

Empowering Rural Women through Small Scale Agro-Processing: The Potential in Maize Flour Processing in Niger State, Nigeria

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Abstract

This study investigated the potential of maize flour processing to empower rural women in Niger State, Nigeria. Multistage random sampling was used to collect data using a questionnaire, the budgetary analysis method was utilized for the analysis. Seventy-three (73) respondent processors were drawn for the study. Furthermore, descriptive statistics were also used to organize and present the data collected. Findings revealed that local processing of maize flour by women in the rural area is profitable, and therefore an economic empowerment strategy. The processors' gross margin and net return were estimated at N14,250 and N11,990 respectively. Hence, from the analysis, it is apparent that the enterprise has the potential of providing means of livelihood to women in the study area. Furthermore, the study identified a lack of preservatives and high moisture content of the flour, a lack of good storage facility, and frequent contamination of the flour by lubricants during milling as constraints. This study focused on the agro-processing potential of rural women in maize flour production. It is confirmed that maize flour processing has the potential to empower rural women in the study area.

Keywords: Agro-Processing, Maize Flour, Profitability, Rural Women, Women Empowerment

INTRODUCTION

The status of women in rural sub-Saharan Africa is that of an economically disadvantaged gender characterized by high dependence on male for livelihood needs. The situation is further aggravated by sociocultural boundaries placed by traditions inhibiting the female gender from aspiring to a more pronounced state of independence. A majority of rural women living in sub-Saharan Africa are reported to be poor and disadvantaged (David, and Ekaterina, 2018). Efforts are currently being made to improve the status of gender at both international and national levels. Primary agriculture is known to be the source of livelihood for the majority of the poor in developing countries, however, the gains obtained by this group do not measure up to improving their economic well-being above the average poverty level. Women being active players on the primary agriculture scene are not excluded from the vicious cycle of poverty associated with subsistent farming. Hence, there must be an alternative income source that women can exploit to improve their economic well-being aside from primary agriculture. Tolulope and Folasade (2014) in their study argued that empowering women can come in a diversity of ways, one of which is education. They identified the challenges of women's empowerment as more cultural than technological and more about people and systems than digital tools. Furthermore, they asserted that women are

central to overcoming rural poverty due to the role they play in productive activities and the household economy.

Agricultural value chain offers vast opportunities for income generation in the economy, this range from handling, processing, and delivery of a product to the final consumer. The bulk of the agricultural value addition takes place after the farm gate, therefore, most of the wealth to be made in the agricultural sector is in the transformation of primary agricultural produce into refined products that the consumer desires. Processing generates employment, provide utility to the needs of consumers at a low cost, and serves as a supplement to other marketing functions, such as merchandising, transportation, as well as storage (Acharya, 2006). In line with the aforementioned, agro-processing offers opportunities for livelihood engagements to the majority of the unemployed in Nigeria, women inclusive. Women are known to be ingenious, identifying and exploiting economic opportunities for the well-being of the family (Ellis, 1999). This is because the role women play in the family as primary caregivers places them in a position to carry most of the burden of family needs. Kaka (2013) asserted that poverty among women is a situation that must be mitigated and this has to bother access to income opportunities, access to land and properties, and

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development opportunities by the governments and international communities. Also, Cynthia and Anastasia (1993), found that consumption levels of household members are highest in households in which women play a primary role in the provision of cash earnings either in partnership with their husbands or as the primary cash providers. It goes without saying that women's empowerment improves family well-being. It is against this backdrop that the study investigated the empowerment potential of maize flour processing by rural women in Niger State, Nigeria.

LITERATURE REVIEW

The theory of empowerment dwells on the processes and outcomes culminating in the acquisition of skills for resource mobilization and management by individuals, communities, and organizations for the attainment of greater access and control over resources for a better livelihood. The

empowering process entails participation in activities or access to structures that may be empowering while empowering outcomes entails the operationalization of the structures of empowerment that lead to access, control, resource mobilization, and management skills for a better livelihood (Zimmerman, Isreal, Schultz, Checkoway, 1992; Rappaport, 1987; Swift and Levin, 1987). Empowered outcomes expected for individuals include but are not limited to situation-specific-perceived control, the ability to the mobilization of resources, and management skills. This study is underpinned by the theory stated above for the empowerment of poor rural women in Niger State. This work is conceptualized on the understanding that lack of access to resources, and the need for resource mobilization and management skills, hinder individuals or households from attaining a comfortable livelihood standard. Hence, the outcome of such deprivation results in poverty and a poor standard of living (Figure 1).

