

The Consortium for Development Partnerships

ENTREPRENEURSHIP IN AGRI-BUSINESS AND POVERTY REDUCTION IN GHANA

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**CONSORTIUM FOR DEVELOPMENT PARTNERSHIPS
(CDP) PROJECT ON PRIVATE SECTOR DEVELOPMENT
& POVERTY REDUCTION**

Entrepreneurship in Agri-business and Poverty Reduction in Ghana

PROJECT REPORT

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1. INTRODUCTION

Agriculture has been the mainstay of many developing economies; employs a greater proportion of the labour force and contributes significantly to GDP in these countries. In Ghana, the share of agriculture in GDP is about 40% and the sector employs about 55% of the working population. Besides, growth in agriculture output has been the highest although the bulk had come from cocoa. However, the incidence of poverty is reported to be highest amongst food crop and export crop farmers, and amongst self-employed rural people working in off-farm activities such as trade (GLSS 4). Currently, agriculture in Ghana is still being practiced using the 'hoe and cutlass' method with very minimal processing. Majority of farmers operate barely subsistence farms or with very low incomes from their holdings. Hence, the development of agro enterprises, particularly those into agro-processing will significantly add value to production and also improve rural incomes. It will contribute to poverty alleviation by increasing and diversifying income, providing improved access to markets, improving product quality, adding value to raw products through intermediate processing, and providing service industries. An improvement in the operations of the agro-business sector in a country will not only employ people within the sector but will also stimulate demand within others sectors of the economy.

However, despite the potential role of agro-enterprises, the sector has not been able to realize its full potential due to a complex set of factors that inhibit its operation. The factors affecting the agri-business sector includes marketing, storage, infrastructure, finance and limited ability to influence government policy. It is against this background that the relevance of this study comes to the fore. The study principally aims to: (i) Identify a meaningful structural basis for achieving growth and productivity in the agricultural commodity value chains of these countries; (ii) determine the extent to which poverty reduction could be tackled within a commodity systems approach to agribusiness development in order to improve livelihoods of the rural population; (iii) overcome identified barriers to value creation within changing local and international environments in order to raise stakeholder competitiveness in the international markets; (iv) seek ways and means by which African businesses in general and farms in particular can make transition from their present subsistence nature to viable commercial levels to end the incidence of most farm businesses in Africa dieing with their owners; and (v) identify how the agribusiness environment could be made to attract private-sector entrepreneurs

Project Objectives

The project aims to link each commodity's production to related downstream activities such as storage, processing into intermediate products, preservation, packaging, marketing, and exporting on the one hand, and general agribusiness productivity increases and competitiveness on the other. In order to overcome the problems of the agri-business sector to enable it improve incomes of the poor and their livelihood. It intends to undertake a thorough study in the following areas in order to inform policy on how to overcome the constraints to the agro-enterprise sector in Ghana:

- Analyze the structural characteristics of each commodity value chain in Cassava and Shea nut;
- Identify the barriers and obstacles to value-generating entrepreneurial initiatives in the Cassava and Shea nut business;
- Promote identified opportunities for entrepreneurial ventures and structural mechanisms and policy instruments that would encourage such agribusiness initiatives;
- Suggest methods through which such ventures can directly address poverty and livelihood issues in Ghana;
- Suggest specific activities that could be undertaken by private sector corporations in these countries to support entrepreneurship in agribusiness

The rest of the report is organized as follows: section two discusses Ghana's socio-economic context and the role played by agriculture in economic growth. The third section discusses the literature on entrepreneurship and agribusiness development in Ghana followed by a section outlining the research methodology. Section four discusses the key findings of the research and the final section provides the concluding remarks.

2. ENTREPRENEURSHIP AND AGRIBUSINESS DEVELOPMENT

Entrepreneurship has been defined as the founding of a private enterprise. This encompassed the risk takers, the decision makers, and the individuals who desire wealth by managing limited resources to create new business ventures (Chan, 2005). Entrepreneurship leads to innovation, such as new products, new production methods, new markets, and new forms of organization. Wealth is created when such innovation results in new demand (QuickMBA, 2007). Others view entrepreneurship as the process of discovering, evaluating, and exploiting opportunities, which go on to reify themselves in the form of new business ventures.

It is obvious from the various definitions that entrepreneurship is often a difficult undertaking as vast majority of new businesses fail. Entrepreneurial activities are substantially different depending on type of organization. Entrepreneurship ranges in scale from solo projects (even involving the entrepreneur only part-time) to major undertakings creating many job opportunities.

Agribusiness on the other hand has been defined as the sum of all operations involved in the manufacture and distribution of farm supplies, production operations on the farm, and the storage, processing and distribution of farm commodities and items made from them. In agriculture, agribusiness is a generic term that refers to the various businesses involved in food production, including farming, seed supply, agrichemicals, farm machinery, wholesale and distribution, processing, marketing, and retail sales (Davis and Goldberg, 1957).

Agribusiness is a concept that denotes collective business activities that are performed from 'farm to fork' FAO (2007). It covers the supply of agricultural inputs, the production and transformation of agricultural products and their distribution to final

consumers. As an economic sector, agribusiness is one of the main generators of employment and income worldwide. Within the agriculture industry, agribusiness is widely used simply as a convenient portmanteau of agriculture and business, referring to the range of activities and disciplines encompassed by modern food production. The above definitions can be summarized by typology of activity areas in agriculture. From this typology, agribusiness activities could be categorized into input acquisition activities, production activities and marketing activities. The farm sector includes, in addition to agricultural producers, a diverse range of large and small enterprises, sometimes referred to as agribusiness, which include farm input and service suppliers (seeds, fertilizer, and equipment), downstream processors, traders, and retailers. These enterprises are interlinked in networks that together constitute agricultural market systems that match buyers and sellers, provide a venue for consolidating small lots and grading, facilitate physical exchange and price discovery, transmit information, and manage risk.

Locally based agribusiness enterprises in developing countries are typically small to medium-scale operations in rural areas that either process raw agricultural materials or provide marketing, transport, and other services (Kinsey, 1987). The size of such enterprises varies from individual households to small groups of neighbors, to larger “cooperative” efforts and even village wide efforts. Based purely on efficiency criteria, a national or regional economy may be best served by enterprises that can take advantage of economies of scale. Indeed, specialization is often associated with improvements in development since resources tend to be used more efficiently (von Braun, 1994; Stevens and Jabara, 1988). On the importance of localized agribusiness enterprises, apart from its direct income effect, it creates employment in the form of labour so that growth in non-farm employment opportunities not only can address employment issues in general, but could also alleviate gender-specific biases associated with agricultural production (Kinsey, 1987).

Increased employment opportunities within the rural areas as a result of such enterprises can help contain pressures for urban migration. Moreover, greater capture of the value added associated with post-harvest activities induces a multiplier effect in the local economy. Each additional Ghana cedi captured can be spent many times over in local businesses, improving their stability. Also, to the extent that agribusiness activities establish market connections outside the rural area, other crops or activities can benefit from improved lines of transportation, finance, and communication. These connections effectively reduce the transaction costs faced by service providers. Specifically, one of the principal contributions of local agribusiness enterprises will be the establishment of marketing channels. Although larger scale enterprises are often favored by the elements of economic performance, locally based enterprises offer both broad impact and non economic benefits that are of considerable advantage (Stanton, 2000).

Entrepreneurship and Agribusiness

entrepreneurship and agribusiness development is concerned with how innovations, such as: new products, new production methods, new markets, new forms of organization

could be used or developed in the manufacture and distribution of farm supplies, farm production operations, and the storage, processing and distribution of farm commodities and items made from them (Davis and Goldberg, 1957). The issue is how innovations could be brought into management, marketing and financing of all the activities involved in agriculture. Such innovations are relevant because agribusiness entrepreneurship is a key element in assisting and improving rural income opportunities and economic growth in the rural agricultural sector both at the national and regional levels in Ghana. In this regard, agribusiness enterprise development is an important factor in promoting sustainable agricultural and rural sector development in Ghana. Agribusinesses are contributing to the value added of primary production resources in many forms. It is also supporting and promoting the development of relevant agricultural support services much needed in the process of agricultural and rural development (UNECE, 2003).

Despite the potential of agribusinesses in most developing countries including Ghana, they are usually small holdings which are often locally based and managed. These small business owners could be considered entrepreneurs but it is important to note that entrepreneurship in strict sense differs somewhat from small businesses.

