

PrOpCom

Making Nigerian Agricultural Markets Work for the Poor

Monograph Series # 10

Ofada Baseline Survey

Submitted By

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Final Report on the

***Ofada* Baseline Survey**

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LIST OF ACRONYMS

ADP	Agricultural Development Programme
FGDs	Focus Group Discussions
Ha	Hectares
HH	Household
HIV AIDS	Human Immunodeficiency Virus / Acquired Immunodeficiency Syndrome
JSS	Junior Secondary School
KIIs	Key Informant Interviews
LGAs	Local Government Areas
M&E	Monitoring and Evaluation
MT	Metric Tonnes
NERICA	New Rice for Africa
NNF	New Nigeria Foundation
NPK	Nitrogen Phosphorus Potassium
OSADEP	Osun State Agricultural Development Project
PrOpCom	Promoting Pro-Poor Opportunities through Commodity & Service Markets
RIFAN	Rice Farmers Association of Nigeria
SPSS-DE	Statistical Package for the Social Sciences Data Entry
SSS	Senior Secondary School
ToR	Terms of Reference
WARDA	West Africa Rice Development Agency

EXECUTIVE SUMMARY

By a letter dated 1st of December 2006, the New Nigerian Foundation was commissioned to carry out a baseline survey of Ofada rice production in Ogun state. The study is designed to cover clusters of local rice producers who are growing Ofada rice variety in Lagos, Ogun, Osun and Ekiti states.

The significance of Ofada rice derives from its wide acceptability among the local people, its growing popularity across the strata of the society and the widening employment opportunities it is creating in the local communities. The target of the study is to make the production of the commodity more profitable to those engaged in it from the farmers, to the parboilers, millers and the marketers. Strategies adopted for the study included focus group discussions (FGDs), key informant interviews (KIIs), case studies where necessary, and enumerative survey of farmers, parboilers, millers and traders in the producing communities. This report presents the activities and findings in the implementation of the baseline survey, which includes key informant interviews, focus group discussions (FGDs), and enumerative survey carried out in the 4 focal States of Ogun, Lagos, Osun and Ekiti.

In all, a first set of 26 initial FGD sessions were held for farmers, parboilers, millers and marketers; a total of 570 questionnaires were administered across the 4 States with 329 (58%) questionnaires administered on farmers, 100 (17%) on parboilers, 61 (11%) on millers, and 80 (14%) on traders; and a second set of 15 FGDs for farmers, parboilers, millers and traders/marketers. A team of two researchers conducted the initial FGD sessions in each of the sites between December 7 and 10, 2006. For the enumerative survey, a total of 8 enumerators were engaged for Ogun State, and 4 each for Lagos, Osun and Ekiti States. The enumerative survey was carried out between December 11 and 19, 2006. The second set of FGD sessions were carried out between January 11 and 16, 2007. Mobilization of the rice farming communities was undertaken with the assistance of ADP extension workers and local chiefs in all the 4 States. Individuals for the KIIs and case studies were identified during the FGDs.

The study revealed the following:

Rice Cultivation

Planting is influenced by the onset of the rains mostly taking place in March and April and harvesting is done three to four months later. Farm sizes devoted to the crop ranged from 1 to 12 hectares. The modal size is 2 hectares; the average size is 4.6 hectares and more than 82% of the farmers crop between 1 and 5 hectares.

- In Ogun state, which is the core state for Ofada rice production, farmers are in rice business because it is an inter-generational business, it is profitable, and bulk income can be derived from sale of products. The reasons in other sites are similar. Other stakeholders – parboilers, millers and traders – feel the same way. In addition, the predominance of rice farming in the communities attracts these other stakeholders. They would disengage from the business if it becomes unprofitable although this is unlikely.
- Farmers in Ogun state would continue in Ofada rice business as long as it remains profitable. If they have more financial resources they would plant more hectares of the crop. In other sites, the opinion is similar. Other

stakeholders would also continue the business as long as there is demand for Ofada rice. Nothing will stop some people from continuing with the business.

- Ofada is the most commonly grown variety of rice in Ogun state rice growing communities. Some communities have tried NERICA but discontinued its cultivation because of poor demand for it. In Osun and Ekiti states, “Igbemo” white and red are grown. It appears that these are just varieties of Ofada. In Lagos State, the Ofada variety is the most commonly grown, parboiled, milled and traded.
- Generally, farmers have access to family labour - male and female (adult and children). Adult female and male members of the household are generally more important in providing the required labour for farming activities. However, many operations require more than the available family labour hence the need for hired labour and mechanisation by some farmers.
- The cost of hiring labour varies from one State to the other but the average daily rate is about N500 (~£2).
- Bird scaring is identified as the most labour intensive and most problematic activity in rice cultivation.
- Fertilizers are generally available and N.P.K. was frequently mentioned by most of the respondents (70% in Ogun State). The average cost of the fertilizer is ₦ 2,473 (~ £10) per 50kg bag. About 95% of farmers across the 4 States indicated that local seeds are readily available. Improved varieties of rice are also available but not commonly grown. About 88% of farmers purchase seeds locally. Agro chemicals, such as 2,4,D, orizoplus and Primextra are readily available but only about 50% farmers can afford them. Although there are accredited dealers of agro chemicals, fertilizers and seeds, 78% of Ogun State farmers purchase inputs from the open markets as the inputs can be purchased in smaller, affordable units.
- About 95% of the farmers do not have access to credit facility and when they do, conditions are generally not favourable as interest rates are said to be very high. However, support sometimes comes from advance payments made by buyers before the harvest season.
- There is evidence that extension officers go to the fields to assist rice farmers in various ways to improve productivity on their farms. The extension officers also train farmers in new technologies for rice production. Some farmers (less than a quarter of those interviewed) indicated that they had received training in such aspects as planting techniques, rice spacing and fertilizer application. Those trained indicated that the services were effective and provided free. About half of the farmers interviewed claimed to have used improved farming technologies for rice cultivation introduced to them and of this, only about half believe that they make more money from using such technologies.
- Labour for the various activities in rice farming is recognized as the highest and most important area of cost. It is also considered a major challenge by about 80% of the farmers. Another area of considerable challenge is irrigation facilities to enable farmers plant more than once a year.
- The average yield per ha is about 1.5 tonnes of paddy rice.
- Challenges for rice farming in Ogun state include bird scaring, pests (monkeys, grasscutters), unpredictable rainfall pattern, expensive fertilizers and agro-chemicals and threats from cheaper/better quality imported rice. Money for the purchase of inputs and absence of government support are

also challenges in other areas outside Ogun state. These are also true of the other Ofada clusters.

Parboiling

- Almost all the parboilers are processing for commercial purposes and they use whole drums, half drum (a whole drum cut into 2 halves), and aluminium pots as parboiling instruments.
- The mean fees charged to parboil a 50kg bag of paddy at peak periods is N170 (< £1) while about N150 (< £1) is charged during the off peak period.
- More than 95% of the parboilers do not hold the commodity for more than 4 weeks, about 57% of them hold the commodity for one week or less while the remaining hold it for 2 – 3 weeks.
- About 17% of the respondents reported that there are opportunities for credit facility; however, only 2% claimed to have access to the facility. Most of the respondents (about 79%) agreed that there is a quality product of the commodity.
- Challenges for parboilers in Ogun state include weather (sun and excessive rains), having to buy paddy on credit, lack of water for boiling and high labour cost. In addition to these, pests and absence of government support are important in other sites.

Milling

- Milling is done as a service provided to farmers or parboilers and the service is charged based on the quantity of milled rice
- Additionally, rice millers have to provide storage facility before or after processing. Majority (76% in Ogun) of the millers have one milling machine each which is operated with a Lister or Dorman diesel engine as prime mover.
- About 90% of the milling machines used have been in use for between 11 and 35 years and in some cases were inherited from parents who had been in the rice milling business.
- 97% of milling machines were bought at a price range of N100,000 (£400) to N140,000 (£560) and were procured from Akure. 82% of millers in Ogun State also claim to use polishers. They are aware of new technologies in rice milling but will require some credit to be able to acquire such technologies.
- 93% of millers hire non-household labour at N200 (£0.8) to N600 (£2.4) for male and less than N200 (£0.8) to N300 (£1.2) for female labour. Labour rates for male and female are very different because intensity of activities are different (men tend to do more labour intensive activities)
- About 76% of them operate between 7 and 12 hours a day for at least 11 days a month at a fee that is not dependent on the rice variety but averaged at N730 (£3) per 50kg of rice. They process up to 164 tins (a tin is about one sixth of a bag) a day during the peak period. During the off season, less time is spent milling and the cost of milling reduces to N560 (~£2) per 50kg of rice with a daily turnover as low as 38 tins.
- 93% of millers engage in active rice milling activities for at least 6 months in a year and about 75% of them actively mill rice for at least 10 months in the year. In a season, about half of the millers process more than 200 bags of

50kg while 25% of the respondents process less than 50 bags of rice in a season.

- 66% and 59% of respondents reported machine maintenance and fuel respectively as the major areas of cost in milling.
- Challenges for millers are nearly the same for Ogun state and the other states. The most important include shortage of fuel (diesel), low off season patronage, mechanical faults and obsolete equipment. Another major challenge encountered by most of the millers is the presence of stones in rice.
- Most millers (72%) have not had any support from their association in dealing with any of the challenges.

Trading

- Traders generally prefer to display high grade rice for sale as there is limited market for lower grades. In general, “quality” is the prime factor influencing the choice of rice to sell.
- 77% of the traders interviewed in Ogun State and 100% in the other 3 States can be classified as small scale traders.
- Market prices vary slightly from one place to the other. In Ayiwere, Ogun State, a 25kg of paddy costs about ₦ 3,500 (£14). In Ifo community also in Ogun State, the finished rice costs up to ₦ 3,500 (£14) per 20kg. Averagely, a tin measure (*Garawa*) of processed rice is between ₦ 2,500 (£10) to ₦ 3,500 (£14) in *Erin-Ijesa* community, Osun state. The minimum price for processed rice in *Erin Ijesa* in 2006 was ₦2,500 (£10), while it was ₦ 2,400 (~£10) in Igbemo.
- Prices of high grade rice (white, without stones or husks) range from N10,500 (£42) to N12,000 (£48) per 50kg bag, while lower quality rice attracts a price range of N7,500 – N9,000 (£30 – £36) per bag.
- Rice is stored mainly in bags, average bag size being 50kg.
- Traders are assisted by their spouses and friends. 58% of Ogun State traders have more than 5 of their household members helping in one way or the other in the business. In many instances between 1 and 5 members of the households are engaged in other employments apart from rice trading.
- Traders get most of their supplies from farmers and millers. Traders buy from mills and some farmers take back their commodity to sell after milling.
- Number of bags traded per day during the peak season range between 2 and 20 with an average of about 6. During off season periods, number traded range between 2 and 15 bags with an average of 5.6 bags.
- A sizeable proportion of rice is sold within the communities. Majority of traders however sell outside the community (36% of in Ogun State, 62% in Lagos, 73% in Osun & 85% in Ekiti).
- Poor financing is one of the constraints mentioned by traders, and this is partly due to poor access to credit facilities.
- The most important health issue raised by the traders is inadequate, sometimes absence of shades in the market places where they display their commodity. This exposes the commodity to dust and the sellers to excessive sun which may produce adverse health effects.
- Some of the challenges facing the traders include: lack of credit facilities, reduced demand during off-peak periods, poverty, importation of cheap rice, rising demand for Ofada from outside the locality which creates competition

during off season (October to July) and weather. There are also challenges associated with transport and handling.

- A few respondents mentioned water shortage as a challenge while fuel wood shortage and HIV/AIDS were not seen as challenges except in Lagos State.

From the above, it is clear that rice production requires considerable intervention at various stages to improve the value chain. Farmers need support for profitable investment in and maintenance of their farms. Parboilers need to be strengthened to be able to buy paddy and traders need credit facility to help them buy competitively from the farmers/millers.

1. Introduction

PrOpCom intends to implement an Ofada rice catalytic activity in Ogun state, which would contribute to removing constraints to efficient market operations and linking market actors to work together and serve one another on a sustainable basis. Ofada rice is traditional rice that has long been produced in the Ofada region of Ogun State. It has recently become popular as specialty rice often served at parties and other status events by the Lagos elites, sold in fast food restaurants, and sold in ½ kg boxes by marketers in Lagos. There is not a clear consensus as to what constitutes Ofada rice, and the project is in the process of implementing several surveys to answer that question. However, Ofada rice is usually a short-grain that is sticky when cooked and it has an aroma, perhaps in part a natural aroma of the rice variety(ies) used, but also an odour of fermentation that comes from soaking the grain for 3-4 days before parboiling. It is often served in a large leaf, reminiscent of past traditions, such that eating Ofada rice is in part a cultural experience.

Ofada rice is not the only rice produced in the Ofada area. Other varieties are grown and not all of the rice grown is subjected to the long soaking period necessary to achieve the desired degree of fermentation found in Ofada rice. In fact, some marketers would seem to indicate that the demand for non-aromatic Ofada rice (not exposed to a long soaking and fermentation) may be as great as for the fermented, aromatic type. Some farmers who produce Ofada rice also produce other types while some are solely Ofada rice producers

PrOpCom plans to establish a Monitoring and Evaluation (M&E) system that uses multiple approaches. Recent experience indicates that secondary data is rarely available in a form that allows direct comparisons that would measure progress toward achievements of objectives and targets indicated in the project log frame. PrOpCom will therefore monitor inputs and outputs from its activities in a number of ways. All project staff will be involved in monitoring activities and it is envisaged that all contracts with project facilitators and service providers will contain clauses requiring that they provide feedback to the project on the activities in which they are involved. Participatory monitoring and assessment activities will be implemented with partners and participating stakeholders in the project activities.

As a first step, PrOpCom is implementing a survey of Ofada rice activity in Ogun State, which will provide the baseline against which progress towards project objectives and targets identified in the project log frame is measured. This report covers the activities and findings in the implementation of this survey. Specifically, it covers key informant interviews (KIV), focus group discussions (FGDs), and enumerative survey carried out in the 4 focal States of Ogun, Lagos, Osun and Ekiti.

2. Methodology

The study was carried out by a team comprising of an Overall Team Leader and 6 teams of Researchers who were also supervisors and research assistants/data analysts. Two of the teams handled Ogun state while a team each handled Lagos, Osun and Ekiti states. The sixth team undertook data coding and analysis. Each team was made up of a Researcher/supervisor and 4 research assistants/enumerators in the case of the data collection groups and a

Researcher/supervisor and 4 data coders in the case of the data analysis group. In implementing the study, a number of approaches and techniques were incorporated including purposive sampling of the target population for the administration of semi-structured questionnaire; focus group discussions (FGDs), key informant interviews (KIIs) and case studies. The techniques used were complimentary to each other. Whatever was not clear for example, from the administration of semi-structured questionnaire was obtained with the FGD and KII. Case studies were undertaken on a few key role players in the different groups targeted by the project to obtain a profile of Ofada rice value chain from the different target groups.

2.1. First Set of FGDs

The study groups undertook initial visits to communities to discuss the purpose of the study and obtain consents from the various target groups for the various activities planned for the study. The visits were also helped to determine suitable venues and times for the meetings in each of the four states. The initial visits also facilitated meetings with the ADP staff, Rice Farmers Association of Nigeria (RIFAN) in each area as well as with community/village leadership. These initial visits took place on December 5 and 6, 2006. Selected key informant interviews (KIIs) were also held to elicit information from stakeholders that might be helpful in guiding discussions during the FGDs.

A higher number of FGDs and KIIs were conducted in Ogun State among the target groups i.e. farmers, parboilers, millers and traders than the other three states. The number of FGDs in Ogun state was twice those of the other three States.



Figure 2.1: An FGD Session for Farmers at Ayiwere Village, Ogun State

Focus group discussions were held with the various target groups. Efforts were made to ensure that discussions were inclusive as every member of each group was given opportunity to contribute to discussions. The FGDs were conducted between

December 7 and 10, 2006 by a team of two researchers in each of the communities. Each session lasted an average of about 2 hours. In all, 26 FGD sessions were held with farmers, parboilers, millers and marketers as shown in Table 2.1.

Table 2.1: Number of FGDs held in the four states

	Farmers	Parboilers	Millers	Marketers	Total
Ogun	4	2	2	1	9
Lagos	2	2	0	1	5
Osun	2	2	1	1	6
Ekiti	2	2	1	1	6
Total	10	8	4	4	26

2.2. Enumerative Survey

The enumerators' conducted survey focussed on farmers, processors (both parboilers and millers) and traders/marketers participating in rice activities in Ogun, Lagos, Osun and Ekiti States. The survey was carried out in the same local government areas where the focus group discussions and key informant interviews were held. The respondents were those involved in the production, processing and marketing of Ofada rice.

a. Preparing for the survey

In preparing for the survey, all the supervisors were trained in the strategy for the administration of the semi-structured questionnaire prepared for the study by PrOpCom. The training included a guided study of each question in the questionnaire to ensure uniform interpretation by researcher. It also included an exposition on the methods for selecting respondents as well as general conduct during the survey. The training took place at the Lagos office of NNF on December 9 2006. The joint training also offered an opportunity for a revision of the instruments to be used for the survey. Many of the questions were restructured to facilitate proper data capturing.

Training sessions for enumerators in the four states were conducted simultaneously on December 11, 2006. The instruments were pre-tested immediately after training and further amendments based on the feedback from the pre-tests were integrated into the instruments. The field teams made regular contacts with the Team leader for clarification of issues as the survey progressed. The field work started on the 12th December and was concluded on 19th December 2006. Data entry was done with SPSS-DE between December 20 and 24, 2006. Data cleaning and analyses followed immediately with the STATA software.

b. Field work

The numbers of respondents interviewed in each state was influenced by the sample size suggested in the ToR for the study. Table 2.2 shows the distribution of the respondents (farmers, parboilers, milers and traders) in the LGAs. In Ogun state, the 151 farmers interviewed were distributed among the five LGAs where rice production is important based on the information provided during the initial visits to the sites on the relative population of rice farmers in each of the LGAs. Thus, while 46 farmers were interviewed in Obafemi Owode, 38 were interviewed in Yewa, 30 in Ewekoro, 20 in Ifo and 17 in Abeokuta North LGAs. In Lagos about equal numbers of farmers were interviewed in Epe and Ibeju-Lekki LGAs, while in Ekiti and Osun

states, 60 and 59 farmers were interviewed respectively in each of the relevant LGAs. A total of 570 questionnaires were administered across the 4 States with 329 (58%) questionnaires administered on farmers, 100 (17%) on parboilers, 61 (11%) on millers, and 80 (14%) on traders.

Table 2.2: Distribution of respondents by LGA

S/N	State	LGA	Number of respondents			
			Farmers	Parboilers	Millers	Traders
1.	Ogun	Obafemi/Owode	46	8	1	8
		Yewa	38	6	0	0
		Ewekoro	30	13	6	6
		Ifo	20	9	16	9
		Abeokuta North	17	6	6	8
2	Lagos	Epe	28	10	5	10
		Ibeju-Lekki	31	9	0	11
3	Osun	Oriade (Erin-ljesa)	59	20	15	15
4	Ekiti	Ifelodun (Igbemo)	60	19	12	13
Total			329	100	61	80

A purposive inclusion approach was used to include farmers into the sample. This meant interviewing ascertained Ofada rice farmers who could be reached at the time of the survey. The exercise lasted 4 to 6 days in the various locations and many of the interviews had to be conducted late in the evening when farmers returned from their farms. The situation was the same for parboilers. Those interviewed were the ones that were available during the study. Most parboilers had some engagements, such as helping on the farms, which took them away from home for most of the day. The exceptions were those who stayed home to dry already parboiled rice.

There were not many millers in the various sites. Indeed, in one of the sites, only one milling centre existed. Consequently, the study teams interviewed all the millers that could be located in the areas selected for the survey. The number of the respondents interviewed in each state followed the figures provided in the TOR. In Ogun state, 29 millers were interviewed in 4 out of the 5 LGAs. In Lagos five respondents were selected in Epe LGA, while 15 and 12 millers were interviewed in Osun and Ekiti states respectively. The highest number of respondents was in Ifo LGA of Ogun state because the state is the focal point of the study. Milling centres were identified by link persons and respondents were selected from the milling centres. The period of the survey was off peak season for millers hence it was not easy to reach the millers as most of them were not in the milling centres. Many interviews had to be conducted at night after the millers returned from their various activities.

The survey team was able to identify more traders/merchants than millers. However, not all traders are actively involved in rice trading at all times so the traders interviewed were mostly those available at the mills or in the markets at the time of the survey. Most interviews took between 60 and 90 minutes.

2.3. Second Set of FGDs and KIIs

The second set of FGDs was planned and conducted primarily to clarify contentious issues in the first FGDs, KII and the enumerative survey. The final FGD sessions were carried out between January 11 and 16, 2007. The visits to the communities for this purpose also facilitated the identification of individuals who could be useful for case studies. The approach of the second set of FGDs was similar to the first. However, the entry point was a sharing of the summary of the findings of the initial FGDs, KII and enumerative survey. In all, 15 FGD sessions were held with farmers, parboilers, millers and traders in the 4 States. The key informant interviews (KIIs) at this stage were held with key stakeholders including the RIFAN chairman in Ogun State and Dr. Osiname, a consultant to PrOpCom among others.

Table 2.3: Number of 2nd Set of FGDs held in the four states

	Farmers	Parboilers	Millers	Marketers	Total
Ogun	2	1	1	1	5
Lagos	1	0	0	1	2
Osun	1	1	1	1	4
Ekiti	1	1	1	1	4
Total	5	3	3	4	15

3. Background Information on Respondents

The major stakeholders in the Ofada rice value chain in the four target states are farmers, parboilers, millers and traders. Farmers in the target LGAs and communities cultivate several varieties of rice but Ofada remains the most important variety cultivated. Farming operations in these communities include land clearing, ploughing, harrowing, broadcasting/planting, weeding, bird scaring, harvesting and threshing. The threshed paddy is then parboiled, milled and then marketed to consumers. Stakeholders in the Ofada rice chain are facing peculiar and sometimes serious challenges that hinder the smooth operation of the chain from the farmer to the consumer. This section presents socio-demographic data on these stakeholders.

3.1 Focus Group Discussions and Key Informant Interviews

Background data on participants at the FGDs and KIIs in the four states is presented in Table 3.1 for farmers and Table 3.2 for parboilers, millers and traders/marketers. The FGDs with farmers had between 10 and 25 persons in each group with participation of significant numbers of women only in Ogun state. The ages of participants in the FGDs were between 20 and 80 with average ages being mostly in the 40s. Most of the farmers who took part in the FGDs had lived most of their lives in the communities and had been involved in rice cultivation most of their adult lives.

Table 3.1: Background information on farmers who participated in the FGDs in the four states

State	Ogun				Lagos		Osun		Ekiti	
	Ayiwere	Ifo	Obada	Ibora	Ise	Ebute Afuye	Erin	Erin	Igbemo	Igbemo
No of participants	25	15	15	16	15	11	12	11	10	10
No of Women in the group	11	5	7	7	4	3	1	1	2	1
Age range (years)	20-80	43-80	35-54	28-70	30-75	35-80	21-80	25-80	34-80	20-75
Average age (years)	43	54	40	42	46	51	39	37	40	35
Years spent in the business	5- 50	7 - 30	6-20	12-55	9-50	18-65	16-45	8-65	10 -50	5 - 60
Years lived in community	5-10	10-30	10-40	10-50			10-35	10-45	10-50	10-70

In most of the communities (with the exception of Igbemo in Ekiti state) parboilers are also traders/marketers of rice and are predominantly women. Millers are however predominantly male and operate as service providers to parboilers. The parboilers, millers and traders who participated in the FGDs were between the ages of 20 and 60 and had spent most of their adult lives dealing in Ofada rice in their respective communities.

Table 3.2: Background information of parboilers, millers and traders involved in FGDs and KIIs

	Ogun		Lagos	Osun	Ekiti
	Ayiwere	Ifo	Ise	Erin Ijesa	Igbemo
Parboilers					
No of participants	13	10	12	10	13
No of Women in the group	13	10	12	10	13
Age range (years)	25-60	30-55	28-50	31 – 50	30—60
Average age (years)	30	35	35	40	45
Years spent in the business	8-40	10-25	5-30	5 - 40	8 - 36
Years lived in community	10-50	10-50	5-40	5-50	10-60
Millers					
No of participants	12	13	1 ¹	10	10
No of Women in the group	0	0	0	0	0
Age range (years)	30-60	35-56	54	25-60	25-50
Average age (years)	38	40		40	35
Years spent in the business	5-25	10-40	25	8-40	5040
Traders					
No of participants	12	13	12	10	10
No of Women in the group	12	13	12	10	10
Age range (years)	33-60	35-50	20-50	25-50	25-45
Average age (years)	35	38	30	30	35
Years spent in the business	15	20	20	25	35
Years lived in community	25	38	25	30	30

Details of the data obtained during the focus group discussions and the informant interviews are presented in Appendix 1.

¹ This was a KII

3.2 Enumerative Survey

i. Farmers

Table 3.3 shows a summary of basic socio-demographic data on Ofada rice farmers interviewed in Ogun, Lagos, Osun and Ekiti states. The data is presented in percentages.

Ogun State In Ogun state, rice farming is a male-dominated venture. This is evident from the fact that more than 80% of the farmers interviewed are married men mostly between the ages of 31 and 60 with an average age of about 51. Most of them had spent their adult lives cultivating rice in their communities. The average number of years spent in rice farming is 24 and more than 20% of the farmers have more than 30 years experience in rice farming. The farmers have little or no formal education. About half of those interviewed had never attended a school, only 6% had full secondary education while less 3% had attended a tertiary institution. Household sizes are typical of Yoruba-speaking areas of Nigeria with sizes between 5 and 15; about 58% of the respondents have household sizes of 6-10. Ofada rice is produced mostly by full time farmers with only few civil servants and retirees involved in the business.

Lagos State Table 3.3 shows that Ofada rice farming is dominated by men in Lagos state. All of the farmers are married and mostly between the ages of 31 and 60 with an average age of about 48. Most of them had spent their adult lives in Ofada rice farming with the average number of years spent in rice business being about 18. A majority of the farmers had attended formal educational institutions with about 10% completing secondary school education, but over 30% of those interviewed had never attended a school and none had tertiary education. The number of persons in each household range from 5 to more than 16 but about 56% of the respondents had households of between 6 and 10 members. Farming is the primary occupation of most of those engaged in Ofada rice cultivation.

Osun State Table 3.3 also shows that men form the majority (76%) of Ofada rice farmers in Osun state. Most of the farmers (78%) were married and are aged between 31 and 60. The average age of the farmers is 45. The modal range of the length of years in rice farming is 11-20 (44%) and the average is 17. About 80% of the farmers attended formal educational institutions with about 20% of them completing secondary education and 5% completing tertiary education. The number of persons in each household is between 5 and 6 but the modal range in which 62% of the respondents fall is 6-10. Farming is the primary occupation of most of those engaged in Ofada rice cultivation (93%). A small proportion of about 7% are civil servants or retirees.