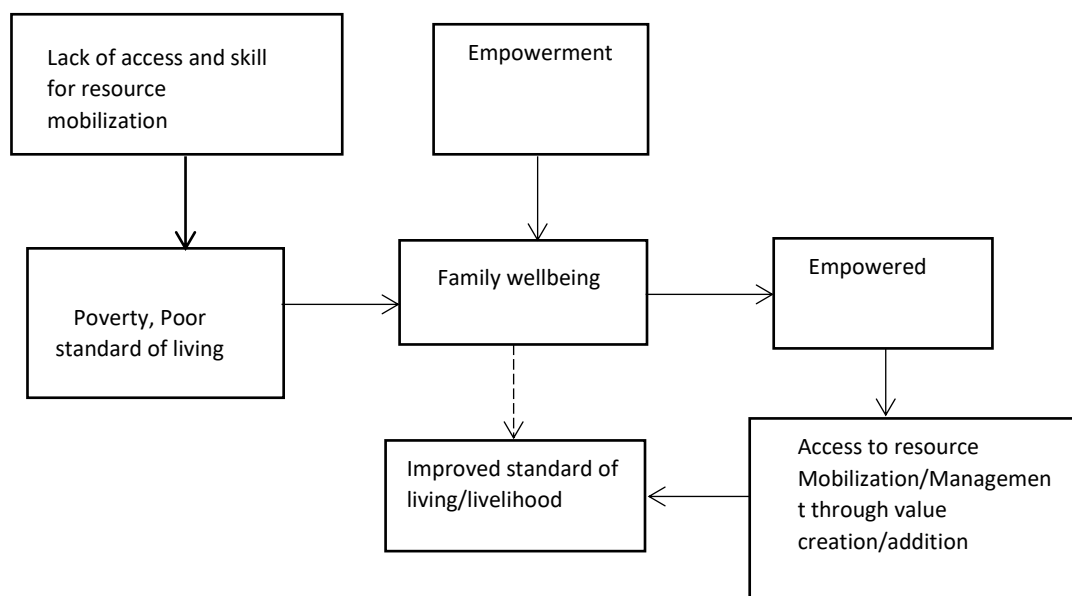


Figure 1: Conceptual Framework of the study

The wellbeing of the family as an entity is key to achieving an egalitarian society, however, economic independence of the woman remain to be a challenge. Empowerment however, provides the vehicle through which the household through the woman can be empowered. Empowering the woman through access to resource, building capacity to mobilize and manage resource for an improved wellbeing is vital for an improved living standard and economic security of the household.

Women empowerment has to do with the provision of adequate opportunities for women to develop skills and potentials in order to contribute to the development of the nation in particular and to the world in general (Lasiele, 1999). Available statistics show that women empowerment has not been attained in Nigeria as one of the MDGs. Furthermore, the empowerment of women requires effective monitoring and genuine commitment on the part of government (Ejumudo, 2013). Etuonovbe (2020), asserted that the female gender needs to be empowered to also play a significant role in family upkeep due to the prevalence of poverty. She also iterated that empowering the rural woman would give her leverage on security and

dignity in the event of the loss of a spouse or irresponsible behavior of the spouse.

Okeke (1995) pointed out the need for women empowerment in Nigeria for economic development. He is of the view that women are responsible for most of the task the home performs. Hence the need to be empowered for the task adequately, the study further asserted that Nigerian women have not attained a threshold of personal well-being and economic independence. Furthermore, Ovute *et al.*, (2015) asserted that the rights of women can be achieved through vocational skill acquisition which will enable the women to be self-reliant. He stated that the acquisition of such vocational skills will reduce unemployment among women. Eucharía *et al.*, (2012) submitted that women are making immense contributions to the development of Nigeria, however, not without challenges. Such challenges include gender status and perceived gender roles of women in society.

