ajfand SCHOLARLY, PEER REVIEWED AFRICAN JOURNAL OF FOOD, AGRICULTURE, NUTRITION AND DEVELOPMENT Volume 23 No. 1 January 2023 PUBLISHED BY AFRICAN SCHOLARLY SCIENCE COMMUNICATIONS TRUST ISSN 1684 5374

Afr. J. Food Agric. Nutr. Dev. 2023; 23(1):22117-22131 https://doi.org/10.18697/ajfand.116.22635

CASSAVA-GARI VALUE CHAIN PARTICIPATION AND RURAL WOMEN'S WELLBEING: AN EXPLORATORY STUDY

Anning-Dorson T[1]*

Thomas Anning-Dorson

*Corresponding author email: thomasdorson@gmail.com

[1]University of the Witwatersrand, Johannesburg, South Africa

ajfand SCHOLARLY, PEER REVIEWED AFRICAN JOURNAL OF FOOD, AGRICULTURE, NUTRITION AND DEVELOPMENT Volume 23 No. 1 January 2023 PUBLISHED BY AFRICAN SCHOLARLY SCIENCE COMMUNICATIONS TRUST ISSN 1684 5374

ABSTRACT

Gender disparity has a severe and long-term consequence on women especially in developing African countries such as Ghana. The socio-economic effect of gender inequality is harsher on rural women dwellers in Ghana due to lack of access to business and livelihood empowering opportunities. One way to deal with the above and improve the economic wellbeing of rural women dwellers is to create economic opportunities from which they can earn a good income. In Ghana, rural women could participate in the entire value chain of food crops such as cassava as they already participate in its cultivation (upstream activities of the supply chain). The current study adopts the approach of literature review on cassava and gari production in Ghana; and conducts interviews and observations on gari processing in Ghana to share useful lessons on how to deal with socio-economic effect of gender disparity among rural women dwellers. This study interviewed women in two gari processing enclaves in the country to provide useful insight on how women wellbeing could be enhanced. A total of 17 women entrepreneurs, 33 female workers and 7 farmers from 10 communities were interviewed and observed. Firstly, this study provides an understanding of the cassava-gari (roasted fermented cassava in a form of tiny grains) value chain, and the role rural women entrepreneurs can play to enrich their livelihood. Secondly, the study highlights the key activities of gari processing by women in rural Ghana, the challenges faced, and provides valuable conclusions on how to bridge the gender gap through women's participation in an enhanced cassava-gari value chain. Lastly, two important issues are highlighted with respect to rural women's participation in an enhanced gari value chain: (1) the opportunity for affordable nutrition through a common local farm produce, and (2) the economic livelihood of rural women. While rural women possess enough capacity to participate meaningfully in the value chain, there are still constraints that can be dealt with by any enterprise that seeks to venture into large-scale commercial fortified gari production. Such ventures, be it a social (businesses for social good) or commercial (profit centered businesses) enterprise, will enhance access to affordable nutrition as well as economic empowerment.

Key words: Value Chain, Food-processing, Gari, Women Entrepreneurship, Wellbeing, Africa

ajfand SCHOLARLY, PEER REVIEWED AFRICAN JOURNAL OF FOOD, AGRICULTURE, NUTRITION AND DEVELOPMENT Volume 23 No. 1 January 2023 PUBLISHED BY AFRICAN SCHOLARLY SCIENCE COMMUNICATIONS TRUST ISSN 1684 5374

INTRODUCTION

Gender inequality has a severe and long-term effect on women in low-income countries. In Africa, the effect of gender disparity, especially among rural dwellers with little to no resource access, is also linked to nutritional challenges [1]. The link between malnutrition and gender inequality has been driving wedge between the poor and the rich, the vulnerable and the strong. Hence, a deliberate attempt at dealing with these two challenges - malnutrition and gender disparity – will bring about the needed sustainable development especially in developing African countries such as Ghana. These two challenges cut across five of the 17 sustainable development goals (SDGs) – 1, 2, 3, 5 and 10. These goals talk about poverty, hunger, good health and wellbeing and gender equality. In Ghana these issues are endemic in the rural setting and need urgent attention as they are core to the livelihood. Gender disparity is high in Ghana due to the socio-cultural make-up of the country. In Ghana, gender gaps exist in most facets of life including education, income, poverty, access to health and wealth, inheritance, and household decision-making [1].