Table 3.3: Background information of farmers who participated in the enumerator conducted survey (percentage of total)

Characteristics	Ogun State (n=151)	Lagos State (n=59)	Osun State (n=59)	Ekiti State (n=60)
Sex of respondents				
Male	81	71	76	92
Female	19	29	24	8
Marital status				
Single	1	0	19	25
Married	96	100	78	75
Separated/Divorced/Widowed	3	0	3	0.
Marriage type²				
Polygamy	48	64	25	33
Monogamy	52	36	75	67
Time spent in rice business				
Less than 5 years	0	10	9	20
5-10 years	13	24	27	19
11-20 years	32	37	44	25
21-30 years	34	15	15	20
31 years and above	21	14	5	13
Mean years spent in rice farming	24	18	17	18
Age of respondents				
20 years or less	1	0	5	7
21-30 years	1	10	17	23
31-40 years	13	22	19	30
41- 50 years	41	31	27	12
51-60 years	33	27	22	23
61 years and above	11	10	10	5
Mean age	51	48	45	40
Level of educational attainment				
None	50	32	20	18
Primary or JSS uncompleted	38	49	39	30
JSS completed/SSS uncompleted	3	7	15	12
Secondary completed	6	12	20	28
Tertiary	3	0	5	12
Number of persons in household				
5 people or less	33	7	27	42
6-10 people	58	56	63	43
11- 15 people	9	27	7	10
16 people or more	0	10	3	5
Number of persons (aged 12-60 years) in the household				
5 people or less	47	32	63	73
6-10 people	46	53	37	27
11- 15 people	7	10	0	0

² For those who were previously or currently married (total n=301, Ogun-149, Lagos-59, Osun-48, Ekiti-45)

Characteristics	Ogun State (n=151)	Lagos State (n=59)	Osun State (n=59)	Ekiti State (n=60)
16 people or more	0	5	0	0
Number of male members (aged 12-60 years) in the household				
5 people or less	88	71	97	92
6-10 people	11	29	3	8
11- 15 people	1	0	0	0
16 people or more	-	-	-	-
Number of female members (aged 12-60 years) in the household				
5 people or less	94	86	95	100
6-10 people	6	12	5	0
11- 15 people	0	2	0	0
16 people or more	-	-	-	-
Primary occupation (%)				
Farming	94	95	93	79
Civil servant	1	0	4	3
Retired/Others	5	5	3	18

Ekiti State As shown in Table 3.3, men form the majority (92%) of Ofada rice farmers in Ekiti state. Most of the farmers (75%) are married and mostly between the ages of 31 and 60, the average age being 45. Most of these farmers had spent the greater part of their adult lives in Ofada rice cultivation. The average length of time spent in Ofada rice farming is 18 years and the modal range is 11-20 years (25%). More than 80% of the farmers had attended formal educational institutions with about 33% completing secondary education and more than 10% tertiary education. The number of persons in each household ranges from 5 to 16 but the modal range in which 43% of the respondents fall is 6 - 10. Farming is the primary occupation of most of those engaged in Ofada rice cultivation (78%). A small proportion of less than 4% are civil servants and close to 20% are retirees.

ii. Parboilers

Table 3.4 shows a summary of basic socio-demographic data on the parboilers interviewed in the four target states. The data is presented in percentages.

Ogun state: In Ogun state, rice parboiling is dominated by married women mostly between the ages of 31 and 50 (65%) who have spent between 5 and 40 years in the business. More than half of them have no formal education; very few (2%) completed their secondary education while none of them had tertiary education. About 57% of the parboilers have between 6 to 10 people in their households and 69% of them have 5 or less family members between 12 and 60 years of age. Almost half of the respondents have parboiling as their primary occupation.

Lagos State: Parboilers in Lagos state are almost equally divided among married men and married women with ages mostly (79%) between 31 and 50. Less than 50% of the respondents have spent between 11 and 20 years in the business, 26% have spent between 5 and 10 years and 11% have spent 21 – 30 years. About 21% have no formal education; very few (11%) completed their secondary education

while 5% had tertiary education. About 53% of the parboilers have between 6 to 10 people in their households.

Table 3.4: Background information of parboilers who participated in the enumerator conducted survey (percentage of total)

Characteristics	Ogun State (n=42)	Lagos State (n=19)	Osun State (n=20)	Ekiti State (n=19)
Sex of respondents				
Male	7	52	15	5
Female	93	48	85	95
Marital Status				
Single	2	0	5	0
Married	91	100	95	100
Separated/Divorced/Widowed	7	0	0	0
Marriage Type³				
Polygamy	41	58	21	37
Monogamy	59	42	79	63
Years spent in rice business				
Less than 5 years	0	11	10	5
5-10 years	26	26	35	32
11-20 years	45	42	45	42
21-30 years	15	11	5	11
31 years and above	14	10	5	10
Mean years spent in rice farming				
Age of respondents				
20 years or less	7	0	0	0
21-30 years	7	0	25	32
31-40 years	29	37	25	37
41- 50 years	36	42	25	21
51-60 years	14	16	20	10
61 years and above	7	5	5	0
Level of educational attainment				
None	52	21	5	21
Primary or JSS uncompleted	43	58	50	42
JSS completed/SSS uncompleted	3	5	35	11
Secondary completed	2	11	5	21
Tertiary	0	5	10	5
Number of persons in household				
5 people or less	38	0	15	32
6-10 people	57	53	55	58
11- 15 people	5	37	25	5
16 people or more	0	10	5	5
Number of persons (aged 12-60 years) in the household				
5 people or less	69	32	25	90

³ Excluding those who are single

Characteristics	Ogun State (n=42)	Lagos State (n=19)	Osun State (n=20)	Ekiti State (n=19)
6-10 people	31	47	55	5
11- 15 people	0	21	10	5
Number of male members (aged 12-60 years) in the household				
5 people or less	98	74	80	90
6-10 people	2	26	20	5
11- 15 people	0	0	0	5
Number of female members (aged 12-60 years) in the household				
5 people or less	93	90	85	100
6-10 people	7	10	15	0
11- 15 people	0	0	0	0
Primary Occupation				
Parboiling	43	0	55	11
Farming	43	95	15	0
Trading	12	0	20	79
Others	2	5	10	10

Osun state More women (85%) are involved in rice parboiling in Osun state. All the parboilers interviewed are married and about half of the women have spent between 10 and 20 years in the business. Respondents that fall in age ranges of 21 – 30 and 41 – 50 are 25% and 25% respectively. Most of these women are married to the rice farmers.

Ekiti State Rice parboiling in Ekiti state is also dominated by women (95%) most who are married to rice farmers. Most of these women have more than 5 years' experience in the business. The ages of the respondents range between 21 and 60. About 80% of the parboilers are also traders.

iii. Millers

Table 3.5 shows a summary of basic socio-demographic data on the millers interviewed in the four target states. The data is presented in percentages.

Ogun State Rice milling is predominantly a male-dominated enterprise in Ogun state. 93% of millers interviewed are married and are between the ages of 31 and 50. More than 80% of them have spent more than 11 years in rice milling business with the mean period in the business being 24 years. About 10% of the respondents have no formal education, 30% completed secondary school education and 10% had tertiary education. About half of the respondents have between 6 – 10 people in their households.

Lagos State: All the millers interviewed in Lagos state were male and married, and mostly between the ages of 31 and 60. 80% had spent 11 years and above in rice milling business with the mean number of years in rice milling being about 27. All the respondents have formal education (primary or JSS uncompleted). More than half of the respondents had between 6 and 15 people in their households, with 6 – 10 people who are between the ages of 12 – 60.

Table 3.5: Background information of millers who participated in the enumerator conducted survey (percentage of total)

Characteristics	Ogun State (n=29)	Lagos State (n=5)	Osun State (n=15)	Ekiti State (n=12)
Sex of respondents				
Male	100	100	100	100
Female	--	--	--	-
Marital Status				
Single	7	0	33	17
Married	93	100	67	83
Marriage Type⁴				
Polygamy	33	100	40	60
Monogamy	67	0	60	40
Years spent in rice business				
Less than 5 years	0	20	33	17
5-10 years	10	0	27	42
11-20 years	41	0	20	25
21-30 years	35	40	7	8
31 years and above	14	40	13	8
Mean years spent in rice milling business	24	27	12	11
Age of respondents				
20 years or less	0	0	13	8
21-30 years	7	0	13	26.
31-40 years	34	20	20	33
41- 50 years	35	20	20	25
51-60 years	10	40	13	8
61 years and above	14	20	20	0.0
Mean age (Years)	46	53	42	36
Level of educational attainment				
None	10	0	0	0
Primary or JSS uncompleted	24	100	53	25.
JSS completed/SSS uncompleted	26	0	20	25.
Secondary completed	30	0	27	25
Tertiary	10	0	0	17
Number of persons in household				
5 people or less	42	0	33	25.
6-10 people	48	20	27	75.
11- 15 people	7	60	27	0
16 people or more	3	20	13	0
Number of persons (aged 12-60 years) in the household				
5 people or less	59	20	40.	58
6-10 people	7	60	27	42

⁴ For those who were previously or currently married (total n=52, Ogun-27, Lagos-5, Osun-10, Ekiti-10)

Characteristics	Ogun State (n=29)	Lagos State (n=5)	Osun State (n=15)	Ekiti State (n=12)
11- 15 people	4	0	33	0
16 people or more	3	20	0	0
No response	27	0	0	0
Number of male members (aged 12-60 years) in the household				
5 people or less	93	20	73	100
6-10 people	7	80	27	0
11- 15 people	--	--	--	--
16 people or more	--	--	--	--
Number of female members (aged 12-60 years) in the household				
5 people or less	100	80	67	92
6-10 people	--	20	33	8
11- 15 people	--	--	--	--
16 people or more	--	--	--	--
Primary Occupation				
Rice Processing	93	20	47	75
Farming	7	80	27	17
Civil servant	0	0	6	0
Retired/Others	--	--	20	8

Osun State All the millers interviewed in Osun state were male with 67% of them married. About 53% of them are between the ages of 31 and 60 and 67% had spent more than five years in rice milling business. Average number of years spent by respondents in rice milling is about 12. All the respondents had formal education with about 27% completing secondary school education. More than 60% of the respondents had between 6 – 15 people in their households and about 40% of them have 5 people or less who are between the ages of 12 – 60 in their households.

Ekiti State All the millers interviewed in Ekiti state were male and 83% of them are married. About 84% of them are between the ages of 21 and 50 with a mean age of 36 years. About 67% of the respondents had spent 5 - 20 years in rice milling with a mean experience of 11 years. All the respondents had formal education while about 17% had tertiary education. All respondents have 10 people or less between the ages of 12 – 60 in their households.

iv. Traders

Ogun State About 80% of the Ofada traders interviewed were married women with 67% between the ages of 31 and 50 (Table 3.6). About 73% of the respondents had spent between 10 and 30 years in rice trading business. About 41% of them had formal education (primary or JSS uncompleted) while 24% had never attended a school. Close to four-fifths (79%) of the respondents have 5 people or less that are between the ages of 12 - 60 in their households. Rice trading is a primary occupation for women in the community

Table 3.6: Background information on traders who participated in the enumerator conducted survey (percentage of total)

Characteristics	Ogun n=31	Lagos n=21	Osun n=15	Ekiti n=13
Sex of respondents				
Male	21	17	27	0
Female	79	83	73	100
Marital status				
Single	6	0	13	8
Married	94	94	87	84
Separated	0	0	0	8
Widow/widower	0	6	0	0
Marriage type				
Polygamy	32	61	20	46
Monogamy	68	39	80	54
Age of respondents				
20 years or less	0	0	7	0
21-30 years	15	17	20	23
31-40 years	29	22	60	31
41-50 years	38	28	13	38
51-60 years	15	22	0	8
61 years and above	3	11	0	0
Years spent in business				
Less than 5 years	9	11	7	15
5-10 years	18	28	53	23
11-20 years	47	33	27	39
21-30 years	26	6	13	23
31 years and above	0	22	0	0
Level of educational attainment				
None	24	22	20	15
Primary or JSS uncompleted	41	56	20	31
JSS completed/SSS uncompleted	21	6	27	15
Secondary completed	9	0	20	23
Tertiary	0	11	0	8
Number of persons in household				
5 people or less	68	22	13	15
6-10 people	29	56	53	62
11- 15 people	3	17	7	23
16 people or more	0	5	27	0
Number of persons (12-60 years) in the household				
5 people or less	79	28	47	54
6-10 people	21	61	40	46
11- 15 people	0	11	0	0
16 people or more	0	0	13	0
Number of male members (12-60 years) in the household				
5 people or less	94	78	66	92

Characteristics	Ogun n=31	Lagos n=21	Osun n=15	Ekiti n=13
6-10 people	0	17	20	0
11- 15 people	0	0	7	0
16 people or more	0	0	7	0
No response	6	5	0	8
Number of female members (12-60 years) in the household				
5 people or less	100	94	86	85
6-10 people	0	0	7	0
11- 15 people	-	-	-	-
16 people or more	0	0	7	0
No response	0	6		15
Primary Occupation				
Farming	6	29	20	0
Trading	79	71	80	92
Processing	15	0	0	0
Others	0	0	0	8

Lagos State: Rice trading is predominantly a female-dominated venture in Lagos state (Table 3.6). About 94% of the traders are married and 72% fall mostly between the ages of 31 and 60. More than 60% have spent between 5 – 20 years in rice trading business. About 22% of the respondents had no formal education while about 56% completed primary school education and 11% had tertiary education. About 65% of the respondents have between 6 – 10 people in their households and more than half (72%) of the respondents have more than 6 people who are between the ages of 12 – 60 years which implies that there are some family members available to participate in the business operations. Rice trading is the primary occupation of all the respondents.

Osun State: Rice trading in Osun state is dominated by women (73%). Most of the respondents (about 87%) are married. About 80% of the traders are between the ages of 21 and 40 and had spent more than five years in rice business. About 20% of the respondents have no formal education while another 20% completed secondary school education. About 53% of the respondents have between 6 and 10 people in their households and about 47% have five people or less who are between the ages of 12 – 60 years. Rice trading and farming are the primary activities of the respondents.

Ekiti State: All Ofada rice traders interviewed in Ekiti State are female with 84% of them married. The ages of 92% of the respondents range between 21 and 50 with 85% having more than 5 years experience in the business. About 31% completed primary school or JSS education while about 23% completed secondary school education. 46% of the respondents have between 6 and 10 people of between 12 and 60 years in their households, 85% of who are female. This distribution may indicate that there is reliable source of labour for labour intensive activities. The primary occupation in this community is rice trading but some of the respondents are also into rice processing (parboiling).

4. Ofada Rice Activities in Ogun State

The natural vegetation in Ogun state ranges from the savanna to the tropical forest with annual rainfall of close to 1500 mm in the north and 1800 mm along the coast. Agriculture is important in the state with rice being a major crop in the five local government areas sampled namely Obafemi/Owode, Ifo, Ewekoro, Yewa North, and Abeokuta Local Government Areas. In these LGAs, rice cultivation has been practiced over several generations and is likely to be sustained as many engage in its cultivation until old age. The reasons adduced for its widespread cultivation are the prospects of deriving bulk income from it at harvest and the fact that it matures within 3-4 months. The type of rice cultivated in Ogun State is upland rice.

4.1. Rice Cultivation

Rice cultivation entails a number of time and labour demanding activities including land clearing, land preparation, planting of seeds, weeding, bird scaring, harvesting and threshing. The data obtained on rice cultivation in Ogun state is presented in Table 4.1. Rice is the most important crop grown by farmers in the LGAs studied. Planting is influenced by the onset of the rains mostly taking place in March and April and harvesting is done three to four months later. Farm sizes devoted to the crop ranged from 1 to 12 hectares. The modal size is 2 hectares; the average size is 4.6 hectares and more than 68% of the farmers crop between 1 and 3 hectares. Cassava, planted either singly or in conjunction with other crops like yam and maize, is evidently the next most important crop.

A CASE STUDY OF AN OFADA RICE FARMER IN OGUN STATE

Our case study is Elder Emmanuel Beyioku. He is in his 60s. Elder Beyioku started as a poultry and pig farmer in 1978. About 8 years ago, some of his friends advised him to move to Ofada rice farming. His farm size is 2Ha though he can only cultivate about half due to lack of funds. Though rice farming has been a little profitable over the years, it has been a case of hand to mouth for Elder Beyioku due to inadequate funds to expand.

Elder Beyioku sells his paddy to women who process it. No outsider comes to buy at the farm. Asked to know whether a person who comes to buy from the farm derives any special benefits for doing so, the farmer answered that a little discount is usually given to the person, taking into consideration the trouble that he or she has taken to reach the farm.

Elder Beyioku sells his paddy immediately it is harvested because he doesn't have funds to go into processing and he has no facility to store the harvested paddy.

Labour to carry out the farming activities is hired. When his children are available, they help out on some of the work on the farm. Elder Beyioku clears his land manually. He uses manual labour for all other processes as well. Elder Beyioku considers land preparation which includes clearing, weeding, burning, packing and planting as the most expensive aspect of Ofada rice farming.

The farmer keeps about two tins of the rice he harvests for family consumption and gift after harvesting. Part of the rice is also kept for planting in the next season. According to Elder Beyioku, Ofada is Ofada, there is no variety and he does not plant any improved variety.

Seasonal Calendar

While Ofada rice activities are carried out throughout the year, the major activities are highlighted in the seasonal calendar provided in Figure 4.1.

Ofada Rice in Ogun State												
	JA N	FE B	MAR	APR	MA Y	JUN	JUL	AU G	SEP	OCT	NO V	DEC

- Land clearing and preparation
- Planting
- Weeding
- Bird scaring
- Harvesting & Threshing
- Processing (parboiling & milling) and Trading

Figure 4.1: Seasonal Calendar for Ofada Rice

Ofada rice varieties: About three main varieties of rice were generally mentioned as being cultivated. These are *Ofada* white, *Ofada* brown/red, and NERICA. However, the *Ofada* varieties are the most widely cultivated with each locality trying to maintain some form of identity in the variety of rice that they grow (e.g. *Ofada* Obada is the *Ofada* variety grown in Obada community). It became clear from the second FGDs that the varieties of *Ofada* mentioned by farmers refer more to the quality of the rice. As a discussant said “*Ofada* is *Ofada*”

Most farmers are unwilling to try other varieties because there is little or no demand for them. The *Ofada* variety is grown for different reasons but about 87% of the farmers mentioned commercial viability as the reason for growing the rice variety. Other major reasons are suitability of the land for rice cultivation (mentioned by 44% of the respondents) and family business handed down by parents (mentioned by 39% of respondents).

Labour utilisation: Generally, farmers have access to some family labour - male and female, adult and children. Adult members of households are generally considered more important in providing labour for farming activities. For example, 99% of farmers reported that adult male members of their households are usually available to help in the various farming operations. Many farm operations in rice cultivation however require more than available family labour hence the need for hired labour and mechanised inputs. Land clearing is the most problematic operation for most farmers because it is physically demanding and can require substantial

financial input particularly for aged farmers who are unable to clear their own farms. Such farmers have to hire labour at rates as high as N800 per day.

Land preparation, which involves harrowing the land twice, is usually undertaken with hired tractors at N5,050 (£20) per hectare for every harrowing operation. About half of Ofada rice farmers in the state use tractors in land preparation while the other half use traditional hoes and cutlasses. The tractors used are hired from government-owned agro service centres and some individual large scale farmers.

Planting is done by broadcasting rice seeds. The seeds are either part of the previous year's harvests or are obtained from the market. Weeding is done twice in the season; the first one involves the use of herbicides while the second weeding is done manually by farmers. Rice is harvested manually by all the farmers with 26% of the required labour provided by family members and the remaining 74% hired. The cost of hiring labour varies from one community to another but the average daily rate is about N376 (£1.5) with daily rates slightly above N500 (£2) frequently indicated. Threshing of harvested rice is done manually and as with harvesting, much of the labour required is hired. However, the household provides up to 43% of the labour required for threshing. The cost of hiring labour for threshing per day is about the same for harvesting.

Bird scaring is generally identified as the most labour intensive and sometimes the most problematic activity in rice cultivation. It involves employing 2 persons at about N500 (£2) per day each to work every day scaring birds away from a farm size of about 1 hectare. This is done for about 30 days before the rice is harvested. About 60% of the farmers interviewed indicated a desire for assistance in dealing with this problem

Farm inputs: Availability of farm inputs such as seeds, fertilizers and agrochemicals is critical in ensuring good harvests. Fertilizers are generally available as indicated by 70% of the respondents. The average cost of fertilizer (NPK) is N2,473 (~£10) per 50kg bag. Most farmers (97%) indicated that local seeds are readily available at an average price of N2,210 (~£10) per bag but the prices range from N900 to N3,500 (£3.6 - £14) per 50kg bag. Improved varieties of rice are common but less than a third of farmers plant them. Most farmers (82%) are able to purchase local seeds but only about half (54%) can afford improved varieties. Agrochemicals, such as 2,4,D, orizoplus and Primextra, are readily available. However, only about 49% of the farmers can afford them. Although there are accredited dealers of agro chemicals, fertilizers and seeds, most farmers purchase inputs from the open markets.

Storage and marketing: Storage of paddy is a critical component of rice production; first as a stop gap between the farm gate and further processing, secondly to prevent damage and post harvest losses, and thirdly to delay sale during the period of glut in the market for greater profit. About 85% of farmers store rice in bags, 65% on mats and 59% in specially reinforced roof ceilings in their houses and 76% believe that the structure in place for marketing their products is good. The major problems mentioned are transportation to the market (mentioned by 38%), and poor pricing (mentioned by 25%). About 19% of the farmers consider middlemen as threats to the proper functioning of the marketing chain. Respondents indicated that standards in terms of the quality of rice produced are important in marketing the

product. The most important characteristics in this respect include cleanliness of product, dryness and wholeness of the grains.

Rice farmers dispose of their harvests in the following ways:

- As pay back to pre-harvest creditors at farm gates.
- At the milling centres, where there are buyers or merchants who buy the processed products from the farmers
- In markets within the community or the neighbouring towns.
- To their spouses for parboiling
- Selling at home particularly for processed or un-milled rice.

Most farmers (more than 80%) have specific merchants to whom they sell their commodity.

Access to credit facilities: Access to credit facilities is important in meeting financial requirements of the various farming operations involved in rice production. When this is lacking, farmers usually find it difficult to achieve good returns from their efforts. In all the rice growing communities, farmers generally have little or no access to such facilities. About 5% of respondents have such access and when they do, conditions are generally not convenient as interest rates are said to be very high. However, some support come from advance payments made by buyers before the harvest season. About 39% of the farmers interviewed claimed to have enjoyed this kind of arrangement.

Extension services: There is some evidence that extension officers provide assistance to rice farmers in various ways to improve productivity on their farms. These include training in new production technologies. However, not all communities have been covered as about 40% of the farmers indicated that extension officers had not been coming to their communities. Some farmers (59% of those interviewed) indicated that they had received free training in such aspects as planting techniques, rice spacing and fertilizer application. Those trained indicated that the services were useful to them. There was very little application of improved techniques beyond the mechanization of such land preparation activities as harrowing. About half of the farmers interviewed claimed to have used improved farming technologies for rice cultivation; of this, only about half believe that they make more money from using such technologies.

Income to the farmer: Rice cultivation is generally considered a profitable venture with farmers claiming that it is possible to earn as much as N300,000 (£1,200) to N400,000 (£1,600) with an investment of N50,000 (£200). Data obtained from the enumerative survey showed that outputs obtained by farmers ranged from 1 to 326 bags, depending on the size of the farm. The average yield for those interviewed was 59 bags (50kg/bag) on an average of 2 ha of land. The yield and quality of rice paddy is affected by conditions in all the stages involved in rice production such as soil fertility, viability of the seeds, planting density, constant and regular weeding, and effective bird scaring before harvesting. Average yield is about 1.5 tonnes per hectare. Price of paddy varies substantially between seasons but the price is also substantially affected by the quality of the rice produced. The price quoted by farmers for a bag of rice ranged from ₦7,500 (£30) to ₦10,500 (£42) with an average of ₦9,000 (£36). The total quantities sold by a single farmer on an annual basis ranged from 1 to 300 bags with a mean of 77 bags. On the average, 10

bags are consumed by a farmers' household and 5 given out as gift. Income to the farmer from the sale of rice ranged from ₦ 6000 (£24) to ₦ 1.4m (£5,600), the average income being ₦243,952 (£976).

Conflict Issues: There were very little indications that there may be conflicts in the community as less than a fifth of the farmers feel there are. The most common form of conflict reported is "inter/intra community conflict". Another issue was encroachment in the community. Most of the farmers felt that there is little or no encroachment. For example only 12% felt that construction of access roads constituted an encroachment. Less than 4% agreed with any of the other possible forms of encroachments as being significant. Most people (72%) feel that the soil is getting better and over-cultivation is singled out as the most important threat (45%). The community has little or no problem with fuel-wood. Only 3% said there is a problem.

HIV/AIDS: Farmers generally feel that HIV/AIDS is not a problem. Less than 2% agreed that it is an issue of concern in the community. A significantly higher proportion (78%) recognized "awareness creation" as a strategy for dealing with the problem. This is most likely to be related to the extensive media sensitization on HIV/AIDS in the state.

Major Challenges: There are some challenges faced by rice farmers in Ogun state which can substantially reduce the profitability of the venture. Labour for the various activities in rice farming is recognized as the highest and most important cost item. It is also considered a major challenge by 76% of the farmers. Another area of considerable challenge is water for irrigation. Although there is usually adequate rainfall for rice production, delay in the onset of rains may alter planting dates, which may result in poor yields. There are currently no irrigation facilities that can allow the farmer plant a second crop of rice in the year.

Other challenges faced include:

- Pest infestation on rice fields, which if not well managed, may lead to huge losses.
- High costs of agro-chemicals and fertilizers, making their use difficult for resource poor farmers.
- Birds' invasion during the harvest period.
- Lack of resources to procure farm inputs.
- There is no form of cooperative society among rice farmers to alleviate financial challenges. Access to credit facilities is non-existent and conventional cooperative societies are either non-functional or weak.
- Government's support is considered weak. The main assistance farmers get from government is the provision of tractors for hiring. These are however available at considerable cost to the farmer.

Soil fertility, fuel wood and HIV AIDS did not appear as major challenges for the Ofada rice farmers in Ogun state.

Coping Strategies: Visible coping strategies adopted by the farmers in cultivating rice include "Joint efforts", "Individual efforts" and "Prayers". Farmers also store rice during peak seasons to take advantage of the relatively higher prices obtainable during the off peak period.

