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ABSTRACT

The agriculture sector is the predominant employer of the active workforce in Ghana. Among this workforce, women constitute majority which invariable imply their role cannot be overemphasized. This study therefore examines how the socioeconomic characteristics of women affects local economic development through cassava production and processing in Central Tongu District of Ghana. A proportional stratified probability sampling with simple random sampling technique was used to select 171 respondents out of 296 in the sampling frame. The paper finds educational level and family size to be significantly related to cassava production and processing in the district. Cassava production and processing was observed to be a profitable economic activity. The paper therefore suggests that government through its decentralized system should focus on policies that promotes cassava related businesses. Also the Assembly through its Business Advisory Centre should support women with credit facilities through the MASLOC initiative. This will give more meaning to the national development thrust of enhancing sustainable livelihoods among indigenes within poverty stricken localities.

Keywords: Local Economic Development (LED); Cassava; Ghana; Food Security; Women; Sustainable Livelihoods (SL).

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1. Introduction

Governments all over the world especially developing economies face increasing unemployment and other mounting demands to provide communities with water, schools infrastructure, electricity and good road networks within constraints of resources. Where local communities take their destiny into their own hands, they could initiate self help projects to ease pressure on central government. This self-help mindset is being deepened through the emergence of local economic development in contemporary times. According to Bartik (2003), local economic development (LED) is understood as increases in the local economy's capacity to create wealth for local residents. Bartik further elucidates that such increases occur if local resources, such as labour and land, are used more productively and it is affected by all local government activities. LED can occur with or without government efforts (Bartik, 2003; Ettlinger, 2001). At the macro level, LED is explained as the process that brings together economic growth and development to specific features and dynamics that take place to the local scale (Conti & Giaccaria, 2009).

Local Economic Development has a primary purpose of encouraging local initiatives to improve livelihoods in local communities (Barberia & Biderman, 2010; Ettlinger, 2001). Any successful LED strategy takes into account the needs, priorities and opinions of both women and men, ensuring that both benefit equally from social change and economic growth, and that gender inequalities are eliminated (Barberia & Biderman, 2010; Forson et al., 2015; Forson, 2016; ILO, 2010). Both men and women are stakeholders in the local economic development agenda of society and each plays a complementary role. Adams and Kruppenbach (1987) maintains that there can be no societal transformation without the involvement, support, and leadership of women. Women in Ghana play a major role in the agricultural sector which employs 50 percent or more of the population (FAO, 2012) and 45.8 percent in 2010 (GSS, 2010). The agricultural sector is the main contributor to Ghana's Gross Domestic Product (GDP), accounting for 34.4 percent in 2009, compared to 26.1 and 30.5 percent for the industrial and service sectors respectively (FAO, 2012).

Cassava has taken the place of maize as Africa's most important food crop due to the unpredictable rainfall, associated with the latter (Scott et al. 2000). The crop has the capacity to yield under marginal soil condition and can therefore play a key role in the global food security. The crop has long been identified as one of the commodity approaches to poverty reduction (Henry et al. 1998) and contributes about 49.5 percent of the total volume of food production in Ghana and occupies 21.6 percent of the total cultivated land area (MoFA, 2011). Ogunleye et al. (2008) posits that women are active in the cassava industry and that they are more predominant in the processing and marketing than their counterparts who dominate the production of the cassava roots.

Despite the fact that the contribution women make to the economic development of Ghana is largely felt in the agricultural sector, they have limited access to the socioeconomic resources needed for production. Women accounts for 70 percent of total food crop production and 52 percent of the agricultural labour force in Ghana (Duncan, 2004). They however lack access to credit, extension services, production technology, processing, storage and access to markets and this has a limiting effect on the scale of production. This assertion is evidentially corroborated in the seminal contribution of Baah-Ennumh and Adom-Asamoah (2012) who explained that women in the informal sector were constrained by inadequate basic infrastructure and limited access to credit facilities and transportation difficulties. Women have a harder time obtaining credit because they are perceived as having less quality land and producing more for home consumption and less for the market (FAO, 2012). Thus inadequacy of credit has been one of the major hindrances to crop production and processing by women since having access to credit could translate itself into overcoming barriers that confront them in their quest to acquire land, pay for labour services and have access to extension services, modern technology and other agricultural inputs.

On the basis of the fore-going perspectives, this study seeks to answer the following questions in relation to the contribution of women to local economic development in the Central Tongu District

of Ghana: (1) what is the effect of women socioeconomic characteristics to cassava production and processing? (2) What support systems are needed to increase productivity, and (3) what larger ramification does cassava production and processing have on the local economy when it comes to sustaining livelihoods? Answers to these questions would have important implications for policy planning and to a larger extent government quest to reducing poverty.

2. Conceptual Framework

2.1 Development

Development practitioners present several explanations to the concept of development based on their varied viewpoints. Central and fundamental to all views on development is that development is about change. Development represents the application of the general idea of progress in the socio-economic and political atmosphere of a nation (Myrdal, 1974). In this regard, development can be thought as a process that brings about improvement in the physical conditions that exist among people in societies (Rist, 2006). The United Nations Development Programme (UNDP, 1991) explains that that "the basic objective of human development is to enlarge the range of people's choices to make development more democratic and participatory. These choices should include access to income and employment opportunities, education and health, clean and safe physical environment. Each individual should have the opportunity to participate fully in community decisions and to enjoy human, economic and political freedom."