MATERIALS AND METHODS

The study was carried out in Niger State, located in the north-central region of Nigeria. The area is agriculturally oriented, with a majority of the population cultivating the land and dwelling in the rural area. The population of the

area is about 3,950,249 (National Population Commission, 2006). Crops grown in the area include yam, cassava, maize, millet, sorghum, and cowpea among others. The study utilized cross-sectional data collected through a well-structured questionnaire. The survey was used to elicit information from the maize processors in the area. The respondents were rural women engaged in the local processing of maize flour as a livelihood strategy.

A multistage random sampling technique was used for the study. In the first stage, four local Government Areas were selected, namely Agai, Shiroro, Lapai and Paikoro local government areas. In the second stage, maize processing locations were further drawn from within the local government areas and finally, seventy three (73) respondent processors were sampled for the study. Hence, the total sample size used for the study is seventy three (73) respondents.

Descriptive statistics and budgetary analysis were used for analyzing data collected. The budgetary model was used to estimate the profit obtained by the maize flour processors. The budgetary model is as presented below (equation 1) following (Bwala and Aniobi, 2018):

$$NFI = GM - TFC \tag{1}$$

$$GM = TR - TVC \tag{2}$$

$$TR = Py.Q \tag{3}$$

Where;

NFI = Net Farm Income

GM = Gross Margin (₦)

TFC = Depreciated values of fixed inputs

TR = Total revenue (Py.Q)

Py = Price per unit of output (₦)

Q = Total quantity of output (kg) per unit per bag of maize flour

TVC = Total variable cost

Furthermore, Ratio Analysis was utilized to determine the Return on Naira Invested (ROI); (Equation 4).

$$ROI = \frac{NFI}{TR} \tag{4}$$

Decision Rule for ROI, if:

ROI > 0 Positive returns to the business.

ROI < 0 Negative returns to the business.

ROI = 0 Break-even.

The straight line method of estimating depreciation was used to appraise the fixed cost items (Equation 7). Thus, it is expressed as:

$$\text{Depreciation} = \frac{\text{Cost Price} - \text{Salvage value}}{\text{Life span (yrs)}} \tag{7}$$

RESULT AND DISCUSSION

Socioeconomic Characteristic Of The Maize Flour Processors

Observations show that a simple majority (89%) of the processors are of the female gender with a few male (11%) processors (Table 01). Furthermore, 89% of the respondents are married, while 6.8% are single. A further 2.7% reported being divorced. Concerning the educational attainment of the respondents, observation shows that a majority of them have attended one form of educational training during the course of life, while just about 39.72% did not attend any form of formal or informal education (Figure 01). The figures show that 20.55% of the respondents have been educated through the Quranic and adult education schools.

Table 1: Distribution of processors according to demography

Variables	Frequency	Percentage
Gender		
Male	8	11.0
Female	65	89.0
Marital Status		
Married	65	89.0
Single	5	6.8
Widow	1	1.4
Divorce	2	2.7

Source: Field Survey, 2019

While just about 12.33% and 6.85% attended primary and secondary schools respectively. Processing of maize flour in the study area is more of a female endeavor considering the fact that a majority of the respondents are of the female gender. Furthermore, having the majority of the processors married implies that the processors have the responsibility of catering for a family (especially children) (Cheryl and Sofa, 2011). Hence, it can be asserted that the processing of maize in the study area is a livelihood strategy that the households depend on for the family's well-being. A report by FAO (2018) stated that women are increasingly supplying high-valued produce to the national and international markets more than men. This goes to give further credence to the

finding of this study regarding the participation of women in the processing of maize flour in the study area.

Education enhances the potential of an individual to derive maximum benefit from an opportunity. The finding regarding the educational attainment of the respondents indicates that they have the potential to utilize the opportunities offered by the processing of maize in the study area. It also implies that with further training, the respondents can improve the production processes of maize flour. The finding regarding the non-acquisition of formal education is corroborated by the report of UNDP (2015) where it was stated that 38% of Nigerian women do not have formal education.