Table 4.1: Responses of farmers to issues related to rice cultivation in Ogun State

Variable	Ogun (n=151)
Farmers using land preparation techniques (%)	
Use tractors	49
Use hoes and cutlasses	48
Use other methods	1
No response	2
Farmers obtaining land preparation equipment from different sources (%)	
Private individuals	48
Hired	40
Govt Agencies	12
Farmers using labour sources for harvesting (%)	
Family labour	26
Hired labour	74
Farmers paying different labour rates for harvesting (%)	
N100 – N200 per day	13
N201- -N400 per day	42
>N400 per day	40
No response	5
Average cost of labour per day	₦376
Farmers using different threshing techniques (%)	
Family labour	43
Hired labour	51
Mechanical	0
Others	0
No response	6
Farmers' response to agricultural inputs issues	
Stated that fertilizers are available (%)	70
Mentioned – N.P.K. as most common (%)	70
Average cost of NPK fertilizer	₦ 2,473
Can afford fertilizers (%)	48
Stated that Local seeds are available (%)	97
Stated that improved seeds are available (%)	36
Stated that local seeds are affordable (%)	82
Range of cost of seeds per bag	₦ 900 – 12,000
Average cost of local seeds	₦ 2,210
Stated that improved seeds are affordable (%)	54
Stated that Agrochemicals are available (%)	59
Range of costs of Agrochemicals	₦ 1,000-2,000
Average cost of agrochemicals	₦ 1,261
Can afford agrochemicals	49
Stated that improved technology is available (%)	50
Makes more money with the Technology (%)	52

Variable	Ogun (n=151)
Buys inputs from open markets (%)	78
Farmers statement on the activities of extension workers	
Visited by extension officers (%)	60
Trained by extension workers (%)	59
Private Sector provide training (%)	32
Farmers statements on credit facility & other sources of funds	
Access to credit available (%)	5
Benefit from advance payment for commodity (%)	39
Know specific buyer (%)	97
Know specific seller in the market (%)	95
Farmers with different reasons for growing rice (%)	
Commercial viability	87
Land suitable for rice cultivation	44
Inheritance from parents	39
No response	0
Land area cultivation & dominant crops	
Mean area of land cultivated (in ha)	5
Farmers cultivating 1-3 hectares (%)	69
Farmers with dominance of rice (%)	99
Farmers with cassava as second most important crop (%)	99
Farmers with yam as second most important crop (%)	93
Farmers with maize as second most important crop (%)	0
Farmers with sugarcane as second most important crop (%)	20

Table 4.2: Responses of farmers to other parameters on rice cultivation in Ogun State

Variable	Ogun (n=151)
Farmers choosing operations as most labour intensive (%)	
Planting	19
Bird Scaring	65
Harvesting	15
Weeding	0
No response	1
Farmers choosing activity as one for which most assistance is desired (%)	
Planting	8
Bird Scaring	59
Harvesting	25
Weeding	7
No response	1
Farmers obtaining labour supply from the family (%)	
Adult male labour	99
Male Children	42
Adult female labour	87
Female children labour	33
Farmers using different methods for storage of commodity (%)	
Store in bags	85

Variable	Ogun (n=151)
Store on mats	65
Store in the ceilings	59
Farmers storing rice (%)	
In the house	94
In the store	11
Farmers claiming yield of rice (%)	
1-5 bags	40
6-11bags	11
>11bags	49
Yield per hectare (in MT)	1.5
Average number of bags of rice sold, consumed and given as gift	
Sold	69
Consumed	11
Given as gift	5
Farmers selling bags of rice sold (%)	
1 -10	6
11-20 bags	16
21-30 bags	7
> 30 bags	73
Price of rice per bag	
Range of prices in Naira	7,500 - 10,500
Average (N)	9,000
Farmer's income from rice	
Range of total income from rice (N)	6,000 – 1,400,000
Average total income (N)	243,952
Farmers selling rice (%)	
Sell to Millers	14
Sell to merchant – wholesalers	87
Sell to merchant – retailers	34
Sell to others	1
Farmers expressing opinion on market chain (%)	
Market chain favourable	76
Farmers expressing opinion on source of threats to market chain stability (%)	
Dominance of middlemen	19
Transportation	38
Poor storage	11
Poor pricing	25
Poor market information	4
Farmers expressing opinion on areas of high cost (%)	
Labour	82
Fertilizer	13
Agrochemicals	7
Planting	7
Harvesting	22
Sourcing Seeds	3

Variable	Ogun (n=151)
Farmers identifying challenges (%)	
Access to agrochemicals & fertilizers	7
Labour	76
Storage of commodity	5
Water for irrigation	26
Pests and diseases	19
Seeds	1
Farmers with opinion on standards (%)	
There are standards in rice production	76
Dryness	63
Shelf life	3
Cleanness	82
Wholeness	25
Farmers who believe that there is problem with fuel wood supply (%)	3
Farmers who believe that HIV/AIDS is a serious problem (%)	1
Farmers who believe that HIV AIDS causes reduction in labour supply	1
Farmers who believe the following are effective for HIV/AIDS Mitigation (%)	
Awareness creation	78
Provision of VCT	1
Provision of ART	0
Others	0
Farmers who believe the following cause encroachment in the community (%)	
Construction of Access road	12
Expansion of settled areas	3
Expansion of GSM coverage	1
Invasion by cattle headsmen	1
Others	2
Farmers who list the following as causes of conflicts (%)	
Any conflicts (=Yes)	17
Conflict with other resources	5
On water sources	0
Inter/intra community conflicts	8
Conflict on fuelwood	0
Other conflicts	0
Resolving conflict	No action
Farmers who believe the following about the soil (%)	
Getting Better	72
Over cultivation a problem	45
Erosion a problem	9
Others	7
Specify others	Bush burning (9); Fertilizers

4.2. Parboiling

Harvested and threshed rice is parboiled in Ogun state mostly by women who in most cases are spouses of farmers. The primary occupations of most of the parboilers interviewed are farming and parboiling. About 93% of the parboilers are processing for commercial purposes and they use both 'half drum' (a drum cut into 2 halves) and full drum for parboiling. Parboilers target the market as well as their own subsistence needs. All the respondents process more than 50% of the commodity for market. The mean fee charged per bag for parboiling at peak periods is N171 (£0.7) while about N150 (£0.6) is charged during off peak periods. Except for the financially buoyant ones, most parboilers do not retain the commodity for more than 4 weeks, about 57% of them hold the commodity for one week or less while the remaining hold it for 2 – 3 weeks. About 17% of the respondents reported that credit facilities are available; however, only 2% claimed to have access to such. Most of the respondents (about 79%) agreed that there are quality standards for Ofada rice.

Parboiling method: Parboiling is undertaken by washing the paddy with soap to remove dirt, drying and then soaking in cold water for 2 – 5 days, depending on the moisture level of the rice at harvest (the drier the paddy the longer the soaking period). During soaking, the paddy is stirred constantly with wood to cause empty husks (without rice in them) to rise to the surface and skim them off. After the rice must have absorbed enough water, the soaking water is drained and the rice is parboiled in drums using hot water. The major sources of energy for parboiling are fuel wood, sawdust and wood scraps from sawmills. The parboiled rice is thereafter dried on the floor or pavement in open air with constant stirring to allow for even drying.

Quality issues: Processed rice in Ogun State is usually of two distinct types, distinguishable by its colour (white and brown). White Ofada is regarded as the higher quality rice and the whiter the rice, the better the quality and the tastier the product. Ofada rice has a distinct smell, which is not offensive. However, when paddy is soaked for long periods, aromatic Ofada rice is obtained. Some consumers prefer aromatic Ofada while others find it offensive and therefore prefer the non-aromatic type. Non-aromatic Ofada is obtained when long soaking periods are avoided in Ofada rice processing.

Health Issues: Parboiling poses some health hazards to processors which include exposure to heat from fire during parboiling, the sun during drying as well as exposure to respiratory tract infection. Turning the drum during parboiling is also considered hazardous and difficult particularly for older parboilers. Parboiled and dried paddy is usually taken to milling centres where it is milled and in most cases sold to merchants/traders who come to the milling centres solely for that purpose.

Market: Most parboilers sell their products at the mill at prices determined by market forces and which vary from one location to another. Sometimes, parboilers take the commodities outside the community for milling in order to have access to a larger market. At harvest times, particularly when the harvest is good, buyers predominantly determine the price of rice since most farmers do not have good storage facilities and are compelled to sell a good portion of their harvest. There are however times when prices are fixed by the parboilers' associations. At the time of

the study, a 50kg bag of rice sold for about ₦8,000 (£32) in Iboro while the same quantity of rice was sold for about ₦10,000 (£40) in Ayiwere community.

There had been some changes in the market structure for rice in the last few years. Demand for Ofada rice has increased considerably and traders have been going directly to farmers to buy rice rather than go through millers who ordinarily serve as middlemen between parboilers and marketers, and therefore are more knowledgeable of market prices and other market information. More parboilers now trade in rice and have first hand knowledge of market prices.

Access to credit: While credit is not readily available, the credit opportunities that sometimes exist include: Loans from friends/family at interest rates of 5%, 10% or 100% per annum depending on individuals, promise of paying back the cost of paddy after sale of processed rice, bank loan, provision of loan by miller, and mutual agreement between farmer and parboiler.

Challenges: Parboilers face some challenges, which include:

- Frequent attack by pests such as birds, chickens and goats during sun drying. Goats apart from consuming the parboiled rice, often leave their droppings on the drying rice which may affect the quality of the rice. Parboilers often have to hire labour to keep away pests during drying.
- Too much rain and too little sunshine, which adversely affects the drying process and may result in low quality rice which usually have to be sold at low prices.
- Lack of money to pay for paddy rice and lack of micro-credit. The local cooperative societies are relatively weak and do not provide reliable credit support for the farmer. Many farmers are left with no option other than to borrow from family and friends to meet demands of parboiling.
- Sun-drying is demanding, requiring long periods in the sun. The parboiler has to be in the sun at an average of about once in every 15 minutes, spending close to 10 minutes, depending on the quantity of his rice, to turn the commodity for thorough and even drying.
- Scarcity of good water is sometimes a problem with the parboiler having to buy water for his/her operations.
- There is usually excessive supply of rice at harvest time and with poor availability of effective storage facilities and practices, many parboilers have to contend with low prices for their products.
- Although many parboilers were trained by West African Rice Development Agency (WARDA) on improved parboiling techniques, the technologies they were exposed have not been available in the market.

Conflicts

Parboilers do not think that there is any conflict in the commodity. Of course there can be shortage of water for parboiling but this does not lead to any conflict because water shortages are usually experienced during off-season period.

Table 4.3: Issues related to rice parboiling in Ogun State

Variable	Ogun (n=42)
Parboilers using the type of parboiling instrument (%)	
Aluminium Pots	19
Half Drum	36
Full Drum	17
Hanigha	9
Others	47
No response	0
Parboilers with the purpose of Processing rice being the following (%)	
Household consumption	62
Commercial	93
Parboilers processing More than 50% of products for the following (%)	
Farmers (%)	81
Millers (%)	100
Traders (%)	98
Self (%)	100
Mean fees charged per 50kg byte following	
Farmers	N65
Parboilers	N80
Traders	N55
Processors holding commodity before sale (%)	
One week or less	57
2-3 weeks	43
4 weeks or more	0
Mean fees charged/bag at peak periods	N171
Mean fees charged/bag at off-peak periods	N151
Parboilers who believe there is availability of a standard product (%)	79
Parboilers who believe there is availability of credit (%)	17
Parboilers who believe there is access to credit (%)	2
Conflict (%)	
Parboilers who believe there is land encroachment	3
Parboilers who believe there are cases of HIV/AIDS	2
Parboilers who believe there is creation of awareness mitigates HIV/AIDS	100

*Note: Cost of aluminium pots vary between N1,000 and N6,000 per pot while half drums cost between N1,000 and N10,000 per half drum

4.3. Milling

Milling is done as a service provided to farmers or parboilers and the service is charged based on the weight of the milled rice. Millers sometimes collect a portion of the milled rice as fee where farmers/parboilers are unable pay the cost of milling and sometimes serve as middlemen in the Ofada rice trade. They are not normally concerned with the rice variety brought for milling but observe that the two most common varieties milled are Ofada and NERICA 1 with the Ofada being more

popular due to its availability, high demand and high yield. Reasons given by the millers for being in the milling business include:

- Inter-generational practice. For many, rice milling is an inherited family business.
- Profitability and its relevance in the community. Many respondents claim that rice milling is perceived to be more profitable than other trades in the community while others reported that rice trading enable them to support their family.
- Lack of comparable alternative.

Technology: About 76% of the millers interviewed have one milling machine, the most common type is AMUDA (Indian make) and the predominant prime mover types used are Lister and Dorman diesel engines. About 90% of the milling machines used have been in use for between 11 and 35 years, while about 5% of the engines are over 36 years old. About 97% of milling machines were bought at a price range of N100,000 (£400) to N140,000 (£560), while some (accounting for 20%) were inherited from parents who had been in the rice milling business. Though 70% of the millers are aware of improved technology, only 19% reported its availability in the community. About 86% of millers believe they can make money from improved technology and would invest on it if they had access to credit.

Ownership: Ownership of milling centres or machines is of three major types - self-owned, jointly owned and loaned mills. Women often purchase milling machines and give them out to men to operate. In some cases, milling centres are managed by operators who are children or relatives of the owners.

Health issues: The main health issues for millers in the communities are the problems of dust from the rice husk and injuries sustained from broken belts during machine operations. Millers have however been trained to wear masks to prevent inhaling too much dust during milling.

Income: Millers in the state earn a mean annual income of N281,310 (£1,125). The amount charged for milling is usually determined by the Millers Association and market forces. The costs of milling are generally low during the peak harvest period but could be high when the cost of diesel is high. Most millers in the state mill for farmers with a mean milling fee of N730 (~£3) per 50kg rice during the peak season while about N560 (~£2) per 50kg is charged on the average during off peak season. An average milling cost of N627 (£2.5) per 50kg bag is charged by millers in the State. Milling costs are not dependent of the quality of rice to be milled but the quantity.

Storage and Marketing: About 55% of the respondents provide some storage facility before or after processing (milling). Half of the millers process more than 200 bags (50kg) in a season while 17% of the respondents process less than 50 bags of rice in a season. About 81 bags of rice are processed and sold in a day. On the average about 164 bags can be milled per day during the peak season and about 38bags during off peak period. The price of rice has been relatively steady and demand has been increasing. About 82% of millers utilize polishers in their milling operations. None of the millers has undergone training in milling. Training is available mostly in processing and preservation, at a cost of about N25,000 (£100). Half of the respondents can afford to attend this type of training if available, though only 35% of them believe such training will be useful to them.

Labour Utilisation: About 93% of millers hire non-household labour at N200 (£0.8) to N600 (£2.4) for male and less than N200 (£0.8) to N300 (£1.2) for female labour. Labour rates for male and female are very different because the nature of the work they do in the mills are different (men tend to do more labour intensive activities). Most of the millers (76%) process for more than 11 days during peak period while about half of the respondents (55%) process for 10 days or less during the off peak period. About 72% of the millers operate for more than 10 months in a year, and 21% operate for 6 – 9 months. About 76% of them operate for 7 to 12 hours in a day. The remaining 24% operate for six hours or less. All the respondents reported that between one and two members of their households are engaged in rice business in this state.

Challenges: Some of the challenges facing millers include lack of power supply, high cost and scarcity of fuel (diesel), aging machines which often break down, low patronage during off peak period and exorbitant taxes levied by revenue collectors. Some respondents reported handling cost as one of the transactions costs. About 66% and 59% of respondents reported machine maintenance and fuel respectively as the major areas of cost in rice milling. Another major challenge encountered by many (41%) millers is the presence of stones in rice. Most of them (72%) have not had any support from their association in dealing with any of the challenges. None of the millers interviewed has benefited from training in rice milling. Although, half of the respondents can afford to attend the training if available, only 35% of them believe that such training will improve their operations. They do not have problems with spare parts for repairs of their machines.

Coping strategies: During off season periods, millers normally engage in other economic activities like farming, driving and petty trading. In coping with the exorbitant taxes, many simply hide away from tax collectors. In *Ifo* community, some millers whose machines run on electricity use diesel powered generators to keep mills. This of course increases the cost of milling. Millers claim that they enjoy no assistance whatsoever from government.

Table 4.4: Issues related to rice milling in Ogun State

Characteristics	Ogun State (n=29)
Millers with annual income ranges from rice milling (%)	
N50,000.00 or less	3
N50,001- N100,000.00	7
N100,001 – N150,000	28
N150,000 and above	62
Mean annual income	N281,310
Millers categorised according to number of mills (%)	
Small (1 mill)	76
Medium 1 (2-3 mills)	17
Medium 2 (3 or more mills)	7
Medium 3 (Non Indian mill)	0
Millers using different types of milling machines (%)	
Amuda	4

Characteristics	Ogun State (n=29)
Dorman	41
England	0
Lister	35
Locally Assembled Machines	3
Ruston	14
Scoda	3
Millers claiming costs of procuring milling machine (%)	
N100, 000-N140, 000	97
N140, 001-N180, 000	3
N180,001 and above	0
Millers processing different varieties of commodity (%)	
Ofada	100
Igbemo	0
Improved variety	0
Millers giving reasons for processing the varieties (%)	
Availability	25
High demand	21
High yield	14
No response	40
Millers with more than 50% of processing carried out for different groups (%)	
Farmers	90
Parboilers	35
Traders	31
Mean fees charged different groups for milling 50kg of rice	
Farmers	N733
Parboilers	N809
Traders	N837
Those who provide storage before or after processing	55
Millers who considered different transaction costs as major cost items (%)	
Transport	41
Handling	10
Marketing	41
Taxes	65
Association fees	17
Average fee charged per bag for milling at different seasons	
Peak season	N740
Off season	N560
Millers who reported that prices are influenced by variety (%)	0
Millers who reported standard product (%)	69
Millers who reported different cost items as areas of high cost (%)	
Machine maintenance	66
Fuel	59
Labour	17
Millers reporting challenges encountered in processing rice (%)	

Characteristics	Ogun State (n=29)
Stones	41
Lack of power supply	41
High cost of fuel	7
No response	11
Millers reporting areas in which association's support addressed problems (%)	
Bought Generator	7
Buying fuel	7
None	72
Pre-Check goods	0
Seek Solution	14
Millers reporting quantity of rice processed in the season (%)	
Less than 50 bags of 50kg	17
51-100 bags of 50kg	17
101-200 bags of 50kg	14
More than 200 bags of 50kg	52
Processing technique used (%)	
Manual processing	---
Machine use	---
Millers who utilize polisher (%)	82
Millers who are aware of improved technology (%)	70
Availability of improved technology in community (%)	19
Millers who made more money from improved technology (%)	45
Millers who would invest in improved technology if credit is available (%)	86
Millers who gave reasons for investing in improved technology (%)	
Makes the work faster	24
Improves quality	17
More profit	21
Provision of training by private sectors	14
Millers who have been trained: Area of training (%)	
Processing and preservation	0
Use and maintenance of machines	0
Milling	14
Millers who can afford to attend training (%)	4
Millers who believe in effectiveness of the training (%)	0
Millers who claim that non-household labour is available (%)	83
Millers who claim cost of Labour (male) (%)	
Less than N200	7
N201-N300	31
N301-N600	62
Millers who claim cost of labour (female) (%)	
Less than N200	35
N201-N300	41
N301-N600	24

Characteristics	Ogun State (n=29)
Millers who process for different numbers of days in peak season (%)	
10 days or less	24
11-15 days	21
16 days and above	55
Millers who process for different numbers of days in off peak season (%)	
10 days or less	55
11-15 days	21
16 days and above	24
Millers who process rice for different periods (%)	
1-5 months	7
6-9 months	21
10-12 months	72
Millers who claim issues as most important (%)	
Milling	17
Quality	24
Returns	17
No response	42
Conflicts + HIV/AIDS	
Land encroachment	0
HIV/AIDS cases	0

4.4. Trading

Rice trading is an important occupation in the State with a significant proportion of the respondents (79%) being involved in the business, while only 15% were involved in rice processing (parboiling). Reasons for trading in rice include inter-generational trade, profitability, family support and the predominance of rice growing in the community. About 7% grew up to see their parents trading in rice and invariably took over from them. Rice trading is also more profitable than trading in other crops. Rice business is clearly the predominant trade in the communities and most of the people who engage in it have no alternative jobs. Traders claim that the only reason they would get out of the business is if it becomes unprofitable.

Quality: Traders generally prefer to display high grade quality for sale as there is limited market for lower grades. In general, “quality” is the prime factor (mentioned by 71%) influencing the choice of rice to sell. Most buyers consider quality as being more important than price. One of the distinguishing parameters of high grade rice is “whiteness”. Traders seem to believe that once it is Ofada, it will be of high grade except something goes wrong during processing. Lower grades can be black/brown in colour and may be “Ofada red”. Dryness and presence of stones are other quality parameters. Stony rice is considered to be of lower quality. Sometimes, hurriedly harvested rice may come out of the mills with parts of its husk. This also reduces the quality of the rice. Traders are able to recognize rice of varying quality and in many communities (particularly so in Ifo community) they ensure that rice of varying qualities are not bagged together.

Price and Income: Most traders in Ogun state (77%) can be classified as small scale traders because they trade less than 100 bags per annum. Average price of milled rice ranges from ₦1,000 (£4) per tin to ₦13,000 (£52) per bag with an average of ₦7,054 (£28) per bag. Price of grade 1 rice (white, without stones or husks) ranges from ₦10,500 (£42) to ₦12,000 (£48) per bag, while lower quality rice attracts a price range of ₦7,500 (£30) – ₦9,000 (£36) per bag. Prices largely depend on how much it is bought from the mills although the rice sellers association influences the price from time to time. Prevailing market situation can also affect the price. Where market prices make the sale of particular consignment unprofitable, traders delay selling their stock particularly if it is off season. Sometimes when stock gets stale, traders may decide to sell off his/her wares at reduced prices to minimise losses.

Most traders are in rice business because of its commercial viability. The commodity is stored mainly in bags (97%) and kept at home (42%). Average bag size is 50kg. About 29% of traders interviewed store their products for up to one season but for 55% of respondents, storage period depends on factors such as demand. There has been no training given to traders on how to improve quality and only one person reported having attended training in rice trading. Ofada rice traders deal in other food items such as imported rice, garri, beans and vegetable oil but Ofada rice is generally regarded as most profitable.



Figure 4.2: Milled Ofada Rice on Sale at Ifo Market, Ogun State

Labour: Traders are assisted by their spouses (29%) and friends (48%). About 58% of traders also have more than 5 of their household members helping in the business. In many instances between 1 and 5 members of the households are engaged in other jobs apart from rice trading. Most traders (97%) own the products they sell and have been recording increases in sales. There is labour availability for

the various phases of trading and at affordable costs (100% of respondents reported this).

Sources of commodity: Traders get most of their supplies from farmers and the mills (mostly from farmers and parboilers). Some farmers also sell directly after milling.

Marketing: Rice market is functioning well and the market structure is adjudged favourable by 71% of the traders interviewed. There is good access to rice for sale and the buyers are readily available. About 39% of traders have agents and places from which they buy or to which they sell their commodities. The number of bags traded per day during the peak season ranges between 2 and 20 with an average of about 6. During off season periods, number of bags traded range between 2 and 15 with an average of 5.6 bags. About 8% of the quantity sold is consumed or given out as gift. About 45% of the traders feel that the thing that is lacking most in the present market structure is instability in prices. The other less significant factors are transportation and storage.

Ofada rice is largely bought and sold within the communities (55% and 58% respectively). Only a small proportion is sold outside the community as most traders (65%) travel less than 10 km to sell their commodity. Only about 35% of traders interviewed indicated that they are wholesalers who sell to retailers.

Access to credit: Poor financing is one of the constraints faced by traders, which is partly due to poor access to credit facilities. About 42% have access to credit mainly through the cooperative societies. The societies usually insist on the provision of a guarantor (45%). Only about 26% of the traders interviewed buy on credit but large proportions (67%) have to sell on credit. This reflects the stress traders have to contend with.

Health issue: The most important health issue raised by the traders is inadequate or lack of shades in the market places where they display their commodity. This exposes the commodity to dust and the sellers to excessive sun.

Family issue: Traders enjoy the cooperation of their spouses, since proceeds from the trade are used to support the family.

Challenges and coping strategies: Some of the challenges facing the traders include; lack of credit facilities, reduced demand during off peak periods, poverty, importation of cheap and better quality rice, rising demand for Ofada from outside the locality which creates competition during off season (October to July) and weather.

There are also challenges associated with transport and handling (61%). A key response to this by traders is "joint purchase" which helps to reduce the unit cost of transportation. The dominant means of transportation to the market is motor vehicle (48%) while the wheel barrow (35%) is important within the precinct of the market. Though roads are motorable in many areas and cost of transportation relatively low, demands by police and custom officers on the highways constitute a major challenge. The frequent breakdown of vehicles also constitutes a challenge. Some of the coping strategies adopted include joining cooperative societies to get credit facilities, purchasing on credit and selling within the communities to avoid police

exploitation. A few respondents mentioned water shortage as a challenge while fuel wood shortage and HIV/AIDS were not seen as challenges in the State.