According to Curle (1995), development is seen as the creation of a form of society in which certain conditions (safety, sufficiency, stimulus and satisfaction) prevail for human beings. Sen (2000) also offered a more comprehensive approach to development, claiming development can be seen as expanding real freedoms that people enjoy. For Sen, development requires the removal of the major sources of '*unfreedom*' such as poverty, tyranny, poor economic opportunities, systematic social deprivation, and neglect of public facilities, intolerance and over-activity of repressive states. In order to operationalize these "*freedoms*", Sen used the concept of human capability, which relates to the ability of human beings to lead lives they have reason to value and to enhance their substantive choices.

The New Approach to Measuring Development

Todaro and Smith (2014) identified two measures of development as traditional and current economic measures and opine that the traditional economic measure considers development purely in economic terms using two national income indicators, annual GDP growth rate and per capita income. The current economic measure on the other hand considers economic indicators in addition to what happens to the living conditions of society (see Cypher & Dietz, 2009).

The traditional and economic criteria of development has been challenged on several counts. For instance, Sen (2000) argues that income growth in itself should not be the litmus test for development theorist, but instead the question of whether the capabilities of people to control their own lives have expanded. While acknowledging that incomes can have a high potential to contribute to the expansion of the real freedoms people enjoy, Sen maintains that the relationship between income and human development is by no means direct or automatic hence making income indicators alone an inadequate indicator of the quality of people's lives.

The challenges associated with the use of purely economic indicators to measure development have brought measures that addresses the flaws of the traditional criteria with emphasis on human beings. This paradigm shift have led to the emergence of multiplicity of indicators, with the Human Development Index (HDI) being notable among them. Other indicators such as Index of Sustainable

Economic Welfare (ISEW), the Genuine Progress Indicator (GPI), Green GDPs, The Ecological Footprint (EF), Subjective Well-Being (SWB), and Gross National Happiness (GNH) and Genuine Wealth Growth per capita (GW) (see Costanza et al., 2009; Forson et al., 2017; Forson, 2016).

2.2 Gender and Cassava Production

Gender as claimed by Sinkaiye and Jibowo (2005) is a term often associated with roles and responsibility of males and females in society as a social classification of sex and it is the socio-cultural differences that exist between males and females as against the biological differences. The interrelations of these roles thus produce a mutual understanding of each other's capabilities and constraints at different stages of life. It is said that the focus of gender analysis is not the biological differences between men and women but rather on their experiences as members of society (Ogunleye et al., 2008). Gender roles therefore provide an insight into issues affecting women and it is focused mainly on the relationship of both men and women to the social and economic structures of a society (Ogunleye et al., 2008). For ILO (2010), gender refers to the social attributes and opportunities associated with being a female or a male and the relationships between women and men, girls and boys while sex refers to the universal biological differences between females and males. According to the organization, gender attributes, relationships and opportunities are socially constructed and learned in a socialization process and they vary across time and space, between societies and cultures, they are therefore context-specific and can be modified.

ILO (2010), further argue that gender roles are what a society or culture constructs and prescribes as proper roles, behaviour and personal identities for women and men and these characteristics affect power relations between women and men at all levels and can result in inequality in opportunities and outcomes for some groups. Women and men contribute to the local economy in various capacities and possess distinct knowledge and skills that correspond to these roles, which are the building blocks for realizing the potential of a locality (Baah-Ennumh & Forson, 2017; ILO, 2010). On the basis of gender roles, cassava therefore provides different opportunities for both men and women farmers and processors (Fomba et al., 2011).

Nweke et al. (2002) identified five important relevant gender related issues about cassava. As per this study, both men and women for instance, make significant contributions of their labour to the cassava industry, with each specializing in different tasks; men work predominantly on land clearing, ploughing and planting, while women specialise in weeding, harvesting, transporting, processing and marketing. The study claims again that both men and women play strategic, but changing roles in the cassava transformation process and opine that as cassava becomes a cash crop, men increase their labour contribution to each of the production and processing tasks. The study further showed that introduction of labour saving technologies in cassava production and processing has led to a redefinition of gender roles in the cassava food systems. It also pointed out that women who want to plant cassava are usually constrained by the lack of access to new cassava production technologies and other resources.

A study conducted by Henry et al. (1998) in tropical region have shown that as cassava is commercialized, households in cassava producing areas invest more on the education of their children. The commercialization of cassava will offer women the economic power to finance the education of their children. It is further argued that, as opportunities for commercialization increase (arising from favourable market opportunities for cassava and its products), the number of women involved in processing increases. Thus, the growth in cassava production is therefore likely to provide increased employment opportunities for women (Fomba et al., 2011).

In contributing to the gender and cassava debate, Fomba et al. (2011) made an important observation to the effect that as mechanized processing equipment (such as graters and mills) are acquired, the involvement of men in cassava processing tends to increase, as they often control and operate these machines and so women may therefore lose some of the benefits of increased

employment, as they lose control over some of the income. To forestall the occurrence of the phenomenon in which the use of processing equipment could lose some benefits of increased employment for women, Fomba et al. (2011) have laid down some policy steps to assist women by getting them organized into groups that can effectively carry out the commercialization of the commodity. Access of the organized women groups to credit for the acquisition of postharvest machinery should be increased and they should be trained properly to operate the equipment, enhance their postharvest and microenterprise skills. Nevertheless, most of these scholars have alluded to the fact that the needs of women should be kept in mind even at the project design at the implementation stages to prevent any possible negative impacts of increased commercialization in the production and processing of cassava (see Arshad, 2008).