Importance of Agribusiness Sector in National Economies

Agribusiness and agro-food system developments and consequent improvements in competitiveness provide a strong catalytic force to poverty reduction, directly and indirectly, in developing and transition economies. This can be achieved by:

- Reducing food costs and supply uncertainties and improving the diets of the rural and urban poor,
- Generating growth, increasing and diversifying incomes, and, providing widespread employment and entrepreneurial opportunities in both rural and urban areas; and
- Inducing productivity gains by smallholder farmers to increase their opportunity for wealth creation and better integrating them into local, national, and international markets.(World Bank Group, 2001).

Empirical analysis of national economic structures points to a general pattern in which the value added in agribusiness accounts for some 15-25% of the GDP of low-income countries, with this share typically increasing to 30-40% for middle-income countries. For many developing countries, agribusiness development could account for between one-third and one-half of the GDP growth in the coming five to ten years. Currently in sub-Saharan Africa, agribusiness represents approximately 21% of GDP, including 49% of the region's manufacturing value added and 43% of the region's services value-added. Countries such as Thailand, Mexico, and Chile are well advanced in a transformation process during which the share of agriculture in GDP contracts while that of agribusiness increases as value is added to primary commodities and as food and other agro-related markets become more sophisticated. In Ghana the share of agriculture in total GDP remains quite high at about 39% in 2006.

<i>Country</i>	<i>Agriculture's Share of GDP</i>	<i>Agribusiness' Share of GDP*</i>	<i>Combined Agriculture and Agribusiness Share of GDP</i>	<i>Agribusiness GDP (\$ billion)**</i>
South Africa	4	16	20	15
Nigeria	42	16	58	6
Uganda	41	23	64	3
Kenya	26	23	49	2
Zimbabwe	18	21	39	2
Ghana	44	19	63	1
All SSA	32	21	53	67.0
United States	1	13	14	1007
Brazil	8	30	38	236
Argentina	11	29	40	94
Mexico	9	27	36	91
Indonesia	20	33	53	71
Thailand	11	43	54	68
Chile	9	34	43	25

* Combines the value added for agro-related industries and that of agricultural trade and distribution services. Based on WB, FAO, and UNIDO databases

Given that the (GPRS II) hinges on agribusiness development, it is desirable that as the sector grows the share of agriculture in total GDP will dwindle while the value added share of agribusiness in GDP increases. Experiences of Israel in the 1960s, Taiwan in the 1970s, and Thailand and Brazil in the 1980s, show that agro-processing can provide avenue for the accumulation of skills, knowledge, and practices which have been important stepping-stones to other forms of industrialization (World Bank, 2001).

Despite the important contribution of agribusiness sector to GDP in Ghana, the agribusiness sector is not advanced and a lot needs to be done to improve on the inefficiencies in the systems. Well functioning markets is a key condition of food security. Improvements in the performance of marketing, agro-processing and distribution industries also contribute to the quality, variety, and safety of the diets of the poor.

Also, apart from contribution to GDP, a rough estimate based on household field surveys is that 25% of total rural incomes come from these non-farm (yet agribusiness) activities. The poor are employed in farm machinery repair, farm product processing, food product trade, and other agribusiness functions and such employment tends to rise as countries move from low-income to middle-income status. For a cross section sample of developing countries, agro-processing accounts for 20 to 35% of wage employment in the manufacturing sector (World Bank, 2001).

Entrepreneurship and Agribusiness Development in Ghana

Agribusiness has been identified by the Government of Ghana and numerous non-governmental and community-based organizations as a key element in efforts to enhance the livelihoods of poor, primarily rural people. Agribusiness in Ghana is still rudimentary and artisanal with little growth or development over the last three decades. However, over the past decade, efforts have been made to develop the agribusiness sector. These efforts have entailed policies, projects and the establishment of institutions to promote agribusiness. It is difficult to analyze the performance of the agribusiness sector in Ghana due to the lack of comprehensive data on agribusiness enterprises and their activities in Ghana. The same can be said about Ghana's entrepreneurial development. Characteristics of Ghana's entrepreneurial resource base range from a preponderance of the informal sector through low technical and business skills to poor business culture and capital insecurity. Entrepreneurship development is essential to address the issue of unemployment and enhance a healthy nation.

Improved market access is necessary for agribusiness development so that key players in the marketing chain, including farmers, processors, inputs suppliers and other service providers have sufficient information that allows for the free flow of factors of production to profitable enterprises. The major determinants of market access agricultural inputs and outputs may be grouped into those for the domestic market (i.e. conducive environment, infrastructure, information and facilitating functions) and those for the international market (international trade rules and policies, comparative advantages and market opportunities).

Export-led growth is critical to the development of countries in sub-Saharan Africa. Major constraints are lack of market information and access to finance, poor infrastructure, poor research and development (R&D) and extension services, difficulties procuring appropriate inputs, inappropriate land tenure arrangements, lack of clarity in institutional roles, slowness in exploiting entrepreneurial opportunities, lack of business knowledge, and burdensome regulations. As a long-term strategy, it is recommended that agribusinesses and entrepreneurs first develop their capacity to supply domestic markets in order to generate the savings and experience they need to succeed in the more demanding export arena. Certain agricultural products (e.g., rain fed, nonperishable, and bulk-trans-ported crops) and markets (e.g., niche, regional, and wholesale) should be carefully examined and ways found in which they might achieve economies of scale (e.g., by joining demand-driven associations and developing linkages with larger firms). Donor interventions are recommended in the areas of infrastructure and policy, basic R&D, training, finance, and association development.

In general, the agribusiness sector in Africa is not well developed even though it employs a large number of the population. Apart from South Africa, most African countries' agribusiness sector is at the infant stage. The sector is not classified into sub-sectors and the industrial survey conducted in 1995 for example covered only medium and large-scale industries. Some data on agro-industries showed a total of 250 companies with about 48,914 employees. In terms of employee numbers, the timber sub-sector dominate (46 percent) followed by the textile sub-sectors with 22 percent (FAO, 2004). Relating to

farming activities, most of the people in the sector are subsistence with small holdings. There are few commercial farmers and exporters of high value horticultural crops.

Women's role in agribusiness entrepreneurs in developing countries

It is important that any project or effort to develop entrepreneurship in agribusiness in Ghana pays adequate attention to women because the majority of Ghana's food crop producers are women. Most of these women are however poor because, among other things, they produce only primary products with very little value addition. The situation is the same for most developing countries where women produce more than 50% of the food crops. In sub-Saharan Africa, it is estimated that women produce up to 80% of staple foods (UN Report, 2000).

The 2000 United Nations report on the status of women also notes that women are twice as likely to be involved in agriculture-related activity.

National averages of female workers in the agricultural labour force vary, but globally women have a principal role in agribusiness, food processing and consumer-related activity. This could be due to the observation made by Rathore and Dhaneja (1999) that the areas of business which provide immense scope for women entrepreneurs are food processing and packaging, followed by preservation of seasonal vegetables and fruits, seed processing and preservation, floriculture/cut flower and other food processing activities. However, despite the enormous contributions of women to developing economies, the concept of entrepreneurship though assumed to be sex neutral, is not well developed among women (Moitra, 2001). Also, women do not control the key resources such as land on which their agricultural activities depend. One major problem with the changing division of labour is that women gain new responsibilities but not the rights that should go with them.

Females constitute about half of the population of Ghana and about 47 percent of the labour force. Women are visible in the informal sector where they dominate in areas such as food crop farming, food processing and marketing of goods. Yet, the time demands on women affect their economic productivity. In urban areas, access to the formal job market is quite restricted for women, as a relatively larger proportion of women do not possess the requirements for entry such as good educational qualifications and skills. Early marriages and teenage pregnancies also deprive young women of opportunities to enter and survive in the labour market. Hence, the informal sector constitutes the most important source of employment for the majority of working urban and rural women (Asenso-Okyere, 1997).

Most people in the agricultural sector in Ghana are subsistence farmers, with none to few volumes of marketable surplus. Generally their investments are low and they depend on simple tools and machinery, rainfed water regime, local seed and natural soil fertility management and the use of manpower (manual labour) for most of their activities. The vast opportunities seen in the agribusiness sector (entrepreneurship, labourers, food processing) for women is due to natural resource endowment and significant

accessibility of human resources (though largely unskilled). Women form over 50 percent of all food crop producers and over 80 percent of food processors and traders (particularly internal trade) in Ghana. Most women in Ghana are motivated to participate in agriculture first because of its contribution to household food self-sufficiency. Thus most women grow food staples like cereals, roots and tubers (apart from yam), and vegetables. There are a few women who devote themselves solely to cash crop production of industrial or export crops although studies have revealed that wives are non-contracted partners to husbands who cultivate cash crops (Abekoe *et al*, 2003; Al-Hassan *et al*, 2001 and Obeng, 1994).