Table 4.5: Issues related to rice trading in Ogun State

Variable	Ogun (n=31)
Traders operating at different scales per annum (%)	
<100 bags	77
100-200 bags	15
>200 bags	6
Cost of 50kg bag of rice	
Range (N)	7,500 – 13,000
Average (N)	7,054
Traders obtaining rice from different sources (%)	
Farmers	27
Mills	41
Others	27
Total income from rice trading	
Range (N)	5,700- 840,000
Average (N)	271,236
Traders selling different varieties of rice (%)	
OFADA (dominant variety)	100
No response	0
Traders giving reason for trading in the rice (%)	
Commercial viability	94
Affordability	35
Inherited from parents	6
No response	0
Traders giving reasons for trading particular variety (%)	
Commercial viability	91
Affordability	26
Inherited from parents	7
Traders selling different varieties/types of rice (%)	
Igbemo	0
Ofada	77
Ofada – Ise	0
Ofada Red	0
Ofada White	19
No response	4
Grade of rice mentioned above (%)	
Grade 1	93
Traders mentioning factor as most important in influencing choice of commodity (%)	
Quality	71
Price	3
Availability	26
No response	0

Variable	Ogun (n=31)
Traders who claim that rice market is functioning (%)	100
Traders who claim that market structure is favourable (%)	71
Traders mentioning issues lacking in present structure (%)	
Regulation of middlemen presence	13
Transportation	32
Storage	32
Unstable pricing	45
Poor market information	3
Traders who claim that of agents/places to buy from are available (%)	39
Traders who buy rice from different places (%)	
Within town	55
Outside town	16
Within the state	16
Outside the state	13
Traders who buy rice from different stakeholders (%)	
Farmers	58
Wholesalers	3
Millers	39
Traders who sell rice to different stakeholders (%)	
Within town	58
Outside town	7
Within the state	32
Outside the state	3
No response	0
Traders who travel distances (%)	
1-10km	65
>10km	35
No response	0
Traders who sell to (%)	
Consumer	65
Retailer	35
No response	0
Traders who claim these as constraints to rice trading (%)	
Poor Financing	84
Low access to Credit facilities	13
No response	3
Traders who claim that market prices are determined by these (%)	
Government	3
Association	52
Rice Growing Communities	3
Others	13
No response	29
Traders who claim these as challenges (%)	
Transport Costs	61

Variable	Ogun (n=31)
Handling	48
Storage	13
Marketing	26
Traders who claim these as most important transaction costs	
Handling	16
Storage	23
Marketing	23
No response	38
Traders who use the following options to address the challenges (%)	
Develop credit facilities	0
Joint purchase	39
Others	13
No response	48
Traders who claim that credit is available (%)	42
Traders who claim that cooperative societies are functioning (%)	42
Traders who claim the following as sources of credit (%)	
Family	26
Bank loan	3
Friends	19
No response	52
Traders who listed the following as conditions for taking a loan (%)	
Producing a guarantor	45
Grades and prices (Grade 1)	
Range (grade 1) – (N)	10,500- 12,000
Average price (N)	11,000
Price of grade 2	
Range (N)	5,500-9,000
Average price (N)	7,525
Labour for loading available (%)	100
Labour cost affordable (%)	100

Table 4.6: Transportation and other features of rice trading in Ogun State

Variable	Ogun (n=31)
Traders who listed these as type of transportation available (%)	
Canoe	0
Head portage	13
Motor Cycle	0
Motor Vehicle	49
Truck Pushers	3
Wheel Barrow	35
No response	0

Variable	Ogun (n=31)
Transport cost	
Range (in Naira)	20-200
Average (in Naira)	79
There are cheaper means (%)	23
Traders using system for storing rice (%)	
Store in bags	97
Store in stacks	0
Spread on mat	6
Store at home	42
In the ceiling	3
Traders holding commodity for different periods (%)	
One season	29
Two Seasons	0
More than two seasons	3
It depends on demand	55
No response	13
Traders who believe the following on standards of product (%)	
There is a standard product	71
Describe (most mentioned attribute)	Whiteness
Individual determines standard	71
There is a premium price	90
Traders who claim the following to be more important to buyers (%)	
Quality	100
Price	0
Traders who claim the following on training & marketing (%)	
Training available	0
Attended a training	3
Marketing a higher quality important	100
Range of bag sizes (kg)	1-75
Traders who buy commodity on credit (%)	26
Traders who sell rice on credit	67
Trades who are assisted by their spouse (%)	29
Traders who are assisted by friends (%)	48
No of bags traded per mkt day Peak Season (range)	2-20
Average no of bags (Peak season)	6
No of bags traded per mkt day Off Season (range)	2-15
Average no of bags (off season)	5.6
Quantity consumed per annum (bags)	0.1 – 20
Average quantity consumed (bags)	3
Quantity given out per annum (bags)	0.1-10
Average quantity given out (bags)	1.8
Quantity sold per annum (bags)	6-300
Average quantity sold (bags)	63
Traders who claim that their income have increased (%)	94
Traders who own their product (%)	97

Variable	Ogun (n=31)
Traders who work as agent (%)	3
Traders with household members in business (%)	
1-5 members	42
>5 members	58
Male <=5	13
Male >5	87
<=5 female members	32
Members in other employment <=5	45
Traders listing the following as sources of conflicts/concern (%)	
Land encroachment	10
HIV/AIDS	3

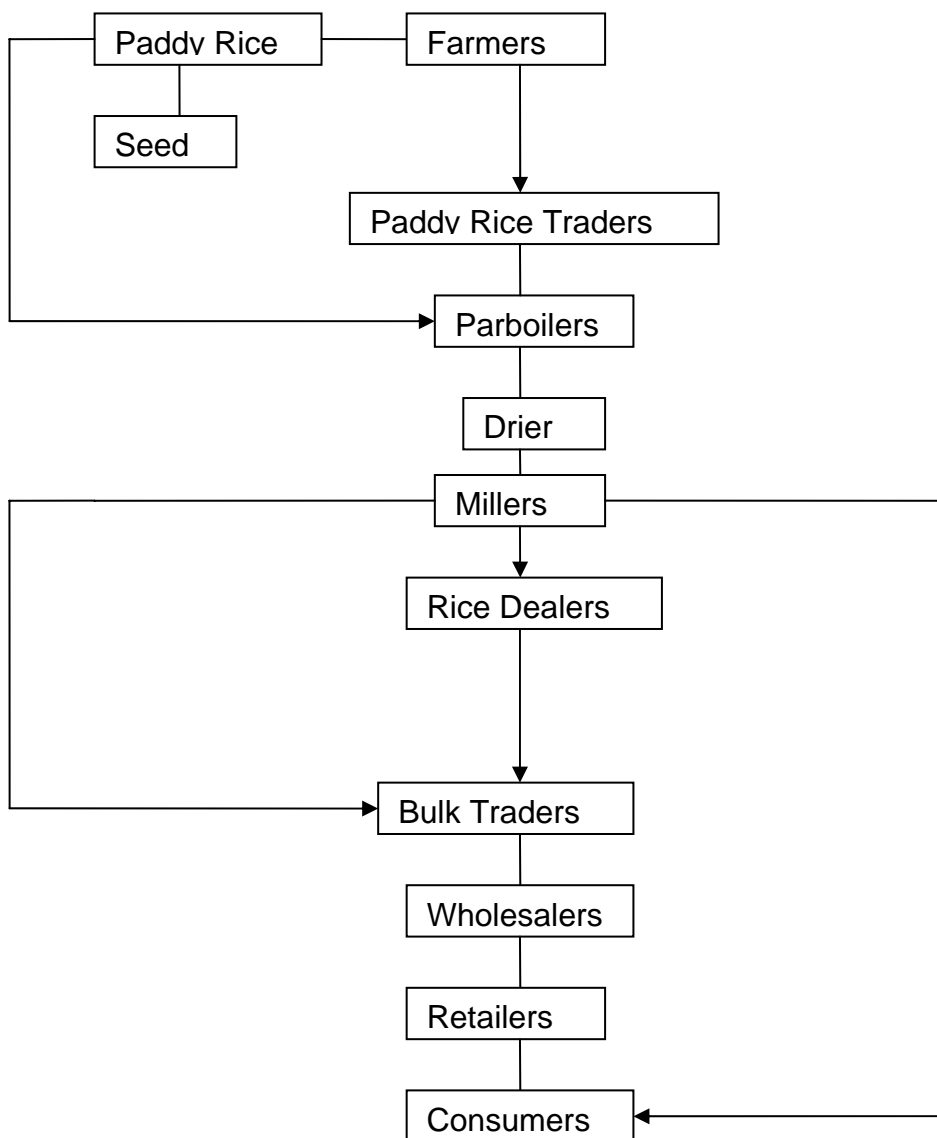


Figure 4.3: Diagram illustrating the market routes of rice

5. Ofada Rice Activities in Lagos State

The communities visited in Lagos were Ise in Ibeju-Lekki LGA and Ebute Afuye (Epe LGA). The two communities are close to the sea. The landscape is predominantly coastal lagoon, on a coastal sandy plain. The sandy nature of the environment supports a variety of parkland savannah. Large herds of cattle graze along the coast. Farmers, parboilers and millers were interviewed in the communities but traders were interviewed in the communities as well as in Lagos metropolis.

5.1. Rice Cultivation

Planting of rice takes place in March and April at the onset of the rains. Harvesting is done three to four months later. Rice production is an inter-generational practice with about 46% of respondents claiming to have inherited rice growing from their parents. It is a choice engagement for several reasons but the most important are its commercial viability which was reported by 63% of the respondents and the suitability of the land for its cultivation (48%). Some other reasons given for the preference for rice production in comparison with other crops include provision of bulk income that can be used to meet major financial needs and its short maturing period (3 – 4 months). Farmers are encouraged in producing the commodity because of the high demand for it and are unlikely to quit the business, except for persistent poor income and old age. Rice cultivation in Lagos State involves land clearing as forest lands have to be cleared each planting season, land preparation, planting, weeding, harvesting and threshing.

Farm lands on which rice is grown range from 1 to 15 hectares. Most people (73%) farm between 1 and 3 hectares and the average farm holding is 3 Ha. Thus, small holdings dominate rice production. As in Ogun state, cassava is the next most important crop to rice. Every one who ranked rice first also ranked cassava second (98%). The area of land devoted to other crops is considerably smaller with less than 20% of the farmers interviewed planting more than 2 hectares of other crops. The modal farm size is 1 hectare.

Respondents indicated that there is consideration for standard in terms of the quality of rice produced (93%). The most important characteristics in this respect are cleanliness, dryness and wholeness of grains in that order. Quality of rice is measured by how well the rice plants grew on the field. This also affects the yield of rice. Water shortage for rice is usually not a problem because the water table on the rice fields are high being close to the lagoon.

Ofada rice varieties: Ofada is the only variety of rice grown although some “agric” varieties (extended to farmers by the State Ministry of Agriculture) had been tried in the past. Two main types of Ofada rice are generally mentioned: Ofada white and Ofada Ise; Ofada white is adjudged to be of a higher quality. The usual process used in securing seeds for planting is by preserving seeds from previous harvest. However, some farmers buy seeds from Agricultural Extension Offices.

Labour utilisation: Land preparation for rice cultivation is done manually with the traditional hoes and cutlasses (93%). None of the farmers interviewed used a tractor. Everyone harvests manually. About 59% of the required labour is hired and family members provide the rest. There are variations in the figures quoted but 83%

indicated labour costs that are slightly above ₦400 per day. The average daily cost of labour was ₦495. Threshing is also done manually. A very small proportion (2%) of respondents mentioned automated threshing. The cost of hiring labour for threshing per day is about the same for harvesting.

Farmers have access to family labour - male and female, adult and children. Adult female and male members of the household are generally more important. For example, 97% of farmers reported that adult male members of the household are usually available to help in the various farming operations. Rice planting is identified in the two communities as the aspect that is most labour intensive. About 57% of the farmers said this. Weeding is the next most important activity that 19% of farmers in the state considered to be most labour demanding.

Bird scaring is identified as the activity for which most assistance is desired followed by planting. Areas of high costs include land clearing, planting, bird scaring and harvesting. Most farmers hire labour for these activities especially bird scaring. Land clearing is the most expensive operation in rice farming and is done manually in the communities.

Farm inputs: Fertilizers seem to be available as indicated by 53% of respondents. However a noticeable proportion (47%) did not agree with this. A large proportion of farmers (73%) can afford to buy fertilizers. Local seeds are readily available as indicated by 94% of the respondents. Prices per bag ranged from ₦2,500 (£10) to ₦10,000 (£40) with an average price of ₦3,581 (~£14). Improved seeds are known but are not commonly grown. There are accredited dealers in key farm inputs including agro chemicals, fertilizers and seeds from which farmers can obtain needed items. Farmers normally purchase inputs from these sources. Only 31% of the respondents said they buy in the open markets. Most farmers (86%) are able to purchase local seeds but only 24% can afford improved varieties. Agro chemicals such as 2,4,D, orizoplus and Primextra are available to some extent as indicated by 44% of respondents but only 49% of farmers indicated that they can afford to buy them. Improved production technology is not available in the communities.

Storage and marketing: Farmers store their paddy in mats (46%), in bags (36%) and in the ceilings (20%). The storage is largely done in the farmers' house (58%). In general, the market chain for rice is favourable as indicated by 61% of respondents. As regards what may be lacking and thus constitute some threats to the market, 66% of the respondents said poor pricing is the most important, while 56% indicated transportation problem. The price of rice varies with the season. During the peak period of rice production, price of rice is normally lower while it is relatively higher during the off peak period. On the average, a tin measure (*Garawa*) of milled rice sold for between ₦2,500 (£10) to ₦3,500 (£14). Farmers sell paddy to either their spouses who follow the other operations involved in rice production or directly to merchants (51%). Farmers do not normally sell to millers. In the community, there is only one miller for all the farmers.

Access to credit facilities: About 15% of respondents have access to credit facilities which they obtain from cooperative societies, relations and friends. Some support comes from advance payment by buyers (said by 33%), which enables the farmer to

have some money before harvest. About 48% of the farmers know specific buyers in the market who they can sell their commodity to.

Extension services: About 88% of farmers interviewed are familiar with extension officers from ADP as the officers visit them from time to time to provide technical assistance. Extension officers also train farmers in new technology for rice production as indicated by 46% of respondents. Specific training areas include planting techniques, rice spacing and fertilizer application.

Income to the farmer: The average yield is 1 ton per hectare. The price of a bag of rice ranges from ₦ 7500 (£30) to ₦9,500 (£38) with an average of ₦9,000 (£36). The modal class of total quantities sold by the farmers on an annual basis is >30 bags as reported by 68% of the farmers; with the average number of bags sold per annum being 103. An average of 10 bags is consumed by the farmers' household and 6 bags given out as gift. Income from the sale of rice ranges from ₦10,000 (£40) to ₦30m (£120,000) per annum. The average income is ₦ 325,606 (£1,302)

Conflicts Issues: There is very little indication that there are conflicts in the community as less 7% of the farmers feel there are. The most common form of conflict reported is "inter/intra community conflict" and is mentioned by less than 4% of the respondents. Another issue is encroachment in the community although most of the farmers felt that there is no encroachment. The most reported form of conflict by the few that agreed is "construction of access roads" and only 3% said so. Most people (72%) feel that the soil is getting better and over-cultivation is also singled out as the most important threat (25%). All of the respondents indicated that the community has no problem with fuel-wood.

HIV/AIDS: Some respondents (25%) feel that HIV/AIDS is a problem. About 54% mentioned "awareness creation" as a strategy for dealing with the problem and more than 10% mentioned provision of VCT.

Major challenges: Labour for the various operations in rice production is recognized by 76% of respondents as the most important area of high cost. This is also recognized by 85% as a major challenge in rice farming. Other areas of high cost are seed planting (mentioned by 63%). Pests (particularly birds and monkeys) invasion is another major challenge. If not well managed, pests can cause huge losses. Agro-chemicals and fertilizers are sometimes very expensive to procure. Lack of resources to purchase needed farm inputs is also a major constraint and can compound farmers' misfortune. For instance, farmers are forced to sell at farm-gate and at low prices due to pressing financial needs.

Government does not support farmers in any major way except in providing extension advice. Farmers cope with challenges through joint efforts and raising funds from friends and relations. Soil fertility, availability of fuelwood and HIV/AIDS were not indicated as challenges or problem areas in the communities.

Table 5.1: Responses of farmers to issues related to rice cultivation in Lagos State

Variable	Lagos (n=59)
Farmers using land preparation techniques (%)	
Use tractors	0
Use hoes and cutlasses	93
Use other methods	2
No response	5
Farmers obtaining land preparation equipment from different sources (%)	
Private individuals	80
Hired	20
Govt Agencies	0
Farmers using labour sources for harvesting (%)	
Family labour	41
Hired labour	59
Farmers paying different labour rates for harvesting (%)	
N100 – N200 per day	2
N201- -N400 per day	14
>N400 per day	83
No response	1
Average cost of labour per day	₦ 495
Farmers using different threshing techniques (%)	
Family labour	42
Hired labour	44
Mechanical	2
Others	0
No response	14
Farmers' response to agricultural inputs issues	
Stated that fertilizers are available (%)	53
Mentioned – N.P.K. as most common	31
Average cost of NPK fertilizer	₦ 2,502
Can afford fertilizers (%)	73
Stated that Local seeds are available (%)	94
Stated that improved seeds are available (%)	42
Stated that local seeds are affordable (%)	86
Range of cost of seeds per bag	₦ 2,500-10,000
Average cost of local seeds	₦ 3,581
Stated that improved seeds are affordable (%)	24
Stated that Agrochemicals are available (%)	44
Range of costs of Agrochemicals	₦ 500-2,500
Average cost of agrochemicals	₦ 1,132
Can afford agrochemicals	49
Stated that improved technology is available (%)	30
Makes more money with the Technology (%)	29
Buys inputs from open markets (%)	31

Variable	Lagos (n=59)
Farmers statement on the activities of extension workers	
Visited by extension officers (%)	88
Trained by extension workers (%)	46
Private Sector provide training (%)	28
Farmers statements on credit facility & other sources of funds	
Access to credit available (%)	15
Benefit from advance payment for commodity (%)	33
Know specific buyer (%)	48
Know specific seller in the market (%)	37
Farmers with different reasons for growing rice (%)	
Commercial viability	63
Land suitable for rice cultivation	48
Inheritance from parents	46
No response	0
Land area cultivation & dominant crops	
Mean area of land cultivated (in ha)	3
Farmers cultivating 1-3 hectares (%)	73
Farmers with dominance of rice (%)	98
Farmers with cassava as second most important crop (%)	98
Farmers with yam as second most important crop (%)	20
Farmers with maize as second most important crop (%)	10
Farmers with sugarcane as second most important crop (%)	7

Table 5.2: Responses of farmers to other parameters on rice cultivation in Lagos State

Variable	Lagos (n=59)
Farmers choosing operations as most labour intensive (%)	
Planting	57
Bird Scaring	9
Harvesting	15
Weeding	19
No response	0
Farmers choosing activity as one for which most assistance is desired (%)	
Planting	33
Bird Scaring	52
Harvesting	3
Weeding	10
No response	2
Farmers obtaining labour supply from the family (%)	
Adult male labour	97
Male Children	76
Adult female labour	75
Female children labour	58
Farmers using different methods for storage of commodity (%)	

Variable	Lagos (n=59)
Store in bags	36
Store on mats	46
Store in the ceilings	20
Farmers storing rice (%)	
In the house	58
In the store	37
Farmers claiming yield of rice (%)	
1-5 bags	3
6-11bags	3
>11bags	93
Yield per hectare (in MT)	1
Average number of bags of rice sold, consumed and given as gift	
Sold	103
Consumed	10
Given as gift	6
Farmers selling bags of rice sold (%)	
1 -10	7
11-20 bags	19
21-30 bags	10
> 30 bags	68
Price of rice per bag	
Range of prices in Naira	7,500 - 9,500
Average (N)	9,000
Farmer's income from rice	
Range of total income from rice (N)	10,000 – 30,000,000
Average total income (N)	325,606
Farmers selling rice (%)	
Sell to Millers	19
Sell to merchant – wholesalers	36
Sell to merchant – retailers	51
Sell to others	2
Farmers expressing opinion on market chain (%)	
Market chain favourable	61
Farmers expressing opinion on source of threats to market chain stability (%)	
Dominance of middlemen	12
Transportation	56
Poor storage	10
Poor pricing	66
Poor market information	19
Farmers expressing opinion on areas of high cost (%)	
Labour	76
Fertilizer	5
Agrochemicals	7

Variable	Lagos (n=59)
Planting	63
Harvesting	25
Sourcing Seeds	10
Farmers identifying challenges (%)	
Access to agrochemicals & fertilizers	10
Labour	85
Storage of commodity	2
Water for irrigation	0
Pests and diseases	17
Seeds	3
Farmers with opinion on standards (%)	
There are standards in rice production	93
Dryness	80
Shelf life	37
Cleanness	76
Wholeness	61
Farmers who believe that there is problem with fuel wood supply (%)	14
Farmers who believe that HIV/AIDS is a serious problem (%)	25
Farmers who believe that HIV AIDS causes reduction in labour supply	16
Farmers who believe the following are effective for HIV/AIDS Mitigation (%)	
Awareness creation	54
Provision of VCT	12
Provision of ART	0
Others	0
Farmers who believe the following cause encroachment in the community (%)	
Construction of Access road	3
Expansion of settled areas	2
Expansion of GSM coverage	0
Invasion by cattle headsmen	0
Others	3
Farmers who list the following as causes of conflicts (%)	
Any conflicts (=Yes)	7
Conflict with other resources	
On water sources	3
Inter/intra community conflicts	3
Conflict on fuelwood	0
Other conflicts	0
Resolving conflict	No action, Dig bore holes
Farmers who believe the following about the soil (%)	
Getting Better	72
Over cultivation a problem	25
Erosion a problem	0

Variable	Lagos (n=59)
Others	0
Specify others	

5.2. Parboiling

Almost all the respondents (95%) are engaged in parboiling as a secondary occupation with farming being their primary occupation. All the parboilers are processing for commercial purposes as it is a profitable venture, which brings bulk income to help meet family demands. However, about 42% of parboilers process for household consumption.

Parboiling Method: Parboiling is carried out by steaming the dried paddy rice in drums filled with hot water, after which the parboiled rice is dried in the open air/sun, using bags as mats to prevent stones and dirt from getting into the rice.

Quality Issues: Milled rice with no stones, white and free of chaff is considered good quality. Quality is thus dependent on colour, smell and presence of stones. Smell is mostly due to soaking in water for long periods of time which results in fermentation of the rice.



Figure 5.1: Drying of Parboiled Paddy Rice at Ise Village, Lagos State

Health Issues: The main health concerns of parboilers include respiratory tract infection due to dust coming from the turning during sun-drying of paddy, exposure to heat from both the fire used in boiling the rice, as well as from sun during drying. Fuel wood was identified as the only source of energy for parboiling.

Market: The price of a 50kg bag of paddy rice in the community is about N7,500 (£30). Processed rice is sold at N9000 (£36)/bag. Price is usually based on the prevailing circumstances in and around the community. The mean fee charged/bag at peak periods is N138 (£0.6) while about N130 (£0.5) is charged during off peak period.

Rice is usually held in the community for less than one week (68%) but about 11% of farmers store the commodity for more than 4 weeks. It is mostly agreed (53% of respondents) that there are quality issues with regards to the commodity. Most parboilers sell their products at the mill and the prices are usually determined by the forces of demand and supply as such during periods of bumper harvest, prices are determined mostly by buyers. However, prices are sometimes fixed by parboilers associations based on what they know obtains elsewhere.

Market structure has changed somewhat with respect to demand for rice. Demand has increased considerably in recent times causing traders to buy directly from farmers. There are no barriers in the market hence there is free entry into the rice trade. There are no constraining conditions like Association fees. Millers serve more or less as middlemen between parboilers and marketers. They are therefore good sources of information about market prices. Some parboilers also trade the commodity in the market themselves and this enables them to get first hand information about current prices. The most common market risk is low demand for products. This usually happens during the peak season when there is plenty of rice in the market.

Access to credit: About 16% of the respondents reported that there is availability of credit facility; however, none of them claimed to have access to the facility.

Challenges & coping strategies: Challenges that parboilers face include pests, too much rain and too little sunshine, lack of money to pay for paddy rice, lack of micro-credit facility and lack cooperative society to cushion some of the constraints. Parboiled rice gets spoilt during periods of persistent rain when there is usually little sunshine to dry the commodities. In such situations, parboilers end up selling their products at give away prices. The sun-drying aspect of parboiling is considered stressful.

There are a few coping strategies that local people adopt. For example, they hire labour for the sun-drying. Some borrow from friends and relations on many occasions to meet the demand of parboiling.

Table 5.3: Issues related to rice parboiling in Lagos State

Variable	Lagos (n=19)
Parboilers using the type of parboiling instrument (%)	
Aluminium Pots	0
Half Drum	0
Full Drum	68
Hanigha	0
Others	0
No response	32

Variable	Lagos (n=19)
Parboilers with the purpose of Processing rice being the following (%)	
Household consumption	42
Commercial	100
Parboilers processing More than 50% of products for the following (%)	
Farmers (%)	100
Millers (%)	100
Traders (%)	100
Self (%)	100
Mean fees charged per 50kg byte following	
Farmers	N81
Parboilers	-
Traders	-
Processors holding commodity before sale (%)	
One week or less	68
2-3 weeks	21
4 weeks or more	11
Mean fees charged/bag at peak periods	N138
Mean fees charged/bag at off-peak periods	N130
Parboilers who believe there is availability of a standard product (%)	53
Parboilers who believe there is availability of credit (%)	16
Parboilers who believe there is access to credit (%)	0
Conflict (%)	
Parboilers who believe there is land encroachment	0
Parboilers who believe there are cases of HIV/AIDS	21
Parboilers who believe there is creation of awareness mitigates HIV/AIDS	100

*Note: Cost of aluminium pots vary between N1,000 and N6,000 per pot while half drums cost between N1,000 and N10,000 per half drum

5.3. Milling

There are few millers in the State. There is only one mill available in the two LGAs where Ofada rice farming is predominant and it is owned by the Rice Farmers Association in the area called Olanrewaju Rice Farmers Association. Rice farming is the primary occupation in the community as almost all the respondents (80%) are involved in farming. However, from the data, only 20% were involved in milling as primary occupation. Reasons given for being in the business include inter-generational practice, profitability and absence of other jobs of interest in the community. The fact that there is only one milling Centre in Ise community guarantees patronage virtually throughout the year.

Technology: Majority of the interviewed millers (60%) have only one milling machine per milling centre while the remaining 40% have three or more milling machines. Millers in the state have different types of milling machines but the most commonly used machines are locally assembled. All the millers got their machines at a price range between N100,000 (£400) and N140,000 (£560). In Ise community, the only

milling centre has a 60 HP Kubuwa milling machine with a Lister driver. Whenever there is a breakdown, a technician is called from Ijebu Ode for repairs. Machine maintenance and fuel are major cost items. Only 20% of the millers are aware of improved technology but none of them reported its availability in the communities.

The two main sources of energy for milling in the State are national grid and diesel-powered generators. The two are important but generators ensure smooth milling services. The engine type used by millers in this state is Indian type driven by diesel engine and all the engines available are 25 years and below in age. None of the millers in this State operates beyond 12 hours in a day. Most (80%) of the millers operate between 7 and 12 hours per day. Others operate for six hours and below.

None of the millers made money from the improved technology even though 60% of them would invest in the technology if credit is available. About 20% of the millers claimed to have undergone training in the area of milling. The only training millers in the state have been exposed to deals with use and maintenance of milling machines. Only about 20 felt that such training was effective and only few (20%) of the respondents can afford to attend such training if available.

Ownership: The only milling machine in Ise community is owned by the Rice Farmers Association in the area and a miller is employed to handle daily activities.

Health issues: Main health issues are the problem of dust from rice husk and injuries sustained from broken belts when the machine is in operation.

Income: The mean annual income of millers in the state is N123,000. Mean milling fee was about N320 (£1.3)/50kg during the peak season while an average milling fee of about N310 (£1.2) is charged during off peak season. Usually, milling charges are lower during the off peak season. Fees charged for milling are determined by what obtains elsewhere and the cost of diesel. On the average, about 34 bags of rice are processed in a day. However, this can be as high as about 51bags during peak season and as low as about 16 bags during off peak period. The miller does not normally buy or sell rice. He gets paid for milling for the farmers/ parboilers.

Storage and Marketing: About 40% of all the millers provide storage facility before or after processing (milling). Transportation, handling and taxes accounted mostly for the transaction costs, none of the millers considered Association fees as one of the transaction costs. About 40% of the millers processed between 51 and 200 bags of 50kg each while the remaining 60% process more than 200 bags each in a season. None of the respondents processed less than 50 bags of rice in a season. An area of high cost according to millers in this State is procurement of fuel. Only about 20% of respondents reported that the price of milling is influenced by rice variety. It is noteworthy that demand for Ofada rice continues to increase in the state.

Labour Utilisation: About 80% of the respondents reported availability of non-household labour with cost of labour ranging from N200 to N600 for male and less than N200 to N300 for female. Most millers (about 80%) process for more than 11 days during peak period while less than half of the millers (40%) process for the same period during off peak period. About 60% of the millers surveyed process for more than 10 months in a year. However, 20% of them process rice for 6 – 9 months

in the year while the remaining 20% process for between one and five months in a year. All the millers surveyed reported that between two and three members of their households are engaged in rice processing employment in this state. The most important issue in rice milling as reported by 40% of respondents was quality of milled rice.

Challenges & coping strategies: Major challenges encountered by millers include irregular power supply, high cost & scarcity of diesel, and aging machines which readily break down. Although the machine does break down, its spare parts can be obtained in Lagos. Only 20% of the respondents indicated stones in rice as another important challenge encountered by millers. All the millers have never had any support from their Association in addressing their major challenges.

