



**FOOD RESEARCH
INSTITUTE**

'SUSTAINABLE INDUSTRIAL MARKETS FOR CASSAVA' PROJECT

FINAL REPORT ON PROJECT OUTPUT 3.7

BASELINE INFORMATION

OR

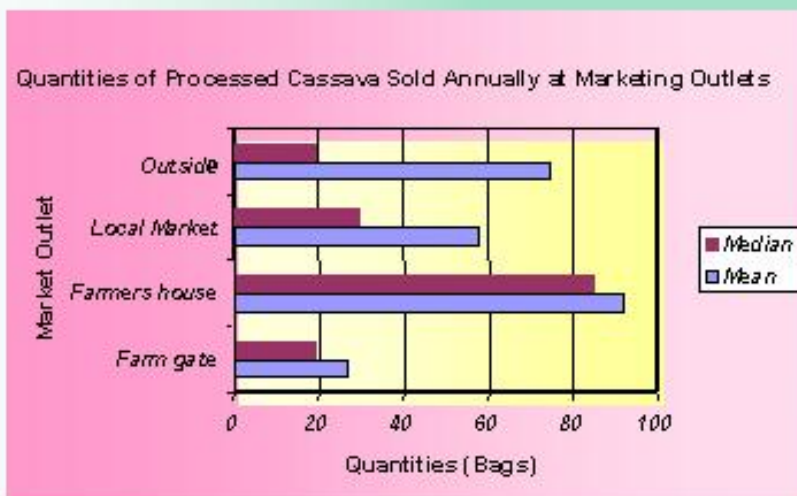
THE UPTAKE OF CASSAVA AS AN INDUSTRIAL COMMODITY

AND

THE LIVELIHOOD STATUS OF FARMERS AND SMALL SCALE PROCESSORS

IN

THE ATEBUBU AND SENE DISTRICTS OF THE BRONG AHAFO REGION, GHANA



By

Godwin Ameleke

David Abusah

Nanam Dziedzoave

Lawrence Krampah

Executive Summary

This survey was carried out in some communities in the Atebubu and Sene Districts of the Brong-Ahafo Region of Ghana. One hundred (100) questionnaires were administered in some selected communities. The survey was carried out within the context of the DFID-funded project on ‘The Sustainable uptake of cassava as an industrial commodity’. The principal focus of the project has been to access new markets for cassava by the introduction of new products such as High Quality Cassava Flour (HQCF) and Glucose Syrup; and the consequent usage of High Quality Cassava Flour in making products such as bread, sweetbud, meat pie and bofrot among others. This particular survey was carried out to assess the current status of the production, utilisation and marketing of these products vis a vis the traditional cassava products, and how they currently impact on the livelihood status of the communities. This is to constitute a baseline information that would be used to assess the impact of the new project and its contribution or otherwise to the improvement of rural livelihoods. Those interview included 24% Farmers, 43% Farmer/Processors, 26% Bakers and 7% Confectionery makers. The survey results were collated and analysed. From the results, it was realised that due to the poor market access for cassava farm sizes were not commensurate with the length of time that farming activities have been going on. Also, 62% of the respondents are not able to sell all their cassava before the following farming season. Out of this number 34% of respondents attribute it to either the non-existence of markets for their produce or the absence of a processing facility. From the results, the up-take of technology by end-users of High Quality Cassava Flour is satisfactory however the source of supply (processors) is not regular. Measures would therefore have to be put in place so that the supply of HQCF can be increased and sustained.

ACKNOWLEDGEMENTS

- UK Department for International Development (DFID): for providing the funding for the project as a whole and the survey in particular.
- Crop Post-Harvest Programme (CPHP) of the Natural Resources International, UK: for providing the administrative framework for administering the funds, and monitoring the project as a whole.
- The Brong Ahafo Directorate of the Ministry of Food and Agriculture: for supporting and facilitating the survey in the field.
- The Food Research Institute, Accra: for providing the local resources needed to facilitate the project as a whole and the survey in particular.

This publication is an output from a research project funded by the United Kingdom Department for International Development (DFID) for the benefit of developing countries. The views expressed are not necessarily those of DFID. (R8268, Crop Post-Harvest Research Programme).