There is enough evidence in existing literature that suggests that while these differences are found in all societies, in developing countries, these gender gaps are biggest with associated greater negative impact on women. Women are socially marginalised and suffer poverty to a greater degree. Most women in these rural settings depend on rain-fed agriculture for their livelihood. These women engage in subsistence farming as their primary source of food and income. Subsistence farming provides some level food security to their families. These women do not only produce food security for their families but also generate income by selling the surplus of their produce in the open market or in exchange for other commodities needed by their families.

One way to address the gender disparity and improve the economic wellbeing of rural women is to create opportunities through value addition to the local food crops which are grown by these women. Opportunities exist for Ghanaian enterprises in the food-processing sector to produce affordable fortified food products from local crops to address the malnutrition challenge facing the country [2, 3] using local farm produce and engaging rural women. Advancing in this sense also creates opportunities for the local women to partake in the value chain of these enterprises. Availing such opportunities to rural women will enhance their livelihood and economic wellbeing, thereby bridging the gender disparity gap. The focus on local food crops offers two major benefits. It helps deal with the nutritional problem in Ghana and provides improved livelihood for rural dwellers, especially

https://doi.org/10.18697/ajfand.116.22635

women. To give a context to why involving rural women is critical, the paper highlights, in the subsequent paragraph, Ghana's nutritional challenges and how to deal with these challenges while enhancing the economic livelihood of rural women.

Whereas Ghana has seen some level of improvement in nutrition, health, and mortality situation through some campaigns from the Ghana Health Services, Ministry of Health and its donor partners, there are still challenges, especially in nutrition. The nutrition deficiency levels in Ghana are still worrying particularly in children and women of reproductive age including adolescent girls, pregnant and breastfeeding women, due to their increased need for micronutrients. The situation is even direr in rural settings, as Ghana Health Services statistics show [4]. According to UNICEF malnutrition in Ghana accounts for one third of all child deaths in the country [5]. The possible explanation is that most foods in Ghanaian homes lack the necessary micronutrients. This predisposes many to a weakened immune system and makes malnourished population groups more vulnerable to infectious diseases. It is observed that some Ghanaians are not able to follow a healthy, diverse diet while some of the local foods lose some amounts of the essential nutrients during preparation [6]. Consequently, the lack of full nutritional value intake is now calling for nutritional improvement through fortified foods. Fortified foods are processed foods that have added essential nutrients. The challenge, however, is that there is the unavailability of affordable food products that are fortified to address the nutritional problems and their attendant challenges. Opportunities exist for Ghanaian entrepreneurs in the food-processing sector to produce affordable fortified food products from local crops to address this important challenge facing the country. In exploiting this opportunity, there exist the potential for local rural women to participate in the value chain and also consume such products. The exploitation of such opportunities by locals has the potential of bringing economic wellbeing, employment and curbing the challenge of malnutrition in the country, especially in rural communities. The rest of the paper describes the methodological approach used, results and discussion, and conclusion.

METHODOLOGY

This study collected primary data to understand the gari value chain in rural Ghana with specific focus on women participants. The study used both interviews and observations to provide a deeper understanding of the activities in the gari processing, women roles and the challenges faced. The data collection were undertaken in rural communities within the Techiman Municipality of the Bono East

ajfand SCHOLARLY, PEER REVIEWED AFRICAN JOURNAL OF FOOD, AGRICULTURE, NUTRITION AND DEVELOPMENT Volume 23 No. 1 January 2023 PUBLISHED BY AFRICAN SCHOLARLY SCIENCE COMMUNICATIONS TRUST ISSN 1684 5374

Region and Upper Manya Krobo District (UMKD) of the Eastern Region. The Techiman enclave was identified as a major gari processing center in the country [7]. The interviews were conducted in five gari processing communities in Bono East with 17 gari entrepreneurs, 33 workers on the processing sites and 7 farmers. In UMKD, leads were obtained from the district's agriculture head and visits were made to three villages around Asesewa. These villages did not have processing centers as compared to the Techiman Municipality; however, in the district, there were micro-scale gari processing going on in various communities. Processing in these villages were usually done by individuals and households on a relatively small scale. Most of these individuals across the villages also were cassava farmers. The interviews were conducted with 9 gari entrepreneurs.
In both locations, interviews were conducted at their place of business except for farmers who were contacted outside of their farms. Farmers were contacted through the gari entrepreneurs and were arranged to meet at the business premises of the entrepreneurs. Interview times varied between 20 and 60 minutes. All respondents consented to be interviewed after the purpose of the study had been explained to them. The study was approved by the University of Ghana Ethics Committee for the Humanities (ECH 147/18-19).