Table 5.4: Issues related to rice milling in Lagos State

Characteristics	Lagos State (n=5)
Millers with annual income ranges from rice milling (%)	
N50,000.00 or less	20
N50,001- N100,000.00	40
N100,001 – N150,000	0
N150,000 and above	40
Mean annual income	N123,000
Millers categorised according to number of mills (%)	
Small (1 mill)	60
Medium 1 (2-3 mills)	0
Medium 2 (3 or more mills)	20
Medium 3 (Non Indian mill)	20
Millers using different types of milling machines (%)	
Amuda	0
Dorman	0
England	0
Lister	0
Locally Assembled Machines	80
Ruston	0
Scoda	20
Millers claiming costs of procuring milling machine (%)	
N100, 000-N140, 000	100
N140, 001-N180, 000	0
N180,001 and above	0
Millers processing different varieties of commodity (%)	
Ofada	100
Igbemo	0
Improved variety	0
Millers giving reasons for processing the varieties (%)	
Availability	0
High demand	0
High yield	20
No response	80

Characteristics	Lagos State (n=5)
Millers with more than 50% of processing carried out for different groups (%)	
Farmers	100
Parboilers	0
Traders	20
Mean fees charged different groups for milling 50kg of rice	
Farmers	N318
Parboilers	N300
Traders	N360
Those who provide storage before or after processing	40
Millers who considered different transaction costs as major cost items (%)	
Transport	60
Handling	60
Marketing	20
Taxes	60
Association fees	0
Average fee charged per bag for milling at different seasons	
Peak season	N318
Off season	N309
Millers who reported that prices are influenced by variety (%)	20
Millers who reported standard product (%)	20
Millers who reported different cost items as areas of high cost (%)	
Machine maintenance	40
Fuel	80
Labour	0
Millers reporting challenges encountered in processing rice (%)	
Stones	20
Lack of power supply	100
High cost of fuel	20
No response	0
Millers reporting areas in which association's support addressed problems (%)	
Bought Generator	0
Buying fuel	0
None	100
Pre-Check goods	0
Seek Solution	0
Millers reporting quantity of rice processed in the season (%)	
Less than 50 bags of 50kg	0
51-100 bags of 50kg	20
101-200 bags of 50kg	20
More than 200 bags of 50kg	60
Processing technique used (%)	
Manual processing	---
Machine use	---

Characteristics	Lagos State (n=5)
Millers who utilize polisher (%)	0
Millers who are aware of improved technology (%)	20
Availability of improved technology in community (%)	0
Millers who made more money from improved technology (%)	0
Millers who would invest in improved technology if credit is available (%)	60
Millers who gave reasons for investing in improved technology (%)	
Makes the work faster	0
Improves quality	20
More profit	0
Provision of training by private sectors	40
Millers who have been trained: Area of training (%)	
Processing and preservation	0
Use and maintenance of machines	20
Milling	20
Millers who can afford to attend training (%)	20
Millers who believe in effectiveness of the training (%)	20
Millers who claim that non-household labour is available (%)	80
Millers who claim cost of Labour (male) (%)	
Less than N200	20
N201-N300	20
N301-N600	60
Millers who claim cost of labour (female) (%)	
Less than N200	40
N201-N300	60
N301-N600	0
Millers who process for different numbers of days in peak season (%)	
10 days or less	20
11-15 days	40
16 days and above	40
Millers who process for different numbers of days in off peak season (%)	
10 days or less	40
11-15 days	20
16 days and above	40
Millers who process rice for different periods (%)	
1-5 months	20
6-9 months	20
10-12 months	60
Millers who claim issues as most important (%)	
Milling	0
Quality	40
Returns	0
No response	60

Characteristics	Lagos State (n=5)
Conflicts + HIV/AIDS	
Land encroachment	0
HIV/AIDS cases	0

5.4. Trading

Rice trading is the primary occupation of all the respondents. Traders claim to be in rice business because of two main reasons its commercial viability (61%) and inherited business (28%). Their interest in the business will be sustained with increased opportunities but they are likely to give it up for more profitable business if rice trading becomes unprofitable. Rice traders sell other food items such as imported rice, garri, beans and vegetable oil but Ofada rice is generally regarded as most profitable.

Quality: Some of the parameters mentioned for measuring quality of Ofada rice include cleanliness, odour, whiteness, and absence of stones. Traders generally prefer to display high grade quality for sale as there is limited market for lower grades. In general, “quality” is the prime factor (mentioned by 81%) considered by traders. Most buyers (86%) also consider quality as being more important than price. One of the distinguishing parameters of high grade rice is “cleanliness”. Traders seem to believe that once it is Ofada, it will be of high grade except something goes wrong with its processing. Lower grades mentioned by a few respondents are ‘agric’ variety and “Ofada red”.

Price and Income: Rice sells at between N9,000 (£36) and N12,000 (£48) per 50kg bag depending on the quality. ‘White’ rice is generally more acceptable and therefore more expensive than ‘brown’/‘black’ rice. Prices of grade one rice range from 10,000 (£40) to 12,000 (£48) per 50kg bag with an average of N11,000 (£44). Where market prices make the sale of a particular consignment unprofitable, traders often delay the sale of their stock for later period when better prices may be obtainable. Many factors including those of government and rice growing communities determine prices. The rice sellers associations are reported to have no control over pricing.

Labour: Labour is available in the communities for loading as confirmed by 94% of respondents at costs that are considered affordable (expressed by 81% of traders). Traders are assisted through provision of labour by their spouses (48%) and friends (19%). About 43% of respondents also have more than five of their household members helping in the business. In some instances between one and five members of the households are engaged in other employments apart from rice trading. Most (57%) own the products they sell and have been recording increase in sales lately.

Sources of commodity: Traders in Lagos State get most of their supplies from other sources apart from the farmers and millers. This is expected in Lagos where wholesalers buy in large quantities and bring to the city for retailers or other big sellers to distribute.

Storage & Marketing: The commodity is stored mainly in bags (91%) and mainly kept at home (52%). Average bag sizes range between 45kg and 50kg. Many (71%)

traders store their products for up to one season. A few (19%) store for more than two seasons. About 29% of respondents indicated that training is available and 38% had actually attended such training.

Most of the traders in Lagos state can be classified as small to medium scale traders because from the survey, all traders interviewed traded less than 100 bags per annum. Average cost per bag range from ₦ 4,000 (£16) to ₦16,000 (£64) with an average of ₦7,594 (£30). The rice market is functioning well as indicated by 81% of respondents. Many of the traders (71%) have places/agents to whom they sell or from whom they buy their products. Market structure appears favourable as indicated by 32% of respondents. Traders however, feel that transportation and activities of middlemen are some of the problems affecting the market structure. These make the products to reach the markets at fairly higher prices. Number of bags traded during the peak season ranged between 1 and 25 with an average of 7. During off season periods, number traded ranged between 1 and 15 bags with an average of 4 bags. Less than 5% of the quantity sold is consumed and given out as gift. Commodities are largely bought within the communities (62%) but sold largely both within (33%) and outside (43%) the communities. Many traders (62%) travel more than 10km to sell their commodity and most traders sell directly to retailers.

There are no barriers to joining the trade and there is no cartel in the trade. There has not been any conflict whatsoever emanating from restrictions in access to any market. There are no payments of taxes or levies.

Access to credit: The challenge faced by traders is poor financing partly due to poor access to credit. About 14% of respondents claim that credit facilities are available mostly from friends and family. Only about one third of the traders buy and sell on credit.

Health issue: The most important health issues raised by the traders are body aches and pains because buses bump them up and down due to the roughness of the road to the communities.

Family issue: Traders enjoy the cooperation of their spouses, since proceeds from the trade are used to support the family.

Challenges and coping strategies: There are challenges associated with transport and handling (81%). A key response to this by traders is “joint purchase” which helps to reduce the unit cost of transportation. The dominant means of transportation to the market are motor vehicle (67%) and canoe (33%). Transport cost ranges between ₦50 (£0.2) and ₦1,000 (£4) depending on distance with an average of ₦426 (£1.7). About 3% of respondents mentioned land encroachment as a problem but there are no conflicts in the communities. Some respondents considered fuelwood shortage (14%) an important challenge and HIV/AIDS (58%) a health issue in the communities. All of these are consistent with contemporary situation in Lagos state. Other challenges mentioned include lack of credit facilities, reduced demand during peak periods, poverty, government policy on rice importation, which affects the demand for their product, rising demand for Ofada from outside the locality which creates competition during off season period i.e. from October to July, and weather.

Table 5.5: Issues related to rice trading in Lagos State

Variable	Lagos (n=21)
Traders operating at different scales per annum (%)	
<100 bags	100
100-200 bags	0
>200 bags	0
Cost of 50kg bag of rice	
Range (N)	4,000- 16,000
Average (N)	7,594
Traders obtaining rice from different sources (%)	
Farmers	0
Mills	0
Others	56
Total income from rice trading	
Range (N)	10,500 – 600,000
Average (N)	370,928
Traders selling different varieties of rice (%)	
OFADA (dominant variety)	89
No response	11
Traders giving reason for trading in the rice (%)	
Commercial viability	61
Affordability	0
Inherited from parents	28
No response	11
Traders giving reasons for trading particular variety (%)	
Commercial viability	62
Affordability	17
Inherited from parents	44
Traders selling different varieties/types of rice (%)	
Igbemo	0
Ofada	48
Ofada – Ise	5
Ofada Red	5
Ofada White	5
No response	37
Grade of rice mentioned above (%)	
Grade 1	93
Traders mentioning factor as most important in influencing choice of commodity (%)	
Quality	81
Price	10
Availability	10
No response	0
Traders who claim that rice market is functioning (%)	81
Traders who claim that market structure is favourable (%)	32
Traders mentioning issues lacking in present structure (%)	
Regulation of middlemen presence	33
Transportation	48

Variable	Lagos (n=21)
Storage	9
Unstable pricing	24
Poor market information	5
Traders who claim that of agents/places to buy from are available (%)	71
Traders who buy rice from different places (%)	
Within town	62
Outside town	14
Within the state	0
Outside the state	24
Traders who buy rice from different stakeholders (%)	
Farmers	91
Wholesalers	0
Millers	9
Traders who sell rice to different stakeholders (%)	
Within town	33
Outside town	43
Within the state	24
Outside the state	0
No response	0
Traders who travel distances (%)	
1-10km	38
>10km	62
No response	0
Traders who sell to (%)	
Consumer	38
Retailer	62
No response	0
Traders who claim these as constraints to rice trading (%)	
Poor Financing	57
Low access to Credit facilities	43
No response	0
Traders who claim that market prices are determined by these (%)	
Government	5
Association	0
Rice Growing Communities	19
Others	38
No response	38
Traders who claim these as challenges (%)	
Transport Costs	81
Handling	76
Storage	19
Marketing	52
Traders who claim these as most important transaction costs	
Handling	38
Storage	19

Variable	Lagos (n=21)
Marketing	72
No response	0
Traders who use the following options to address the challenges (%)	
Develop credit facilities	5
Joint purchase	62
Others	0
No response	33
Traders who claim that credit is available (%)	14
Traders who claim that cooperative societies are functioning (%)	5
Traders who claim the following as sources of credit (%)	
Family	24
Bank loan	5
Friends	21
No response	50
Traders who listed the following as conditions for taking a loan (%)	
Producing a guarantor	5
Grades and prices (Grade 1)	
Range (grade 1) – (N)	10,000-12,000
Average price (N)	10,500
Price of grade 2	
Range (N)	4,000-8,000
Average price (N)	5,675
Labour for loading available (%)	94
Labour cost affordable (%)	81

Table 5.6: Transportation and other features of rice trading in Lagos State

Variable	Lagos (n=21)
Traders who listed these as type of transportation available (%)	
Canoe	33
Head portage	0
Motor Cycle	0
Motor Vehicle	67
Truck Pushers	0
Wheel Barrow	0
No response	0
Transport cost	
Range (in Naira)	50-1000
Average (in Naira)	426
There are cheaper means (%)	0
Traders using system for storing rice (%)	
Store in bags	91
Store in stacks	29
Spread on mat	0
Store at home	52
In the ceiling	19
Traders holding commodity for different periods (%)	

Variable	Lagos (n=21)
One season	71
Two Seasons	5
More than two seasons	19
It depends on demand	5
No response	0
Traders who believe the following on standards of product (%)	
There is a standard product	81
Describe (most mentioned attribute)	Cleanliness
Individual determines standard	67
There is a premium price	95
Traders who claim the following to be more important to buyers (%)	
Quality	86
Price	14
Traders who claim the following on training & marketing (%)	
Training available	29
Attended a training	38
Marketing a higher quality important	100
Range of bag sizes (kg)	1-50
Traders who buy commodity on credit (%)	33
Traders who sell rice on credit	33
Trades who are assisted by their spouse (%)	48
Traders who are assisted by friends (%)	19
No of bags traded per mkt day Peak Season (range)	1-25
Average no of bags (Peak season)	7
No of bags traded per mkt day Off Season (range)	1-15
Average no of bags (off season)	4
Quantity consumed per annum (bags)	0.25-25
Average quantity consumed (bags)	4
Quantity given out per annum (bags)	0-10
Average quantity given out (bags)	3.6
Quantity sold per annum (bags)	20-1000
Average quantity sold (bags)	209
Traders who claim that their income have increased (%)	86
Traders who own their product (%)	57
Traders who work as agent (%)	14
Traders with household members in business (%)	
1-5 members	57
>5 members	43
Male <=5	29
Male >5	71
<=5 female members	33
Members in other employment <=5	29
Traders listing the following as sources of conflicts/concern (%)	
Land encroachment	3
HIV/AIDS	58

6. Ofada Rice Activities in Osun State

6.1. Rice Cultivation

Since rice is grown on rain-fed fields, its planting is influenced by the onset of rains. Planting takes place mostly in March and April and harvesting is done three to four months later. Farm sizes devoted to the crop ranged from 1 to 16 hectares. The modal size is one hectare, the average size is 5 hectares and 27% of the farmers interviewed crop between one and three hectares.

Rice is considered the most important crop in the target communities. It is widely grown for many reasons which include the fact that it affords the farmer bulk income which can be used for capital projects such as building a house and paying his children's school fees, its production is an inter-generational practice, which is likely to be sustained in the community in spite of the challenges, and it has a short period of maturation. Cassava is considered the second most important crop by 76% of the respondents in the enumerative survey. It is planted either singly or in conjunction with other crops like yam and maize. Cassava takes this position because it provides food for the farmers' household and requires minimum attention once it begins to grow on the field

Ofada rice varieties: From the enumerative survey, Ofada is the dominant variety of rice grown in the community. A few respondents mentioned a variety from the Ministry of Agriculture. The initial FGD indicated however, that there may be other varieties. Discussants said that there were four varieties including the one from the Ministry of Agriculture, *Ofada*, *Sapagiri* (from Wasinmi, Abeokuta), and *NERICA*. Nevertheless, these four may just be two – Ofada and improved varieties from the Ministry of Agriculture. The second FGD threw further light on other varieties: *ITA – 150*, *ITA – 257* and *Taraba*. The first two are improved early maturing variety while *Taraba* variety is the swamp rice imported from Gboko.

Ofada is however, the most popular variety. One of the main reasons for this is its commercial viability as indicated by 85% of the respondents in the enumerative survey. It is also affordable. The cultivation of other varieties, particularly the improved varieties, resulted in heavy losses to farmers in the past because the varieties were not accepted by local rice consumers. Farmers are unwilling to experiment with it again.

Labour utilisation: Generally, farmers have access to family labour - male, female, adult and children. Adult female and male members of the household are generally more important. For example, in the enumerative survey, 98% of farmers reported that adult male members of the household are usually available to help in the various farming operations. Many operations however require more than available family labour hence the need for hired labour and use of tractors by some farmers. Land preparation for rice cultivation is done mainly with the traditional hoes and cutlasses (88%). A small proportion (7%) of the farmers interviewed used tractors for this. The tractors used are hired from government-owned agro service centres and some individual large scale farmers. Rice harvesting is done manually by all the farmers with 45% of the required labour provided by family members. The average daily rate of hiring labour was about N400 (£1.6). Threshing of the harvested rice is also done

manually and about 60% of the labour required is hired. The cost of hiring labour for threshing per day is about the same for harvesting.

Availability of labour for the various operations is generally seen as the most problematic issue in rice cultivation. This is said to be particularly true for bird scaring which is the most labour demanding operation in rice cultivation in the State. About 68% of the farmers interviewed indicated a desire for assistance in dealing with this problem.

Farm inputs: Farm inputs such as seeds, fertilizers and agrochemicals which are critical in ensuring good harvest are generally available in the communities. The analysis of data from the enumerative survey shows that fertilizers are available as indicated by 60% of the respondents and a sizable majority (61%) can afford them. Most farmers (91%) indicated that local seeds are readily available at an average price of N3,483 (£14) per bag but the prices range from ₦1,000 (£4) to ₦10,000 (£40) per 50kg bag. Improved varieties of rice are not common and only 24% of the farmers can afford their costs. Most farmers (93%) can however afford local seeds. Normally, farmers do not buy seeds. They usually preserve part of their harvests for the purpose. This is a customary practice as expressed in the initial FGD session. Usually, it is new entrants into the business or those who had missed one or two growing seasons that go to buy seeds in the open market.

In the enumerative survey, 90% of respondents said that agrochemicals, such as 2,4,D, orizoplus and Primextra, are obtainable while 71% said they are affordable. About 73% of farmers interviewed obtain their inputs from accredited dealers although the inputs are available in the open market where the remaining 27% buy from.

Storage and marketing: Storage of paddy is a critical component of rice production which may affect the prices of products. The enumerative survey shows that 87% of farmers interviewed store their paddy on mats and are kept at home. Most farmers (76%) believe that the structure in place for marketing their products in terms of access to the products is good. There are many market routes for the products. These include exchanging products with pre-harvest creditors at farm gates, taking products to the farmers' house from where the parboilers (who may be the farmers' wives) take over, milling centres, and market within and/or outside the immediate community. The major problems with the market mentioned in the enumerative survey are difficulty of getting transportation to the market (mentioned 44% of respondents) as well as poor pricing of commodities in the market (mentioned by 39%). Apart from selling to casual buyers, most farmers have specific merchants to whom they sell their commodities. Many farmers (68%) sell directly to merchant – wholesalers.

Only a small percentage of farmers (7%) consider middlemen as threats to the proper functioning of the marketing chain. These buy in large quantities and compel retailers to buy from them at higher rates.

Although respondents said that there is standard in rice production, further probing show that they interpreted standard to mean quality. Quality is important in marketing

the product. The most important characteristics in this respect are cleanliness of products, dryness and wholeness of the grains.

Access to credit facilities: In the two rice growing communities, farmers generally have little or no access to credit facilities. Results of the enumerative survey show that 19% of respondents had such access to credit. When they do, conditions are generally not convenient as interest rates are said to be high. However, some support come from advance payments made by buyers before the harvest season. A substantial proportion (85%) of the farmers interviewed have enjoyed this kind of arrangement with buyers.

Extension services: There is only very little evidence that extension officers go to the fields to assist rice farmers to improve productivity on their farms as only 9% of the farmers interviewed during the enumerative survey claimed to have been visited by extension officers. Farmers are not familiar with extension officers from Osun State Agricultural Development Project (OSADEP). The extension workers are reported to have done only little training in the area. A negligible proportion of respondents (2%) claimed to have received training from private organizations. Only 5% of the farmers interviewed claimed to have used improved farming technologies for rice cultivation introduced to them while only 4% believe that they made more money from using such technologies.

Income to the farmer: The average yield for those interviewed is 20 bags per hectare. The price quoted by farmers during the enumerative survey for a bag of rice ranged from ₦7,000 (£28) to ₦10,000 (£40) with an average of ₦8,000 (£32). However, the second FGD shows that the cost is between ₦7,200 (£29) and ₦8,400 (£34). These fell within the range obtained from the enumerative survey. The figures appear generally acceptable depending on the scale at which the rice is bought. Large scale buying will be cheaper. The total quantities sold by a single farmer on an annual basis ranged from one to 78 bags with a mean of 14 bags. An average of 1 bag is consumed by the farmers' households and one bag given out as gift. Income to the farmer from the sale of rice ranges from ₦8,000 to ₦7m, the average income being ₦85,135.

Conflicts: There is very little indication that there are conflicts in the community. For example only 2% agreed to any of the forms of conflicts listed in the questionnaire. On encroachment, most of the farmers felt that there is no encroachment. For example only 3% felt that construction of access roads constituted an encroachment. 3% agreed with any of the other possible forms of encroachments as being significant. Most people (66%) feel that the soil is getting better and over-cultivation is also singled out as the most important threat (31%). There are problems of fuelwood supply as indicated by 12% of the respondents. This may be expected given that firewood is the dominant source of domestic energy in the area.

HIV/AIDS: Farmers generally feel that HIV/AIDS is not a problem. None of the respondent agreed that it is a problem.

Major Challenges: Labour for the various activities in rice farming is recognized as the highest and most important area of cost. However, pests and diseases, particularly the invading birds at ripening to harvest time are considered the highest

challenge by about 46% of the farmers. Bird scaring can cost as much as N30,000 per hectare in a season. Attack by grass-cutters can also be devastating. Farmers usually need to commit resources to fencing their farms because of the pests. Grass-cutters when trapped on the fences can however help pay for cost of the fences. A grass-cutter sells for as much as N2,000. Another area of considerable challenge is labour (29%) and availability of water for irrigation (29%). Declining soil fertility, fuel wood shortages and HIV AIDS are not seen as major challenges by the farmers in the State.

Table 6.1: Responses of farmers to issues related to rice cultivation in Osun State

Variable	Osun (n=59)
Farmers using land preparation techniques (%)	
Use tractors	7
Use hoes and cutlasses	88
Use other methods	5
No response	0
Farmers obtaining land preparation equipment from different sources (%)	
Private individuals	95
Hired	3
Govt Agencies	2
Farmers using labour sources for harvesting (%)	
Family labour	45
Hired labour	55
Farmers paying different labour rates for harvesting (%)	
N100 – N200 per day	6
N201- -N400 per day	45
>N400 per day	49
No response	0
Average cost of labour per day	₦ 410
Farmers using different threshing techniques (%)	
Family labour	38
Hired labour	60
Mechanical	2
Others	0
No response	0
Farmers' response to agricultural inputs issues	
Stated that fertilizers are available (%)	60
Mentioned – N.P.K. as most common	17
Average cost of NPK fertilizer	₦ 2,180
Can afford fertilizers (%)	61
Stated that Local seeds are available (%)	91
Stated that improved seeds are available (%)	29
Stated that local seeds are affordable (%)	93
Range of cost of seeds per bag	₦ 1,000 – 10,000
Average cost of local seeds	₦ 3,483
Stated that improved seeds are affordable (%)	24

Variable	Osun (n=59)
Stated that Agrochemicals are available (%)	90
Range of costs of Agrochemicals	₦ 800-3,000
Average cost of agrochemicals	₦ 1,165
Can afford agrochemicals	71
Stated that improved technology is available (%)	5
Makes more money with the Technology (%)	4
Buys inputs from open markets (%)	27
Farmers statement on the activities of extension workers	
Visited by extension officers (%)	9
Trained by extension workers (%)	5
Private Sector provide training (%)	2
Farmers statements on credit facility & other sources of funds	
Access to credit available (%)	19
Benefit from advance payment for commodity (%)	85
Know specific buyer (%)	75
Know specific seller in the market (%)	81
Farmers with different reasons for growing rice (%)	
Commercial viability	85
Land suitable for rice cultivation	4
Inheritance from parents	2
No response	9
Land area cultivation & dominant crops	
Mean area of land cultivated (in ha)	5
Farmers cultivating 1-3 hectares (%)	27
Farmers with dominance of rice (%)	76
Farmers with cassava as second most important crop (%)	76
Farmers with yam as second most important crop (%)	31
Farmers with maize as second most important crop (%)	0
Farmers with sugarcane as second most important crop (%)	0

Table 6.2: Responses of farmers to other parameters on rice cultivation in Osun State

Variable	Osun (n=59)
Farmers choosing operations as most labour intensive (%)	
Planting	7
Bird Scaring	72
Harvesting	0
Weeding	17
No response	4
Farmers choosing activity as one for which most assistance is desired (%)	
Planting	7
Bird Scaring	68
Harvesting	3
Weeding	20
No response	2
Farmers obtaining labour supply from the family (%)	

Variable	Osun (n=59)
Adult male labour	98
Male Children	25
Adult female labour	80
Female children labour	7
Farmers using different methods for storage of commodity (%)	
Store in bags	40
Store on mats	87
Store in the ceilings	25
Farmers storing rice (%)	
In the house	76
In the store	25
Farmers claiming yield of rice (%)	
1-5 bags	7
6-11bags	24
>11bags	69
Yield per hectare (in MT)	1
Average number of bags of rice sold, consumed and given as gift	
Sold	14
Consumed	1
Given as gift	1
Farmers selling bags of rice sold (%)	
1 -10	53
11-20 bags	36
21-30 bags	2
> 30 bags	12
Price of rice per bag	
Range of prices in Naira	7,000 - 10,000
Average (N)	8,000
Farmer's income from rice	
Range of total income from rice (N)	8,000 - 7,000,000
Average total income (N)	85,135
Farmers selling rice (%)	
Sell to Millers	24
Sell to merchant – wholesalers	68
Sell to merchant – retailers	19
Sell to others	2
Farmers expressing opinion on market chain (%)	
Market chain favourable	76
Farmers expressing opinion on source of threats to market chain stability (%)	
Dominance of middlemen	7
Transportation	44
Poor storage	3
Poor pricing	39
Poor market information	9

Variable	Osun (n=59)
Farmers expressing opinion on areas of high cost (%)	
Labour	56
Fertilizer	7
Agrochemicals	31
Planting	12
Harvesting	15
Sourcing Seeds	0
Farmers identifying challenges (%)	
Access to agrochemicals & fertilizers	24
Labour	29
Storage of commodity	2
Water for irrigation	29
Pests and diseases	46
Seeds	0
Farmers with opinion on standards (%)	
There are standards in rice production	100
Dryness	64
Shelf life	7
Cleanness	46
Wholeness	23
Farmers who believe that there is problem with fuel wood supply (%)	9
Farmers who believe that HIV/AIDS is a serious problem (%)	0
Farmers who believe that HIV AIDS causes reduction in labour supply	0
Farmers who believe the following are effective for HIV/AIDS Mitigation (%)	
Awareness creation	-
Provision of VCT	-
Provision of ART	-
Others	-
Farmers who believe the following cause encroachment in the community (%)	
Construction of Access road	3
Expansion of settled areas	2
Expansion of GSM coverage	0
Invasion by cattle headsmen	0
Others	3
Farmers who list the following as causes of conflicts (%)	
Any conflicts (=Yes)	2
Conflict with other resources	2
On water sources	2
Inter/intra community conflicts	0
Conflict on fuelwood	0
Other conflicts	0
Resolving conflict	Community meeting, Dialogue

Variable	Osun (n=59)
Farmers who believe the following about the soil (%)	
Getting Better	66
Over cultivation a problem	31
Erosion a problem	9
Others	3
Specify others	Application of Chemicals, Higher yields

6.2. Parboiling

Parboilers in Osun State are mainly women (85%) and parboiling is done in practically the same way in the four states. Most of the parboilers are spouses of farmers. In a way therefore, they parboil to support the family. It is also seen as a profitable venture that brings bulk earnings which can help meet perceived demands.

Available variety: The most common variety of rice parboiled is the Ofada variety. Other varieties parboiled include Taraba and NERICA.

Market route and determination of prices: Most parboilers in the community sell their products at the milling centre and the prices are usually determined by market conditions (forces of demand and supply) though at times, prices are influenced by the parboilers associations. However as earlier indicated, during periods of bumper harvest, prices are solely determined by buyers.

Market structure is also flexible as it permits free entry and exit of participants. In general, demand for the commodity has increased considerably in recent times. The millers serve more or less as the middlemen between parboilers and marketers. They are therefore good sources of information about market prices. Some parboilers often trade the commodity in the market themselves and this enables them to get first hand information about current prices. Almost all the parboilers (95%) are processing for commercial purposes and they use both full drums (40%) and aluminium pots (20%) as parboiling instruments. The mean fee charged/bag at peak periods is N197 (£0.8) while about N183 (£0.7) is charged during the off peak period. Almost all respondents (95%) hold the commodity for one week or less. About 20% of the respondents reported that there is availability of credit facility; however only 15% claimed to have access to the facility. Some of the respondents (about 55%) agreed that there is a standard product of the commodity. The most common market risk is low demand for products. This usually happens during the peak season when there is plenty of rice in the market. The other risk, which is associated with the first, is the fact that buyers often determine the price of rice. This makes it difficult for parboilers to project how much income they can expect from their effort.