3. Objective and Methodology

The paper examines the contribution of women to local economic development through cassava production and processing in the Central Tongu District of Ghana. Women involvement in the transformation of local economies have received less attention in the discourse of local economic development. The paper provides evidence on how women socioeconomic characteristics contributes to cassava production and processing. This has important implications for poverty reduction and sustaining livelihoods in poverty stricken districts.

Field surveys were carried out to collect data within the central Tongu district in the Volta region of Ghana. Primary data was collected directly from 171 women who were segregated into 9 groups based on their socio-economic characteristics, activities performed in the production and processing of cassava and support systems available for cassava businesses. Other secondary sources were used to bolster survey output. Key sources of the secondary data included the Business Advisory Centre of the Central Tongu District Assembly, NGOs (Cassava Adding Value for Africa) and progressive Youth and Community Development, Crop Research Institute, Kumasi and Central Tongu Directorate of food and Agriculture.

The paper relies on frequency distribution table and regression technique to examine the relationship between women's socioeconomic characteristics (age, educational level, marital status, family size and income levels) and cassava production. These variables were selected based on what the literature postulates in previous studies regarding women contribution to development (Baah-Ennumh & Adom-Asamoah, 2012; Duflo, 2012; Mehra, 1997; Nandi & Yurkushi, 2011; Odoemenem & Otanwa, 2011; Ogunleye et al. 2008; Zhang et al. 2014). To explore the relation, the baseline equation below is used;

$$\text{In}\,(Y_{CP}) = \text{In}\,(\beta_0) + \beta_1 \ln(X_1) + \beta_2 \ln(X_2) + \beta_3 \ln(X_3) + \beta_4 \ln(X_4) + \beta_5 \ln(X_5) + \beta_6 \ln(X_6) + e \quad (1)$$

Where;

Y_{CP} = Output of cassava and any of its processed products.
X_1 = Age
X_2 = Educational Level.
X_3 = Marital Status
X_4 = Family Size
X_5 = Income Level
X_6 = Number of Years Spent in Cassava production and Processing and e = error term

4. The Study Area

The paper briefly profiles the study area in terms of climate, topography, drainage; soil types and the vegetation types. This is to make way for relevant implications to be drawn in relation to LED. It should be noted that Adidome is the administrative capital for the Central Tongu District (see Figure 1).

The climate is tropical and greatly influenced by the South – West Monsoons from the South Atlantic and the dry harmattan winds from the Sahara desert. There are two rainy seasons; the major one from mid – April to early July and the minor from September to November. The average annual rainfall varies from 900mm to 1100mm with more than 50 percent of it falling in the major season. Rainfall generally is inadequate even during the major season, which adversely affects both crop and cattle production in the district. Temperature and relative humidity vary little throughout the year. The mean temperature is 27ºC and the maximum and minimum vary from 22ºC to 33ºC respectively. March is the hottest month while July and August are the coolest months. Average relative humidity is about 80%, making the weather quite conducive for human activities, such as habitation, farming and recreation.

The topography is generally gentle, ranging from near sea level to about 18 meters above sea level. The areas near the Volta River are at a higher elevation, falling gradually backwards and rising again into the Adaklu Hills. There are few inselbergs, which rise abruptly from the plains, namely the Awakpe, Asiekpe and Kluma Hills, which are composed of granite rocks. The Todze Hill located near New Bakpa is composed mainly of gravel. The gentle topography brings about low development costs and favours large-scale mechanized farming. The granite and gravel hills mentioned above also serve as good sources of construction material. However there are serious overflows during the rainy season, which calls for channeling, diversion or other means of correction to make the area productive.

The district is drained by the Kolo, Aklakpa, Gblor, and Nyifla streams and their numerous tributaries into the Volta River, which runs North – South through the district. The Todze and its western tributaries drain the eastern part of the District into the Avu lagoon (in the South Tongu District). There are dominantly medium to moderately coarse textured alluvial soils along the Volta River. These soils are also very difficult to cultivate because they have low water holding capacity. They are also shallow (low effective rooting depth). They are however, suitable for rice and sugarcane cultivation under irrigation. They form the raw material for pottery, brick and tile industries. Areas between Adidome, Anfoe, Kpedzeglo, Mafi Kumase, Sasekpe and Bakpa Avedo consist of moderately coarse or sandy loams, which drain easily and are suitable for agricultural purposes.