Women also dominate the agro-processing sub sector of agriculture. They are mostly small-scale entrepreneurs who are bakers of bread and other pastries, processors of corn and cassava dough, gari, palm oil, coconut oil, groundnut paste, smoked fish, cured fish, powdered pepper, among others. Women are actively participating in agriculture and agricultural related activities but the question is how well the activities are being performed and whether these activities are profitable enough to bring them out of poverty. The general assertion is that the productivity of women farmers is lower than men (Mehra, 1997). Low productivity is contributed to low production and or too much time spent in the production of a unit output. This situation persists because of lack of improved technical equipments and know-how. Entrepreneurship in agribusiness development could help break the cycle of poverty.

Those with resources (the few) are better placed to take advantage of opportunities created by District Level Stakeholders in information dissemination by organizations like the Ministry of Food and Agriculture (MoFA) and many agro-based NGOs. The general assertion is that, married women, the moderate-to-highly educated, those in formal sector employment and those in industrial and export crop production are better off. Many more are among the under privileged; those in food crop production and small scale traditional-technology-based food processors, the single women and the disabled. Entrepreneurship drives in agribusiness should be targeted towards such groups also.

Entrepreneur and Business Development

Although some people are of the view that entrepreneurs are born, and not made, experience has shown that entrepreneurship can be taught, and that a positive environment encourages entrepreneurial thinking, promotes innovation, and leads to a higher degree of social and economic sustainability. Rural areas often provide few business opportunities and many of the entrepreneurs and businessmen/women are unaware of how to run a modern and sustainable business. Therefore it is essential that the introduction of business opportunities and entrepreneur development go hand in hand.

Therefore, to assist the private sector and specifically local entrepreneurs to successfully expand, entrepreneurial and financial assistance through the public sector and donors are needed. The areas of concern are:

- Entrepreneur/business training,
- Business support services,
- Technical training and support,

- Labour and skills development and
- Local enterprise support infrastructure.

Agribusiness development and Employment Creation

Although a well-functioning private agribusiness sector is a precondition for a productive farm sector, the environment for private sector operations frequently has serious limitations. Rural areas often lack infrastructure, effective local government, adequate commercial and social services, and information and communication systems. In addition, product and factor markets do not function well, and considerable interregional market rigidities exist. This increases risks associated with doing business and contributes to interregional disparities. When agro-enterprises find it too costly or risky to rely on small-scale farmers for raw material supply, these farmers are excluded from market opportunities. For agricultural growth to be pro-poor, the rural poor must be successfully integrated into expanding markets (World Bank Group, 2004). This is where agribusiness development has a crucial role to play.

Managing agribusiness firms is a particularly challenging endeavour. Contrary to the traditional manufacturing industries, agribusiness is characterized by raw materials that are mostly perishable, variable in quality and not regularly available at all times of the year. The sector also tends to be subject to stringent regulatory controls regarding issues such as consumer safety, product quality and environmental protection. In addition, agribusiness is facing unprecedented changes in its business environment, fuelled by developments in technology, urbanization, consumer preferences and the globalization of markets. Traditional production and distribution methods are being replaced by more closely coordinated and better planned linkages between agribusiness firms, farmers, retailers and others in the supply chains (UNECE, 2003).

In this changing environment, agribusiness managers must not only possess the traditional management skills in areas such as operations, finance and marketing, but they must also understand the peculiar nature of their business, anticipate the changes in their unique business environment and master the tools and techniques to cope with them. There is an increased understanding that production-support activities must be linked to market demand and that farm-level activities must be looked at within the context of the whole value chain and the linkages within that chain. These are the central issues addressed by FAO's Agribusiness Management Programme, with a strong emphasis on capacity building and human resources development at different levels. The program produces training materials, in particular for small farmers and managers of agro-processing enterprises who need technical and managerial training: comprehensive of stronger capacity for business planning. It also advises on policies and strategies to improve agribusiness competitiveness, including fostering better coordination and linkages among business partners (FAO, 2007).

Public support for development of agricultural markets and private sector capacity can involve: improving the policy and regulatory framework; privatization; provision of public goods infrastructure and services to enhance competitiveness; development of

entrepreneurial capacity, industry and producer associations, and new market chains; and information and communication systems (World Bank Group, 2004). A positive alternative is the introduction of businesses which not only build on existing rural enterprise skills such as farming and agricultural contracting and utilise local labour, but which also enable people to upgrade their own agricultural enterprises, through widening the use of agricultural equipment. If local entrepreneurs were given the necessary entrepreneurial and business development support and encouraged to deliver these services, sustainable enterprises could be created. For agribusiness development initiatives, consideration should be given to sourcing business finance, equipment supply and support, employment opportunities and entrepreneurial capacity building.

Sourcing Business Finance

Most banks are not known for their generosity towards small and medium sized businesses (SMEs), particularly those in rural areas. This is understandable given their lack of collateral and, in many cases, credibility. According to Stanton (2000), women in agribusiness enterprises are usually poor and have small holdings and tend to be constrained by available capital, and thus serve particular niches. However, new business initiatives will provide the local entrepreneur with fixed contracts, which will help to give the banks the confidence required to finance the purchase of the necessary equipment. Where there is still a problem because of the lack of collateral, especially for the purchase of larger equipment, other financing sources such as leasing need to be explored, together with a combination of donor based guarantees and/or mutual guarantee schemes i.e. guarantees provided by a group of people. Smaller entrepreneurs, such as individual farmers, could still find it difficult to afford expensive capital equipment so additional enterprises renting equipment and providing service facilities, also need to be encouraged (Stanton 2000).

Equipment Supply and Support

These new initiatives will provide additional sales opportunities for equipment manufacturers and suppliers; however, their support over and above simply selling their products is essential if the new initiatives are to be sustained. To develop entrepreneurship in agribusiness in particular manufacturers and importers must assist with:

- Providing the right product, built for their use and conditions and ensuring that local staff is competent in advising buyers.
- Ensuring efficient and affordable service and spares parts back up.
- Working with donors and local financial institutions to provide practical and flexible finance packages.
- Working with local manufacturers in order to offer affordable additional equipment such as trailers, grader blades among others.

In addition to the direct benefits to the local community, that will result from the introduction of new business initiatives in the area, new employment and agribusiness opportunities will also develop.

Employment Opportunities

One of the major benefits of entrepreneurship development in agribusiness is job creation. Most young people who graduate from educational institutions expect to be employed. Developing entrepreneurship in agribusiness could help such people, among others, gain employment and also create employment. The local enterprises “kick started” by the new business initiatives will provide additional employment opportunities for local people through a number of different channels such as:

- Direct employment by local enterprises such as local labour, drivers, among others;
- As the money earned filters through into the local economy more jobs will be created, either directly related to the new enterprises (e.g. equipment services and supply) or in the consumer sectors (e.g. shops, food stalls);
- Local skills usage;
- The presence of new jobs in the area will give people more incentive to actively seek work and training and to stay and work locally.

Developing Entrepreneurial Capacity

Entrepreneurial and managerial skills including market research, promotion, pricing strategies, marketing channel management, and other skills necessary for effective agribusiness development and private sector investment are not widely developed in Ghana. This is due, in part, to the past dominance of processing/marketing activities by parastatal (and/or foreign) enterprises and the concentration of trade in unprocessed standard commodities. This limited the skills base and inhibited the ability of entrepreneurs to penetrate international markets for non-traditional products, and to compete with established companies in domestic and regional markets. Business development services (BDS) that help firms improve quality and efficiency of processes, reduce costs, and expand operations are important to all firms, but are especially critical to small firms, agribusinesses and new start-ups. A needs assessment is important because it indicates the scope for programs of training, internships, and technical assistance to build skills in small business management, so that small firms and agribusinesses in rural areas in particular can develop capacity to participate in markets. BDS are best provided by financially autonomous entities, capable of securing much of their funding through the recovery of costs from users. Examples in agriculture are agribusiness development centers (ADCs), project development facilities, learning through exchange schemes, and nonprofit private sector institutes (World Bank, 2004).

Alternative Approaches to Incorporating Agribusiness in Development Strategies

Here, we examine as options what could be considered progressive stages of agribusiness enterprise in developing countries: public parastatals, multinational and large domestic companies, cooperatives among producers, and individual private marketing enterprises. To successfully promote agribusiness activities may require the joint efforts of government ministries, with a “system perspective” toward development (FAO, 1998).