TABLE OF CONTENT

	Page
Executive Summary	i
Acknowledgement	ii
Table of Content	iii
1.0 Introduction	1
2.0 Methodology	1
3.0 Results	1
3.1 General Characteristics	2
3.1.1 <i>Composition of Respondents</i>	2
3.1.2 <i>Gender of Respondents</i>	2
3.1.3 <i>Educational Level of Respondents</i>	3
3.2 Farmers	6
3.2.1 <i>Farm Size</i>	6
3.2.2 <i>Labour Hired</i>	7
3.2.3 <i>Market Outlets</i>	7
3.2.4 <i>Quantities of Fresh Cassava Sold at Outlets</i>	8
3.2.5 <i>Quantities of Processed Cassava Sold at Outlets</i>	9
3.3 Processors	11
3.3.1 <i>Scale of Bread Production</i>	11
3.3.2 <i>High Quality Cassava Flour and Kokonte Processing</i>	12
3.3.3 <i>Bakers and Confectionery Makers</i>	12
3.4 Comparison of Target Communities and Non-Target Communities	13
3.5 Current Livelihood Status	16
4.0 Conclusion and Recommendation	16
5.0 Appendices	17

1.0 INTRODUCTION

Atebubu and Sene Districts can be found in the Brong-Ahafo Region of Ghana. The vegetation is semi-deciduous and major crops grown include cassava and yam. Market access for crops especially cassava is quite poor. To improve this attempts are being made to find new markets for cassava. This is to be done by the introduction of new products such as High Quality Cassava Flour and Glucose Syrup from cassava. To this end, farmers and other persons in the district are being trained to process High Quality Cassava Flour and Glucose Syrup from cassava. Also bakers have been trained to use the High Quality Cassava Flour in making bread, sweatbud, meat pie and bofrot among others. This study provides some baseline information for the assessment of uptake of cassava as an industrial commodity and livelihood status of farmers and small-scale processors in the district.

2.0 METHODOLOGY

In order to generate the information required, a survey was carried out in March 2003. Sampling was purposive, and communities were selected with the view of capturing representative numbers of farmers, processors, and users of High Quality Cassava Flour. About 100 respondents were covered. The survey was done in communities in which interventions for cassava processing and industrial utilisation High Quality Cassava Flour have been introduced or will be introduced. These communities were Watro and Kokofu. In addition, some other communities, which have not been targeted for intervention, were also covered. These include, Atebubu, Yeji, Bantama, Kwame Danso, Achremade, Boniafo, Mem and Old Kokompe. The inclusion of these communities in the survey was to enable later comparisons of impact between communities which have received intervention and those that did not.

3.0 RESULTS

First some general characteristics of respondents are discussed. This is then followed by a more in-depth look at farmers and processors. Finally, some key parameters are compared across communities receiving interventions (Watro and Kokofu) and those not receiving any (others).

3.1 General Characteristics

3.1.1 Composition of Respondents

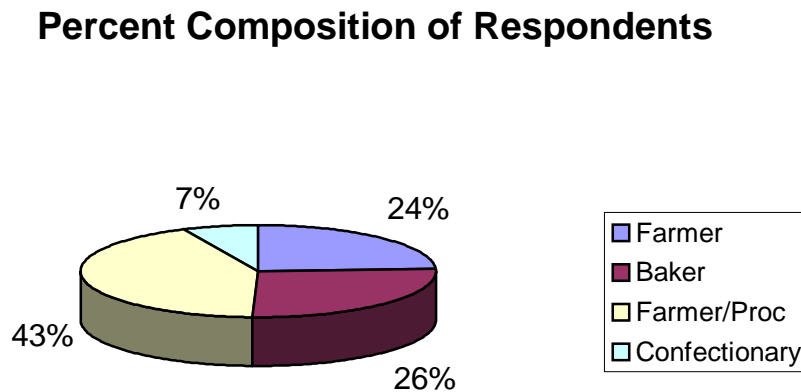
Twenty-four (24) farmers, 26 bakers, 42 farmer/processors, and 7 confectionery (meat pie, sweatbud boflot) producers were covered. Table 1 presents the numbers and the percentages they account for. The number of respondents from the different communities were as follows: Ateububu (9), Watro (20), Kokofu (17), Yeji (10), Bantama (2), Kwame Danso (12), Achremade (7), Boniafo (11), Mem (6), and Old Kokompe (5).

Table 1. Composition of Respondents

Category of respondent	Frequency	Percent
Farmer	24	24.2
Baker	26	26.3
Farmer/Processor	42	42.4
Confectionery maker	7	7.1
Total	99	100

Figure 1 also presents the composition of respondents in pictorial form.

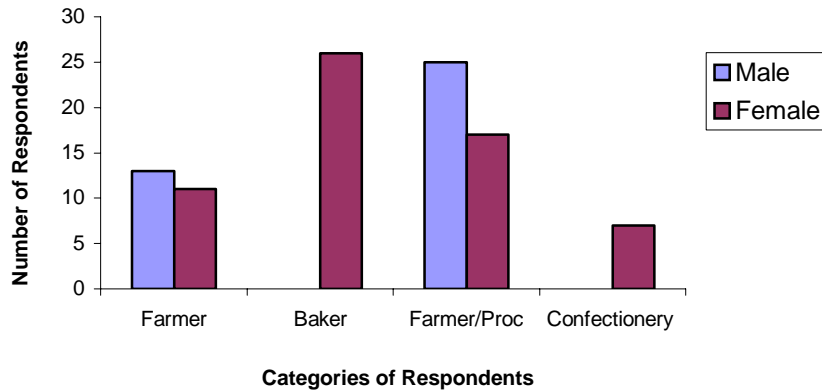
Fig. 1. Composition of respondents



3.1.2 Gender of Respondents

Whereas bakers and confectionery makers were exclusively females, the gender distribution of farmers was about equal. Both genders were also prominently represented in the farmer/processor category. Figure 2 presents the gender distribution of respondents.