Energy sources: The parboilers generally have two major sources of energy: fuel wood and scraps of wood obtained from sawmills. However, the activities of those who rely on fuel wood may contribute to the depletion of forests.

Challenges and coping strategies: The parboilers identified pests, weather, poverty, lack of government support, lack of cooperative society, and debtors as some of the major challenges facing them. Their commodities sometimes get spoilt during periods of persistent rain when there is usually little sunlight to dry the commodity. In situations like this, parboilers end up selling their products at very low prices. The sun-drying aspect of parboiling is identified as very stressful. The parboiler has to be in the sun at an average of about once in every 15 minutes spending close to 10 minutes, depending on the quantity of her rice, turning the commodity around for thorough drying. Also, in times of bumper harvest, parboilers are at the mercy of traders who determine how much they would pay for measures of milled rice. To tackle the problem of acute shortage of water for parboiling, digging of well and the use of labour to fetch water were normally employed. Parboilers also have to borrow from friends and relations on many occasions to meet the demand of parboiling.

Parboilers also have health concerns. These include: respiratory tract infection due to inhaling of dusts during sun-drying of parboiled rice, exposure to heat from both the fire used in boiling the rice, and from the sun. Turning the hot drum to drain off water after heating is also a major concern in parboiling especially for aging parboilers.

Table 6.3: Issues related to rice parboiling Osun State

Variable	Osun (n=20)
Parboilers using the type of parboiling instrument (%)	
Aluminium Pots	20
Half Drum	0
Full Drum	40
Hanigha	5
Others	0
No response	35
Parboilers with the purpose of Processing rice being the following (%)	
Household consumption	40
Commercial	95
Parboilers processing More than 50% of products for the following (%)	
Farmers (%)	100
Millers (%)	95
Traders (%)	100
Self (%)	100
Mean fees charged per 50kg byte following	
Farmers	N90
Parboilers	N20
Traders	N88
Processors holding commodity before sale (%)	
One week or less	95
2-3 weeks	0
4 weeks or more	5
Mean fees charged/bag at peak periods	N197
Mean fees charged/bag at off-peak periods	N183

Variable	Osun (n=20)
Parboilers who believe there is availability of a standard product (%)	55
Parboilers who believe there is availability of credit (%)	20
Parboilers who believe there is access to credit (%)	15
Conflict (%)	
Parboilers who believe there is land encroachment	6
Parboilers who believe there are cases of HIV/AIDS	5
Parboilers who believe there is creation of awareness mitigates HIV/AIDS	100

*Note: Cost of aluminium pots vary between N1,000 and N6,000 per pot while half drums cost between N1,000 and N10,000 per half drum

6.3. Milling

Several reasons supported preference of rice milling over engagement in other business. These include the fact that the business was inherited from parents, profitability and the dominance of rice cultivation in the community. Rice milling in this community was considered to be one of the most profitable trades and it enables them to cater for the members of their household. Some others are in the rice milling business because there is no other “lucrative” job in the community.

Technology: Majority of millers in the state (73%) have only one milling machine and the most commonly used type of machines are “Amuda” (80%) and “scoda” (13%) machines. Most of the millers (67%) procured their machines at the cost of N100,000 (£400) – N140,000 (£560). About 7% of the millers interviewed in this State are aware of improved technology but all indicated that improved technology is not available in the State. None of the respondents has made money from improved technology but 47% claimed they would invest in improved technology if credit is available because they believe this will make the work faster. About 20% of respondents have undergone training in the area of milling while another 20% got trained on the use & maintenance of machines. Only 7% reported training on processing and preservation. About 20% of the respondents could afford to attend the training if available, while 20% of them said the training is effective.

The engine type used by millers in this state is diesel engine and most of the engines available are 25 years and below in age. Most of the engines were purchased directly by millers while few were inherited from parents. Most of the millers operate for 7 to 16 hours a day while a few operate for more than 17 hours.

Varieties of rice milled: Unlike parboilers, millers in this community do not normally discriminate once the rice is properly parboiled and dried enough for milling. The quality of milled rice is generally determined by how well it had been parboiled. However, there are five different rice varieties in the various communities as far as milling operation is concerned. These include: Ofada, Erin or Igbemo, Agric, Sapagiri (imported from Abeokuta) and Igede (which is predominantly cultivated by Tiv people from Taraba State). The Igede variety according to millers in Erin Ijesa is easier to mill than the other rice varieties. However, people come from outside the community to mill their rice.

Labour: About 67% of the respondents believe that there is availability of non-household labour with cost of labour ranging from N300 (£1.2) to N600 (£2.4) for male and less than N200 (£1.2) to N300 (£1.2) for female. Most of the millers (67%) process for more than 16 days during peak period while about 73% process for the same period of days or more during off peak period. 46% of the millers in this community process the commodity between 10 and 12 months in a year.

Cost of milling: The milling price is normally determined mainly by two factors; the Millers Association and market conditions (forces of demand and supply). The Millers Association enforces milling prices by ensuring that all millers abide and defaulters are punished. The cost of milling is generally lower during the off peak period. Higher cost of diesel is normally transferred to the customer. Cost of milling on the average in the community is about N300 (£1.2) per 50kg bag of parboiled rice. About 73% of the respondents provide storage facility before or after processing (milling). Transportation, handling, marketing and taxes accounted mostly for the transaction costs. However, machine maintenance could be another major area of high cost in addition to procurement of fuel. The millers in Erin Ijesa own the machines and this should help reduce milling cost. However, the milling process involves division of labour, especially during peak periods. Some work as operators while some work as *jack* men, others are responsible for separating the husk from the rice after milling. These raise the costs of milling.

Milling operation is considered as a lucrative business. However, there is higher patronage during peak than off peak periods. During peak periods, millers in this community could mill up to 200 tins of rice per day, while they mill about 10 tins off peak. During the peak period, they may realize up to N20,000 (£80) a day, depending on the volume of rice milled. Most of the millers in this state (67%) processed more than 201 bags of 50kg each in a season.

Source of Energy: There are basically two main sources of energy for milling operation. These are electricity and diesel-powered generators. The two are important but millers in Erin Ijesa use only generators for their operation due to unreliable power supply.

Challenges in rice milling: The major challenge encountered by most of the millers is power supply as reported by 67% of respondents. However, about 33% of them included presence of stones as another important challenge encountered by millers. Most of the millers (86%) did not have any support from their Association in addressing the challenges while few of them (7%) reported that their Association supported them in the area of procurement of fuel. Some of the other challenges facing the millers include high cost and scarcity of diesel, low patronage during off peak period and aging machines, which readily break down. However, the parts of the machine are readily available in nearby big towns. There are health-related challenges. The main health issue is the problem of dust from rice husks and injuries sustained from broken belts when the machine is in operation.

Coping strategy

To take care of the constraint posed by low patronage during the off season of rice processing, millers in this community normally get engaged in some other activities like farming, driving and petty trading to keep them busy.

Table 6.4: Issues related to rice milling in Osun State

Characteristics	Osun State (n=15)
Millers with annual income ranges from rice milling (%)	
N50,000.00 or less	47
N50,001- N100,000.00	20
N100,001 – N150,000	0
N150,000 and above	33
Mean annual income	N108,666
Millers categorised according to number of mills (%)	
Small (1 mill)	73
Medium 1 (2-3 mills)	27
Medium 2 (3 or more mills)	0
Medium 3 (Non Indian mill)	0
Millers using different types of milling machines (%)	
Amuda	80
Dorman	0
England	0
Lister	0
Locally Assembled Machines	7
Ruston	0
Scoda	13
Millers claiming costs of procuring milling machine (%)	
N100, 000-N140, 000	67
N140, 001-N180, 000	6
N180,001 and above	27
Millers processing different varieties of commodity (%)	
Ofada	87
Igbemo	0
Improved variety	13
Millers giving reasons for processing the varieties (%)	
Availability	20
High demand	7
High yield	0
No response	73
Millers with more than 50% of processing carried out for different groups (%)	
Farmers	27
Parboilers	53
Traders	60
Mean fees charged different groups for milling 50kg of rice	
Farmers	N413
Parboilers	N393
Traders	N400
Those who provide storage before or after processing	73
Millers who considered different transaction costs as major cost items (%)	

Characteristics	Osun State (n=15)
Transport	53
Handling	47
Marketing	40
Taxes	60
Association fees	33
Average fee charged per bag for milling at different seasons	
Peak season	N293
Off season	N246
Millers who reported that prices are influenced by variety (%)	7
Millers who reported standard product (%)	20
Millers who reported different cost items as areas of high cost (%)	
Machine maintenance	47
Fuel	67
Labour	13
Millers reporting challenges encountered in processing rice (%)	
Stones	33
Lack of power supply	67
High cost of fuel	7
No response	0
Millers reporting areas in which association's support addressed problems (%)	
Bought Generator	0
Buying fuel	7
None	86
Pre-Check goods	7
Seek Solution	0
Millers reporting quantity of rice processed in the season (%)	
Less than 50 bags of 50kg	20
51-100 bags of 50kg	0
101-200 bags of 50kg	13
More than 200 bags of 50kg	67
Processing technique used (%)	
Manual processing	---
Machine use	---
Millers who utilize polisher (%)	0
Millers who are aware of improved technology (%)	7
Availability of improved technology in community (%)	0
Millers who made more money from improved technology (%)	0
Millers who would invest in improved technology if credit is available (%)	47
Millers who gave reasons for investing in improved technology (%)	
Makes the work faster	20
Improves quality	0
More profit	7

Characteristics	Osun State (n=15)
Provision of training by private sectors	7
Millers who have been trained: Area of training (%)	
Processing and preservation	7
Use and maintenance of machines	20
Milling	20
Millers who can afford to attend training (%)	20
Millers who believe in effectiveness of the training (%)	20
Millers who claim that non-household labour is available (%)	67
Millers who claim cost of Labour (male) (%)	
Less than N200	0
N201-N300	27
N301-N600	73
Millers who claim cost of labour (female) (%)	
Less than N200	27
N201-N300	40
N301-N600	33
Millers who process for different numbers of days in peak season (%)	
10 days or less	20
11-15 days	13
16 days and above	67
Millers who process for different numbers of days in off peak season (%)	
10 days or less	20
11-15 days	7
16 days and above	73
Millers who process rice for different periods (%)	
1-5 months	27
6-9 months	27
10-12 months	46
Millers who claim issues as most important (%)	
Milling	7
Quality	13
Returns	13
No response	67
Conflicts + HIV/AIDS	
Land encroachment	0
HIV/AIDS cases	6

6.4. Trading

Variety: The four major varieties traded by traders in Osun state are Erin red and white (which is the local Ofada), Agric (from improved seed), Sapagiri (from Wasimi in Ogun state) and Taraba.

Quality issue: Quality is largely determined by the whiteness and dryness of the rice grains. Good quality rice is white, clean and maintains its length while over dried rice

breaks during milling operation. Rice that is affected by rain during the rainy season is not normally white in colour, the colour changes to brown while grains sucked by birds are normally black. Presence of stones is another quality factor and this, most of the time, is because the commodity is dried on the floor. Stony rice is considered of lesser quality. Sometimes hurriedly harvested rice may come out of the mills with parts of its husk and this also reduces the quality of the rice.

Rice trading and market structure: The traders in Osun state sell within and outside the community at both retail and wholesales prices. They buy rice either from farmers directly or from middlemen. However, rice purchased from farmers is always less than that purchased from middle men. Many (80%) of the traders are in the rice business because of its commercial viability while only few (20%) considered affordability of the product as their major reason for trading in rice. Most of the traders (60%) in this community reported that quality of the commodity is the major factor influencing the choice of rice. Most of the traders (67%) were of the opinion that the present market structure is favourable however, unstable price, lack of storage facility, poor market information and dominance of middle men are constraining market structure in this community and these make the products to reach the markets at fairly high prices. Most of the traders (91%) sell their commodities outside the community; only 7% sell theirs within the community. This is confirmed by the fact that most of the traders (73%) travel more than 10km to sell their commodity and they sell directly to retailers.

Traders reported greater assistance from friends (73%) than from their spouses (33%). Many traders (60%) have less than five of their household members helping in the business. In many instances (47%) between one and five members of the households are engaged in other employments apart from rice trading. Most (93%) own the products they sell and record increase in income. Rice traders sell other food items such as imported rice, garri, beans and vegetable oil but Ofada rice is generally regarded as most profitable.

Market price and market route: All rice traders in Osun state are small scale traders as all the respondents traded less than 100 bags. Average cost per bag range from ₦3,000 (£12) to ₦10,000 (£40) with a mean of ₦5,214 (£21). Market forces determine the prices of rice in this community although the rice sellers' association does influence the price from time to time. Where market prices make the sale of a particular consignment unprofitable, traders often delay the sales of their stock particularly if is off season. Where stock is getting stale, an individual trader may however decide to sell off his/her wares at a reduced price to forestall further loss. Many factors including those of government (33%), Association (40%) and rice growing communities (8%) determine prices.

Access to credit facility: The constraint faced by traders is poor financing which is partly due to poor access to credit facility. More than half (53%) of the respondents said credit facility was available, the main sources being family members and cooperative societies. Taking loan from the cooperative societies is not all that easy as the prospective beneficiary has to produce a guarantor. Many traders (60%) buy their commodities on credit while 53% sell on credit.

Storage and marketing: The commodity is stored mainly in bags (93%) and mainly kept at home (53%). Average bag sizes range between 2 and 50kg with an average of 36kg. Many traders keep their products for up to one season (47%). None reported having attended one form of training or another in rice trading. 80% reported that there is availability of labour for loading bags of rice from the store into the vehicle and the labour cost is affordable.

Income to trader: Number of bags traded during the peak season ranged between one and 20 with an average of 9 while the range was between one and 15 bags with an average of 6 bags during the off season periods. Almost all (80%) the traders reported increase in income. The average price quoted by traders in the state was N5,214 (£21). However the retail price of rice is a function of the quality. First grade rice (white and clean) costs about N160 (£0.6) per small bowl (*congo*), rice with broken grains costs about N120 (£0.5), rice with brown grains costs N120 (£0.5) while rice with black grains (grains sucked by birds) costs about N80 (£0.3) per “congo”.

Major Challenges: The major challenges in rice trading are associated with transportation and handling (73%). The handling and marketing of the commodity are considered to pose the greatest challenges (47% each). A coping strategy by traders is “joint purchase” which helps to reduce the unit cost of transporting bags of the commodity. The dominant means of transportation to the market are motor vehicle (33%) but truck pushers and wheel barrow operators are also important (21% and 27% respectively) in the transportation of the product. Transport cost within the community ranges between N20 (£0.1) and N100 (£0.4) depending on distance with an average N89 (£0.35). There are no reports of land encroachment as a problem in this community. HIV/AIDS did not show up as a major challenge for rice traders in Osun state.

Table 6.5: Issues related to rice trading in Osun State

Variable	Osun (n=15)
Traders operating at different scales per annum (%)	
<100 bags	100
100-200 bags	0
>200 bags	0
Cost of 50kg bag of rice	
Range (N)	3,000-10,000
Average (N)	5,214
Traders obtaining rice from different sources (%)	
Farmers	60
Mills	0
Others	33
Total income from rice trading	
Range (N)	6,000 – 372,000
Average (N)	115,500
Traders selling different varieties of rice (%)	
OFADA (dominant variety)	67
No response	33

Variable	Osun (n=15)
Traders giving reason for trading in the rice (%)	
Commercial viability	80
Affordability	20
Inherited from parents	7
No response	0
Traders giving reasons for trading particular variety (%)	
Commercial viability	73
Affordability	13
Inherited from parents	20
Traders selling different varieties/types of rice (%)	
Igbemo	20
Ofada	0
Ofada – Ise	0
Ofada Red	0
Ofada White	7
No response	73
Grade of rice mentioned above (%)	
Grade 1	60
Traders mentioning factor as most important in influencing choice of commodity (%)	
Quality	60
Price	0
Availability	0
No response	40
Traders who claim that rice market is functioning (%)	93
Traders who claim that market structure is favourable (%)	67
Traders mentioning issues lacking in present structure (%)	
Regulation of middlemen presence	47
Transportation	33
Storage	40
Unstable pricing	40
Poor market information	27
Traders who claim that of agents/places to buy from are available (%)	67
Traders who buy rice from different places (%)	
Within town	60
Outside town	33
Within the state	7
Outside the state	40
Traders who buy rice from different stakeholders (%)	
Farmers	80
Wholesalers	20
Millers	0
Traders who sell rice to different stakeholders (%)	
Within town	7
Outside town	65
Within the state	13

Variable	Osun (n=15)
Outside the state	13
No response	2
Traders who travel distances (%)	
1-10km	21
>10km	73
No response	6
Traders who sell to (%)	
Consumer	21
Retailer	73
No response	6
Traders who claim these as constraints to rice trading (%)	
Poor Financing	53
Low access to Credit facilities	43
No response	4
Traders who claim that market prices are determined by these (%)	
Government	33
Association	40
Rice Growing Communities	8
Others	13
No response	6
Traders who claim these as challenges (%)	
Transport Costs	73
Handling	47
Storage	33
Marketing	47
Traders who claim these as most important transaction costs	
Handling	27
Storage	13
Marketing	27
No response	33
Traders who use the following options to address the challenges (%)	
Develop credit facilities	40
Joint purchase	67
Others	13
No response	0
Traders who claim that credit is available (%)	53
Traders who claim that cooperative societies are functioning (%)	40
Traders who claim the following as sources of credit (%)	
Family	40
Bank loan	13
Friends	0
No response	47
Traders who listed the following as conditions for taking a loan (%)	

Variable	Osun (n=15)
Producing a guarantor	33
Grades and prices (Grade 1)	
Range (grade 1) – (N)	2,400-8,000
Average price (N)	4,400
Price of grade 2	
Range (N)	2,400 -6,000
Average price (N)	3,867
Labour for loading available (%)	80
Labour cost affordable (%)	80

Table 6.6: Transportation and other features of rice trading in Osun State

Variable	Osun (n=15)
Traders who listed these as type of transportation available (%)	
Canoe	0
Head portage	7
Motor Cycle	0
Motor Vehicle	33
Truck Pushers	21
Wheel Barrow	27
No response	12
Transport cost	
Range (in Naira)	20-100
Average (in Naira)	89
There are cheaper means (%)	0
Traders using system for storing rice (%)	
Store in bags	93
Store in stacks	13
Spread on mat	20
Store at home	53
In the ceiling	27
Traders holding commodity for different periods (%)	
One season	47
Two Seasons	0
More than two seasons	13
It depends on demand	20
No response	20
Traders who believe the following on standards of product (%)	
There is a standard product	87
Describe (most mentioned attribute)	-
Individual determines standard	93
There is a premium price	73
Traders who claim the following to be more important to buyers (%)	
Quality	53
Price	47

Variable	Osun (n=15)
Traders who claim the following on training & marketing (%)	
Training available	0
Attended a training	0
Marketing a higher quality important	33
Range of bag sizes (kg)	2-50
Traders who buy commodity on credit (%)	60
Traders who sell rice on credit	53
Trades who are assisted by their spouse (%)	33
Traders who are assisted by friends (%)	73
No of bags traded per mkt day Peak Season (range)	1-20
Average no of bags (Peak season)	9
No of bags traded per mkt day Off Season (range)	1-15
Average no of bags (off season)	6
Quantity consumed per annum (bags)	0.3 -3
Average quantity consumed (bags)	1
Quantity given out per annum (bags)	0.3-2.5
Average quantity given out (bags)	1.2
Quantity sold per annum (bags)	15-450
Average quantity sold (bags)	118
Traders who claim that their income have increased (%)	80
Traders who own their product (%)	93
Traders who work as agent (%)	7
Traders with household members in business (%)	
1-5 members	60
>5 members	40
Male <=5	53
Male >5	47
<=5 female members	60
Members in other employment <=5	47
Traders listing the following as sources of conflicts/concern (%)	
Land encroachment	7
HIV/AIDS	0

7. Ofada Rice Activities in Ekiti State

7.1. Rice Cultivation

In Ekiti state, rice planting takes place in March and April when the rainy season has become fully established and harvesting is done three to four months later. Land preparation for rice cultivation is done manually with traditional hoes and cutlasses (90%). The items used for land preparation are largely owned by the individuals (88%). Land area cultivated for rice ranged from one to 45 hectares. The modal size is one hectare, the average size 6 hectares and 33% of the farmers crop between one and three hectares. Rice cultivation brings bulk income, improves social status of farmers and guarantees food security. Cassava planted either singly or in conjunction with other crops like yam and maize is said to be the next most important crop by 82% of the respondents in the enumerative survey.

Ofada rice varieties: Igbemo (white and red) is the dominant variety of rice grown in the community. Igbemo rice, as the FGD confirms, is the same as Ofada rice. Apart from this dominant variety, farmers grow the Gboko (Taraba) variety and a few respondents mentioned the variety introduced by the Ministry of Agriculture. The Igbemo variety is popular because of its commercial viability as reported by more than nine-tenths of the respondents. The Gboko variety is also common but is a swamp variety and grows only in limited areas.

From the first FGD, it is clear that planting the local variety might continue even if newer varieties are made more popular. Apart from its acceptability, the local variety is what has been grown over a long period of time. The discussants reiterated that rice cultivation is an age long practice in the area, as the skills for cultivating rice are passed down from one generation to another. It is likely to continue to attract the interest of the local people. Also, the variety that has long been cherished i.e. Ofada is likely to continue to be more favoured.

Most of the respondents (90%) indicated that there is consideration for standard in terms of the quality of rice produced. The most important characteristic in this respect is wholeness of grains mentioned by 77% of the respondents.

Labour utilisation: Generally, farmers have access to family labour - male and female, adult and children. Adult female and male members of the household are generally more important. For example, more than 78% of the farmers reported that adult male members of the household are usually available to help in the various farming operations. Many operations however require substantially more than available family labour hence the need for hired labour and use of tractors by some farmers.

Land preparation for rice cultivation is done mainly with the traditional hoes and cutlasses (90%) while 13% mentioned the use of tractors. Rice harvesting is done manually by all the farmers with about 95% requiring hired labour. The average daily rate of hiring labour is about N385 (£1.5) with daily rates ranging between N200 (£0.8) and N400 (£1.6). Threshing of the harvested rice is done manually and as with harvesting, while 96% of the labour required is hired. The cost of hiring labour for threshing per day is about the same for harvesting. The second FGD helped clarify further issues on cost incurred in rice cultivation. From the FGD, it is clear that the

average cost of clearing land is about N4,500 (£18) per hectare while labour cost include N200/day (£0.8) for planting and N1,000/day (£4) for harvesting. Household labour is employed for other aspects of farming operations like bird scaring, and so on.

Bird scaring was identified in the communities as the operation that is most labour intensive. About 48% of the farmers said this. Weeding (23%) is the next most important operation that farmers in the State considered to be most labour demanding and is also the factor ranked first in terms of the activity for which assistance is desired.

Farm inputs: Availability of farm inputs such as seeds, fertilizers and agrochemicals are critical in ensuring good harvests. Only a fifth of the respondents considered fertilizers to be readily available. Nevertheless, 62% said they can afford them. Local seeds are available and affordable. These were expressed by 97% and 92% of the respondents respectively. The improved seeds (from the Ministry of Agriculture) are not so common. Local seeds are readily available at an average price of N4,198 (£17) per bag but the prices range from N1000 (£4) to N10,200 (£41) per 50kg bag. Improved varieties of rice are not common but 40% of the farmers can afford their costs. Many farmers normally do not buy seeds. They preserve part of their harvests for the next planting season.

Agrochemicals are readily available (93%) and are affordable. However, the FGD suggests that they are often unavailable when critically needed. Improved technology is however hardly mentioned in the community. Most farmers obtain their inputs from the open market although there are accredited dealers who could provide them with high quality inputs.

Storage and marketing: Storage of paddy is a critical component of rice production. In the enumerative survey, farmers indicated that they store their paddy on mats and in bags. The mats were mentioned more frequently than bags. In the second FGD farmers explained further that mats were placed on cemented floors to prevent stones from mixing with the commodity. As indicated by 90% of the respondents, the commodity was usually kept in the house. Most farmers (77%) believe that the structure in place for marketing their products in terms of access to buyers is good. Apart from selling to casual buyers, the farmers have specific individuals/agents to whom they sell their commodities. Many farmers (63%) sell directly to merchant – wholesalers. Also, farmers know specific buyers (86%) and sellers (73%) in the market who could buy their commodities.

In general, the market chain for rice is favourable and the route is predictable. The variability comes in when farmers have to “pay” their creditors with all or part of their products sometimes right on the field. About 29% of the respondents said this in the enumeration survey. The major threat to the market chain identified was poor pricing. A little above 50% of the respondents believed this. The next most significant factor was dominance of middlemen (37%), followed by poor market information (32%). Respondents indicated that standards in terms of the quality of rice produced are important in marketing the product. The most important characteristics in this respect are cleanliness of products, dryness and wholeness of the grains. The FGD results show that all of these reflect in the weight of the product. The high quality product is

heavier. Quality of the product with respect to dryness is often tested by breaking a few of the grains with teeth. The dry ones break readily.

Access to credit facilities: In the rice growing communities, farmers generally have little or no access to credit. Only 23% of the respondents had access to credit facilities. Those who had access took loans from cooperative societies, relations and friends. However, some support come from advance payments made by buyers before the harvest season. About 29% of the farmers interviewed have enjoyed this kind of arrangement with buyers.

Extension services: There is little evidence that extension officers go to the fields to assist rice farmers to improve productivity on their farms in the communities as only 8% claimed to have been visited by extension workers. Very few individuals in the FGD mentioned receiving help from extension workers. The extension workers had not trained anyone and no one had received any form of training from private agents on rice cultivation. While 2% said improved technology is available, none of the respondents use improved technology in their rice farming.

Income to the farmer: The average yield per hectare is 1.4 metric tonnes. From the second FGD, it is clear that yield is variable as it is determined by several factors such as bird invasion, soil fertility and weather. However, in a normal season, if one plants one bowl of rice, he may harvest about 30 bowls. The price quoted by farmers for a bag of rice ranges from ₦8,000 (£32) to ₦12,000 (£48) with an average of ₦8,000 (£32). The total quantities sold by a single farmer on an annual basis ranges from one bag to 78 with a mean of 11.7 bags. An average of two bags is consumed by the farmers' household and two bags given out as gift. Income to the farmer from the sale of rice ranges from ₦100,000 (£400) to ₦9m (£36,000), the average income being ₦141,627 (£567). Data from the FGD supports high seasonal income. Discussants suggested that one can make up to ten times of his total investment in rice cultivation.

Conflicts: There are only little indications of any form of conflicts in the communities. For example just 8% of the respondents agreed to any of the forms of conflicts listed in the questionnaire. Conflicts are resolved through community meetings and dialogue. On encroachment, most of the farmers felt that there is no encroachment. For example only 12% of the respondents felt that construction of access roads constituted an encroachment. 7% mentioned "expansion of settled areas". Most people (73%) feel that the soil is getting worse and over-cultivation is also singled out as the most important threat (65%). There are problems of fuel-wood supply as indicated by 14% of the respondents. This may be expected given that firewood is the dominant source of domestic energy in the area.

HIV/AIDS: Farmers believed that HIV/AIDS is not a problem. None of the respondent agreed that it is.