Public Parastatals and Agribusiness Development

The incentives for private action may be insufficient to generate private investment in agribusiness in Ghana. Few private companies are so motivated (Sinha, 1995, Wanders, 1993). Large numbers of small producers can be reached through a public sector entity temporarily charged with promotion and marketing of that export crop, for example. Similarly, where value added could be captured through a processing facility, public sector investments are important (World Bank, 2004). It is important to not however that through contracts with large firms, farmers and agribusiness operators can obtain access to markets and technology that would have otherwise been difficult to acquire (Glover, 1994),

Producer Cooperatives

Since the challenges associated with many rural areas derive from the small size of most agricultural producers and agribusinesses, a natural alternative is to form groups of producers with common goals. By joining forces in the marketing, processing, or transport of crops, producers effectively mimic the circumstances of larger producers, often gaining access to credit, technology, and markets that were previously out of reach. Producers can jointly obtain technical assistance needed to try new crops, venture into commercialized agriculture, and learn new management techniques, all aimed at increasing their integration into markets (Stanton, 2000, World Bank, 2004).

Individual Private Marketing Enterprises

While non farm enterprises can only indirectly increase farm incomes, their presence helps boost employment and access to other services. Basic infrastructure, such as roads and communications; access to capital; technical assistance associated with management, marketing and sales, among others, as well as a predictable market environment are all crucial to the establishment and sustainability of individual private marketing enterprises and agribusinesses. As larger entities bring business in, many basic services will be improved contemporaneously, benefiting smaller agribusiness entrepreneurs (Stanton, 2000).

3. METHODOLOGY

Cassava and Sheanut producers/pickers and processor were surveyed in two regions of Ghana, the Central and Northern Regions. Cassava producers were selected from the Gomoa and Agona districts of the Central Region while cassava processors were selected from the Ewutu-Efutu-Senya and the Gomoa districts. Sheanut pickers were selected from Savelugu Nanton and Tolong Kumbungu districts as well as the Tamale Metropolis. Sheanut processors were taken from only the tamale Metropolis where most of them are located. The distribution of the sample size is shown in Table 1.

Table 1: Sample Size and Distribution

Cassava	Region	District	Sample size
• Producers	Central	• Gomoa • Agona	• 42 • 15
• Processors	Central	• Ewutu-Efutu-Senya • Gomoa	• 45 • 11
Sheanut			
• Pickers	Northern	• Savelugu Nanton • Tolong Kumbungu • Tamale Metropolis	• 18 • 25 • 7
• Processors	Northern	Tamale Metropolis	• 50

4. FINDINGS

This study analyzes the structural characteristics of each commodity value chain in Cassava and Shea nut in order to identify the barriers to value-generating entrepreneurial initiatives in the Cassava and Shea nut business. It is strongly believed this will promote opportunities for entrepreneurial ventures and provide suggestions through which such ventures can directly address poverty and livelihood issues in Ghana including activities that could be undertaken by private sector operators to support entrepreneurship in agribusiness in Ghana.

4.1 Cassava Production

The majority of cassava producers (79.0%) are male with female producers making up the rest of respondents surveyed. Generally, females in Ghana are thought to produce the bulk of food crops. The mean age of sampled cassava producers is about 40 years with a standard deviation of 11.7 years. The youngest producer is 20 years while the oldest is 74. Primary education was attained by 7% of all cassava producers sampled in the 4 districts of the Central Region while more than one-half of cassava producers have basic education (Middle School or Junior Secondary School). About 21% of all cassava producers surveyed have no formal education while about 10.5% attained secondary education (i.e. O-level and Senior Secondary School Certificates). None of the producers had attained tertiary level education albeit about 5% have either technical or professional education of a sort.

Table 1: Educational Background of Cassava Producers

	Frequency	Valid Percent
None	12	21.1
Primary	4	7.0
Middle/JSS	32	56.1
O-Level	4	7.0

SSS	2	3.5
Tech/Professional	3	5.3
Total	57	100.0

Source: Field Survey, 2007

Land acquisition is important in an agricultural production process; it is a primary input in the production of cassava. The survey data reveals that the majority (about 72%) of cassava producers acquire land for production through share-cropping arrangements (i.e. *abusa* and *abunu*). The other 28% of cassava producers surveyed acquired their cassava farmlands through inheritance or outright cash purchase of land. The proportion of farmers who claim they purchase land outright for cassava production is only about 5% (Table 2). More than 68% of farmers interviewed indicated that there exists some difficulty in acquiring land for cassava cultivation.

Table 2: Land Acquisition for Cassava Cultivation

	Frequency	Valid Percent
Matrilineal Inheritance	5	8.8
Patrilineal Inheritance	5	8.8
Both Matrilineal and Patrilineal	3	5.3
Direct Outright purchase	3	5.3
Long Lease (<i>abunu</i> , <i>abusa</i> , etc)	41	71.9
Total	57	100.0

Source: Field Survey, 2007

Cassava cultivation has been a life time vocation for a number of respondents with the total number of years of cassava cultivation ranging from 1 to 50 years. Meanwhile, the mean number of years of cassava cultivation is approximately 13 years. The size of cassava farms cultivated ranged from 0.5 acres to 17 acres with the mean cassava farm size being about 3.5 acres. Thus, Cassava is not produced on a large-scale by many people in the Central regions which goes to explain why producers form the bulk of the poor in Ghana. Cassava production begins with land preparation which is done manually. None of the cassava producers employs machinery in the preparation of land for planting aside from simple tools such as the cutlass and the hoe. From the survey data, hired labour is important in cassava production in the survey area and indeed, more than 98% of farmers use hired labour in some part of the production process.

The mean cost of land preparation for cassava production is GH¢18.40 with the maximum cost per acre for land preparation at GH¢54. On the per acre basis manual land preparation costs a maximum of GH¢14 while mechanical land preparation costs a maximum of GH¢37.5 (Table 3). At the household level, it costs a household about

GH¢4.2 for manual land preparation and about GH¢4.3 for mechanical land preparation. Cassava farmers either buy their planting materials or obtain them from their old farms. From the survey data the maximum expenditure on cassava cuttings was GH¢80 with mean expenditure of GH¢8.65. On the per acre basis the mean expenditure on planting material was GH¢18.40. Some cassava producers employ hired labour during planting. The average labour cost for planting an acre of cassava is about GH¢13.1. Another important cost component of cassava production is weeding; most cassava farms, according to the sample are weeded twice before harvest. The average cost of first weeding is about GH¢57.1 with the maximum cost of first weeding being GH¢340. For an acre of cassava farm, the average cost of first weeding was reported to be about GH¢3.34 with the maximum cost being GH¢12. Second weeding costs an average of GH¢64.26 with a standard deviation of GH¢81.92. On the average it costs about GH¢3.7 per acre for second weeding.

The harvesting of cassava involves cost in terms of labour. The survey shows that the highest cost incurred by a cassava farmer with regards to the harvesting of cassava was GH¢72, while on the average is costs GH7.63 with a standard deviation of Gh11.8. On the per acre basis, mean labour cost for harvesting cassava stood at about GH¢4 per acre with standard deviation of GH¢4 per acre.

Table 4: Cost of Cassava Production (GH¢)

	N	Minimum	Maximum	Mean	Std. Deviation
Manual land preparation	57	0	400	69.28	84.696
Planting Material (Cassava Sticks)	57	0	80	8.65	15.473
Planting (Labour)	57	0	255	50.28	57.246
1st Weeding (Labour)	57	0	340	57.11	63.427
2nd Weeding (labour)	57	0	450	64.26	81.921
Harvesting (labour)	57	0	72	7.63	11.773
Transportation (Labour)	52	0	50	5.21	10.525
Transportation (By Vehicle)	27	0	24	2.56	5.216

Source: Field Survey, 2007

Table 5: Per Acre Cost of Cassava Production (GH¢)

	N	Minimum	Maximum	Mean	Std. Deviation
Land preparation (manual)	57	.00	14.00	4.1858	3.29220
Land preparation (mechanical)	57	.00	37.50	4.2744	6.18761
First weeding	57	.00	12.00	3.4363	2.71243
Second weeding	57	.00	12.00	3.6793	2.90354
Harvesting (labour)	57	.00	25.00	4.0801	4.79967

Source: Field Survey, 2007

Transportation of cassava from the farm and to the market is done by hiring labour or by motor vehicle which both involve some monetary cost. According to the respondents it costs a little over GH¢5 to transport harvested cassava using labour while it cost about half the cost if transported by vehicle. Inputs such as fertilizers and other agro chemicals are rarely used on cassava farms if at all and irrigation is also not practiced. About 91% of cassava farmers also cultivate other crops while 51% of farmers who produce cassava as their main crop also produce maize. Others produce crops such as plantain (21% of farmers), pepper (21% of farmers) and oil palm (19% of farmers) among others. Table 5 shows a summary of cassava production and marketing. From the survey data cassava farms in the areas surveyed range between 0.5 and 17 acres. The mean area of land planted to cassava is about 3.5 acres with a standard deviation of 3.5 acres. The most common unit of measure of cassava output is bags (commonly known as fertilizer bag). According to informal discussions with agricultural extension agents the ‘fertilizer bag’ load of cassava weighs about 75Kgs. Given this assumption, the survey reveals that cassava output varied widely among the sample of farmers. The minimum output obtained was about 375Kgs and the maximum output was given as about 16,200 Kgs (16.2 tons). On the average however farmers sampled obtained about 3.4 tones of cassava. Estimating output of cassava per land area planted puts mean productivity of an acre of cassava farm at about a ton (1 ton). Productivity however exhibits wide variation from about 187Kgs to about 4 tons.