Fig. 2. Gender Distribution of Respondents



3.1.3 Educational Level of Respondents

The educational level of respondents ranged between ‘no education’ and ‘teacher training’. Respondents who were involved in processing had higher education than those involved in farming. The highest level of education attained by those engaged in farming only was Middle School Leaving Certificate. While the highest attained by bakers and confectionery makers was Vocational/ Commercial or Teacher Training. In most cases, majority of respondents had Middle School Leaving Certificate or less. Table 2 shows the educational levels by occupation of respondents.

Table 2. Occupation by Education

Level of Education	Occupation			
	Farmers	Bakers	Farmer-Processors	Confectionary Producers
None or below MSLC	14	9	24	3
MSLC/ Non-formal	10	12	17	2
Secondary	-	2	1	1
Vocational/Commercial	-	3	-	-
Teacher Training	-	-	-	1
Total	24	26	42	7



On arrival at Atebubu for baseline survey studies.



David interviewing a farmer at Kokofu.



Group interviewing section with some bofrot and sweatbud makers at Kwame Danso.



Interviewing section with some of the farmers at Kokofu



Godwin interviewing sweatbud maker at Yeji



Godwin interviewing a farmer/ processor at Kokofu



Peter interviewing a farmer/ processor at Kokofu.



The Chairman of Kokofu farmers Association being interviewed.



At Kokofu, a group photograph with some of the inhabitants witness pounding of cassava for preparing "Tsortso"



David interviewing sweatbud maker at Yeji.



Interviewing section with Chairperson of Yeji Bakers Association.



Mawuko interviewing bofrot maker at Kwame Danso..

3.2 Farmers

Farmers (including farmers who do not process and those who process) numbered 66. Of this number nearly half (48.5%) had been farming for 10 years or less. Those who had been farming for 11-20, 21-30, and 31 plus years accounted for 16%, 13%, and 5% respectively. Table 3 summarises this.

Table 3. Length of Time in Farming

Duration in Farming	Frequency	Percent
1-10	32	48.5
11-20	16	24.2
21-30	13	19.7
31- and above	5	7.6
Total	66	

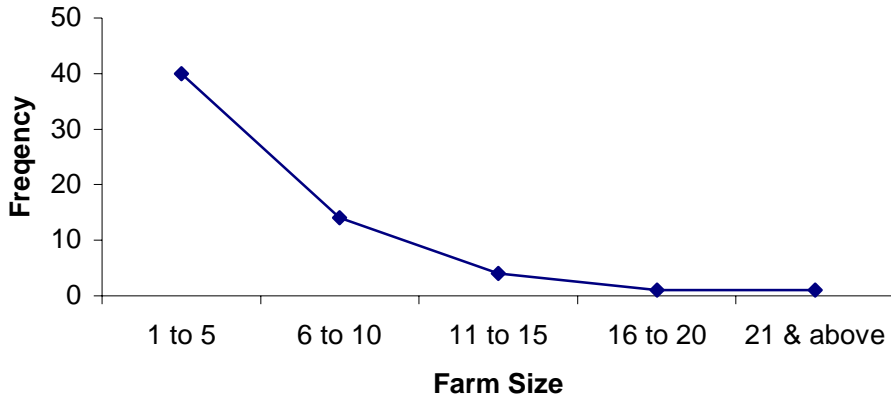
3.2.1 Farm Size

Most of the farmers (61%) had farm sizes of 5 acres or below. Those who had farm sizes of 6 to 10 acres were 21 percent. The rest had 11 acres or above. Table 4 and Figure 3 present the distribution of farm size.