RESULTS AND DISCUSSION

The results from both the secondary and primary research are discussed under key headings.

Demand, Production and Consumption of Cassava

According to the Food and Agriculture Organization (FAO), cassava is the largest agricultural commodity produced in Ghana and contributes 22% of Agriculture gross domestic product (GDP) [8]. Cassava plays an important role in the lives of rural communities in Ghana, utilizing it as an important source of carbohydrate and providing income for many who are in farming. It is grown throughout the country and its production has been increasing yearly and has a higher average yield in metric ton per hector than any other crop.

The demand for cassava will continue to grow not just for consumption but for industry use by breweries and starch manufacturing companies and as a replacement for wheat flour. Currently, cassava is grown by small-holder farmers with few large-scale cultivations. Cassava is planted mostly between April and November. Some new varieties have come in which allows for harvesting within 12 months of planting. According to Bayitse, Tornyie and Bjerre, the largest percentage of the cassava root harvest comes onto the market in the early part of

the wet season (May to July) before planting begins [9]. Harvesting during the dry season (November to March) is in small quantities [10]. Most farmers usually include cassava in their mix cropping with other crops such as cocoyam, yam, maize and sometimes cocoa, coffee and rubber in the first few months.

For the past two decades, cassava production has been growing in Ghana, especially in the middle and southern belt of the country [11]. Beesabathuni, van Zutphen and Kraemer predicted that its production will continue to grow as it recorded a 40% growth between 2012 and 2016 [12]. Available data from Ministry of Food and Agriculture (MoFA) showed that cassava still enjoys the largest area planted per hector as compared with other food crops. In 2016, Ghana produced almost 18 million metric tons of cassava, the highest of all food crops. The top three producers of cassava by region are Eastern (4,649,508 MT), Brono Ahafo (3,844,253 MT) and Ashanti (2,748,331 MT) [11]. On average, Ghana has been recording a net surplus for cassava production. In 2016/17 crop season, the country recorded over 3.8 million metric tons net surplus for cassava. In the same year, the price per metric ton grew by 152% to GHs 1328.3 per metric ton. However, in rural communities, the price per metric ton is less than GHs 350.

Cassava is usually regarded as food for the poor in Ghana. However, in recent times, it has been recognized as an important cash crop with immense opportunities. Cassava also has characteristics that limit the opportunities it offers. It is highly perishable, high is moisture content and has high cyanide content and must be processed within a day or two after harvesting. Cassava is largely consumed directly in Ghana as it is a staple food. The direct consumption of cassava come in the form “fufu” when it is pounded with either cocoyam or plantain, “agbelima” which is cassava mash usually added to corn dough to make “banku”, and dried chips which is further processed into a form of flour for “konkonte”, thus, tapioca. A large amount of cassava is also processed into “gari” – roasted fermented cassava in a form of tiny grains. Gari is either produced for household consumption or on large scale for sale. Cassava is also for industrial use for breweries and starch. Common cassava beers in Ghana are “Ruut Extra” by Guinness Ghana Breweries and “Eagle” by Accra Brewery.

The Cassava Value Chain

Analysis of the in-depth interviews and observations demonstrated that the cassava value chain consists of five distinct sets of activities. They are (1) input supply, (2) farming, (3) processing, (4) marketing and distribution, and (5) consumption of processed cassava. Figure 1 gives some details on the various activities within the chain.

ajfand SCHOLARLY, PEER REVIEWED AFRICAN JOURNAL OF FOOD, AGRICULTURE, NUTRITION AND DEVELOPMENT Volume 23 No. 1 January 2023 PUBLISHED BY AFRICAN SCHOLARLY SCIENCE COMMUNICATIONS TRUST ISSN 1684 5374