Table 5: Cassava Output and Revenue

	N	Minimum	Maximum	Mean	Std. Deviation
Area in acres	57	0.5	17.0	3.553	3.5085
Total Output (Kgs)	53	375	16,200	3,392	3,360
Output per acre (productivity)	53	187.5	4,050	1,039	704.06
Price Per Unit (GH¢)*	52	3.00	35.00	14.12	4.845
Total Revenue (GH¢)	56	50.00	3,500	639.46	694.84
Revenue per acre (GH¢)	56	37.50	810.0	802.22	142.00

Source: Survey Data, 2007. *One unit of cassava is about 75Kgs

The average price at which the sampled farmers sold a unit of cassava ranged between GH¢3.00 to GH¢35.00 with the mean price at about GH¢14.12 with a standard deviation of about GH¢4.84. The variation in price of cassava is not surprising as is the case for most raw agricultural products. During bumper harvest the price of cassava falls by several factors compared to when the produce is relatively scarce, particularly during the dry season. The survey results show that cassava is produced in the sample areas because among other reasons it generates revenue for the farm households. Revenue from the sale of cassava ranged between GH¢50 to about GH¢3,500 with an average revenue of about

GH¢640. Calculating revenue per acre from cassava shows that farmers obtain between GH¢37.5/acre and about GH¢810 per acre. The mean revenue per acre of cassava cultivated is about GH¢802 with a standard deviation of about GH¢142.

As typical of staple crop farmers in particular in Ghana, the hoe and cutlass are the main tools used in the cultivation of cassava. Other inputs used include earth chisel, pick axe, boots, hired labour input and cassava cuttings. A financial constraint was mentioned as the major impediment to the use of inputs. This was mentioned by about 70% of respondents as the main constraint to production. On the other hand, about 16% of respondents indicated that they face no constraint in obtaining inputs for cassava cultivation. About 89% of farmers contend that extension services were not readily available and this could be seen as a constraint to production. Other production constraints are lack of credit, high cost of labour, price instability and lack of buyers among others (Table 6).

Table 6: Constraints to Obtaining Inputs for Planting

	N	% Responses
Money to obtain inputs is very difficult	44	77.2
Acquisition of land	1	1.8
Occasional drought	1	1.8
Cassava sticks are difficult to get	1	1.8
The inputs that we use are not of good quality	1	1.8
No constraint	9	15.8
Total	57	100.0

Source: Survey Data, 2007

Table 7: Production constraints

	N	% Responses
Lack of credit	58	39.7
High Cost of Labour	9	6.2
Land acquisition problems	18	12.3
Outmoded equipments	5	3.4
Price instability and lack of buyers	29	19.9
Transportation Constraints	6	4.1
No processing firm in the area	3	2.1
Climatic change	5	3.4
Pest attack	8	5.5
Difficulty in getting Cassava sticks	2	1.4
Post-harvest losses	2	1.4
Lack of extension services	1	0.7
Total	146	100.0

Source: Survey Data, 2007

Most farmers do not store harvested cassava due to the perishable nature of the crop; it is either processed or kept on the farm. Thus, farmers will only harvest quantities meant for sale and or household consumption at a time. Harvesting of cassava also comes with its challenges; according to the farmers, the most important harvesting constraint is labour cost and this was mentioned by more than 53% of respondents. The next most important harvesting constraint is the hard nature of the soil during harvesting. This was mentioned as a problem because aside from making harvesting difficult and time consuming it also has implications for how long the tubers can be stored. The likelihood of bruises on the tuber is high when the soil is not loose and moist and these bruises hasten cassava tuber spoilage. Other notable harvesting constraints include post-harvest losses and market uncertainty.

Table 8: Harvesting Constraints

Constraint	N	% Responses
High labour cost of harvesting	26	44.07
The company to help us has collapsed	1	1.69
Hard nature of land	10	16.95
Financial constraints	5	8.47
Market uncertainty	4	6.78
Post harvest losses	9	15.25
No constraints	4	6.78
Total	59	100.0

Source: Survey Data, 2007

The marketing of agricultural output is particularly important if the farmer is benefit substantially from production. When the farmer has direct contact with the final consumer and he/she is able to eliminate the middleman, revenue tends to be better. From the survey data, the two main outlets for cassava sales are through the local market and middle men. More than 56% of farmers sell their cassava in the local market while about 32% of them sell through middle men, usually at the farm gate. Processing firms account for about 9% of the market outlet of cassava. Most farmers sell their cassava on credit (86% of farmers who sell). The transportation of cassava is done mainly by head load (about 78% of farmers) while only about 16% transport by road transport. About 37% of respondents felt that the poor nature of our roads is a major constraint to marketing of cassava. As a result, high cost of transportation ranked as the second major constraint (Table 9).

Table 9: Transportation constraints

	N	% Responses
Poor nature of our roads	21	35.6
High cost of transportation	16	26.1
Labour cost is high	12	20.4
Difficulty in carrying the Cassava	3	5.1
Cost of labour to transport is expensive	3	5.1

When it rains people slip and fall	2	3.4
Lack of Vehicles	1	1.7
No problem	1	1.7
Total	59	100.0

Source: Survey Data, 2007

According to the farmers, the two most important market related constraints are lack of good market for cassava and price instability or price fluctuations (Table 10). The price of cassava is very low during some periods and this makes it impossible for farmers to cover the cost of production and transportation. This results in the third most important challenge mentioned by farmers, that is the unprofitability of cassava sales.

Table 10: Marketing Constraints

	N	% Responses
Some market women buy on credit and abscond	4	7.6
Lack of good market for cassava	19	35.8
Price fluctuations	20	37.8
Cassava sales unprofitable	7	13.2
Local market is too small	1	1.9
Don't have a problem marketing	2	2.8
Total	53	100.0

Source: Survey Data, 2007

Ways of Improving Cassava Production & Marketing

In the view of cassava producers the constraints they face could be resolved in a number of ways but the three major areas of focus includes: (i) availability of credit; (ii) improved market access; (iii) Mechanization of production processes . It is worth noting that most of the suggestions from farmers bother on financial assistance and market access (Table 11). Also they look up to government (and often central government) as the solution to their constraints. About 68% of farmers are unaware of any government policy on cassava although there is a government policy through the Presidential Special Initiative on cassava.

Table 11: Suggestions by farmers to improve cassava production

	Frequency	Percent
More money should be injected	17	29.8
We need money to cultivate on a larger scale	6	10.5
Improved processing facilities	8	14.0
We need a larger market	12	21.1
We need machines to help in the processing of Cassava	2	3.5
Gov't intervention in land acquisition	1	1.8
Access to foreign markets	3	5.3

There should be price control of Cassava	1	1.8
We need land to expand	3	5.3
The Ayensu Startch Factory should be re-opened	3	5.3
We need chemicals to help us transform the Cassava	1	1.8
Total	57	100.0

Source: Survey Data, 2007

4.2 Cassava Processing

The majority of cassava processors are females, that is, about 93% of all processors. Their ages range between 22 and 70 years with the mean age of about 44 years. The educational background of the cassava processors does not appear impressive; about 66% of the processors surveyed had no formal education. For those processors that had some level of education, the majority have only primary education (19.6%). The highest level of basic education was attained by nearly 11% of all processors surveyed (Table 12). About 73% of cassava processors are married, 20% widowed and about 7% divorced.

Table 12: Educational background of cassava processors

	Frequency	Percent
None	37	66.1
Primary	11	19.6
Middle/JSS	6	10.7
O-Level	1	1.8
Training college	1	1.8
Total	56	100.0

Source: Survey Data, 2007

The survey revealed that cassava is processed into two products namely cassava dough and Gari. About 54% of processors convert the fresh cassava to Gari while about 46% convert the cassava to dough. Their source of cassava (input) varied depending on the scale of processing as well as proximity to the production source. About 41% of the processors buy the fresh cassava from the farm or from the farm gate while about 45% of them buy from wholesalers with the other 14% obtaining their cassava from the village market.