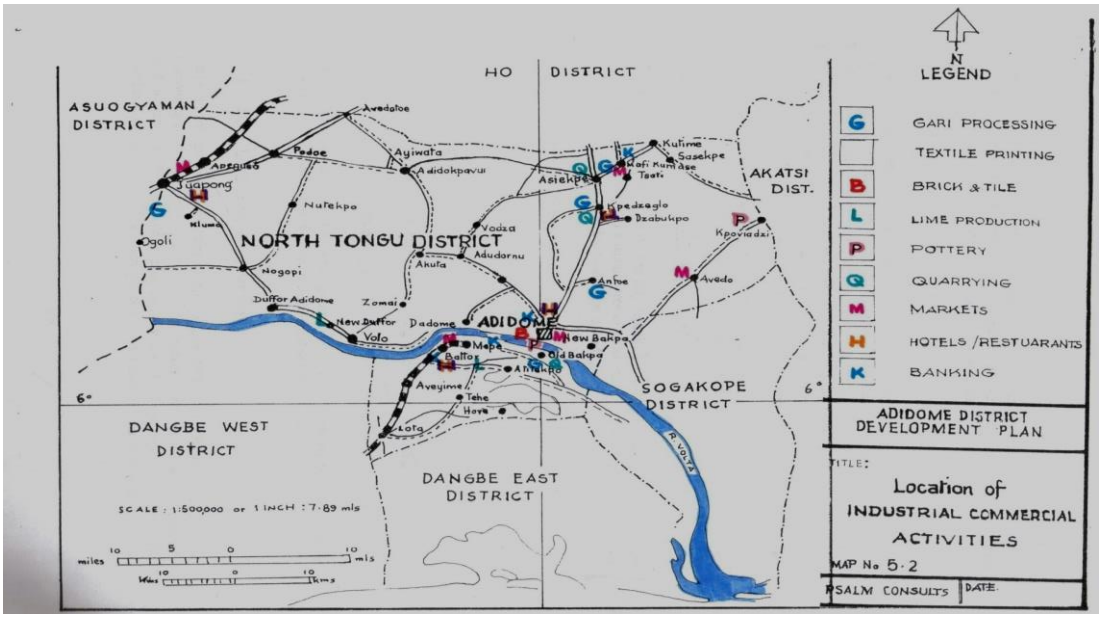

Figure 1. Combined Map of Central and North Tongu Districts Showing Some

Commercial Activities

4.1. Implications of the District Profile for LED

The climate, drainage, soil and the vegetation have some implications for local economic development of the district. The climate and the topography are favourable to the growing of maize, rice, groundnut and cassava. Cassava according to Scott et al. (2000) typically grows favourably in areas that are frost-free all year round and are below an altitude of 150m, with temperatures averaging 25°C and 29°C and exceptional varieties growing at altitudes of up to 1500m.

The topography of Central Tongu District is gentle, ranging from near sea level to about 18 meters above sea level fitting into the topographical requirement for cassava production. Granite obtained from Awakpe, Asiekpe and Kluma Hills in the district provide quarry materials for road construction at moderately low cost and the gentle topography itself provides less difficulty in road construction. The moderately coarse or sandy loamy soil type which drains easily and are found in areas between Adidome, Anfoe, Kpedzeglo, Mafi-Kumase, Sasekpe and Bakpa-Avedo are suitable for agricultural purposes and support the production cassava.

On drainage, communities located along the Volta River Basin when provided with irrigation facilities could engage in all year round production of crops including vegetables. Aqua culture opportunities also exist for communities that live along the Volta Basin and in addition inland creeks including Aklamadaw, Amidoe, and Akplordodi, offer breeding grounds for fish. In terms of vegetation, the district lies within the tropical savannah grassland zone. Shrub and grassland areas provide suitable grasses for cattle grazing and favour the rearing of cattle in the district. The cattle provide adequate source of meat, job opportunity for some people in the district.

5. Presentation and Discussion of Results

Means of Land Acquisition for Cassava Production

According to the survey, about 72 percent of the women acquired land by inheritance and the rest through leasing, purchasing and as a gift (Table 1). Thus access to land by women for farming activities in the district is relatively easy as the inheritance system does not exclude them and this has a positive implication for advancing their course in terms of access to land for farming. Women's access to land which is relatively unhindered could consequently enhance their contribution to the LED of the district through the agricultural sector.

Table 1. Means of Land Acquisition for Cassava production

Means	Frequency	Percentage
Inheritance	123	72
Lease	43	25
Gift	2	2
Purchase	1	1
TOTAL	169	100

Source: Authors' construct from field survey

Educational Level Attained

Education attainment is crucial for LED and thus to establish its effect on LED. A cursory look at the educational level attained by the women showed that educational attainment cuts across basic, second cycle, tertiary, non-formal with a few without formalized form of education. The field data in Table 2 shows that 69.6 percent of the women had attained basic education level with 15.8 percent attaining no level of education. This by implication suggests that agricultural activities have remained the main employment source for the less educated and that more specifically the highly educated class shun farming jobs. This development could negatively affect the local economic development efforts of the women.

Table 2. Educational Attainment of Respondents

Educational Attainment	Frequency	Percentage
Basic	119	69.9
Second Cycle	10	5.8
Tertiary	6	3.5
Non-formal	9	5.3
None	27	15.8
TOTAL	171	100.3

Source: Authors' construct from field survey

Effects of Socioeconomic Characteristics on Cassava Production

Regressing women socioeconomic characteristics on cassava production using equation (1) shows women socioeconomic characteristics substantially determines cassava processing. Note should be taken that to avoid heteroskedasticity and enhance elasticity for easy interpretation of results across board, a natural logarithm is taken on selected variables. It was observed further that education and family size were significant since they had a p-value ≤0.05. Thus, educational status and family size had positive effects on local economic development via cassava production and processing in the Central Tongu District. The remaining four socio-economic characteristics namely, marital status, age, income level and farming experience on the other hand were not significant since the significant values exceeded the conventional p-value ≤0.05.