Table 4. Distribution of Farm Size

Farm Size	Frequency	Percent
1-5	40	61
6-10	14	21
11-15	4	6
16-20	1	6
21-	1	2
Total	66	100

Fig. 3 Distribution of Farm Size

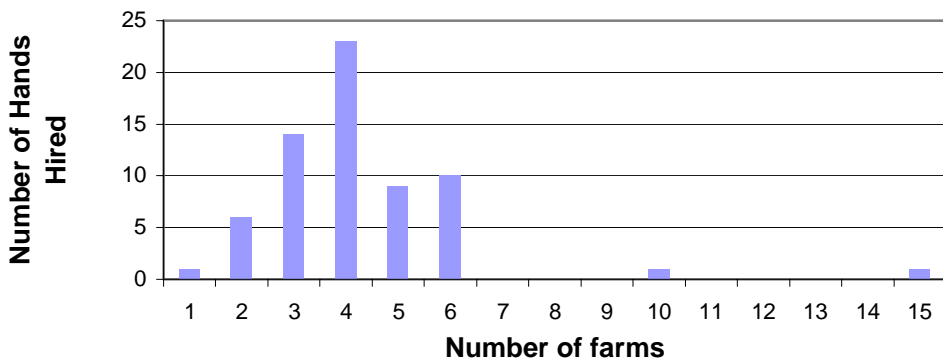


3.2.2 Labour Hired

Most farmers (35%) hired 4 people to work on their farms followed by 3 people (22%). Fourteen and fifteen percent of the farmers hired 5 and 6 people respectively. While 9 percent of farmers hired 2 people, only 2 percent hired 1, 10, or 15 people.

The following histogram (figure 4) presents the distribution of number of hands hired by farmers. Farm sizes are somewhat normally distributed

Fig. 4 Distribution of Labour Hired



3.2.3 Market Outlet for Cassava

Nearly half of the farmers (49%) said they sold their produce on the local market, while 46% said they sold their produce in their homes. Only 2% and 3% of farmers sold produce on their farms and in other markets aside the local market respectively. Table 5 shows the proportion of farmers using the various market outlets.

Table 5. Number of Farmers Using Various Market Outlets

Outlet	Frequency	Percent
Farm gate	1	2
Farmer's House	27	46
Local Market	29	49
Outside	2	3
Total	59	100

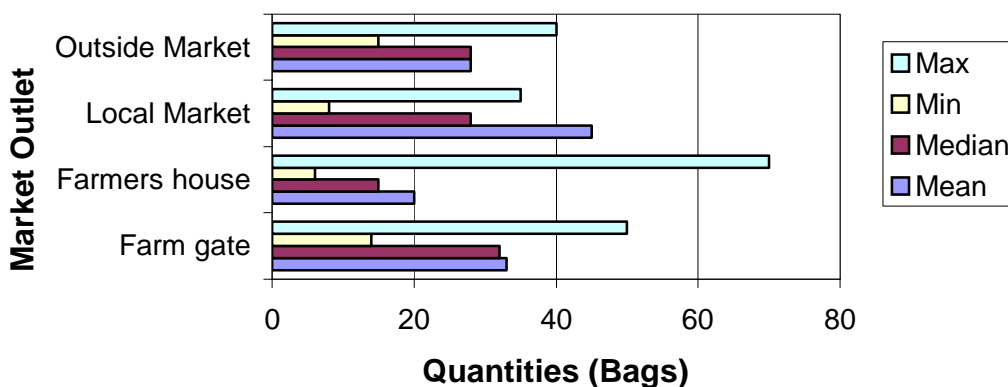
3.2.4 Quantities of Fresh Cassava Sold at Outlets

The mean quantities of fresh cassava sold were between 20 bags to 45 bags per season, while the median quantities ranged between 15 bags and 32 bags. The largest mean quantity 45 was sold on the local market while the largest median quantity was sold at the farm gate. Table 6 and figure 5 show these quantities.

Table 6. Quantities (in bags) of Fresh Cassava Sold

Measure	Farm gate	Farmers house	Local Market	Outside
Mean	33.2	20.2	44.8	27.5
Median	32.0	15.0	27.5	27.5
Min	14.0	6.0	8.0	15.0
Max	50.0	70.0	35.0	40.0
N	5	9	14	2

Fig. 5 Quantities of Fresh Cassava Sold at Outlets Per Season



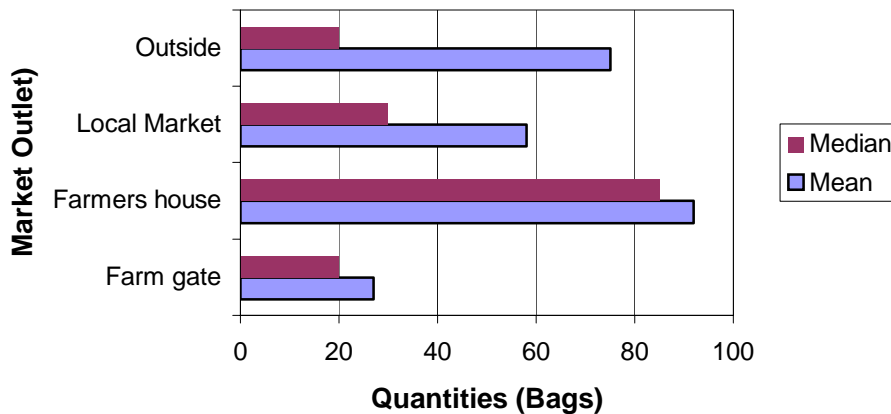
3.2.5 Quantities of Processed Cassava Sold at Outlets

The highest mean and median quantities (92 and 85 bags) of processed cassava sold by farmers were at the farmers' house. While the lowest quantities (27 and 20 bags) were at the farm gate. The quantities are presented in table 7 and figure 6.