In general, price and quantity of cassava that purchased has been increasing from 2004 to 2007 (Table 13). In 2004 the mean quantity of cassava purchased for processing was about 96 bags compared to 199 bags in 2006. Also the mean price of a bag of cassava rose from about GH¢6 in 2004 to about GH¢6.9 in 2005 and then to about GH¢8.5 in 2006. The average price however decreased slightly in 2007 to about GH¢8.5.

Table 13: Output and Price of cassava 2004-2007

	N	Minimum	Maximum	Mean	Std.
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					Deviation
Number of bags bought in 2004	35	0.00	360.00	96.58	106.12
Unit Price in 2004 (GH¢)	24	0.00	15.00	6.08	4.259
Number of bags bought in 2005	40	0.00	900.00	141.07	164.41
Unit Price in 2005 (GH¢)	34	0.00	15.00	6.860	3.04
Number of bags bought in 2006	55	2.00	900.0	199.30	179.37
Unit Price in 2006 (GH¢)	53	3.50	18.00	8.49	3.77
Unit price in 2007 (GH¢)	56	3.00	20.00	8.14	3.25

Source: Survey Data, 2007

Table 14: Storage of cassava prior to processing

	Frequency	Percent
Covered with rubber on the ground	4	10.8
No storage	28	75.7
Leave them on the ground	2	5.4
Peeled immediately it is bought	1	2.7
Soaked in water after peeling	1	2.7
Packed under a tree	1	2.7
Total	37	100.0

Source: Survey Data, 2007

In contrast to cassava producers who transport most of their harvested cassava by head portage, most processors do so by truck. More than 71% of cassava processors transport the fresh cassava by truck to the processing point while a little more than 23% do so by head portage. A related issue is the way cassava is stored. The majority of cassava processors as in the case of producers do not particularly store the fresh tubers over a relatively long period of time. Indeed, the processing of the tubers immediately after harvesting is a way of avoiding spoilage given that the tubers have a short shelf life once harvested. About 76% of all processors do not store the fresh tuber at all, that is they begin processing immediately the cassava is harvested or purchased. Meanwhile, about 11% cover the tubers with polythene on the ground while the rest just leave the tubers for a few hours or days before processing without any particular storage method. Processors do not seem to face many constraints in purchasing cassava. However, some processors mentioned uncertainty about tuber quality, price instability and high transportation cost as some of the constraint they encounter in buying cassava for processing (Table 14). In the processors' own estimation the method of processing is described as traditional by more than 52% of all processors while the rest see their method of processing as modern (Table 14).

Table 14: Constraints to buying cassava for processing

	Responses	
	N	Percent

Have to harvest and transport the fresh tuber ourselves	5	10.2
No problem	20	40.8
High transport cost	5	10.2
Uncertainty about quality of tubers	3	6.1
Price instability	8	16.3
Financial constraint	7	14.3
Cassava farmers don't produce in large quantities	1	2.0
Total	49	100.0

Source: Survey Data, 2007

Most cassava producers rely on hired labour with only about 9% relying on both hired and family labour for the processing of cassava into either gari or cassava dough. More than 90% of this hired labour is female. Thus the processing of cassava can be said to be a predominantly female activity. The mean wage of female hired labour is slightly higher than the mean wage of male hired labour. From the survey the mean daily wage for hired male labour is about GH¢1.22 while that of females is about GH¢1.55. Child work/labour is not common in cassava processing. Transportation cost per unit of cassava (that is per bag of cassava) range between GH¢0 to GH¢10 with the mean transport cost per unit of cassava transported for processing at about GH¢1.36. On the average, the cost of employing the services of a truck is more than that of head portage. This is because it costs on average about GH¢6.22 per unit of cassava transported for processing. However it appears that the trucks are used for transportation when the distances involved are longer and cassava is purchased in relatively larger quantities.

Table 15: Costs of processing

	N	Min.	Max.	Mean	Std. Dev.
Wage for Hired Female labour	55	0	4	1.55	0.689
Hired Labour (female) number	56	0	10	5.29	2.357
Amount Spent per bag for Transportation	47	0	10	1.36	2.221
Amount Spent per bag for Cost of Truck	51	0	25	6.22	7.032
Amount Spent per bag for Rent	39	0	6	0.46	1.253
Amount Spent per bag for Local Market Tax	43	0	25	1.81	4.717
Amount Spent per bag for feeding of labour	55	0	30	3.87	4.033

Source: Survey Data, 2007

Table 16: Constraints to cassava processing

	Responses	
	N	Percent
It is time consuming and tedious	5	9.1
No constraints	3	5.5
Health problems due to nature of work	3	5.4
High cost of processing	6	10.9

Poor structures for processing	2	3.6
Lack of machines to process cassava	6	10.9
Financial constraints	12	21.8
No modern technology	18	32.7
Total	55	100.0

Source: Survey Data, 2007

From the viewpoint of the cassava processor the most important constraint to processing appears to be the manual nature of processing cassava. This accounts for about 33% of responses. The next most mentioned constraint was financial constraints that are related the processors inability to high adequate labour to help for instance. Other important constraints include the tedious nature of the process which also leads to some health implications related particularly to smoke and body pains

Table 17: Sales and Price of Cassava (2004-2007)

	N	Min.	Max.	Mean	Std. Dev.
Average quantity sold monthly	56	3.0	70.0	23.3	14.3
Number of bags sold in 2004	25	0.0	700.0	203.3	181.4
Unit Price in 2004 (GH¢)	22	0.0	20.0	10.6	6.7
Number of bags sold in 2005	34	0.0	800.0	221.2	202.8
Unit Price in 2005 (GH¢)	33	0.0	20.0	11.7	5.5
Number of bags sold in 2006	55	12.0	720.0	248.7	167.6
Unit Price in 2006 (GH¢)	55	2.0	18.0	12.6	4.4

Source: Survey Data, 2007

Middlemen play an important role in the marketing of processed cassava. Indeed, more than 62% of all processors sell their products to middlemen. The rest of the processed cassava products are sold in the local market. Even though processed cassava either into dough or gari stores well, most of the processors sell the products immediately after processing. This brings to the fore the question of whether they are able to take advantage of better prices during periods of scarcity or rather middlemen reap such benefits. About 63% of processors sell their products on credit and also most cassava processors indicated that they are unaware of any government policy to promote the cassava industry. This means they are unprepared to take advantage of the opportunities that may exist. Participation in capacity building programmes is very low and this could mean that either such programmes have not been organized or that the processors are not aware of any such programmes. Only about 5% of processors mentioned that they have been involved in some capacity building programme which trained them in the bagging of gari, cassava processing and packaging.

Table 18: Constraints to the marketing of processed cassava products

	Responses	
	N	Percent

The middlemen dictate the price	14	26.1
Debt due to non payment	1	1.8
We have restricted to sell only 15 bags	1	1.8
No Problem	13	23.2
Tiredness and body pains	6	10.7
We don't get our money in bulk	5	8.9
Market women don't come regularly to buy	1	1.8
Small nature of the market	10	17.9
Others	5	9.0
Total	56	100.0

Source: Survey Data, 2007

Even though about 23% of processors mentioned that they do not face any particular problems with the marketing of their products some processors face challenges which include the dictation of prices by middlemen, small nature of markets and some health related problems. The respondents' suggested in particular the need for more funds to expand (Table 19). As was observed in the case of cassava producers, most of their suggested solutions relate to government intervention either in the market of processed cassava products or through infrastructural support.

Table 19: Suggested solutions

	Responses	
	N	Percent
We need money to expand	30	54.5
There should be price control	5	9.1
We need reliable market	3	5.5
We need cold store to store the dough	1	1.8
Government should support	3	5.5
We need more machine	5	9.1
We need bigger market	5	9.1
Stable pricing policy	3	5.5
Total	55	100.0

Source: Survey Data, 2007

4.3 Sheanut Pickers

Sheanuts occur in the wild and serve as an important source of income for households in Northern Ghana. The picking of sheanut is a predominantly female activity and as the survey revealed all sampled sheanut pickers are females who have no education at all or at best very basic education. Indeed, only about 12% of the sheanut pickers have at most basic education with the rest (about 88%) having no formal education. The majority (96%) of these women are married with a very small proportion being widows. The picking of sheanut though provides a substantial proportion of income for the pickers is

often not the main occupation for the people who engage in it. About 40% of the pickers interviewed were petty traders while 22% and 12% are sheanut/groundnut harvesters and farmers respectively (Table 20). The picking of sheanut is thus seen as a supplementary activity.