Table 3. Regression on the effects of socioeconomic characteristics on Cassava production (Dependent variable: *Cassava production*)

Variables	**Unstandardized Coefficients**			
	Beta	**Std. Error**	**t**	**Sig.**
Constant	3.331**	0.258	12.905	0.000
In(Age of Farmers)	-0.053	0.08	0-.666	0.507
In(Educational Level)	0.103	0.05	2.051	**0.042****
In(Marital Status)	-0.082	0.073	-1.126	0.262
In(Family Size)	0.032	0.06	0.536	**0.054***

In (Annual Income)	-0.158	0.085	-1.865	0.592
In(Farming Experience)	-0.067	0.103	-0.652	0.515
R^2=0.063	adj.R^2= 0.028	F= 1.827	Durbin Watson= 2.11	

Note: Significant at *p<0.10, **p<0.05 and, ***p<0.01

The coefficient of determination of 0.063 of the multiple regressions model indicates that only 6.3 percent of the variation in the output of cassava production could be explained by the predictors. Although the coefficient of determination was far less than expected, the model in general was jointly significant at 5 percent (F= 1.827).

Putting these statistical values in perspective, it could be concluded that there exists some relationship between the independent variables (socioeconomic characteristics of women) and the dependent variable (cassava output). However, the selected socioeconomic variables could not adequately explain women's local economic development efforts using cassava production and processing as a proxy since in all, only two of the variables (education and family) were statistically significant as contained in Tables 3.

Technology used in Ploughing Land

The field data revealed that 95 percent of the respondents used tractor in ploughing land and the rest still applied traditional method including hoe and cutlass for the production of cassava in the Central Tongu District as indicated in Table 4. According to the Central Tongu Directorate of Food and Agriculture, some farmers hired tractor services at a cost ranging between GH¢60.00 and GH¢70.00 (Approximately USD$15.00 and USD$17.5) while others were supported by NGOs through the block system in which the farmers upon harvesting and sale of products would have to pay back to the donor NGOs.

Table 4. Technology used in Ploughing Land

Technology	Frequency	Percent
Tractor	163	95.3
Traditional tools	8	4.7
TOTAL	171	100.0

Source: Authors' construct from field survey

Execution of Farm Activities

Farm activities as used in this context refer to the activities that take place in the field prior to the peeling of cassava at any preferred destination. The identified activities in this regard include land clearing, planting, weeding and maintenance, harvesting and carting cassava to preferred destination for peeling. The respondents were required to indicate who performed the activities as indicated. According to the data, it emerged that 29 percent of the women performed the farm activities themselves, and 25 percent were assisted by their husbands or children. It also came out that 17 percent of the women hired purely labour services in their operations as could be verified in Table 5.

Table 5. Execution of Farm Activities

Labour Division	Frequency	Percent
Myself	50	29

Labour Only	29	17
Myself and Husband	17	10
Myself, Assisted by husband or children	43	25
Husband Only	32	19
TOTAL	171	100.0

Source: Authors' construct from field survey

Execution of Post Farm Activities

The post farm activities on the other hand includes peeling of the cassava, carting to the grater, pressing (squeezing water from the cassava dough), processing into "*gari*" and the sale of finished product. As cassava matures for harvesting and processing, the level of engagement of several other agents reduces as the activity of women increases. For instance, the number of women who performed farm activities alone increased from 29 percent to 35 percent under the post farm activities and this confirms to a larger extent the stipulations by the ILO (2010) that women specialise in harvesting, transporting, processing and marketing of cassava. Again, 19 percent of them hired labour services under post farm activity.

In addition to the farm and post farm activities performed by the women, another questionnaire was designed to seek the view of the 10 men within the women groups. The men were of the view that men alone could not bring about local economic development to the district. Further clarification was sought into the activities they performed and it was observed that they performed several activities such as land clearing, spraying of herbicides, weeding of the farm, and uprooting of cassava.

Table 6. Post Farm Activities

Labour Division	Frequency	Percent
Myself	60	35
Labour Only	19	11
Myself and Husband	17	10
Myself, Assisted by husband or children	48	28
Husband Only	27	16
TOTAL	171	100.0

Source: Authors' construct from field survey

Preferred Cassava Varieties Grown

The field data gathered also revealed that farmers had access to 12 cassava varieties which included Afisiafi, Husivi, Dogbo, Agric, Agegevi, Sosha, Bankyehemaa, Ankra, Bosomsia, Ahokpo, Antigrace and varieties not listed were grown in the district as in Table 7. The dominant varieties grown were Husivi and Afisiafi. Husivi was popularly preferred by the farmers probably due to its ability to withstand different climatic conditions and the fact that within six months one could harvest to meet pressing needs.

Table 7. Preferred Cassava variety grown

Variety Grown	Frequency	Percent

Afisiafi	26	15.2
Ahokpo	10	5.8
Antigrace	12	7.0
Variety not listed	4	2.3
Husivi	28	16.4
Dogbo	5	2.9
Agric	6	3.5
Agegevi	28	16.4
Sosha	17	9.9
Bankyehemaa	18	10.5
Ankra	13	7.6
Bosomsia	4	2.3
TOTAL	171	100.0

Source: Authors' construct from field survey

Average Annual Output of Raw and Processed Cassava Production

The respondents were also requested to provide an estimate of annual output of cassava. Out of the 171 women, 42.69 percent produced within 10-20 tons of cassava and 4.68 percent produced less than 10 tons as illustrated in Figure 6. The data in Figure 2 seems to have suggested that the 95 percent of the women who used tractor in ploughing their land might have produced between the average output range of 10-20 and 21-30 tons of cassava and similarly Husivi and Afiasiafi cassava could be the cassava varieties produced as shown in Figure 2. On cassava processing, the field data further revealed that 39.77 percent produced processed cassava into gari within the range of 21-30 bags and 1.17 percent produced less than 10 bags.