Table 7. Quantities (in bags) of Processed Cassava Sold at Outlets

Measure	Farm gate	Farmers house	Local Market	Outside
Mean	27	92	58	75
Median	20	85	30	20
Min	1	15	6	4
Max	60	1200	500	200
N	3	18	21	3

Fig. 6 Quantities of Processed Cassava Sold at Outlets



Two-thirds of farmers said they sold not less than two-thirds of their produce before the following season and the other third were able to sell about half of their produce before the same period. Table 8 shows the proportions of cassava farmers are able to sell before the next season.

Table 8. Percent of Crop (Cassava) Sold Before the Next Season

Percentage Sold	Frequency	Percent
50	22	33.3
67	5	7.6
75	14	21.2
100	25	37.9
Total	66	100

Home consumption of cassava was cited by majority of farmers (66% of farmers) as the reason for their inability to sell all their cassava before the next season. About a third of respondent (29%) also gave low market price or no market as reason for inability to sell all their produce before the next season. Lack of processing facility appeared to be the least mentioned reason for inability of farmers to sell all their produce as only 5% of the respondents (41) mentioned that. Table 9 presents the number of farmers who gave the various reasons.

Table 9. Reasons for Inability to Sell all Produce Before Next Season

Reason	Frequency	Percentage
Low market price/ no market	12	29
Home consumption	27	66
No processing facility	2	5
Total	41	100

Of the 66 farmers interviewed 57 (86.4 %) belonged to a farmer's group (see table 10).

Table 10. Membership of Farmer's Group

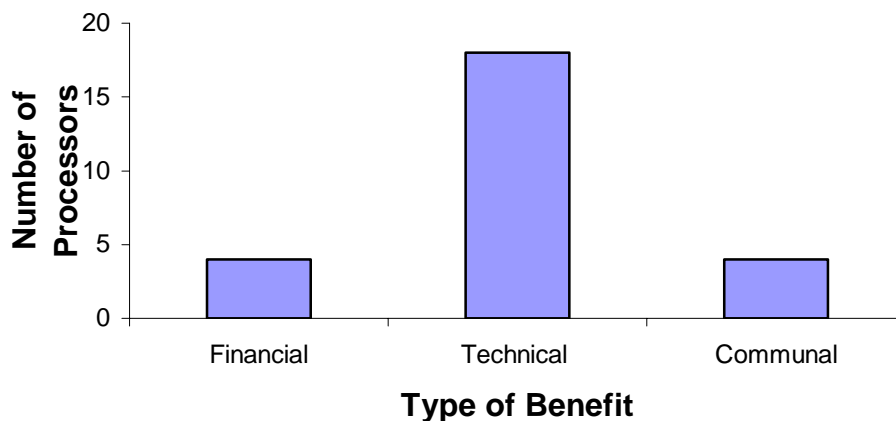
	Frequency	Percent
Non-member	9	13.6
Member	57	86.4
Total	66	100.0

3.3 Processors

Forty-five percent (45%) out of 97 respondents (processors) belong to processing associations while the rest (55%) did not.

Of the 45% who stated that they belonged to associations, 57% indicated that they received some benefits by virtue of their membership. These benefits include financial assistance or credit, technical assistance and assistance from other members of the association (communal). Figure 7 gives the break down of the frequencies of persons receiving a particular type of help.

Fig. 7 Number of Processors Receiving Benefits



3.3.1 Scale of Bread Production

Majority (53%) of bakers used up to 5 bags of High Quality Cassava Flour in their production in a month. An additional 26% of bakers used between 6-10 bags of flour. The other 21% of bakers (4) used over 10 bags as shown in Table 11.

Table 11. Scale of High Quality Cassava Flour Use in Bread Production

Bags per month	Frequency	Percent
1-5	10	53
6-10	5	26
over 10	4	21
Total	19	100

Other products processed include cakes, sweetbud and bofrot. Seven processors produced sweetbud while ten processors produced bofrot. While all processors of sweetbud used

between 1-5 bags of flour per month, majority of bofrot producers used between 1-5 bags. Only two respondents reported that they produced cake and they both used 1 and 5 bags per week.