Table 20: Main occupation of pickers

	Frequency	Percent
Petty Trader	20	40.0
Student	1	2.0
Unemployed	2	4.0
Production of sheabutter	2	4.0
Production of local soap	1	2.0
Charcoal Seller	1	2.0
Farmer	6	12.0
Rice Processing	2	4.0
Groundnut cake seller	3	6.0
Sheanut picking and groundnut harvesting	11	22.0
Sheabutter Extractor	1	2.0
Total	50	100.0

Source: Survey Data, 2007

Since the sheanut tree grows in the wild a large proportion (52%) of the pickers collect the sheanut from the bush. A sizable proportion (34%) also indicated that they pick the nuts from their husbands' farm (Table 21). This is not to say that these trees have been cultivated but that the trees could be located in cultivated lands. The period of picking sheanuts is between April and June and the nuts are picked mostly early in the morning even though it could be picked anytime in the day. The nuts are picked by hand and do not involve the use of any equipment. The distance from the pickers' to the point where the nuts are usually picked range from 0.5km to 7.5km with the mean distance of about 2.4km. The number of bags of sheanut picked in a day also ranges from 0.3 of a bag to about 6 bags with the average number of bags picked per day amounting to 1.7. In a year (between April to June) individuals pick about 1 to 10 bags of sheanut. The average annual quantity of sheanuts picked per person is about 4.4bags???? . This is rather peculiar, especially when an average of 1.7bags is picked in a day and 4.4bags in a year.

Table 21: Sources of sheanut

	Frequency	Percent
I pick nuts from the bush	26	52.0
I pick nuts from my farm or husband's farm	2	4.0
I pick nuts from my husband's farm	17	34.0
Landlord's Farm	4	8.0
Father's farm	1	2.0
Total	50	100.0

Source: Survey Data, 2007

Table 22: Quantities of sheanut usually picked

	N	Min.	Max.	Mean	Std. Dev.
Distance (km) to the point of picking from residence	50	0.50	7.50	2.38	1.49
Quantity of sheanut (bags) picked per day	50	0.30	6.00	1.73	1.06
Quantity of sheanut (bags) picked per year	49	1.00	10.00	4.41	1.56

Source: Survey Data, 2007

Table 23: Constraints to sheanut picking

	N	% Responses
Rising very early	13	11.2
Dangerous insects found in the bush	37	31.9
Weeds around the trees	10	8.6
Competition from other pickers	8	6.9
Transportation of the nuts	10	8.6
Handpicking at certain times on the farm	6	5.2
Sometimes the shea trees do not produce	7	6.0
Parboiling, firewood problem	9	7.8
We do not wear shoes	5	4.3
Long distance	3	2.6
No food to eat	4	3.4
Others	4	3.6
Total	116	100.0

Source: Survey Data, 2007

Table 24: Methods of storing sheanuts

	Frequency	Percent
Dry the nuts put in sacks and pack on top of stones and logs	7	14.6
Put in sack and on sticks stored in rooms	12	25.0
Put it in bags and put on plywood and put in a room	4	8.3
We boil, dry and crush and dry again then put them in bags	23	47.9
After picking we put them in sacks for storage	1	2.1
After picking we boil the nuts	1	2.1
Total	48	100.0

Source: Survey Data, 2007

The survey reveals a number of constraints to sheanut picking, particularly, the dangers faced in the bush especially with insects. There are two main ways of storing the sheanut, namely, (i) drying and then putting into bags and (ii) boiling the nut before drying and then bagging. A major revelation is that, only 20% of sheanut pickers sell the nuts on credit. This is encouraging when compared to the case of cassava. This can be attributed to the ease with which sheanut can be stored compared to Cassava. Also, the price of sheanuts appear to be rising over the period 2004-2007 as the quantities on the local markets also seem to be increasing, at least from the survey data.

Table 25: Quantity and price of sheanut sold

	N	Min.	Max.	Mean	Std. Dev.
Unit price of a bowl of sheanuts (GH¢)	50	0.66	1.50	1.26	0.17
Quantity (bowls) of sheanut sold per market day	47	2.00	99.00	9.02	14.76
Number of bowls/bags sold 2004	39	0.30	15.00	2.17	2.33
Unit Price in 2004 (GH¢)	37	0.20	30.00	9.71	9.59
Number of bowls/bags sold 2005	42	0.30	20.00	1.87	2.99
Unit Price in 2005 (GH¢)	39	0.30	36.00	12.34	12.07
Number of bowls/bags sold 2006	46	0.18	6.00	1.38	1.15
Unit Price in 2006 (GH¢)	46	0.30	42.00	8.10	13.45

Source: Survey Data, 2007

As in the case of cassava, majority of sheanut pickers are not aware of any policy particularly directed at the sheanut industry. Generally, there is no organization working particularly to help the sheanut industry and if it existed most of the pickers are not aware of them.

Table 26: Organizations helping with the sheanut industry

	% Responses	
	N	Percent
No organization	40	81.6
Don't Know	3	6.1
Centre for Micro Credit	4	8.2
Not seen one	1	2.0
ADRA	1	2.0
Total	49	100.0

Source: Survey Data, 2007

Table 27: Sheanut marketing constraints

	N	% Responses
Transportation cost to the market	20	24.69
Distance to market	7	8.64
Price fluctuations	34	41.98
Buyers dictate the price	10	12.35
No grinding mill	2	2.47
Lack of working capital	1	1.23
No reliable marketing organization	1	1.23
Maintenance and care during processing	2	2.47
Buying on credit	2	2.47
Ready market so no constraints	2	2.47
Total	81	100.0

Source: Survey Data, 2007

Table 28: Suggestions from pickers

	N	% Responses
Government should to assist us in buying	19	26.4
Institute price control	20	27.8
There should be assistance from companies	10	13.9
We need a grinding mill	5	6.9
Skill for production	3	4.2
We need loans	7	9.7
No idea	8	11.1
Total	72	100.0

Source: Survey Data, 2007

The most important marketing constraints reported by the respondents is mainly market fluctuations and transportation cost to the market. Additionally, buyers dictate the price which is a major challenge in the marketing of sheanut. Majority of pickers hold the view that government should institute price controls as well as assist in the buying of the product. Again, government is seen by the pickers as the main intervening force in the industry.

4.4 Sheanut processors

As in the case of sheanut picking, all sheanut processors are females with no formal education. The majority (82%) are married with the rest either widowed or divorced. Unlike sheanut pickers for whom picking of nuts is not their main occupation, 84% of the sheanut processors interviewed regard the activity as their main occupation. About 6% of them are farmers while 10% are petty traders. The village market serves as the main outlet for sheanut processors. Nearly 76% of sheanut processors obtain their nuts from

the village market and about 18% of the processors buy the nuts from retailers while the rest obtain them from wholesalers. From the interviews, storage is not a very complex business; the nuts are kept in sacks and kept to dry.

Table 29: Storage of nuts prior to processing

	Frequency	Valid Percent
I don't store the nuts	8	17.0
In sacks and keep in a dry place	27	57.4
I wash the nuts and dry them	5	10.6
I put it on the floor where there is no water	2	4.3
I store it in my store room	5	10.6
Total	47	100.0

Source: Survey Data, 2007

Table 30: Constraints in buying sheanut for processing

	N	% Responses
Sometimes the nuts are not available	42	48.9
Poor quality of nuts	7	8.2
High prices	21	24.4
Lack of capital to buy nut	9	10.5
The buying of the nuts is tiring	3	3.5
Others	4	4.8
Total	86	100.0

Source: Survey Data, 2007

The nuts are transported from the market to the location where the processing takes place by motor vehicle. The nuts are then stored mainly in sacks or processed straight away. Some of the processors wash and dry the nuts before processing or storing for processing at a later date. The two most important constraints faced by the processors are the non-availability of the nuts at certain times in the year as well as high price of sheanut. Other constraints include lack of adequate capital, poor quality of nuts among others. As far as the method of sheanut processing is concerned, the majority (88%) of processors describe the method as modern. The modern technology involves the use of crushing and roasting machines. The processing of sheanut typically starts with parboiling which is often done by the pickers after which the nuts are sun dried by the pickers. Often, it is at this stage that the processors get the nuts and then crush them using the crushing machine. It is worth noting however that some of the pickers (about 16%) crush the nuts before selling to the processors. About 96% of the processors use the machine with a negligible number doing the crushing manually. After the crushing the nuts, they are then milled and

kneaded. The kneading is done manually (that is by hand) and when completed complete boiling is done using the steam boiler (86% of the processors use the steam boiler) while the rest boil in pots after which sedimentation takes place. The processing of sheanut is done mainly with family labour (about 43%), hired labour (about 25%), both family and hired labour (about 20%) and community labour (about 12%).

The average number of calabashes of shea butter sold was 156, 151, and 155 in 2004, 2005 and 2006 respectively. Meanwhile, the average price per calabash was GH¢22, GH¢29, GH¢35 in 2004, 2005 and 2006 respectively.