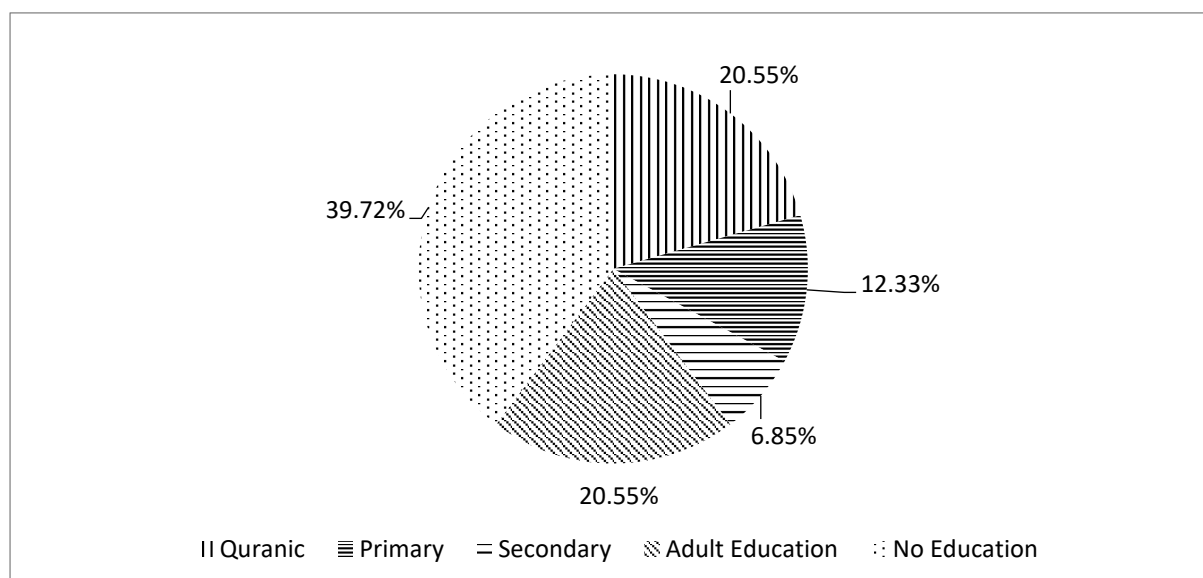


Figure 1: Educational Status of processors.

Source: Field Survey, 2019

Household size of the processors ranged between 1 to 15 persons per household. A majority (52.1%) have household sizes between 6 and 10 persons per household, while 43.8% have between 1 to 5 persons per household (Table 02). It can be asserted that a majority of the households have relatively large households. The implication of this observation is that most of families have more mouths to feed, hence, the need for extra income considering the income level of the poor rural households. Concerning years

of practice (being a maize processor), a simple majority (79.5%) of the respondents have experiences below 10 years, while just about 8.2% have experiences of between 11 to 20 years. This finding goes to show that the processing of maize flour in the area attracted most of the players in the last ten years. Thus, implies that maize processing in the area provides a means of making a living for rural dwellers; it can therefore be said that people are discovering the potential of the business.

Table 2: Household size and years of experience

Variables	Frequency	Percentage
Household Size		
1-5	32	43.8
6-10	38	52.1
11-15	3	4.1
Years of practice		
1-10	58	79.5
11-20	8	11.0
21-30	6	8.2
31-40	1	1.4

Source: Field Survey, 2019

Household size is a determinant of family well-being in a subsistent setting, this is because the larger the family the greater the labor resource available to the family to invest in productive activities. However, if not well utilized, a large household size in a subsistent scenario is a burden to the family budget. This is because it translates to deprivation of essential basic needs that may arise through rationing. The majority of the maize flour processors have family sizes between 6 and 10 (Table 02). This implies that processors of maize flour in the study area have family labor which they can utilize in the processing venture without engaging a hired hand. The results also imply that children have a high tendency of being used as a source of cheap labor. Oladejo, (2012), reported large household sizes of 6 to 10 persons in a home setting. Concerning the years of experience of the respondents in the processing of maize flour, it can be asserted that most of them are relatively new in the business. This is because a majority (79.5%) started the business in the last 10 years. This implies that the attraction to process maize flour for commercial purposes increased in the last ten years among respondents.