Major Challenges: Labour for the various activities in rice farming is recognized as the highest and most important area of cost. Land clearing was singled out in the focused discussion as the most expensive aspect in rice farming. This aspect is capital intensive more especially for old people who cannot do it by themselves and have to hire labour which can be expensive. For example the cost of labour per day

is N600 (£2.4) per person. Other aspects of high cost are weeding, planting, and harvesting. In the enumerative survey, the major challenges identified were pests and diseases (78%), labour (68%), and access to agro-chemicals and fertilizers (55%). Another area of challenge is bird scaring in the last one month before rice is harvested. Farmers also noted that weather vagaries are a major challenge as rice is grown on rain fed fields. Decline in soil fertility, fuelwood supply and HIV AIDS are not seen as major challenges by the farmers in the State.

Table 7.1: Responses of farmers to issues related to rice cultivation in Ekiti State

Variable	Ekiti (n=60)
Farmers using land preparation techniques (%)	
Use tractors	13
Use hoes and cutlasses	90
Use other methods	3
No response	0
Farmers obtaining land preparation equipment from different sources (%)	
Private individuals	88
Hired	10
Govt Agencies	2
Farmers using labour sources for harvesting (%)	
Family labour	5
Hired labour	95
Farmers paying different labour rates for harvesting (%)	
N100 – N200 per day	2
N201- -N400 per day	68
>N400 per day	30
No response	0
Average cost of labour per day	₦ 385
Farmers using different threshing techniques (%)	
Family labour	4
Hired labour	96
Mechanical	0
Others	0
No response	0
Farmers' response to agricultural inputs issues	
Stated that fertilizers are available (%)	20
Mentioned – N.P.K. as most common	3
Average cost of NPK fertilizer	₦ 2,750
Can afford fertilizers (%)	62
Stated that Local seeds are available (%)	97
Stated that improved seeds are available (%)	18
Stated that local seeds are affordable (%)	92
Range of cost of seeds per bag	₦ 1,000 – 10,200
Average cost of local seeds	₦ 4,198
Stated that improved seeds are affordable (%)	40
Stated that Agrochemicals are available (%)	93

Variable	Ekiti (n=60)
Range of costs of Agrochemicals	₦ 680-1,500
Average cost of agrochemicals	₦ 1,043
Can afford agrochemicals	82
Stated that improved technology is available (%)	2
Makes more money with the Technology (%)	2
Buys inputs from open markets (%)	82
Farmers statement on the activities of extension workers	
Visited by extension officers (%)	8
Trained by extension workers (%)	0
Private Sector provide training (%)	0
Farmers statements on credit facility & other sources of funds	
Access to credit available (%)	23
Benefit from advance payment for commodity (%)	29
Know specific buyer (%)	86
Know specific seller in the market (%)	73
Farmers with different reasons for growing rice (%)	
Commercial viability	93
Land suitable for rice cultivation	32
Inheritance from parents	2
No response	0
Land area cultivation & dominant crops	
Mean area of land cultivated (in ha)	6
Farmers cultivating 1-3 hectares (%)	33
Farmers with dominance of rice (%)	82
Farmers with cassava as second most important crop (%)	82
Farmers with yam as second most important crop (%)	20
Farmers with maize as second most important crop (%)	12
Farmers with sugarcane as second most important crop (%)	60

Table 7.2: Responses of farmers to other parameters on rice cultivation in Ekiti State

Variable	Ekiti (n=60)
Farmers choosing operations as most labour intensive (%)	
Planting	10
Bird Scaring	48
Harvesting	14
Weeding	23
No response	5
Farmers choosing activity as one for which most assistance is desired (%)	
Planting	22
Bird Scaring	28
Harvesting	2
Weeding	35
No response	13
Farmers obtaining labour supply from the family (%)	
Adult male labour	78

Variable	Ekiti (n=60)
Male Children	40
Adult female labour	48
Female children labour	35
Farmers using different methods for storage of commodity (%)	
Store in bags	53
Store on mats	80
Store in the ceilings	0
Farmers storing rice (%)	
In the house	90
In the store	0
Farmers claiming yield of rice (%)	
1-5 bags	10
6-11bags	25
>11bags	65
Yield per hectare (in MT)	1.4
Average number of bags of rice sold, consumed and given as gift	
Sold	18
Consumed	2
Given as gift	2
Farmers selling bags of rice sold (%)	
1 -10	40
11-20 bags	31
21-30 bags	8
> 30 bags	23
Price of rice per bag	
Range of prices in Naira	8,000- 12,000
Average (N)	8,000
Farmer's income from rice	
Range of total income from rice (N)	100,000 – 9,000,000
Average total income (N)	141,627
Farmers selling rice (%)	
Sell to Millers	12
Sell to merchant – wholesalers	63
Sell to merchant – retailers	8
Sell to others	18
Farmers expressing opinion on market chain (%)	
Market chain favourable	77
Farmers expressing opinion on source of threats to market chain stability (%)	
Dominance of middlemen	37
Transportation	27
Poor storage	10
Poor pricing	52
Poor market information	32

Variable	Ekiti (n=60)
Farmers expressing opinion on areas of high cost (%)	
Labour	95
Fertilizer	10
Agrochemicals	32
Planting	50
Harvesting	38
Sourcing Seeds	2
Farmers identifying challenges (%)	
Access to agrochemicals & fertilizers	55
Labour	68
Storage of commodity	0
Water for irrigation	3
Pests and diseases	78
Seeds	2
Farmers with opinion on standards (%)	
There are standards in rice production	90
Dryness	5
Shelf life	2
Cleanness	27
Wholeness	77
Farmers who believe that there is problem with fuel wood supply (%)	14
Farmers who believe that HIV/AIDS is a serious problem (%)	0
Farmers who believe that HIV AIDS causes reduction in labour supply	-
Farmers who believe the following are effective for HIV/AIDS Mitigation (%)	
Awareness creation	2
Provision of VCT	0
Provision of ART	0
Others	0
Farmers who believe the following cause encroachment in the community (%)	
Construction of Access road	12
Expansion of settled areas	7
Expansion of GSM coverage	0
Invasion by cattle headsmen	2
Others	0
Farmers who list the following as causes of conflicts (%)	
Any conflicts (=Yes)	8
Conflict with other resources	12
On water sources	0
Inter/intra community conflicts	12
Conflict on fuelwood	0
Other conflicts	0
Resolving conflict	

Variable	Ekiti (n=60)
Farmers who believe the following about the soil (%)	
Getting Better	27
Over cultivation a problem	65
Erosion a problem	35
Others	0
Specify others	

7.2. Parboiling

The primary occupation of most of the respondents in the parboiling business is trading with parboiling as a minor occupation. Almost all the parboilers process for commercial purposes and 79% use aluminium pots as parboiling instrument. However, about 32% of them parboil for household consumption in addition to the commercial purpose. All the respondents process more than 50% of the commodity for millers, farmers, traders and for their personal consumption.

Parboiling Method: As in the other three states, the paddy is initially soaked for about three days, after which the water used in soaking the paddy is changed. The rice is then boiled. Rice parboiling is done locally on firewood. This may take up to seven hours of intense heat on fuel wood. Fuel wood are got from sawmills and the surrounding bushes. After a while, the parboiled rice is pushed off the fire to allow the hot water drain. The process of drying the paddy is by spreading it on the floor. There are cemented floors on which rice is spread in almost all the compounds in Igbemo.

Varieties of rice parboiled: Varieties of rice parboiled in Ekiti are the same varieties planted by farmers in the state. These include the Igbemo white and red as well as the Taraba or Gboko varieties. Parboilers also travel out of the community to get other varieties like NERICA. Most of the Parboilers (95%) parboil for commercial purposes

Costing: The mean fee charged/bag at peak periods is N300.00 (£1.2) while about N240.00 (£1) is charged during off peak period. None of the respondents hold the commodity for more than 4 weeks while most of them (79%) hold it for one week or less. About 42% of the respondents reported that there is availability of credit facility; however, 37% of the parboilers claimed to have access to the facility. Most of the respondents (about 90%) agreed that there is a standard product of the commodity.

Market route and determination of prices: Most parboilers sell their products at the mills and market conditions (forces of demand and supply) usually determine the prices. There have been slight changes in the market structure in recent times due to increasing demand for local rice. The market is barrier free as there are no strict regulations regarding entry and exit. The millers also serve as the source of information about market prices as most of the parboilers sell their products at the milling centres. The market risks faced by parboilers include fall in demand, which in most cases makes them to sell at losses. Also a little error during any stage of parboiling or drying may affect the quality, with a concomitant effect on the price of the rice.

Challenges and coping strategies: Rice parboiling involves a lot of stress and time. Some of the challenges facing parboilers include availability of fuel wood, which is mostly sourced from the mill, lack of money to purchase paddy, as there is no credit facility available, dearth of water needed for parboiling as they find it difficult to get water during the dry season and pest infestation during the process of drying. To cope with the challenges, parboilers hire labour for the various phases of the parboiling, to complement their household labour; they also dig wells for water. In addition, they raise credits from friends and relations. Health concerns are also challenges. The concerns include: exposure to heat from both the fire used in boiling the rice, as well as from sun during drying. Turning the heated drum is also a major concern in parboiling and is reported to be particularly difficult for aging parboilers. Generally these exercises often lead to fatigue and body pains.

Table 7.3: Issues related to rice parboiling in Ekiti State

Variable	Ekiti (n=19)
Parboilers using the type of parboiling instrument (%)	
Aluminium Pots	79
Half Drum	32
Full Drum	16
Hanigha	0
Others	84
No response	0
Parboilers with the purpose of Processing rice being the following (%)	
Household consumption	32
Commercial	95
Parboilers processing More than 50% of products for the following (%)	
Farmers (%)	100
Millers (%)	100
Traders (%)	100
Self (%)	100
Mean fees charged per 50kg byte following	
Farmers	-
Parboilers	N98
Traders	-
Processors holding commodity before sale (%)	
One week or less	79
2-3 weeks	21
4 weeks or more	0
Mean fees charged/bag at peak periods	N300
Mean fees charged/bag at off-peak periods	N240
Parboilers who believe there is availability of a standard product (%)	90
Parboilers who believe there is availability of credit (%)	42
Parboilers who believe there is access to credit (%)	37
Conflict (%)	
Parboilers who believe there is land encroachment	16
Parboilers who believe there are cases of HIV/AIDS	0

Variable	Ekiti (n=19)
Parboliers who believe there is creation of awareness mitigates HIV/AIDS	100

*Note: Cost of aluminium pots vary between N1,000 and N6,000 per pot while half drums cost between N1,000 and N10,000 per half drum

7.3. Milling

Rice milling business naturally grew from the abundant rice fields planted in the area. Most of the millers are males and are in business because of its profitability. A few of them also inherited the trade from their parents. Several other reasons given for being in the trade include high demand for milling services due to extensive cultivation of rice in the area, and the fact that there is no other good job in the community.

Technology: Millers in this state earn a mean annual income of N111,166 (£445). 67% of the millers have only one milling machine each, the most predominant type being “Amuda” while the prime movers are “Listers” and both cost between N100,000 (£400) and N140,000 (£560). However, machine maintenance is another major area of high cost in addition to procurement of fuel. None of the respondents made use of polisher in addition to this machine. Only 13% of the millers were aware of improved technology but none of the respondents reported its availability in the community. Most of the engines available in this state are diesel engines and are between the ages of 11 and 25 years. However, there are few (13%) that are relatively new since they were procured less than ten years ago. Most of the engines were purchased directly by millers while few (about 27%) were inherited from parents. Most of the millers operate for 7 to 12 hours a day. Few reported that they could operate for 13 to 16 hours per day.

None of the millers in this state made money from the improved technology but 25% would invest in it if credit is available because they believe this will make the work faster and lead to production of better quality rice. Some of the millers (36%) have undergone training in the area of milling while 27% were trained in the area of use and maintenance of machines. About 55% of the respondents could afford to attend the training if available, while 46% of them said the training was effective.

Varieties of rice milled: Millers in Igbemo mill virtually all varieties of rice grown in the community. They also mill other varieties brought from outside the community and the millers are willing to mill as long as the rice is dry enough for milling. They charge equal fees for the various types of rice.

Labour: Almost all the respondents (91%) believe that there is availability of non-household labour with cost of labour ranging from N300 (£1.2) to N600 (£2.4) for male and less than N200 (£1) to N600 (£2.4) for female. Some of the millers (36%) process for 11 – 15 days during peak period while about 55% process for ten days or less off peak period. About 82% of the respondents processed the commodity for more than 10 - 12 months in a year.

Health Issue: The main health issues raised by millers in Igbemo are the problem of dust from the rice husks and injuries sustained from broken belts when the machine is in operation

Source of Energy: The millers rely on two main sources of energy; these are electricity and diesel powered generators. The irregularity of power supply had forced millers to resort to generators as the main source of energy.

Price and income: The Millers Association in Igbemo determines the price of milling and enforces it by ensuring that all millers abide and punishing defaulters by seizing their tins. Market conditions (forces of demand and supply) also determine the milling price. However, the costs of milling are generally lower during off peak period. Higher costs of diesel are normally transferred to the customer. Cost of milling varies from about ₦300 (£1.2) per 50kg bag of parboiled rice in off peak periods as well as periods when fuel is available to ₦850 (£3.4) in festive periods or in peak periods when demand is higher. The ownership nature of the mills somehow affects the costs of milling. During peak periods, millers mill up to 200 tins of rice per day, while they mill up to 15 tins during off peak periods.

Storage & marketing: All the respondents provide storage facility before or after processing (milling). Some of the respondents reported marketing fees as one of the transaction costs. However, transportation costs and taxes accounted mostly for the transaction costs. Some of the respondents (about 20%) reported that the price of milling is influenced by rice variety and the area of high cost in this community is procurement of fuel. All the millers process more than 201 bags a season. On the average, about 34 bags of rice are processed in a day. However, the number of bags processed can go up to an average value of about 51bags during the peak season and can also be as low as about 19bags during off peak period. Most of the millers reported that the numbers of their household members engaged in rice processing employment in this state are two or more. The major changes observed in the rice market in this community are low production coupled with increase demand.

Ownership of the machines: There are two major ownership types: these self-owned and jointly owned. Some of the operators are managing the milling centres for their parents or other relations.

Challenges in rice milling: Some of the challenges facing the millers include lack of power supply (75%), high cost and scarcity of diesel; aging machines which readily break down; low patronage during off peak period and exorbitant taxes levied by revenue collectors. It was reported that the average tins of rice milled per day could fall from 50 tins/day during peak periods to 15 tins/day off peak periods. Another important challenge facing millers in Igbemo is irregular power supply. Milling machines also develop mechanical faults at times but they easily get the parts.

Coping strategy: Some of the coping strategies include: engaging in some other activities like farming, driving and petty trading to keep them busy, resorting to the use of generator as an alternative source of power, and tax evasion.

Table 7.4: Issues related to rice milling in Ekiti State

Characteristics	Ekiti State (n=12)
Millers with annual income ranges from rice milling (%)	
N50,000.00 or less	25
N50,001- N100,000.00	50
N100,001 – N150,000	8
N150,000 and above	17
Mean annual income	N111,166
Millers categorised according to number of mills (%)	
Small (1 mill)	67
Medium 1 (2-3 mills)	8
Medium 2 (3 or more mills)	17
Medium 3 (Non Indian mill)	8
Millers using different types of milling machines (%)	
Amuda	34
Dorman	8
England	0
Lister	33
Locally Assembled Machines	25
Ruston	0
Scoda	0
Millers claiming costs of procuring milling machine (%)	
N100, 000-N140, 000	75
N140, 001-N180, 000	8
N180,001 and above	17
Millers processing different varieties of commodity (%)	
Ofada	25
Igbemo	58
Improved variety	17
Millers giving reasons for processing the varieties (%)	
Availability	25
High demand	0
High yield	17
No response	58
Millers with more than 50% of processing carried out for different groups (%)	
Farmers	42
Parboilers	58
Traders	67
Mean fees charged different groups for milling 50kg of rice	
Farmers	N273
Parboilers	N320
Traders	N300
Those who provide storage before or after processing	100
Millers who considered different transaction costs as major cost items (%)	
Transport	33

Characteristics	Ekiti State (n=12)
Handling	17
Marketing	25
Taxes	42
Association fees	17
Average fee charged per bag for milling at different seasons	
Peak season	N240
Off season	N226
Millers who reported that prices are influenced by variety (%)	20
Millers who reported standard product (%)	100
Millers who reported different cost items as areas of high cost (%)	
Machine maintenance	58
Fuel	100
Labour	17
Millers reporting challenges encountered in processing rice (%)	
Stones	25
Lack of power supply	75
High cost of fuel	8
No response	0
Millers reporting areas in which association's support addressed problems (%)	
Bought Generator	8
Buying fuel	0
None	92
Pre-Check goods	0
Seek Solution	0
Millers reporting quantity of rice processed in the season (%)	
Less than 50 bags of 50kg	0
51-100 bags of 50kg	0
101-200 bags of 50kg	0
More than 200 bags of 50kg	100
Processing technique used (%)	
Manual processing	---
Machine use	---
Millers who utilize polisher (%)	0
Millers who are aware of improved technology (%)	13
Availability of improved technology in community (%)	0
Millers who made more money from improved technology (%)	0
Millers who would invest in improved technology if credit is available (%)	25
Millers who gave reasons for investing in improved technology (%)	
Makes the work faster	25
Improves quality	17
More profit	0
Provision of training by private sectors	17
Millers who have been trained: Area of training (%)	

Characteristics	Ekiti State (n=12)
Processing and preservation	0
Use and maintenance of machines	27
Milling	36
Millers who can afford to attend training (%)	55
Millers who believe in effectiveness of the training (%)	46
Millers who claim that non-household labour is available (%)	91
Millers who claim cost of Labour (male) (%)	
Less than N200	9
N201-N300	9
N301-N600	82
Millers who claim cost of labour (female) (%)	
Less than N200	46
N201-N300	18
N301-N600	36
Millers who process for different numbers of days in peak season (%)	
10 days or less	9
11-15 days	36
16 days and above	55
Millers who process for different numbers of days in off peak season (%)	
10 days or less	55
11-15 days	0
16 days and above	45
Millers who process rice for different periods (%)	
1-5 months	0
6-9 months	18
10-12 months	82
Millers who claim issues as most important (%)	
Milling	9
Quality	27
Returns	0
No response	64
Conflicts + HIV/AIDS	
Land encroachment	0
HIV/AIDS cases	0

7.4. Trading

Ofada rice variety: The two major varieties traded in Ekiti state are Igbemo and Ofada white. Quality is largely determined by the whiteness and dryness of the rice grains. Good quality rice is white, clean and maintains its length while over-dried rice grains break during milling operation. Rice that is affected by rain during the raining season is not normally white in colour, the colour changes to brown or black. Presence of stones is another quality factor and this comes most of the time because the commodity is dried on the floor. Stony rice is considered of lesser

quality. Sometimes hurriedly harvested rice may come out of the mills with parts of its husks and this also reduces the quality of the rice.

Rice trading and market structure: The traders in Ekiti state sell within and outside the community as retailers and wholesalers. Most of them buy rice at the mills while some obtain theirs from middlemen. All the traders interviewed are in the business because of its commercial viability and the fact that the local rice is affordable for many. Only about 15% are in the business because they inherited it from their parents. All respondents consider the present market structure to be generally favourable. However, unstable price, lack of storage facility and dominance of middle men are constraining the market structure. Most traders (92%) sell their commodities within the town. Traders reported greater assistance from their spouses (54%) than from friends (46%). Many of the traders have between one and five members of their households helping in the business. In many instances (69%) between one and five members of the households are engaged in other employments apart from rice trading. Most (92%) own the products they sell and record increase in income.

Access to credit facility: The constraint faced by traders is poor financing which is partly due to poor access to credit facility although 46% of the respondents said credit facility was available and the main sources of credit were friends and family. There is no cooperative society that can assist in credit facility in this community. Some of the traders (46%) buy their commodities on credit while just a little above half (54%) sell their product on credit.

Market price and market route: Most rice traders in Ekiti state are small scale traders as virtually all the respondents traded less than 100 bags. Average cost per bag range from ₦4,000 (£16) to ₦5,000 (£20) with a mean of ₦4,753 (£19). All the traders are in rice business because of its commercial viability although the fact that many people can afford the commodity is also another major factor. Only few are in the business because of generational practices. Market forces mostly determine the prices of the commodity although some of the traders sell at lower prices when in financial distress. At times rice traders association also influence the market prices. Where market prices make the sale of a particular consignment unprofitable, traders often delay the sales of their stock particularly if is off season. Where stock is getting stale, an individual trader may however decide to sell off his/her wares at a reduced price to forestall further loss. Many factors including those of government (23%), Association (31%) and rice growing communities (31%) determine the price of the commodity.

Number of bags traded per day during the peak season ranged between 4 and 12 with an average of 8 while the range reduced to 2 and 6 bags with an average of 4 bags during off season periods. About half of the traders (54%) reported increase in income.

Storage and marketing: The commodity is stored mainly in bags (92%) and kept at home (62%). Average bag size ranged between 21 and 50kg with an average of 43kg. Many traders keep their products for up to one season (54%). To some traders (46%), how long they keep a particular stock depends on many factors such as expected increase in demand and their financial needs. None of the respondent had attended any training on improving the quality of products sold. There is labour for

loading and off loading products (85%) and all the traders agreed that the cost is affordable.

Major Challenges: The major challenge in rice trading is associated with transportation and handling (59%). Most of the respondents reported that the handling of the commodity poses the greatest challenge (69%). A coping strategy for this is “joint purchase” which helps to reduce the unit cost of transporting bags of the commodity. The dominant means of transportation to the market are motor vehicle (77%) but motor cycle and truck pushers’ operators are also important (15% and 8% respectively) in the transportation of the product. Transport cost ranges between ₦50 (£0.2) and ₦ 250 (£1) with an average ₦ 116 (£0.5).

Table 7.5: Issues related to rice trading in Ekiti State

Variable	Ekiti (n=13)
Traders operating at different scales per annum (%)	
<100 bags	100
100-200 bags	0
>200 bags	0
Cost of 50kg bag of rice	
Range (N)	4,000-5,000
Average (N)	4,753
Traders obtaining rice from different sources (%)	
Farmers	8
Mills	54.
Others	37
Total income from rice trading	
Range (N)	72,000-480,000
Average (N)	250,872
Traders selling different varieties of rice (%)	
OFADA (dominant variety)	7
No response	93
Traders giving reason for trading in the rice (%)	
Commercial viability	100
Affordability	38
Inherited from parents	15
No response	0
Traders giving reasons for trading particular variety (%)	
Commercial viability	100
Affordability	92
Inherited from parents	15
Traders selling different varieties/types of rice (%)	
Igbemo	85
Ofada	0
Ofada – Ise	0
Ofada Red	0
Ofada White	8
No response	7
Grade of rice mentioned above (%)	

Variable	Ekiti (n=13)
Grade 1	92
Traders mentioning factor as most important in influencing choice of commodity (%)	
Quality	0
Price	0
Availability	0
No response	100
Traders who claim that rice market is functioning (%)	92
Traders who claim that market structure is favourable (%)	100
Traders mentioning issues lacking in present structure (%)	
Regulation of middlemen presence	30
Transportation	46
Storage	39
Unstable pricing	39
Poor market information	0
Traders who claim that of agents/places to buy from are available (%)	85
Traders who buy rice from different places (%)	
Within town	92
Outside town	8
Within the state	0
Outside the state	0
Traders who buy rice from different stakeholders (%)	
Farmers	54
Wholesalers	31
Millers	15
Traders who sell rice to different stakeholders (%)	
Within town	15
Outside town	69
Within the state	69
Outside the state	0
No response	0
Traders who travel distances (%)	
1-10km	15
>10km	85
No response	0
Traders who sell to (%)	
Consumer	15
Retailer	85
No response	0
Traders who claim these as constraints to rice trading (%)	
Poor Financing	46
Low access to Credit facilities	27
No response	27
Traders who claim that market prices are determined by these (%)	
Government	23

Variable	Ekiti (n=13)
Association	31
Rice Growing Communities	31
Others	0
No response	16
Traders who claim these as challenges (%)	
Transport Costs	59
Handling	69
Storage	15
Marketing	23
Traders who claim these as most important transaction costs	
Handling	46
Storage	8
Marketing	31
No response	15
Traders who use the following options to address the challenges (%)	
Develop credit facilities	46
Joint purchase	23
Others	8
No response	23
Traders who claim that credit is available (%)	46
Traders who claim that cooperative societies are functioning (%)	0
Traders who claim the following as sources of credit (%)	
Family	15
Bank loan	0
Friends	23
No response	62
Traders who listed the following as conditions for taking a loan (%)	
Producing a guarantor	15
Grades and prices (Grade 1)	
Range (grade 1) – (N)	2,400-4,800
Average price (N)	
Price of grade 2	
Range (N)	1,600-3,200
Average price (N)	2,333
Labour for loading available (%)	85
Labour cost affordable (%)	100

Table 7.6: Transportation and other features of rice trading in Ekiti State

Variable	Ekiti (n=13)
Traders who listed these as type of transportation available (%)	
Canoe	0
Head portage	0
Motor Cycle	15
Motor Vehicle	77

Variable	Ekiti (n=13)
Truck Pushers	8
Wheel Barrow	0
No response	0
Transport cost	
Range (in Naira)	50-250
Average (in Naira)	116
There are cheaper means (%)	0
Traders using system for storing rice (%)	
Store in bags	92
Store in stacks	0
Spread on mat	0
Store at home	62
In the ceiling	0
Traders holding commodity for different periods (%)	
One season	54
Two Seasons	0
More than two seasons	0
It depends on demand	46
No response	0
Traders who believe the following on standards of product (%)	
There is a standard product	100
Describe (most mentioned attribute)	Cleanliness
Individual determines standard	85
There is a premium price	100
Traders who claim the following to be more important to buyers (%)	
Quality	100
Price	0
Traders who claim the following on training & marketing (%)	
Training available	0
Attended a training	0
Marketing a higher quality important	62
Range of bag sizes (kg)	21-50
Traders who buy commodity on credit (%)	46
Traders who sell rice on credit	54
Trades who are assisted by their spouse (%)	54
Traders who are assisted by friends (%)	46
No of bags traded per mkt day Peak Season (range)	4-12
Average no of bags (Peak season)	8
No of bags traded per mkt day Off Season (range)	2-6
Average no of bags (off season)	4
Quantity consumed per annum (bags)	0.3 – 5
Average quantity consumed (bags)	2
Quantity given out per annum (bags)	0-2.5
Average quantity given out (bags)	1.1
Quantity sold per annum (bags)	15 – 250
Average quantity sold (bags)	64

Variable	Ekiti (n=13)
Traders who claim that their income have increased (%)	54
Traders who own their product (%)	92
Traders who work as agent (%)	8
Traders with household members in business (%)	
1-5 members	77
>5 members	23
Male <=5	62
Male >5	38
<=5 female members	85
Members in other employment <=5	69
Traders listing the following as sources of conflicts/concern (%)	
Land encroachment	0
HIV/AIDS	0

8. Concluding Remarks

Ofada rice remains the most widely cultivated rice in Ogun, Lagos, Osun and Ekiti States. While some States might give the rice their locality name (e.g. Igbemo rice, Ofada Obada, etc.), the variety is largely the same. The rice has become more popular as a delicacy in Lagos State, with majority of supply coming from Ogun State. The commodity chain is however burdened with many problems, which include inefficient use of inputs (fertilizers, agro-chemicals and seeds); lack of access to credit for cultivation, processing, milling, and trading; scarcity of clean water for parboiling; gluts and scarcity due to lack of storage facility; unavailability of improved technology for parboiling; high costs of labour; pest infestation on fields during cultivation; weak government support; high cost of fuel for milling; aged machines; presence of stones in rice which spoils machines; importation of cheap and better quality rice; rising demand for Ofada from outside the locality which creates competition during off season; high transportation and handling costs, etc.