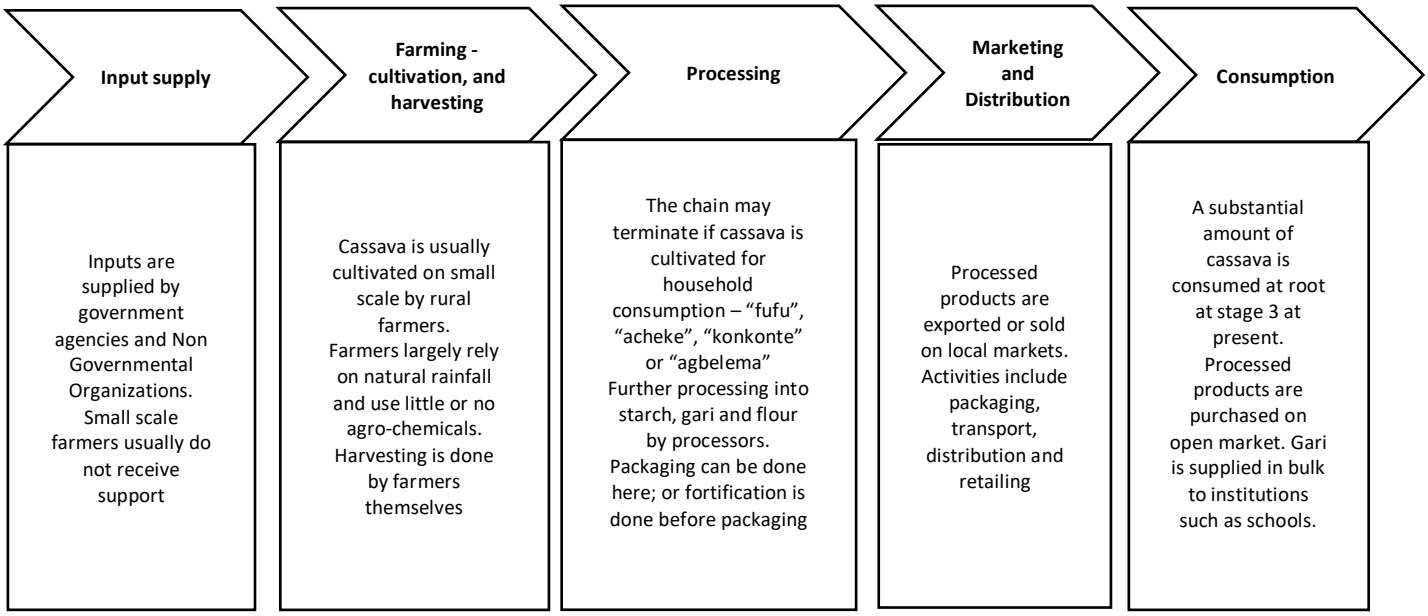

Figure 1: Basic Cassava Value Chain

Traditional Processing of Cassava by Households

There are three main forms of traditional processing of cassava before it is consumed [9]. These are "gari", "kokonte" and "agbelima" processing. In these three forms, there are usually six operational units in the processing. They are peeling, chipping, grating, fermentation, sieving and frying/drying/roasting. Traditional Gari Processing: Traditional gari processing usually goes through the process of peeling the fresh cassava, washing, grating, pressing and fermentation, sieving and roasting. Tubers are peeled and washed before being grated by rubbing on the rough surface of a perforated galvanized metal sheet fixed to wooden board support. A mash is formed and packed into valve oven sack which is tied. To drain the water (starchy juice) out, heavy objects are placed on the sack. Fermentation takes place within two or three days before they are dried in the sun and later sieved. The sieved grains are roasted over a fire in open cast iron frying pan with quick stirring until cooked and crisp. The roasted mass is again sieved to remove lumps and packaged for storage. Cassava may also be processed into"Kokonte" In this process, peeled tubers are cut into pieces and dried in the sun for 4 – 7 days. In the drying process, fermentation takes place. The dried pieces are milled into flour which is used to prepare the traditional kokonte meal. Lastly, cassava may also be processed into"Agbelima" Agbelima process follows of gari processing. However, the pressed and fermented grain is not fried. The fermented dough is used for the preparation of Ghanaian dishes like (Akple or banku) and "Yakeyake."

ajfand SCHOLARLY, PEER REVIEWED AFRICAN JOURNAL OF FOOD, AGRICULTURE, NUTRITION AND DEVELOPMENT Volume 23 No. 1 January 2023 PUBLISHED BY AFRICAN SCHOLARLY SCIENCE COMMUNICATIONS TRUST ISSN 1684 5374

The Gari Value Chain

Commercial gari processing is not too different from traditional processing. It was observed from the different locations that the difference is in the scale and the methods, and the equipment used. The value chain is similar to the one described for the cassava value chain. There is a three-stage value chain (Figure 2) to explain the activities within the value chain. In the gari value chain, the number of players increases in the processing phase as many hands are employed. The intense activities occur between when the truck of cassava pulls up at the processing site and when the truck leaves with the gari for the market. This is usually the case in large processing communities in the Bono East Region.