Sources of Finance for maize flour Processing

The results show that the respondents got their start-up funds from various sources (Figure 02), however, observations show that the majority of the maize flour processors (72.6%) got their finance from personal savings (Figure 02). Also, 16.44 % sourced their start-up capital from family members. While just a few (1.37) of the respondents sourced their funds from the banks. Also, about 4.11% got their start-ups from inheritance while a further 2.74% had theirs from friends and cooperative associations respectively. This finding implies that processors in the study area do not have access to institutional credits. Furthermore, the cooperative is not a popular avenue for accessing credit in the study area. While it is expedient that the processors have initial funding through personal savings, additional investments involving large capital can be better facilitated through credit institutions. The improvement of quality of the processed maize flour would require machines that are beyond the financial capacity of the processors.

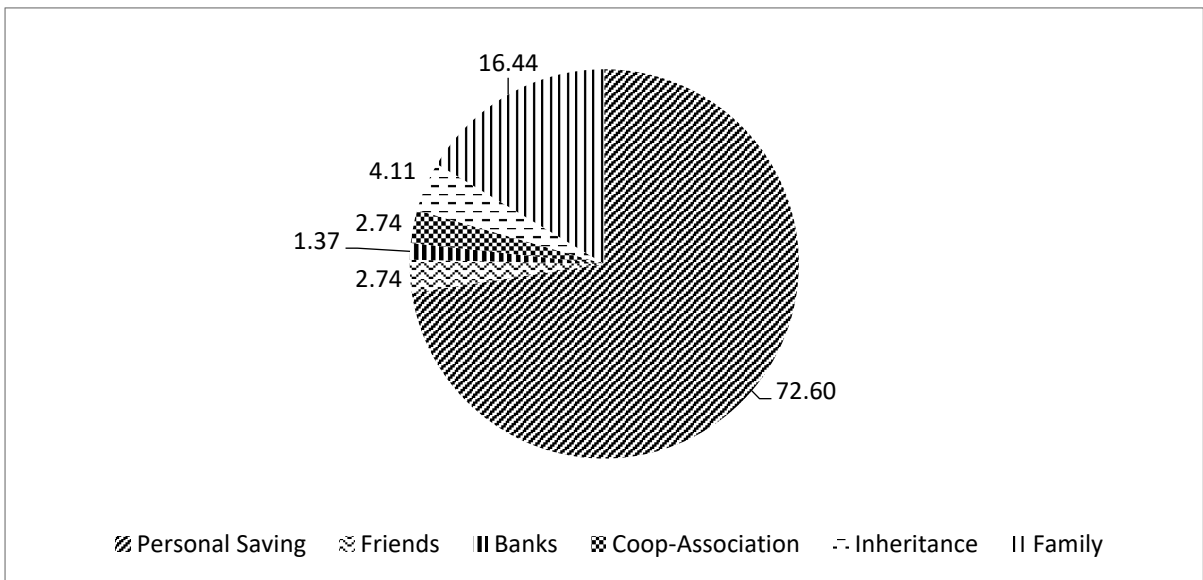


Figure 2: Source of Capital.

Source:FieldSurvey2019

Start-up capital is usually a challenge for poor individuals embarking on any business venture. Hence, even though there might be individuals willing to engage in new enterprises, it is usually difficult to access the needed funds (Acka, 2011). From the results, it was reported that a majority of the respondents provided their start-up capital through personal savings. The implication of this finding is that the processors do not have access to formal financial institutions. This situation might hinder the operators from adopting improved processing and marketing techniques due to the non-availability of funds. Furthermore, the lack of funds could also hinder the market expansion of these processors. One reason that may be put forward for the lack of access to formal financial facilities could be the lack of collateral and guarantors that may facilitate access to such funds. One such avenue where small-scale processors/entrepreneurs can access formal loans is through the cooperatives. However, processors that belong