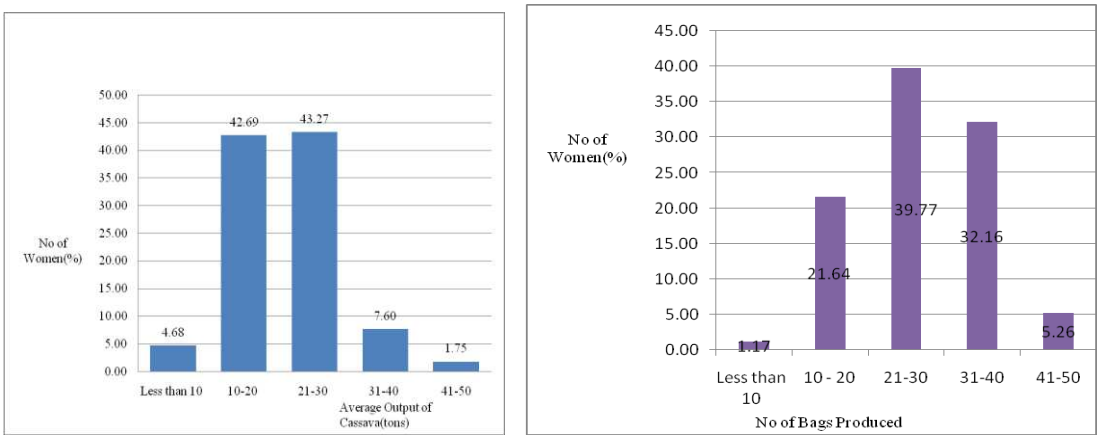

Figure 2. Average Annual Output of Raw and Processed Cassava by Farmers

Support Systems for Women in Cassava Production and Processing

From documentary research, it was established there were some support systems available for women in cassava production and processing in the Central Tongu District. To further probe the nature of these support system, several questions were raised to elicit responses from the respondents (technical or financial) from Central Tongu District Assembly, Central Tongu Directorate of Food and Agriculture and NGOs in agriculture in the district. The strategy of triangulation was adopted by developing different questionnaires which were completed by Crop Research Institute (Kumasi), Business Advisory Centre (BAC) of the Central Tongu District Assembly, NGOs such as Cassava Adding Value to Africa (CAVA); and Progressive Youth and Community Development (PROYCOD); and Central Tongu Directorate of Food and Agriculture.

The Crop Research Institute (CRI) also provides support to cassava farmers such as planting materials, new varieties meant for both human consumption and industrial use free of charge. Assessing how often these support services are available, it is found that out of the 171 farmers, 43 representing 25.7 percent who claimed to have enjoyed extension services were to choose from among three options, weekly, monthly and annually to indicate the frequency of the extension service delivery. The response showed that 21.6 percent of the farmers benefited from extension service on weekly basis and 4.1 percent monthly.

The farmers were required to identify one major financing source for their operations and it was revealed in Table 8 that majority of them, 64 percent financed their cassava farming and processing from ploughed back profit and 2 percent from bank loan. Ploughed back profit thus, constituted the major source of finance for most of the women cassava farmer groups in the district and this might probably be due to the inability of the farmers to access conventional credits due to lack of savings and thus collateral. The women cassava farmers might not contribute substantially to local economic development of the district if ploughed back profit would be the major financing source given that cassava production itself is subject to the vagaries of the weather.

Table 8. Financing Sources

Financing Source	Frequency	Percent
Ploughed Back Profit	108	64.2
Capital from Relatives	43	25.1
MASLOC	10	5.8
NGO Fund	3	1.8
Bank Loan	3	1.8
Other Sources	2	1.2
TOTAL	171	100.0

Source: Authors' construct from field survey

6. Implications of Women Contribution to LED

A careful examination of the analysis relating to cassava production and processing activities performed by women in the Central Tongu District reveals streams of associated socioeconomic benefits that has the linchpin to serve as the engine for LED. The ownership and management of cassava and its related businesses and activities by the women generated several cassava related jobs such as offering employment to the women themselves since by these operations the women derive their livelihoods in a relatively sustainable manner.

Furthermore, cassava production and processing activities through the spillover effect creates avenues for more jobs to persons engaged in its processes. For instance, 17 percent and 10 percent of the women engaged labour services under the farm and post farm activities respectively. The women offered agricultural jobs to people who worked directly on the farms or truck pushers and tricycle motor riders who transport cassava from the farms to the peeling centres and to and fro the graters.

Finished and semi-finished products are transported to market centres by drivers, tricycle motor riders and truck pushers and this offer them income for their livelihood.

Moreover, cassava production and processing provides local people with food security as cassava can be processed into several end-products. Cassava can be cultivated even during the harshest of climatic conditions which supports the idea of enhancing food security. Other positive externalities of cultivating and processing cassava transcends women to local artisans who are into the manufacturing of grater and pressing machines.