3.3.2 *High Quality Cassava Flour and Kokonte Processing.*

Fifteen respondents indicated that they processed High Quality Cassava Flour. This number was just about 27% of the respondents (56) that indicated that they processed Kokonte. The mean quantities of High Quality Cassava Flour and Kokonte processed were 14 bags and 81 bags respectively. These quantities are as shown in table 12.

Table 12. Quantities Of High Quality Cassava Flour and Kokonte Processed.

Measure	High Quality Cassava Flour (Bags)*	Kokonte (Bags)
Mean	14	81
Median	13	40
Min	4	8
Max	30	1200
N	15	56

Note: * indicates a bag of 110 kilograms

3.3.3 *Bakers and Confectionery Makers.*

Most of the end-users of High Quality Cassava Flour use it in making bread, sweatbud, bofrot and meat pie among others. As at the time this survey was conducted, most of the end-users were not getting the High Quality Cassava Flour for use in their production. The records obtained on this were based on the last time they used it. Meanwhile they all expressed the willingness to use the product since this gives them higher profit margins. Though a few bakers have complained about the bread quality further questioning revealed that these particular bakers were not using the correct mix ratio because they wanted to make unreasonably high returns.

3.4 Comparison Of Target Communities And Non-Target Communities

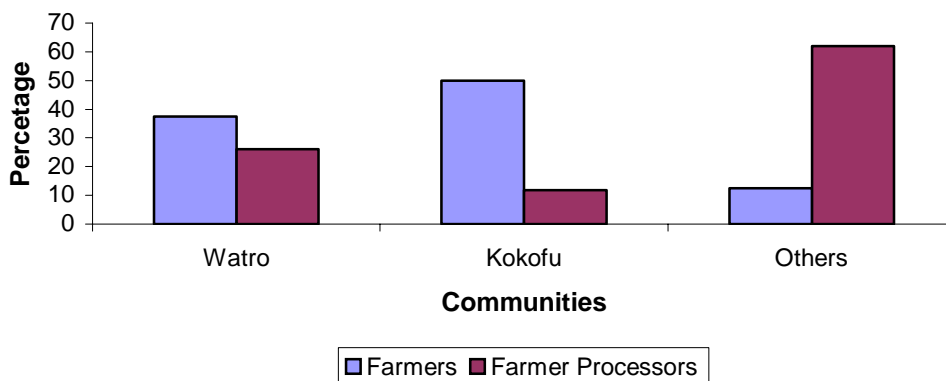
The discussions here concentrated on farmers and farmer-processors, since this is the category of people at whom the interventions of training in High Quality Cassava Flour processing and Glucose Syrup production were targeted. Comparisons are between communities that have or will receive interventions and those that did or may not receive.

The number of farmers and farmer-processors in the various communities are as shown in Table 13. Figure 8 also indicates the proportion of all respondents in a community who were farmers only or farmer-processors. In the target communities, Watro and Kokofu, the proportions of farmers interviewed were higher than farmer-processors. The reverse was the case in the other (non-target) communities.

Table 13. Number of Farmers and Farmer-Processors Interviewed in the Various Communities

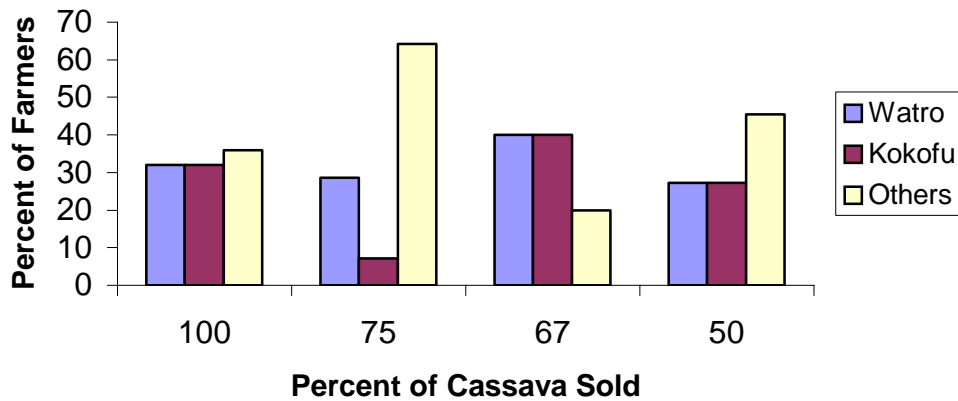
	Watro	Kokofu	Others	Total
Farmers	9	12	3	24
Farmer-Processors	11	5	26	42
Total	20	17	29	66

Fig. 8 Distribution of Farmers and Farmer-Processors in Communities



The proportion of farmers in the various communities selling all (100%) of their cassava before the next season was about the same (32-36%). No clear patterns appeared among respondents selling three-quarters, two-thirds and one half of their produce.