Table 31: Constraints in sheanut processing

	N	% Responses
Fuel wood and water scarcity	13	12.4
Sheanut availability is limited	14	13.3
No reliable buyer	9	8.6
Lack of credit	9	8.6
Non-availability of processing materials	4	3.8
There are no ready market for the butter	2	1.9
Roasting machine is not available	7	6.7
High prices of the nut	3	2.9
The grinding mill not available	3	2.9
Poor quality of nuts	2	1.9
The manual process is tiring	22	21.0
Low profit	10	9.5
The process are exposed to a lot of heat	3	2.9
Others	4	4.0
Total	105	100

Source: Survey Data, 2007

The sheanut processors interviewed mentioned several constraints to the processing of sheanut. The main ones include the non-availability of nuts all year round, scarcity of fuelwood, exclusive manual process, and the lack of credit.

Table 32: Storage of sheabutter

	Frequency	Percent
Covered with wet rugs and stored at room temperature	4	8.1
In calabashes covered with rugs at rooms temperature	22	44.9
It is kept in polythene bags kept in basins	6	12.2
Stored in a well ventilated room	5	10.2
It is stored in rubber buckets	10	20.4
Others	2	4.0
Total	49	100

Source: Survey Data, 2007

Like Cassava, the main outlet for selling processed sheanut is through middle men (64%), followed by sale in the local market. If the sheanut is not sold immediately, the sheabutter needs to be stored properly and this is done mainly in calabashes covered with wet rugs and kept at room temperature or in rubber buckets at room temperature. The important thing is to prevent it from melting.

Table 33: Other sources of assistance

	Frequency	Percent
Don't know	3	6.1
No support of any kind	40	81.6
There was a loan scheme by the rural bank	1	2.0
Christian Children fund of Canada	4	8.2
Ghana Danish community programme	1	2.0
Total	49	100.0

Source: Survey Data, 2007

It is noted that sheanut processors have no knowledge about government policy concerning the sheanut processing industry. There are also very few organizations that have assisted the processing industry. Also, in terms of capacity building programmes, only about 15% of processors have taken part in a capacity building activity to improve their skills. The training was on how to produce neat and attractive sheabutter and to improve the quality of the butter produced.

Table 34: Constraints in the marketing of products

	N	% Responses
Nuts are not available	40	21.5
High Cost of transport	15	8.1
High Prices of the Nut	11	5.9
No Certainty in supply	36	19.3
The prices are not stable	8	4.3
Many buyers	16	8.7
The measurement is another constraint	4	2.2
The Price are not uniform	8	4.3
Standardization is a constraint	15	8.1
Speculation in Nut market	4	2.2
I don't know any	13	7.0
The buyers want to buy at very low price	12	6.5
Others	4	2.0
Total	186	100

Source: Survey Data, 2007

Table 35: Price and Revenue from Shea nuts

	N	Min.	Max.	Mean	Std. Dev.
Amount Spent per bag for Cost of Truck	48	0.30	3.00	1.088	0.58
Amount Spent per bag for Rent	37	0.20	5.00	0.71	0.99
Amount Spent per bag for Local Market Tax	50	0.10	1.00	0.47	0.31
Amount Spent per bag for Feeding of Labour	49	1.00	16.00	6.66	3.76
Other Amount Spent	10	2.00	8.00	3.51	1.77
Basin Qty	48	0.00	0.00	0.00	0.00
Calabash Qty	39	0.00	0.06	0.00	0.00
Bucket Qty	47	0.00	0.00	0.00	0.00
Age of Fixed Item	48	0.00	0.00	0.00	0.00
Purchase Price	48	0.00	40.00	13.59	9.90
Purchase Price	25	0.50	50.00	22.88	10.46
Purchase Price in 2004	29	0.20	2.00	0.69	0.42
Purchase Price in 2005	43	0.05	20.00	7.34	5.29
Purchase Price in 2006	27	0.10	40.00	14.26	11.58
Purchase Price	20	0.20	20.00	3.45	4.39
Purchase Price	1	5.00	5.00	5.00	0.00
Profit per bag of sheanut	50	2.00	14.00	6.82	2.85
Price of a calabash of Sheabutter	48	15.00	65.00	43.09	9.23
Quantity of sheabutter sold per market day	49	0.00	0.00	0.00	0.00
Number of calabashes sold in 2004	46	0.00	0.09	0.016	0.02
Unit Price in 2004	45	8.00	40.00	21.91	7.27
Number of calabashes sold in 2005	47	0.00	0.09	0.01	0.016
Unit Price in 2005	47	10.00	60.00	28.95	10.12
Number of calabashes sold in 2006	50	0.00	0.09	0.016	0.01
Unit Price in 2006	50	10.00	60.00	35.08	10.90

Source: Survey Data, 2007

Table 36: Suggestions from processors

	N	% responses
Machines should be provided for kneading	8	8.1
Availability of ready market	21	21.2
Support from Gov't and financial institutions	10	10.1
Non-governmental organization should com	4	4.0
The raw materials could be made available	2	2.0
Credit	26	26.3
Reliable market for the butter	4	4.0
Need Water	9	9.1
Link with buyers of our product	2	2.0
Organization should come out with buyers	4	4.0

Planting of sheanut trees	2	2.0
Others	7	7.0
Total	99	100

Source: Survey Data, 2007

The non availability and uncertainty of nut supply seem to be a major marketing constraint because it affects the sheabutter market. Other constraints include the poor quality of the nut which affects the quality of the butter as well lack of standards. According to the processors government interventions are necessary for the growth of the local sheanut processing industry. On the basis of the constraints and the potential for shea butter production to promote poverty reduction, shea nut processors were quick to suggest the following: first, credit should be made available and at an affordable rate to all stakeholders involved in the value chain process. Secondly, marketing of shea butter has remained a major challenge and there developing market outlets through better infrastructure will significantly promote the industry. Shea butter processors also suggested that they will like to see more government support towards training and other capacity programmes which will promote the industry. In addition contacts should be made with established marketing organizations who will buy their products at good prices.

5. CONCLUSION

The main objective of the study is to ascertain how entrepreneurship in agri-business can lead to poverty reduction in Ghana. To do this, two crops were selected, namely, Cassava and Shea butter cultivated in northern Ghana. Different survey instruments were designed for the value chain processes of the two commodities. Cassava producers were selected from the Gomoa and Agona districts of the Central Region while cassava processors were selected from the Ewutu-Efutu-Senya and the Gomoa districts. Sheanut pickers were selected from Savelugu Nanton and Tolong Kumbungu districts as well as the Tamale Metropolis. Sheanut processors were taken from only the Tamale Metropolis where most of them are located. Hence, producers, processors and marketers were interviewed to ascertain the crop characteristics, constraints to their operation and ways to enhance their productivity for sustainable poverty reduction.

The study made the following observations: Whereas Cassava production is male dominated, shea butter production is a female dominated activity. The mean acre of Cassava cultivated is 3.5 and therefore it can be concluded that it is not cultivated on the large scale which obviously explain the prevalence of poverty among food crop farmers in Ghana (Cassava inclusive). Besides, rudimentary production techniques are used with little mechanization. Irrigation is not practiced and inputs such as fertilizers and other agro chemicals are rarely used. Consequently, annual average output is 3.4 tonnes and with market price of GH¢ 14.12 average income will amount to GH¢ 48 (\$1.6 a day). When the cost of production is taken into consideration, it leaves a net income of less than a \$1 a day. This goes to confirm the findings of the Ghana Living Standards Survey (GLSS) that food crop farmers are the poorest in Ghana.

Cassava processing is female dominated but storage and processing techniques are still very traditional with little use of advanced technology. They therefore tend to be time consuming and very labour intensive. They also face financial, technology and related health hazards due to the way it is processed. Marketing remains a challenge and therefore middle men dictate the price, sometimes buy on credit and end up reaping a greater proportion of the profit. Also, shea nut picking comes with its own challenges some of which include attacks from dangerous insects because the trees grow in the wild, transportation cost, competition from other potential pickers especially when property rights are not well defined. Similarly, processing also faces challenges such as marketing, labour cost and lack of government support for capacity building in processing and marketing. This is very typical since a lot more effort is concentrated on cocoa and other traditional crops.

In conclusion, both crops are female dominated and have great potential for poverty reduction if cultivated and processed on a large scale. It is therefore suggested that farmers should form cooperatives to have a strong voice to access credit and also expanding output. Government and other NGO support should be sought to promote effective production, storage, processing and marketing of these products. Export promotion and other marketing outlets should be sought to improve revenue realized from the production and processing of these crops.

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