Again cassava operations serve as one of the sources of revenue to the Central Tongu District Assembly. Market tolls are collected by the Assembly from the women who sell their products at Mafi-Kumase Market (the biggest market centre in the district) and this by implication will enhance their Internally Generated Fund (IGF) to enable it pursue its socio-economic agenda as a planning authority.

7. Policy Recommendations and Conclusion

To promote LED efforts of the women in cassava production and processing activities, the paper made some recommendations. It came to light that about 29 percent of women performed farm activities all alone and the 17 percent hired labour services and the others indicated that they were done together with the assistance of their husbands or children. Bearing in mind the benefits associated with the cassava business activities of the women, it is recommended that the Central Tongu District through its Business Advisory Centre supports the women with stimulus package to enhance their contribution to Local Economic Development in a sustainable manner. For instance, the chunk of Microfinance and Small Loans Center (MASLOC) credit facilities could be used to champion the course of women in agriculture.

The study revealed inadequate government support for women cassava production and processing activities in the Central Tongu District. Since it is increasingly becoming a daunting challenge for government to finance activities of extension service staffs due to scarcity of funds, then the farmers should be made to pay little fees for extension services rather than continue with the current status quo where it is free but could not be provided.

In addition, if the government of Ghana intends to effectively reduce poverty especially in the rural areas then such policies must focus on economic activities of women since they are mostly victims of vulnerability including poverty and they engage in agricultural activities whose prices are not guaranteed. Cassava, due to its ability to thrive well in most climatic conditions readily meets the food security needs of most countries particularly Africa and so the government of Ghana must therefore focus on policies that promotes cassava related businesses by establishing cassava commercialization project fund.

Contemporary challenges faced by women re-emerged in this study. Out of the nine challenges identified, it was revealed that, the government has the utmost responsibility of providing solution to the problems of access to capital, irregular extension service, unstable demand for product and fluctuating price. However, the farmers admitted that problems involving pests and diseases, bush fires and land acquisition should be collectively tackled. This re-emphasizes the key role that governments in developing countries play regarding their ability to evolve pragmatic policies aimed at empowering women with the needed resources to undertake economic activities that will improve their well-being and consequently enhance their contribution to local economic development to sustain livelihoods.

Local Economic Development has become a key strategy for promoting social wellbeing of the population in destitution. The contribution that women make to local economic development in the Central Tongu District were characterized by several problems out of which the farmers held the view

that government had the greatest responsibility to provide solution. In spite of the problems, the contributions that women in cassava production make to LED in the areas of job creation opportunities, revenue generation to the Central Tongu District Assembly, meeting cassava food needs and providing raw material for Guinness Ghana Limited cannot be overemphasized.

Ethical approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Reference

Adams, M. N., & Kruppenbach, S. E. (1987). Gender and Access in the African School. *International Review of Education*, *33*(4), 437–453. https://doi.org/10.1007/BF00615158

Arshad, Z. (2008). *The Economic Contribution of Pakistani Women through their Unpaid Labour*. Islamabad. Retrieved from http://healthbridge.ca/images/uploads/library/Pakistan_summary_report_final.pdf

Baah-Ennumh, T. Y., & Adom-Asamoah, G. (2012). The Role of Women in the Informal Economy in Kumasi. *Journal of Science and Technology*, *32*(2), 56–67. Retrieved from http://dx.doi.org/10.4314/just.v32i2.8

Baah-Ennumh, T.Y., & Forson, J. A. (2017). The Impact of Artisanal Small-Scale Mining on Sustainable Livelihoods: A Case Study of Mining Communities in the Tarkwa-Nsuaem Municipality of Ghana. *World Journal of Entrepreneurship, Management and Sustainable Development*, *13*(3). https://doi.org/http://dx.doi.org/10.1108/WJEMSD-09-2016-0042

Barberia, L.G., & Biderman, C. (2010). Local economic development: Theory, evidence, and implications for policy in Brazil. *Geoforum*, *4*(6), 951–962. https://doi.org/10.1016/j.geoforum.2010.07.002

Bartik, T. J. (2003). *Local Economic Development Policies* (No. 03–9). Michigan. https://doi.org/. http://dx.doi.org/10.17848/wp03-91

Conti, S., & Giaccaria, P. (2009). Local Economic Development. *Geography*, 233–238. https://doi.org/10.1016/B978-008044910-4.00200-5

Costanza, R., Hart, M., Posner, S., & Talberth, J. (2009). *Beyond GDP: the Need for New Measures of Progress*. Boston MA. Retrieved from http://www.bu.edu/pardee/files/documents/PP-004-GDP.pdf

Curle, A. (1995). *Positive Response to Contemporary Violence*. Oxford: Jon Carpenter Publishing.

Cypher, J. M. & Dietz, J. L. (2009). *The process of Economic Development* (3rd ed.). London and New York: Rutledge.