Fig. 9 Percentage of Farmers Selling Various Proportions of Cassava before the Next Season



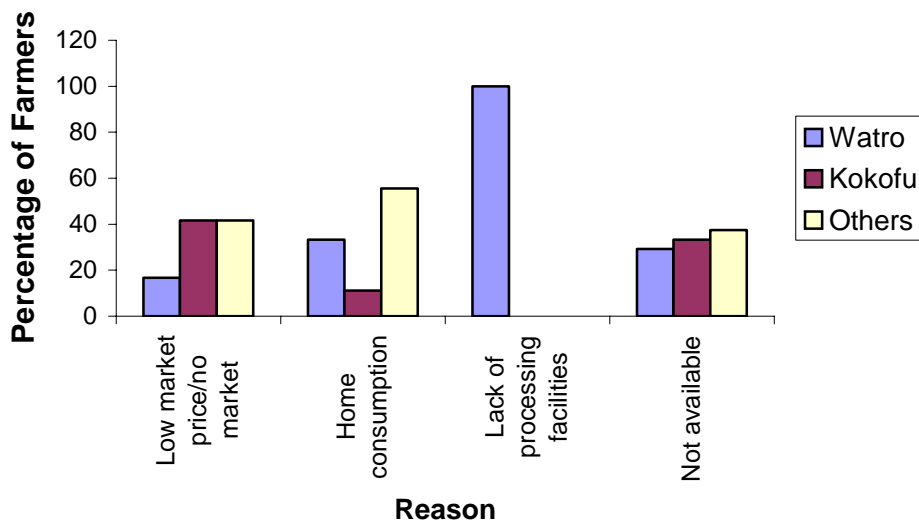
Currently farmers who are engaged in High Quality Cassava Flour processing can be found only in Watro (see table 14).

Table 14. Number of Farmers Engaged in High Quality Cassava Flour Processing

Number	Watro	Kokofu	Others	Total
Processors	14	0	0	14
Non-Processors	6	0	0	52
Total	20	0	0	66

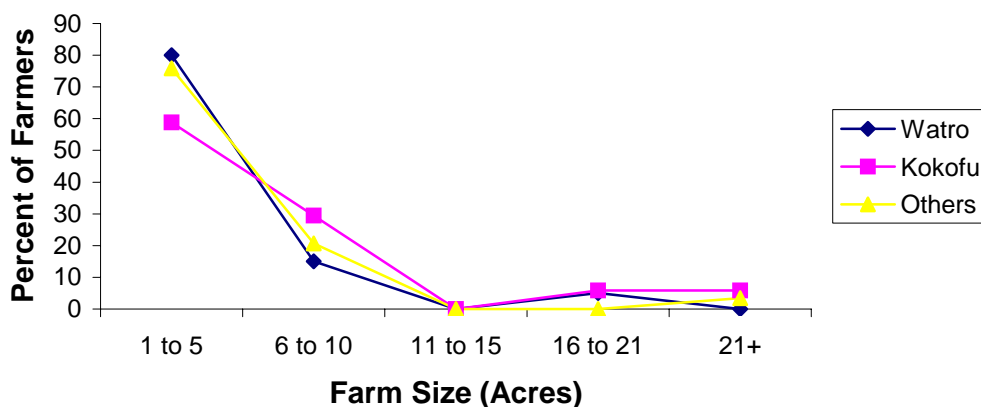
While various proportions of farmers in the various communities gave reasons like low market price, and home consumption as reasons for their inability to sell all their produce before the next season, only those from Watro cited no processing facility as a reason (fig. 10). This is because they are the only community provided with this facility, which is also with low capacity and has to under go regular repairs.

Fig. 10 Reasons for Inability to Sell/Processed All Cassava Before Next Season



The patterns in the proportion of farmers in the target and non-target communities operating various farm sizes appeared the same (fig. 11). The majority (59-80%) of farmers had farms sizes of between 1-5 acres

Fig. 11 Farm Sizes in Target Communities and Non-Target Communities



3.5 CURRENT LIVELIHOOD STATUS

Donations at funerals was considered to be a factor that is directly linked to the individuals level of income. This was therefore used as an objective measure of the current livelihood status of the respondents. About 93% of respondents normally made funeral contributions ranging between ₦1000 and ₦10,000 and the amount contributed by majority of respondents (56.1%) was ₦5,000. Table 15 shows distribution of the levels of funeral donations by respondents.

Table 15. Amount Donated at Funerals

Amount (₦)	Frequency	Percent
1000	3	3.1
2000	6	6.1
5000	55	56.1
6000 -10000	27	27.6
Over 10,000	7	7.1
Total	98	100.0

4.0 CONCLUSION AND RECOMMENDATION

Farmers, processors and end-users of High Quality Cassava Flour are organised by belonging to their respective associations and therefore able to obtain certain benefits from the association. They have all benefited from technical advice whilst few have also benefited from various kinds of financial assistance. The respondents were very co-operative and hence a very successful survey was carried out. However, the following recommendations are made.