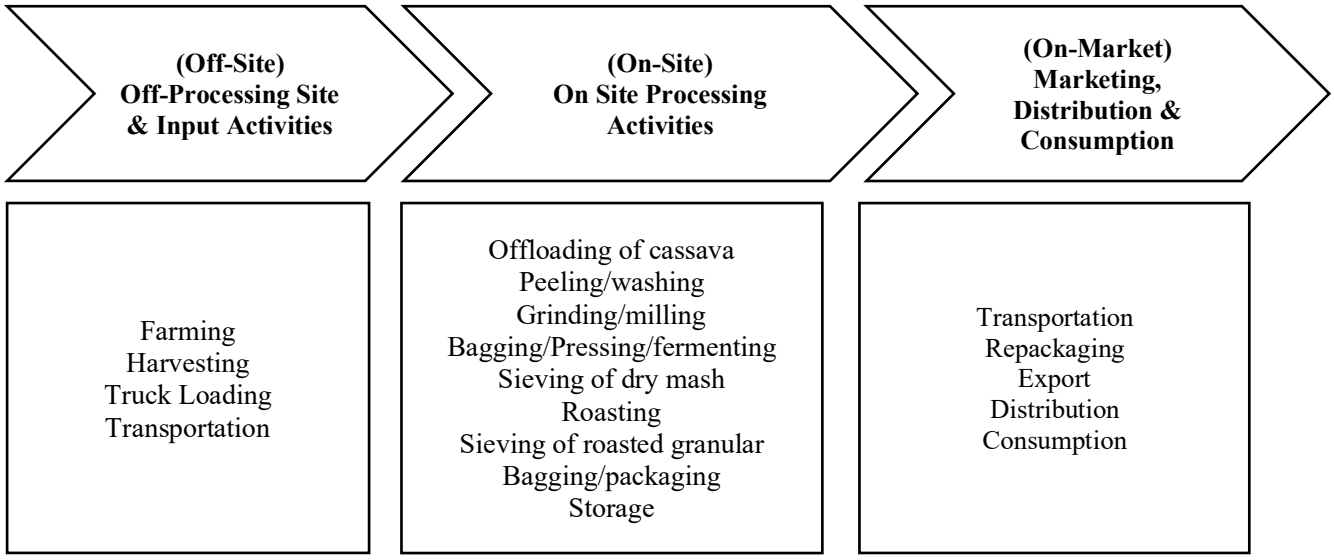

Figure 2: Gari Value Chain

Key Activities and Actors: The key activities of gari processing, thus, between the farm and market, include harvesting, loading, transporting, off-loading at the processing site, peeling and washing, grinding, bagging, pressing and fermenting, drying and sieving, roasting, sieving and packaging. Gari processing has two main groups of actors, the gari entrepreneur group and the workers group.

Gari entrepreneurs: These are usually persons with substantial money to fund the entire activities of gari processing. These entrepreneurs have experience ranging from 10 – 40 years in the business. Some have their processing sites or rent processing sites and labour to carry out the gari business. These entrepreneurs vary in size and have different capacities. The large entrepreneurs have their cassava farms they source from, have trucks to cart the cassava from farms and the gari to market and sometimes provide accommodation for workers. For

example, one entrepreneur in the Bono East Region, provides accommodation for some of the workers as well as health insurance through the National Health Insurance Scheme. These large entrepreneurs usually have offtakers (buyers) and produce to offtakers' request and specification. They sometimes sell to "market women" (gari distributors) and on the open market. These processors can employ 60 workers – usually women – in peak production periods and about 30 in slow production periods. These entrepreneurs sometimes buy from smaller entrepreneurs when they are unable to meet demand.

The smaller entrepreneurs book processing site and sometimes some facilities such as miller, pressers, pans, roasting stoves etc. to embark on their activities. In some communities, however, small entrepreneurs have small sheds with stoves ranging from 3-6 per entrepreneur. These entrepreneurs also hire workers, usually women, to complete their processing. Hired workers are paid per the amount of work done. The small entrepreneurs usually buy from farmers and cart the cassava to the processing site. They largely sell to distributors (market women) in the open market on specific market days. They hardly have offtakers. Their production capacity ranges from 4 – 8 bags (100 kg) a week depending on availability of materials and workers as well as demand.

Some cooperatives also do gari processing. These are usually a group of women who come together to embark on the gari business. They may or may not have support from external parties and usually produce medium to large quantities (25 bags or more a week) of gari.