to a cooperative are not a majority among the respondents. This means that the processors do not have the platform to pool resources both human and financial for the advancement of their enterprises. The implication of the scenario is that the inadequacies the processors may have to deal with, due to the non-availability of an umbrella body (association) from which they can have a formidable bargaining power may be profound. Furthermore, having a functional organization by the processors would also aid the branding of their commodity and expand the market scope. However, the lack of subscription to cooperatives among the processors can be attributed to a lack of information, environmental realities, and the fear of being defrauded. Furthermore, results show that only 5.5 percent of the processors belong to a cooperative organization (Figure 03), while the majority (94.5 %) do not belong to a cooperative association.

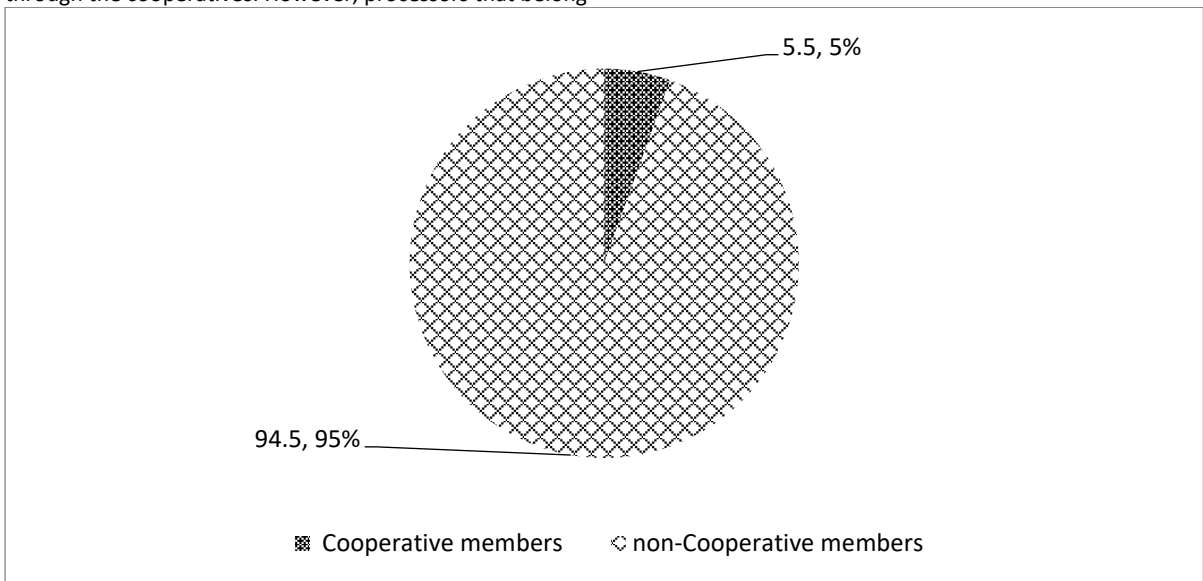


Figure 3: Membership of Cooperative Society

Source: Field Survey, 2019

A sure way to access opportunities through the pooling of resources is cooperative membership; this is critical to the development and enhancement of the well-being of trade

participants. The non-participation of most of the processors in cooperative activities exposes them more to the challenges of the environment and makes them less resilient than if they would have been in a cooperative.

Budgetary Analysis of Maize Flour Processing

The budgetary analysis revealed the total variable cost incurred by the processors for a hundred and fifty kilograms is ₨30,750 per week with a fixed depreciated cost of ₨2500. The total revenue obtained for the quantity of maize processed is ₨45,000 for a processing of 150kg of maize (Table 3).