1. The supply base for the High Quality Cassava should be expanded so that the end-users can get it as and when they need it.
2. A few training sessions for end-users on the mix ratio of the HQCF and Wheat Flour would go a long way to help the few bakers who were profit-driven too much and ended up using a wrong mix ratio.
3. Soft loans given to the respondents would enable them to expand their production
4. The processing facilities provided for the targeted communities have a very low capacity. In other to sustain the supply base for the HQCF and if possible widen the scope of end-users, these facilities would have to be expanded.

5.0 APPENDIX: SAMPLE OF QUESTIONNAIRE USED FOR THE SURVEY

QUESTIONNAIRE: DFID/CPHP/FRI ‘Sustainable uptake of Cassava as an Industrial Commodity’ Project

This survey is being carried out to determine the livelihood status of Farmers and Small-Scale Processors.

1. Questionnaire No: 2. Interviewer:
3. Town/Village:.....
4. Date of Interview:.....
5. Name:
6. Age:..... 7. Sex: Male/Female
8. Marital Status:
9. Educational Background:
10. Main Occupation:.....
11. How many children (Under 18 yrs) are you taking care for?.....
12. How long have you been farming?
13. What is the size of your cassava farm?
14. How many farm hands do you currently hire?.....
15. How much do you pay them (farm hands) in a day?.....
16. Where do you sell your cassava?.....

Code: 1 = Farm Gate, 2 = Farmer’s House, 3 = Local Market, 4 = Outside, 5 = Others (Specify)

17. Form in which cassava is sold

Outlet for Cassava	Quantity of Cassava sold		Unit Price for Cassava	
	Fresh	Processed	Fresh/50kg	Processed/50kg
Farm/Factory Gate				
Farmer’s House				
Local Market				
Outside				
Others (Specify)				

18. What percentage of your cassava are you able to sell/process before the following farming season?.....
19. Reasons for inability to sell all the cassava?

-
20. Do you have a farmer's Co-operative Union? Yes/No
21. If yes, what benefit do you derive as a member?.....
-
22. What is your source of drinking water at home?.....
23. Do you belong to any Processing Association? Yes/No
24. If yes, what benefit do you derive as a member?.....
-

25. Nature of processing

Type of Product	Scale of Processing	Source of Cassava	Peak Season Unit Price /50kg	Lean Season Unit Price /50kg	Qty Produced per day or per week	
					Peak	Lean

Codes: 1= Farm Gate, 2= Farmer's House, 3= Local Market, 4= Outside Market, 5= Others (Specify)

26. What is the means of transport to and from your plant location and source of raw material (cassava):.....
27. In your view, how effective is the processing technology (In terms of production, recovery and quality)?.....
28. Do you have any problem with the use of the technology? Yes/No
29. If yes, please describe the problem:
-
-
30. What do you think can be done to improve the level of effectiveness of the technology?
-

31. Average weekly composition of your labour force for various activities

Activity	Permanent Labour			Casual Labour (Indicate cost/man-day in bracket)		
	Adult Male	Adult Female	Children Under 18yrs	Adult Male	Adult Female	Children Under 18yrs
Sourcing for Raw Material						
Processing						
Marketing						
Others (Specify)						

32. Marketing

Product	Outlet	Type of Buyer	Reasons for choice of Outlet	Qty sold per day/week		Selling Unit	Unit Price	Losses if Any
				Peak	Lean			

Codes:

Outlet: 1= House Based, 2= Local Daily Market, 3= Market Days only, 4 = Others (Specify)

Type of Buyer: 1 = Consumer, 2 = Trader, 3= Others (Specify)

Reasons for Choice of Outlet: 1= Good Price, 2= Reliable Customer, 3= Accessibility, 4= Others (Specify)

33. What kind of loans are available to you?.....
- Codes: 1= Bank Loan, 2= NGO's Loan, 3= Susu Loan, 4= Family Loan, 5= Loan from Individual,
6= Others (Specify)
34. Which of these loans have you benefited from?
- Codes: 1= Bank Loan, 2= NGO's Loan, 3= Susu Loan, 4= Family Loan, 5= Loan from Individual,
6= Others (Specify)
35. Did you face any difficulty in paying back the loan? Yes/No
36. If yes, explain the difficulty.....
-
37. How do you entertain yourself after a day's work?.....
38. How frequently do you entertain yourself?.....
39. How often do you attend funerals/social gatherings?.....
40. How much do you usually pay as funeral levy?.....
41. Is there anything you would like to tell us? Yes/No
42. If yes, mention them
-
-