Gari Processing Workforces

These are largely made of up women with few men do the hard jobs such as loading and pressing. These workers work on processing sites either as "freelancers" (temporary laborers working under no entrepreneur) or under a particular entrepreneur. They are usually paid based on the amount of work done within a day and sometimes group themselves to work for an entrepreneur on a project basis. The workforce performs all the activities described in Figure 2 above except on-market activities.

Harvesting, loading and transporting: The entrepreneurs, especially the large ones, pay for harvesting, loading, and transportation activities as they usually have farms. The entrepreneurs also buy directly from farmers. In this case, they visit the cassava farms, bargain for the price with the farmer and then do the harvesting. Farmers sometimes also do the harvesting and sell to the entrepreneurs, usually in the case of smaller entrepreneurs. Large entrepreneurs usually cart the cassava to

their processing site with their truck while the smaller entrepreneurs hire a truck for this purpose. The cost of transportation depends on the distance between the processing site and the farm. The interviews suggested that transporting is usually done by a 1-ton bakkie truck, costing between GHs 800 – GHs 1200 (US$1=GHs 5.6 at the time of data collection) for carting tubers, and between GHs 150 – GHs 400 for gari to the market. These activities are dominated by men.

On-Site Activities

The is the first activity at a gari processing site is offloading. This is usually done by men after the truckload of cassava arrives at the processing site. The next is peeling and washing. Currently, peeling is manually done with knives to remove nonedible outer. Peeling is done either by slitting along the length of one side of the root with a knife followed by using the fingers to roll back the peels from the fleshy portion of the root, or by using the knife to slice the outer covering entirely from the flesh. The manual peeling is done by women and is very laborious. The peeled cassava is then washed and grinded. The peeled and washed gari is mechanically milled to create the mash which are bagged, pressed and allowed to ferment. The processing is men – dominant. After pressing to remove the water, the relatively dry cassava mash is broken up and sieved to remove the large lumps. Women dominate this stage. Roasting then take place where women cook and dry the wet granular of milled/grated cassava to finally form gari. The roasting is done in large aluminum pans on purpose-built shaded stoves. Roasting takes about 25 – 40 minutes depending on the moisture content of the mash. The roasted granular cassava is further sieved to remove lumps that may have formed during the roasting process. The gari is then bagged in 25 kg, 50 kg or 100 kg. This sieving is done by women while the bagging is dominated by men. Gari is stored in a cool dry place before transporting to the market or the final user. Processors claim they can store gari between 18 – 36 months.

Types of processing site

There are two main types of processing sites. Entrepreneur-owned and the communal owned. In the former, the entrepreneur owns the land and building as well as all processing facilities. The entrepreneur usually has a preferred workers he/she engages during the processing. The entrepreneur usually does not allow a small entrepreneur to use the facility. A variant of this is where the entrepreneur also allows smaller processors to use the facilities at the fee.

The communal sites have processors renting facilities for their gari processing. These sites are usually owned by an individual, an entity such as a church (Akrofrom Catholic Church in the Techiman Municipality) or a community.

ajfand SCHOLARLY, PEER REVIEWED AFRICAN JOURNAL OF FOOD, AGRICULTURE, NUTRITION AND DEVELOPMENT Volume 23 No. 1 January 2023 PUBLISHED BY AFRICAN SCHOLARLY SCIENCE COMMUNICATIONS TRUST ISSN 1684 5374

Currently, there is a project underway as Asueyi to mechanize the gari production which is going to be that of a communal facility which can serve several communities. Such a facility will have entrepreneurs process their gari at a fee.

Cost of production

Cost of production varies based on processor location, processor capacity and availability of cassava, that is seasonality of raw materials. The cost of processing a ton of cassava ranges from GHs 1800 – 2200. The bulk of the cost is in the purchase of the raw cassava which costs between GHs 1000 – 1500 as at the time of the primary research. Transport and loading and offloading ranges between GHs 300 – 500 while the on-site activities cost range between GHs 300 – 600. One pays GHs 6-10 per bag for transporting gari to the Techiman market (about 10 km). The processing of a truckload costs between GHs 10 – 12 100 kg bags at a unit cost of between GHs 150 and GHs 220 depending on the quality of the gari. In terms of its profitability, both small and large entrepreneurs consider it as a profitable business as they sel1 a 100kg for GHs 2000 – 2600.