Table 3: Profitability of maize processing per production (Kg)

Items	Quantity	Price(₨)	Depreciation (₨)	Cost (₨)	Percent Cost
Costs of maize	150 Kg	136	-	20,400	62
Storage costs	150 Kg	5	-	750	2
Packaging cost	4	200	-	800	2
Transportation cost	3	600	-	1,800	5
Costs of milling	3	1500	-	4,500	14
Labor costs	2	1250	-	2,500	8
Total Variable Cost				30,750	
Fixed costs					
Measuring pan	1	2500	400	400	1.21
Big bowl	2	1500	200	400	1.21
Flat tray	1	1800	260	260	0.79
Mini Drums	2	3500	600	1,200	3.64
Total Fixed Costs (Depreciated value)				2,260	
Total Costs				33,010	100
Total Revenue	150	300	45000		
Gross Margin (TR-TVC)				14,250	
Net Farm Income				11,990	
Return on Investment				0.266	

Source: Field Survey, 2019

Furthermore, Gross and Net returns of ₨14,250 and ₨11,990 were also calculated for the said quantity respectively (Table 03). Also, a net return per capital of ₨1.29k was estimated from the result. The analysis for the profitability of maize flour processing by women in the study area shows the enterprise to be a profitable venture. The return on investment of the enterprise showed a 0.266 profit for every Naira invested by the processors.

This finding is corroborated by Iken and Amusa, (2004) who reported that, for every one naira (1₨) the female respondents invest in rice production ₨1.02 was realized. The processing of maize flour by women in the study area no doubt enhances the income-generating base of the households. Considering the profit margin obtained by the processors, it can be asserted that an agro-processing venture of this nature presents a great opportunity for the

female gender to contribute to the income base of the family.

Constraints Mitigating the Processing of Maize Flour in The Study Area

Identified constraints/challenges mitigating the smooth operation of the maize flour processors in the study area are presented in (Table 4). These include product coloration, short shelf life, and contamination of flour with lubricant while processing in the mills. Lack of credit facility was also identified as a constraint. All the aforementioned constraints ranked first in the hierarchy of associated problems and constraints identified. Inadequate milling centers and availability of electricity for the proper function of these mills were identified as a challenge, this ranked second, and adulteration of the product ranked 4th.

Table 4: Distribution of respondents according to constraints/challenges

CONSTRAINTS	Frequency	Percentage (%)	Rank
Coloration of the product	73	100	1 st
Inadequate storage facilities	73	100	1 st
Fluctuation of price	73	100	1 st
Lack credit facilities	73	100	1 st
Short shelf life	73	100	1 st
Product contamination with grease	73	100	1 st
Inadequate grinding center & Electricity	65	89.0	2 nd
Adulteration	13	17.8	3 rd

Source: Field Survey, 2019

The ranking reveals that most of the constraints are priority as indicated by all of the respondents. All the constraints listed affect the quality of the maize flour in the study area. The presence of these constraints in the process of maize flour hinders the attainment of good-quality products. The implication of the identified constraints is that women involved in the processing of maize flour in the study area will be hindered from harnessing the full empowering potential of the venture. In line with the listed constraints, inadequate electricity supply will limit the operation of the processing activity thereby reducing output, and invariably income. Furthermore, lack of credit is an important factor that will impede the capacity of women to access technology that will improve their products.

CONCLUSION

Agro-processing has the potential to provide employment for rural women. Rural women in the study area are making a living through the local commercial processing of maize flour. The processing of maize flour in the study area is a profitable venture that has the capacity to empower poor rural women for improved livelihood. However, there need to be developed an improved production process and packaging system. Hence, the agro-processing venture provides an avenue for self-employment for rural women. The study, therefore, recommends that women in the study area should form a cooperative to facilitate the acquisition of improved packaging and branding of the processed maize in the study area.

This work contributed to the body of knowledge through the finding that maize flour processing is a strategy through which rural women can be empowered with direct interventions from government or development agencies for the improvement of their livelihood. Interventions in the form of improved processing technology and equipment can be facilitated through Government and Non-governmental organizations. This will improve the shelf life of the flour and increase its value. Thereby increasing the income of the women involved in the processing. The study did not take into cognizance women that do not participate in the processing of maize flour in the area for comparative analysis. Future research should consider having groups that do not have the capacity to participate, this would allow for a comparative study to isolate the difference in well-being between the groups.

REFERENCE

Acka, J. and Vuvor, S. (2011). The Challenges faced by Small & Medium Enterprises (SMEs) in Obtaining Credit in Ghana. Master's Thesis in Business Administration, MBA programme, School of management Ghana.