Duflo, E. (2012). Women's Empowerment and Economic Development. *Journal of Economic Literature*, *50*(4), 1051–79. https://doi.org/10.3386/w17702

Duncan, B. A. (2004). *Women in Agriculture in Ghana*. Printright. https://doi.org/10.1007/s11192-012-0839-x

Ettlinger, E. (2001). Local Economic Development. *International Encyclopedia of the Social & Behavioral Sciences*, 9004–9008. https://doi.org/10.1016/B0-08-043076-7/02562-6

FAO. (2012). *Gender Inequalities in Rural Employment in Ghana*. Rome. Retrieved from http://www.fao.org/docrep/016/ap090e/ap090e00.pdf

Fomba, S., Dixon, A.G.O., Onadipe, O.O., Alenkhe, E.B., & Sanni, L. O. (2011). *Cassava Value Chain*

Development by Supporting Processing and Value Addition by Small and Medium Enterprises in West Africa. Benin. Retrieved from http://common-fund.org/newprojects/project-overview/project-details/news/cassava-value-chain-development-by-supporting-processing-and-value-addition-by-small-and-medium-ente-2/?tx_news_pi1[controller]=News&tx_news_pi1[action]=detail&cHash=595203fb20e64ef9

Forson, J.A., Buracom, P., Baah-Ennumh, T.Y., Chen, G., & Carsamer, E. (2015). Corruption , EU Aid Inflows and Economic Growth in Ghana : Cointegration and Causality Analysis. *Contemporary Economics*, *9*(3), 299–318. https://doi.org/10.5709/ce.1897-9254.171

Forson, J.A., Buracom, P., Chen, G., & Baah-Ennumh, T. Y. (2017). Genuine Wealth Per Capita as a Measure of Sustainability and the Negative Impact of Corruption on Sustainable Growth in Sub-Sahara Africa. *South African Journal of Economics*, *85*, 1–18. https://doi.org/10.1111/saje.12152

Forson, J. A. (2016). A "recursive framework" of corruption and development: comparison between economic and sustainable outcomes. *World Journal of Entrepreneurship, Management and Sustainable Development*, *12*(4), 282–298. https://doi.org/10.1108/WJEMSD-05-2016-0027

GSS. (2010). *Population and Housing Census*. Accra. Retrieved from www.statsghana.gov.gh/.../2010phc/Census2010_Summary_report_of_fi...

Henry, G., Westby, A., & Collinson, C. (1998). *Global Cassava End-Uses and Markets: Current Situation and Recommendations for Further Study*. Rome. Retrieved from http://www.hubrural.org/IMG/pdf/global_cassava_end_use_study.pdf

ILO. (2010). *Gender Mainstreaming in Local Economic Development Strategies*. Geneva.

Mehra, R. (1997). Women, Empowerment, and Economic Development. *The Annals of the American Academy of Political and Social Science*, *554*, 136–149. Retrieved from http://www.jstor.org/stable/1049571

MoFA. (2011). *Ghana Commercial Agricultural Project (GCAP) and PEST Management Plan (PMP)*. Accra, Ghana. Retrieved from http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2011/11/23/000406484_20111123114819/Rendered/PDF/E28900EA0P11420gement0Plan0P1142640.pdf

Myrdal, G. (1974). What Is Development? *Journal of Economic Issues*, *8*(4), 729–736. Retrieved from http://www.jstor.org/stable/4224356

Nandi, J.A., & Yurkushi, E. N. (2011). Economic Analysis of Cassava Production in Otubra Local Government Area of Cross River State, Nigeria. *Asian Journal of Agriculture Sciences*, *3*(3), 205–209.

Nweke, F.I., Spencer, D. S. C., &, & Lynam, J. K. (2002). *The Cassava Transformation: Africa's Best-Kept Secret*. Michigan State University Press. Retrieved from http://www.jstor.org/stable/10.14321/j.ctt7ztc0t

Odoemenem, I.U., & Otanwa, L. B. (2011). Economic Analysis of Cassava Production in Benue State (Nigeria). *Current Research Journal of Social Sciences*, *3*(5), 406–411.

Ogunleye, K.Y., Adeola, R.G., & Ibigbami, I. O. (2008). Gender Roles in Cassava Processing Activities among Processors in Ogo-Oluwa Local Government Area of Oyo State. *International Journal of Agricultural Economics and Rural Development*, *1*(1), 30–37. Retrieved from http://www.lautechaee-edu.com/journal/ijaerd1/ijaerd - 1.5 edition.pdf

Rist, G. (2006). *The History of Development* (2nd ed.). London: ZED Books.

Scott, G. J., Rosegrant, M.W., & Ringler, C. (2000). *Roots and Tubers for the 21st Century Trends: Projections, and Policy Options*. Washington DC. Retrieved from http://ebrary.ifpri.org/cdm/ref/collection/p15738coll2/id/48014

Sen, A. K. (2000). *Development as Freedom*. New York: Anchor Books. Retrieved from

http://blog.lib.umn.edu/ipid/ipid/Dev. as Freedom-Sen-Ch.1.pdf

Sinkaiye, T., & Jibowo, A. . (2005). Gender needs for participating in poverty alleviation programme in selected villages of Kwara State, Nigeria. *Journal of Agricultural Extension*, *8*, 22–31. Retrieved from http://aesonnigeria.org/ajm/index.php/jae/article/download/215/208

Todaro, M.P., & Smith, S. C. (2014). *Economic Development* (12th ed.). Boston, MA: Pearson.

Zhang, W., Wang, W., Li, Y., & Ye, F. (2014). Economic development and farmland protection: An assessment of rewarded land conversion quotas trading in Zhejiang, China. *Land Use Policy*, *38*, 467–476. https://doi.org/10.1016/j.landusepol.2013.12.008