Marketing, distribution and consumption of gari

Entrepreneurs sell to different buyers. Currently the buyers are dominated by "market women" (wholesalers/distributors who come from the various major cities in the country) These "market women" influence price both at the market and the purchase price at the processing sites. These distributors either repackage it in smaller quantities or sell to retailers who sell directly to the consuming public. Other buyers are institutions such as educational institutions. Gari entrepreneurs sometimes get contracted by educational institutions i.e. schools and colleges to supply. However, the "market women" sometimes use their financial power to negotiate better prices including supplying on credit to negotiate with institutional buyers.

Women in Cassava-Gari value chain and their challenges

Women are key in the gari value chain and constitute about 85% of the players. Gari process is therefore a women-dominant business. At the processing facilities, women dominate the process and it employs many women from the processing communities and its surroundings. In the Bono East Region, there were several women who had come from other regions such as Northern, Upper East and West and Savannah regions to work as processing workers. Buyers and sellers of bulk gari at large markets (., Techiman market) are also dominated by women. Similar trends were observed in smaller markets in the Eastern Region.

https://doi.org/10.18697/ajfand.116.22635

ajfand SCHOLARLY, PEER REVIEWED AFRICAN JOURNAL OF FOOD, AGRICULTURE, NUTRITION AND DEVELOPMENT Volume 23 No. 1 January 2023 PUBLISHED BY AFRICAN SCHOLARLY SCIENCE COMMUNICATIONS TRUST ISSN 1684 5374

With the needed capacity and support, women at the processing sites (in small rural communities) can add value to raw gari through fortification, breaking bulk and packaging into smaller units for the retail market. This is where they may brand and sell to the final consumer as off-takers usually purchase at minimal margins. The main challenges of these women are:

- Guaranteed buyers: In peak seasons, there are no off-takers for both large and small entrepreneurs. The small entrepreneurs suffer most as they do not have storage spaces. The lack of guarantee off-takers leads to selling at low prices at minimal margins.
- Seasonality and Price fluctuation: The seasonality of the cassava production impact on the price of gari. There is no price stability which makes it difficult for processors to plan.
- Physical and Health challenge: workers at the processing facility go through harsh physical conditions which pose health challenges to the women. The heat, long hours of standing, and smoke in the eyes are some of the health challenges these women face.
- Financing: The financial capacity of an entrepreneur determines the level of profitability. These women are sometimes limited by finance even when there is an abundance of raw material to produce more.
- Storage facilities: Lack of storage facilities make them sell at cheap prices with little or no profit. This is as a result of the lack of finance to put up warehouses to store and sell later when prices and profit margins are high.
- Climatic shocks and conditions: Droughts, floods and bush fires have an effect on cassava production which in turn impacts the cost of production of gari.
- Land tenure systems – farmlands are hard to come by which limits the size of farming one can do as some of the women are not natives of the communities in which they operate.

Capacity and Training Needs of Women

One way to improve the economic conditions of these rural processors is through an active participation in a structured and functioning value-added (fortified) gari value chain. Investors in agro-processing may look to design a business model that leverages on the expertise of these rural women. Such a business model would need to deal with some inefficiencies which will largely require collaboration with these women. The study identified the following capacity and training needs as key in this regard.

https://doi.org/10.18697/ajfand.116.22635

ajfand SCHOLARLY, PEER REVIEWED AFRICAN JOURNAL OF FOOD, AGRICULTURE, NUTRITION AND DEVELOPMENT Volume 23 No. 1 January 2023 PUBLISHED BY AFRICAN SCHOLARLY SCIENCE COMMUNICATIONS TRUST ISSN 1684 5374

- **Product development:** Adding value through fortification, producing variants for different buyers (example, some buyers want yellow gari – processed with palm oil), better packaging. This will require some technical training.
- **Market identification and development:** How to identify and exploit new markets, form associations and cooperatives and negotiate and supply to educational institutions
- **Financial management:** Bookkeeping, sourcing funding and basic financial management
- **Factory level training:** Hygiene is a big issue at the processing sites. Processors will need training on safety and hygiene especially the small entrepreneurs. This may require the construction of a new factory floor of refurbishing of existing ones with standardized hygiene protocols.

CONCLUSION

The processing of cassava into gari had been largely traditional in most parts of the country. However, commercial processing is increasing as demand for the product is also increasing. The value chain for gari has huge women participation and impact their economic wellbeing. When they are supported in terms of training and capacity development, these women through gari processing can improve the quality of life of their family members.