Acharya, S. S. (2006). Sustainable Agriculture and Rural Livelihoods. *Agricultural Economics Research Review*, 19, 205-217.

Bwala, M. A. and Aniobi, U. J. (2018). Profitability of Rice Production in Bida Agricultural Zone of Niger State. *Journal of Bangladesh Agricultural University*. Published by Bangladesh Agricultural University, Bangladesh <http://baures.bau.edu.bd/jbau>

Cheryl, D., and Sofa, T. (2011). The role of women in Agriculture. The Food and Agricultural Organizations in the United Nations. *Journal of Agricultural Development Economics Division*, 11(2), 76-89.

Cynthia, B. L. and Anastasia, J. G. (1993). Women's Role in Maintaining Households: Family Welfare and Sexual Inequality in Ghana, *Population Studies*, 47:1, 115-131.

David, F., and Ekaterina, B., (2018). Leaving Women Behind: Gender In Agriculture In Sub-Saharan Africa. <https://www.siani.se/blog/leaving-women-behind-gender-in-agriculture-in-sub-saharan-africa/>

Eucharia, N. N., Grace, R. E., and Michael, B.B. (2012). The Social Phenomenon of Women Empowerment in Nigeria: A Theoretical Approach. *Sociology Mind*, 2(4), 388-393. DOI:10.4236/sm.2012.24051

Ellis, F., (1999). Rural Livelihood Diversity In Developing Countries: Evidence And Policy Implications. *Natural Resource Perspective*, 40, 19-29.

Ejumudo, K. B. (2013). Gender Equality and Women Empowerment in Nigeria: The Desirability and Inevitability of a Pragmatic Approach *Developing Country Studies www.iiste.org ISSN 2224-607X (Paper) ISSN 2225-0565 (Online)*.

Etunovbe, A. K. (2020). Women Empowerment: the Way Forward for a Progresses Society and Nation Building, Nigeria in Focus. (10737) (Nigeria) FIG Working Week 2020 Smart surveyors for land and water management *AtdthNthld1014M2020*

FAO (2018). National gender profile of Agricultural and rural livelihoods in Nigeria. *Country gender assessment series*, Abuja.

Iken, J.E. and Amusa, N.A. (2004). Maize research and production in Nigeria. *African Journal of Biotechnology*, 3(6) 302-307.

Kaka, E. J. (2013). Poverty Is A Woman Issue In Africa. *Journal Of Humanities And Social Science (IOSR-JHSS)*, 18(6), 23-39.

Lasiele, Y.A. (1999). Women Empowerment in Nigeria: Problems, Prospects and Implications for Counselling. *The Counsellor*, 17(1), 132-137

Oladejo, J.A, Adetunji, M.O. (2012). Economic analysis of maize production in Oyo state of Nigeria. *Journal of Agricultural Science Research*, 2(2), 77-83.

Ovute, A.O., Dibia, N. G. and Obasi, S.C. (2015). Empowering Nigerian women for national development: State of the art, challenges and prospects. *Quest Journals Journal of Research in Business and Management*, 3(1), 04-10.

Okeke, C. C.(1995) women empowerment and development in Nigeria, *Nwazor Journal of Development Research*.

Rappaport, J. (1987). Terms of Empowerment/Exemplars of Prevention: Towards a Theory for Community Psychology. *American Journal of Community Psychology*, 15, 121-148.

Swift, C, and Levin, G. (1987). Empowerment and Emerging Mental Health Technology. *Journal of Primary Prevention*, 8, 71-94

Tolulope, O., and Folasade, A. (2014). Women Empowerment as an Economic Force in Rural Employment in Nigeria: Need for the Empowerment Framework Approach. *International Journal of Sustainable Development*, 6(5), 119-126.

UNDP, (2015). Work for human development briefing, note for countries on the 2015 human Development report.

Zimmerman, M. A. Isreal, B. A., Schultz, A., and Checkoway, B. (1992). Further Exploration in Empowerment Theory: An Empirical Analysis of Psychological Empowerment. *American Journal of Community Psychology*, 20, 707-727.