Modern technology for rice production is reaching more and more of the areas and is improving the lot of the farmers. The fact that some farmers plant more than 10 hectares of rice confirms the fact that there must be a certain level of mechanization that has been achieved in the production of the commodity. However, it is important to create more awareness of these options and make them available particularly to the small farmers in order to empower them. Agricultural Extension Officers need to be more visible in the communities to help farmers improve their productivity by providing information about new technology and among others on appropriate timing of farming activities. Furthermore, some form of advocacy is required to enable government participate more actively in agricultural sectors, especially in terms of inputs' availability and affordability.

Improved parboiling technology is available, which reduces the processing period and enhances product quality. This technology is however not widely known and adopted. Training parboilers in this area will greatly improve their product quality and save them time. This will also reduce the need for large quantity of water as well as labour for parboiling. The improved process will ensure reduction of stones in rice, which will reduce the challenge of stones for millers.

All stakeholders need to be linked to available sources of credit, especially Micro-Finance Institutions (MFIs) who have the mandate to provide assistance to this level of enterprises.

Annex VI Ofada Baseline Data Related to PrOpCom's Logframe OVIs

OVI: 03-1.1 Increase efficiency in the production and marketing of selected commodities by reduced costs of processing and production

Source	Questions	State				
		Ogun	Lagos	Osun	Ekiti	
Farmer	Farmers using land preparation techniques (%)	Use tractors	49	0	7	13
Farmer		Use hoes and cutlasses	48	93	88	90
Farmer		Use other methods	1	2	5	3
Farmer		No response	2	5	0	0
Farmer	Farmers obtaining land preparation equipment from different sources (%)	Private individuals	48	80	95	88
Farmer		Hired	40	20	3	10
Farmer		Govt Agencies	12	0	2	2
Farmer	Average cost of labour per day	N376	N 495	N 410	N 385	
Farmer	Farmers using different threshing techniques (%)	Family labour	43	42	38	4
Farmer		Hired labour	51	44	60	96
Farmer		Mechanical	0	2	2	0
Farmer		Others	0	0	0	0
Farmer		No response	6	14	0	0
Farmer	Farmers' response to agricultural inputs issues	Stated that fertilizers are available (%)	70	53	60	20
Farmer		Mentioned – N.P.K. as most common	70	31	17	3
Farmer		Average cost of NPK fertilizer	N 2,473	N 2,502	N 2,180	N 2,750
Farmer		Can afford fertilizers (%)	48	73	61	62
Farmer		Stated that Local seeds are available (%)	97	94	91	97
Farmer		Stated that improved seeds are available (%)	36	42	29	18
Farmer		Stated that local seeds are affordable (%)	82	86	93	92
Farmer		Range of cost of seeds per bag	N 900 – 12,000	N 2,500-10,000	N 1,000 – 10,000	N 1,000 – 10,200
Farmer		Average cost of local seeds	N 2,210	N 3,581	N 3,483	N 4,198
Farmer		Stated that improved seeds are affordable (%)	54	24	24	40
Farmer		Stated that Agrochemicals are available (%)	59	44	90	93
Farmer		Range of costs of Agrochemicals	N 1,000-2,000	N 500-2,500	N 800-3,000	N 680-1,500
Farmer		Average cost of agrochemicals	N 1,261	N 1,132	N 1,165	N 1,043
Farmer		Can afford agrochemicals	49	49	71	82
Farmer	Stated that improved technology is available (%)	50	30	5	2	
Farmer	Farmers choosing operations as most labour intensive (%)	Planting	19	57	7	10
Farmer		Bird Scaring	65	9	72	48
Farmer		Harvesting	15	15	0	14
Farmer		Weeding	0	19	17	23
Farmer		No response	1	0	4	5
Farmer	Farmers choosing activity as one for which most assistance is desired (%)	Planting	8	33	7	22
Farmer		Bird Scaring	59	52	68	28
Farmer		Harvesting	25	3	3	2
Farmer		Weeding	7	10	20	35
Farmer		No response	1	2	2	13
Farmer	Farmers using different methods for storage of commodity (%)	Store in bags	85	36	40	53
Farmer		Store on mats	65	46	87	80
Farmer		Store in the ceilings	59	20	25	0
Farmer	Farmers storing rice (%)	In the house	94	58	76	90
Farmer		In the store	11	37	25	0
Farmer	Farmers expressing opinion on areas of high cost (%)	Labour	82	76	56	95
Farmer		Fertilizer	13	5	7	10
Farmer		Agrochemicals	7	7	31	32
Farmer		Planting	7	63	12	50
Farmer		Harvesting	22	25	15	38
Farmer		Sourcing Seeds	3	10	0	2
Farmer		Farmers statement on the activities of extension workers	Visited by extension officers (%)	60	88	9
Farmer	Trained by extension workers (%)		59	46	5	0
Farmer	Private Sector provide training (%)		32	28	2	0

Source	Questions	State				
		Ogun	Lagos	Osun	Ekiti	
Farmer	Farmers with different reasons for growing rice (%)	Commercial viability	87	63	85	93
Farmer		Land suitable for rice cultivation	44	48	4	32
Farmer		Inheritance from parents	39	46	2	2
Farmer		No response	0	0	9	0
Farmer	Land area cultivation & dominant crops	Mean area of land cultivated (in ha)	5	3	5	6
Farmer		Farmers cultivating 1-3 hectares (%)	69	73	27	33
Farmer		Farmers with dominance of rice (%)	99	98	76	82
Farmer		Cassava as second most important crop (%)	99	98	76	82
Farmer		Yam (%)	93	20	31	20
Farmer		Maize (%)	0	10	0	12
Farmer		Sugarcane (%)	20	7	0	60
Farmer	Farmers selling rice (%)	Sell to Millers	14	19	24	12
Farmer		Sell to merchant – wholesalers	87	36	68	63
Farmer		Sell to merchant – retailers	34	51	19	8
Farmer		Sell to others	1	2	2	18
Farmer	Other agricultural inputs	Buys inputs from open markets (%)	78	31	27	82
Millers	Millers with more than 50% of processing carried out for different groups (%)	Farmers	90	100	27	42
Millers		Parboilers	35	0	53	58
Millers		Traders	31	20	60	67
Millers	Mean fees charged different groups for milling 50kg of rice	Farmers	N733	N318	N413	N273
Millers		Parboilers	N809	N300	N393	N320
Millers		Traders	N837	N360	N400	N300
Millers	Storage	Those who provide storage before or after processing (%)	55	40	73	100
Millers	Millers who reported different cost items as areas of high cost (%)	Machine maintenance	66	40	47	58
Millers		Fuel	59	80	67	100
Millers		Labour	17	0	13	17
Millers	Millers reporting quantity of rice processed in the season (%)	Less than 50 bags of 50kg	17	0	20	0
Millers		51-100 bags of 50kg	17	20	0	0
Millers		101-200 bags of 50kg	14	20	13	0
Millers		More than 200 bags of 50kg	52	60	67	100
Millers	Millers who process for different numbers of days in peak season (%)	10 days or less	24	20	20	9
Millers		11-15 days	21	40	13	36
Millers		16 days and above	55	40	67	55
Millers	Millers who process for different numbers of days in off peak season (%)	10 days or less	55	40	20	55
Millers		11-15 days	21	20	7	0
Millers		16 days and above	24	40	73	45
Millers	Millers who process rice for different periods (%)	1-5 months	7	20	27	0
Millers		6-9 months	21	20	27	18
Millers		10-12 months	72	60	46	82
Millers	Processing technique used	Manual processing	---	---	---	---
Millers		Machine use	---	---	---	---
Millers	Millers who utilize polisher (%)		82	0	0	0
Millers	Millers who are aware of improved technology (%)		70	20	7	13
Millers	Availability of improved technology in community (%)		19	0	0	0
Parboilers	Parboilers using the type of parboiling instrument (%)	Aluminium Pots	19	0	20	79
Parboilers		Half Drum	36	0	0	32
Parboilers		Full Drum	17	68	40	16
Parboilers		Hanigha	9	0	5	0
Parboilers		Others	47	0	0	84
Parboilers		No response	0	32	35	0
Parboilers	Parboilers with the purpose of Processing rice being the following (%)	Household consumption	62	42	40	32
Parboilers		Commercial	93	100	95	95
Parboilers	Parboilers processing More than 50% of products for the following (%)	Farmers (%)	81	100	100	100
Parboilers		Millers (%)	100	100	95	100
Parboilers		Traders (%)	98	100	100	100
Parboilers		Self (%)	100	100	100	100
Parboilers	Mean fees charged per 50kg by the following	Farmers	N65	N81	N90	-
Parboilers		Parboilers	N80	-	N20	N98
Parboilers		Traders	N55	-	N88	-

Source	Questions	State				
		Ogun	Lagos	Osun	Ekiti	
Parboilers	Processors holding commodity before sale (%)	One week or less	57	68	95	79
Parboilers		2-3 weeks	43	21	0	21
Parboilers		4 weeks or more	0	11	5	0
Traders	Traders operating at different scales per annum (%)	<100 bags	77	100	100	100
Traders		100-200 bags	15	0	0	0
Traders		>200 bags	6	0	0	0
Traders	Cost of 50kg bag of rice	Range (N)	7,500 – 13,000	4,000- 16,000	3,000-10,000	4,000-5,000
Traders		Average (N)	7,054	7,594	5,214	4,753
Traders	Traders obtaining rice from different sources (%)	Farmers	27	0	60	8
Traders		Mills	41	0	0	54
Traders		Others	27	56	33	37
Traders	Total income from rice trading	Range (N)	5,700-840,000	10,500 – 600,000	6,000 – 372,000	72,000-480,000
Traders		Average (N)	271,236	370,928	115,500	250,872

OVI: 03-1.2 Increase efficiency in the production and marketing of selected commodities by increased quality awareness and use of grades and standards

Farmer	Farmers with opinion on standards (%)	There are standards in rice production	76	93	100	90
Farmer		Dryness	63	80	64	5
Farmer		Shelf life	3	37	7	2
Farmer		Cleanness	82	76	46	27
Farmer		Wholeness	25	61	23	77
Millers	Millers using different types of milling machines (%)	Amuda	4	0	80	34
Millers		Dorman	41	0	0	8
Millers		England	0	0	0	0
Millers		Lister	35	0	0	33
Millers		Locally Assembled Machines	3	80	7	25
Millers		Ruston	14	0	0	0
Millers		Scoda	3	20	13	0
Millers	Millers claiming costs of procuring milling machine (%)	N100, 000-N140, 000	97	100	67	75
Millers		N140, 001-N180, 000	3	0	6	8
Millers		N180,001 and above	0	0	27	17
Millers	Millers processing different varieties of commodity (%)	Ofada	100	100	87	25
Millers		Igbemo	0	0	0	58
Millers		Improved variety	0	0	13	17
Millers	Millers giving reasons for processing the varieties (%)	Availability	25	0	20	25
Millers		High demand	21	0	7	0
Millers		High yield	14	20	0	17
Millers		No response	40	80	73	58
Millers		Only product	?	?	?	?
Millers	Millers who reported standard product (%)		69	20	20	100
Millers	Millers who claim issues as most important (%)	Milling	17	0	7	9
Millers		Quality	24	40	13	27
Millers		Returns	17	0	13	0
Millers		No response	42	60	67	64
Millers	Millers who have been trained: Area of training (%)	Processing and preservation	0	0	7	0
Millers		Use and maintenance of machines	0	20	20	27
Millers		Milling	14	20	20	36
Millers	Millers who can afford to attend training (%)		4	20	20	55
Millers	Millers who believe in effectiveness of the training (%)		0	20	20	46
Parboilers	Parboilers who believe there is availability of a standard product (%)		79	53	55	90
Traders	Traders giving reason for trading in the rice (%)	Commercial viability	94	61	80	100
Traders		Affordability	35	0	20	38
Traders		Inherited from parents	6	28	7	15
Traders		No response	0	11	0	0
Traders	Traders giving reasons for trading particular variety (%)	Commercial viability	91	62	73	100
Traders		Affordability	26	17	13	92
Traders		Inherited from parents	7	44	20	15

Source	Questions	State				
		Ogun	Lagos	Osun	Ekiti	
Traders	Traders selling different varieties/types of rice (%)	Igbemo	0	0	20	85
Traders		Ofada	77	48	0	0
Traders		Ofada – Ise	0	5	0	0
Traders		Ofada Red	0	5	0	0
Traders		Ofada White	19	5	7	8
Traders		No response	4	37	73	7
Traders	Grade of rice mentioned above (%)	Grade 1	93	93	60	92
Traders	Grades and prices (Grade 1)	Range (grade 1) – (N)	10,500-12,000	10,000-12,000	2,400-8,000	2,400-4,800
Traders		Average price (N)	11,000	10,500	4,400	
Traders	Price of grade 2	Range (N)	5,500-9,000	4,000-8,000	2,400 -6,000	1,600-3,200
Traders		Average price (N)	7,525	5,675	3,867	2,333
Traders	Traders who believe the following on standards of product (%)	There is a standard product	71	81	87	100
Traders		Describe (most mentioned attribute)	Whiteness	Cleanliness	-	Cleanliness
Traders		Individual determines standard	71	67	93	85
Traders		There is a premium price	90	95	73	100
Traders	Traders who claim the following to be more important to buyers (%)	Quality	100	86	53	100
Traders		Price	0	14	47	0
Traders	Traders who claim the following on training & marketing (%)	Training available	0	29	0	0
Traders		Attended a training	3	38	0	0
Traders	Traders using system for storing rice (%)	Store in bags	97	91	93	92
Traders		Store in stacks	0	29	13	0
Traders		Spread on mat	6	0	20	0
Traders		Store at home	42	52	53	62
Traders		In the ceiling	3	19	27	0
Traders	Traders holding commodity for different periods (%)	One season	29	71	47	54
Traders		Two Seasons	0	5	0	0
Traders		More than two seasons	3	19	13	0
Traders		It depends on demand	55	5	20	46
Traders		No response	13	0	20	0

OVI: 03-1.3 Increase efficiency in the production and marketing of selected commodities by improved market linkages and lower transaction costs

Millers	Millers who considered different transaction costs as major cost items (%)	Transport	41	60	53	33
Millers		Handling	10	60	47	17
Millers		Marketing	41	20	40	25
Millers		Taxes	65	60	60	42
Millers		Association fees	17	0	33	17
Millers	Average fee charged per bag for milling at different seasons	Peak season	N740	N318	N293	N240
Millers		Off season	N560	N309	N246	N226
Millers	Millers who reported that prices are influenced by variety (%)		0	20	7	20
Millers	Millers reporting challenges encountered in processing rice (%)	Stones	41	20	33	25
Millers		Lack of power supply	41	100	67	75
Millers		High cost of fuel	7	20	7	8
Millers		No response	11	0	0	0
Millers	Millers reporting areas in which association's support addressed problems (%)	Bought Generator	7	0	0	8
Millers		Buying fuel	7	0	7	0
Millers		None	72	100	86	92
Millers		Pre-Check goods	0	0	7	0
Millers		Seek Solution	14	0	0	0
Parboilers	Mean fees charged/bag at peak periods		N171	N138	N197	N300
Parboilers	Mean fees charged/bag at off-peak periods		N151	N130	N183	N240
Traders	Traders who claim these as challenges (%)	Transport Costs	61	81	73	59
Traders		Handling	48	76	47	69
Traders		Storage	13	19	33	15
Traders		Marketing	26	52	47	23

Source	Questions	State				
		Ogun	Lagos	Osun	Ekiti	
Traders	Traders who claim these as most important transaction costs	Handling	16	38	27	46
Traders		Storage	23	19	13	8
Traders		Marketing	23	72	27	31
Traders		No response	38	0	33	15
Traders	Traders who use the following options to address the challenges (%)	Develop credit facilities	0	5	40	46
Traders		Joint purchase	39	62	67	23
Traders		Others	13	0	13	8
Traders		No response	48	33	0	23
Traders	Traders who claim the following on training & marketing (%)	Training available	0	29	0	0
Traders		Attended a training	3	38	0	0
Traders		Marketing a higher quality important	100	100	33	62

OVI: 03-1.4 Increase efficiency in the production and marketing of selected commodities by increased private sector investment

Farmer	Farmers statements on credit facility & other sources of funds	Access to credit available (%)	5	15	19	23
Farmer		Benefit from advance payment for commodity (%)	39	33	85	29
Farmer		Know specific buyer (%)	97	48	75	86
Farmer		Know specific seller in the market (%)	95	37	81	73
Farmer	Farmers expressing opinion on market chain (%)	Market chain favourable	76	61	76	77
Farmer	Farmers expressing opinion on source of threats to market chain stability (%)	Dominance of middlemen	19	12	7	37
Farmer		Transportation	38	56	44	27
Farmer		Poor storage	11	10	3	10
Farmer		Poor pricing	25	66	39	52
Farmer		Poor market information	4	19	9	32
Millers	Millers who would invest in improved technology if credit is available (%)		86	60	47	25
Millers	Millers who gave reasons for investing in improved technology (%)	Makes the work faster	24	0	20	25
Millers		Improves quality	17	20	0	17
Millers		More profit	21	0	7	0
Millers		Provision of training by private sectors	14	40	7	17
Parboilers	Parboilers who believe there is availability of credit (%)		17	16	20	42
Parboilers	Parboilers who believe there is access to credit (%)		2	0	15	37
Traders	Traders who claim that credit is available (%)		42	14	53	46
Traders	Traders who claim that cooperative societies are functioning (%)		42	5	40	0
Traders	Traders who claim the following as sources of credit (%)	Family	26	24	40	15
Traders		Bank loan	3	5	13	0
Traders		Friends	19	21	0	23
Traders		No response	52	50	47	62
Traders	Traders who listed the following as conditions for taking a loan (%)	Producing a guarantor	45	5	33	15

OVI: 03-2.1 Programme interventions demonstrate pro-poor outcomes through increased incomes

Farmer	Average number of bags of rice sold, consumed and given as gift	Sold	69	103	14	18
Farmer		Consumed	11	10	1	2
Farmer		Given as gift	5	6	1	2
Farmer	Other agricultural inputs issues	Makes more money with the Technology (%)	52	29	4	2
Farmer	Farmers claiming yield of rice (%)	1-5 bags	40	3	7	10
Farmer		6-11bags	11	3	24	25
Farmer		>11bags	49	93	69	65
Farmer		Yield per hectare (in MT)	1.5	1	1	1.4
Farmer	Bags of rice sold as claimed by farmers (%)	1 -10 bags	6	7	53	40
Farmer		11-20 bags	16	19	36	31
Farmer		21-30 bags	7	10	2	8
Farmer		> 30 bags	73	68	12	23
Farmer	Price of rice per bag	Range of prices in Naira	7,500 - 10,500	7,500 - 9,500	7,000 -10,000	8,000-12,000
Farmer		Average (N)	9,000	9,000	8,000	8,000

Source	Questions	State				
		Ogun	Lagos	Osun	Ekiti	
Farmer	Farmer's income from rice	Range of total income from rice (N)	6,000 – 1,400,000	10,000 – 30,000,000	8,000 -7,000,000	100,000 – 9,000,000
Farmer		Average total income (N)	243,952	325,606	85,135	141,627
Millers	Millers who made more money from improved technology (%)		45	0	0	0
Traders	Traders who claim the following on training & marketing (%)	Trades who are assisted by their spouse (%)	29	48	33	54
Traders		Traders who are assisted by friends (%)	48	19	73	46
Traders		No of bags traded per mkt day Peak Season (range)	2 - 20	1 - 25	1 - 20	4 - 12
Traders		Average no of bags (Peak season)	6	7	9	8
Traders		No of bags traded per mkt day Off Season (range)	2 - 15	1 - 15	1 - 15	2 - 6
Traders		Average no of bags (off season)	5.6	4	6	4
Traders		Quantity consumed per annum (bags)	0.1 – 20	0.25-25	0.3 -3	0.3 – 5
Traders		Average quantity consumed (bags)	3	4	1	2
Traders		Quantity given out per annum (bags)	0.1-10	0-10	0.3-2.5	0-2.5
Traders		Average quantity given out (bags)	1.8	3.6	1.2	1.1
Traders		Quantity sold per annum (bags)	6-300	20-1000	15-450	15 – 250
Traders		Average quantity sold (bags)	63	209	118	64
Traders		Traders who claim that their income have increased (%)	94	86	80	54
Traders		Traders who own their product (%)	97	57	93	92
Traders		Traders who work as agent (%)	3	14	7	8
Traders	Traders who sell rice to different stakeholders (%)	Within town	58	33	7	15
Traders		Outside town	7	43	65	69
Traders		Within the state	32	24	13	69
Traders		Outside the state	3	0	13	0
Traders		No response	0	0	2	0
Traders	Traders who travel distances (%)	1-10km	65	38	21	15
Traders		>10km	35	62	73	85
Traders		No response	0	0	6	0

OVI: 03-2.2 Programme interventions demonstrate pro-poor outcomes through increased employment

Farmer	Farmers using labour sources for harvesting (%)	Family labour	26	41	45	5
Farmer		Hired labour	74	59	55	95
Farmer	Farmers paying different labour rates for harvesting (%)	N100 – N200 per day	13	2	6	2
Farmer		N201- -N400 per day	42	14	45	68
Farmer		>N400 per day	40	83	49	30
Farmer		No response	5	1	0	0
Farmer	Farmers obtaining labour supply from the family (%)	Adult male labour	99	97	98	78
Farmer		Male Children	42	76	25	40
Millers	Millers who claim that non-household labour is available (%)		83	80	67	91
Millers	Millers who claim cost of Labour (male) (%)	Less than N200	7	20	0	9
Millers		N201-N300	31	20	27	9
Millers		N301-N600	62	60	73	82
Millers	Millers who claim cost of labour (female) (%)	Less than N200	35	40	27	46
Millers		N201-N300	41	60	40	18
Millers		N301-N600	24	0	33	36
Traders	Traders with household members in business (%)	1-5 members	42	57	60	77
Traders		>5 members	58	43	40	23
Traders		Male <=5	13	29	53	62
Traders		Male >5	87	71	47	38
Traders		<=5 female members	32	33	60	85
Traders		Members in other employment <=5	45	29	47	69

OVI: 03-2.2 Programme interventions demonstrate pro-poor outcomes through access to the market

Farmer	Farmers identifying challenges (%)	Access to agrochemicals & fertilizers	7	10	24	55
Farmer		Labour	76	85	29	68

Source	Questions	State				
		Ogun	Lagos	Osun	Ekiti	
Farmer		Storage of commodity	5	2	2	0
Farmer		Water for irrigation	26	0	29	3
Farmer		Pests and diseases	19	17	46	78
Farmer		Seeds	1	3	0	2
Traders	Traders who claim that rice market is functioning (%)		100	81	93	92
Traders	Traders who claim that market structure is favourable (%)		71	32	67	100
Traders	Traders mentioning issues lacking in present structure (%)	Regulation of middlemen presence	13	33	47	30
Traders		Transportation	32	48	33	46
Traders		Storage	32	9	40	39
Traders		Unstable pricing	45	24	40	39
Traders		Poor market information	3	5	27	0
Traders	Traders who claim that agents/places to buy from are available (%)		39	71	67	85
Traders	Traders who claim these as constraints to rice trading (%)	Poor Financing	84	57	53	46
Traders		Low access to Credit facilities	13	43	43	27
Traders		No response	3	0	4	27
Traders	Traders who claim that market prices are determined by these (%)	Government	3	5	33	23
Traders		Association	52	0	40	31
Traders		Rice Growing Communities	3	19	8	31
Traders		Others	13	38	13	0
Traders		No response	29	38	6	16
Traders	Labour for loading available (%)		100	94	80	85
Traders	Labour cost affordable (%)		100	81	80	100
Traders	Traders who listed these as type of transportation available (%)	Canoe	0	33	0	0
Traders		Head portage	13	0	7	0
Traders		Motor Cycle	0	0	0	15
Traders		Motor Vehicle	49	67	33	77
Traders		Truck Pushers	3	0	21	8
Traders		Wheel Barrow	35	0	27	0
Traders		No response	0	0	12	0
Traders	Transport cost	Range (in Naira)	20-200	50-1000	20-100	50-250
Traders		Average (in Naira)	79	426	89	116
Traders		There are cheaper means (%)	23	0	0	0

OVI: 03-2.2 Programme interventions demonstrate pro-poor outcomes through increased market-based choice

Traders	Traders selling different varieties of rice (%)	OFADA (dominant variety)	100	89	67	7
Traders		No response	0	11	33	93
Traders	Traders mentioning factor as most important in influencing choice of commodity (%)	Quality	71	81	60	0
Traders		Price	3	10	0	0
Traders		Availability	26	10	0	0
Traders		No response	0	0	40	100
Traders	Traders who claim that market structure is favourable (%)		71	32	67	100
Traders	Traders who buy rice from different places (%)	Within town	55	62	60	92
Traders		Outside town	16	14	33	8
Traders		Within the state	16	0	7	0
Traders		Outside the state	13	24	40	0
Traders	Traders who buy rice from different stakeholders (%)	Farmers	58	91	80	54
Traders		Wholesalers	3	0	20	31
Traders		Millers	39	9	0	15
Traders	Traders who sell to (%)	Consumer	65	38	21	15
Traders		Retailer	35	62	73	85
Traders		No response	0	0	6	0
Traders	Traders who claim the following on training & marketing (%)	Marketing a higher quality important	100	100	33	62
Traders		Range of bag sizes (kg)	1 - 75	1 - 50	2 - 50	21-50

Source	Questions	State				
		Ogun	Lagos	Osun	Ekiti	
OVI: 03-5	Pro-poor action include consideration of gender, conflict, HIV/AIDS and environment					
Farmer	Farmers who believe the following about the soil (%)	Getting Better	72	72	66	27
Farmer		Over cultivation a problem	45	25	31	65
Farmer		Erosion a problem	9	0	9	35
Farmer		Others	7	0	3	0
Farmer	Farmers who believe that there is problem with fuel wood supply (%)		3	14	9	14
Farmer	Farmers who list the following as causes of conflicts (%)	Any conflicts (=Yes)	17	7	2	8
Farmer		Conflict with other resources	5		2	12
Farmer		On water sources	0	3	2	0
Farmer		Inter/intra community conflicts	8	3	0	12
Farmer		Conflict on fuelwood	0	0	0	0
Farmer		Other conflicts	0	0	0	0
Farmer		Resolving conflict	No action	No action, Dig bore holes	Community meeting, Dialogue	
Farmer	HIV/AIDS	Farmers who believe that HIV/AIDS is a serious problem (%)	1	25	0	0
Farmer		Farmers who believe that HIV AIDS causes reduction in labour	1	16	0	-
Farmer	Farmers who believe the following are effective for HIV/AIDS Mitigation (%)	Awareness creation	78	54	-	2
Farmer		Provision of VCT	1	12	-	0
Farmer		Provision of ART	0	0	-	0
Farmer		Others	0	0	-	0
Farmer	Farmers obtaining labour supply from the family (%)	Adult female labour	87	75	80	48
Farmer		Female children labour	33	58	7	35
Parboiler	HIV/AIDS	Parboilers who believe there are cases of HIV/AIDS	2	21	5	0
Parboiler		Parboilers who believe that creation of awareness mitigates	100	100	100	100
Miller		Millers who believe there are cases of HIV/AIDS	0	0	6	0
Traders	Traders listing the following as sources of conflicts/concern (%)	Land encroachment	10	3	7	0
Traders		HIV/AIDS	3	58	0	0