There are good reasons for entrepreneurs venturing into fortified gari (. Gari-Soy Mix with micronutrients) to source gari from these rural processors as women dominated processing sites. One is the capacity to meet demand. The interactions with these gari entrepreneurs and the site visits show that there is enough capacity to meet the demand for raw gari for any commercial venture in fortified gari production within the Techiman and UMKD (Sekesua) enclaves, for example. Another important reason is the socio-economic impact that could be made on the economically marginalised group. Sourcing from these women processors will be a way of building their economic capacity and enhancing their livelihoods. It will also solve the challenge of lack of off-takers for the gari processed by these entrepreneurs.

There is the need to provide some support for these processors in order to meet product safety and quality requirements. In the form helping them upgrade on the hygienic conditions of the processing sites, financial support to enable them to buy cassava in larger volumes and enjoy some economies. Support may also come in

https://doi.org/10.18697/ajfand.116.22635

ajfand SCHOLARLY, PEER REVIEWED AFRICAN JOURNAL OF FOOD, AGRICULTURE, NUTRITION AND DEVELOPMENT Volume 23 No. 1 January 2023 PUBLISHED BY AFRICAN SCHOLARLY SCIENCE COMMUNICATIONS TRUST ISSN 1684 5374

the form of constant training to keep the processors abreast with the quality standards as expected by the market, both home and abroad.

Aside the benefits that will be accrued to rural economies in gari processing, there is a huge market for value added gari (fortified) both home and abroad. Already, non-fortified gari is being exported from Ghana to the West African sub-region with Nigeria being the biggest market. Additionally, there is a huge protentional within the European and American markets as long as quality and nutritional standards are improved. This makes the cassava-gari value chain viable investment opportunity for investors who are interested in creating a hybrid of social and commercial enterprises.

https://doi.org/10.18697/ajfand.116.22635

ajfand SCHOLARLY, PEER REVIEWED AFRICAN JOURNAL OF FOOD, AGRICULTURE, NUTRITION AND DEVELOPMENT Volume 23 No. 1 January 2023 PUBLISHED BY AFRICAN SCHOLARLY SCIENCE COMMUNICATIONS TRUST ISSN 1684 5374

REFERENCES

1. **Akotia CS and A Anum** Gender, culture, and inequality in Ghana: An examination of sociocultural determinants of gender disparity. In: Psychology of gender through the lens of culture Springer, *Cham*. 2015: 375-394.

2. **Van de Poel E, Hosseinpoor AR, Jehu-Appiah C, Vega J and N Speybroeck** Malnutrition and the disproportional burden on the poor: the case of Ghana. *Int'l J. for equity in health* 2007;**6(1):** 1-12.

3. **Kushitor SB, Owusu L and MK Kushitor** The prevalence and correlates of the double burden of malnutrition among women in Ghana. *PloS one* 2020;**15(12):** e0244362.

4. National Nutrition Policy for Ghana; 2013-2017 http://extwprlegs1.fao.org/docs/pdf/gha145267.pdf *Accessed June 20, 2018.*

5. **UNICEF.** https://www.unicef.org/ghana/health_nutrition_7522.html *Accessed June 20, 2018.*

6. **Obaasima.** http://obaasimaghana.com/food.php *Accessed June 20, 2018.*

7. **Drafor I** Access to information for farm-level decision-making. *Journal of agricultural & food information*, 2016;**17(4):** 230-245.

8. **FAO.** https://www.fao.org/3/a0154e/a0154e07.htm *Accessed November 19, 2021.*

9. **Bayitse R, Tornyie F and AB Bjerre** Cassava cultivation, processing and potential uses in Ghana. Handbook on Cassava. Nova Science Publishers, Inc, 2017: 313-333.

10. **Sam J and H Deppah** West African Agricultural Productivity Programme – Ghana Baseline Survey Report. 2009: Accra Ghana.

11. **Beesabathuni K** Affordable Nutritious Foods for Women (ANF4W): Value Chain. 2014 https://sightandlife.org/wp-content/uploads/2015/11/SAL_Mag_Frontiers_In_Nutrition_2015_ANF4W_value_chain.pdf *Accessed 20 June 2018.*

12. **Beesabathuni K, van Zutphen KG and K Kraemer** Role of Foundations and Initiatives by the Private Sector for Improving Health and Nutrition. In: Nutrition and Health in a Developing World. Humana Press, Cham. 2017: 771-790.