CSIR-FOOD RESEARCH INSTITUTE

MONITORING AND EVALUATION REPORT ON RICE PARBOILING TECHNOLOGY & ECONOMICS FACILITATED BY MASTER TRAINERS IN THE UPPER EAST AND NORTHERN REGIONS OF GHANA.

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List of Abbreviations

AAGDS	Accelerated Agricultural Growth and Development Strategy
CARI	Competitive African Rice Initiative
CSIR - FRI	Council for Scientific and Industrial Research – Food Research Institute
FASDEP	Food and Agriculture Sector Development Policy I
GPRS I & II	Ghana Poverty Reduction Strategy I & II
MoFA	Ministry of Food and Agriculture
MTADP	Medium-Term Agricultural Development Programme
CA	Christian Aid
GTLC	Ghana Trade and Livelihood Coalition
YHFG	Youth Harvest Foundation Ghana
PBV	Parboiling Vessel
SMA	Single Mothers Association
TOT's	Training of Trainers
UER	Upper East Region
NR	Northern Region

SUMMARY

Domestic rice production in Ghana has been far less than demand, hence rice is imported to make up for the shortfall in supply. Rice consumption rate has been increasing as a result of population growth, urbanization and change in consumer habits, taste among other factors. Rice parboiling is a major income generating activity in Northern Ghana.

The quality of the local parboiled rice compared to the imported ones varies significantly. The goal of this training was to increase the competitiveness of domestic rice supply to meet increasing regional demand. Terms of reference (TOR) was developed between Christian Aid (CA) and CSIR- Food Research Institute (FRI) with respect to training 36 trainers (ToTs) drawn from YHFG, SMA, GTLC and Nyebyona to deliver training at the communities of beneficial groups. In the TOR it was expected that FRI carried out a Monitoring & Evaluation audit.

Rice imports into Ghana over the past six years have ranged from 384,000MT in 2009 to 414,000MT in 2014 (NRDS, 2015). The current estimate of per capita consumption is 34.0 kg/person/year. The Ministry of Food and Agriculture policy documents over the years notably, FASDEP I, FASDEP II, GPRS I & II, MTADP, AAGDS and others,

have sought to promote rice production to address food security and poverty reduction (NRDS, 2015).

Generally, in the processing and marketing sectors, women are the major actors at the small to medium scale levels. Promoting the home-grown rice industry will enhance the output and income of the small holder farmers, processors and traders.

Rice consumer preference in Ghana has a wide variation with respect to grain quality characteristics. However, long grain, cleanliness, aroma, good taste, swelling capacity and good appearance are the most preferred quality characteristics. Furthermore, health-conscious consumers patronize indigenous brown rice. Parboiled rice is preferred mostly in the Northern savannah part of Ghana, there is however significant demand in other parts of the country.

1. INTRODUCTION.

1.1 Background:

The Competitive African Rice Initiative (CARI) was commissioned by the Federal Ministry of Economic Cooperation and Development of Germany. The programme is supported by the Bill & Melinda Gates Foundation, the Walmart Foundation and Agro-industry.

In Ghana, it is implemented by Techno Serve in cooperation with private businesses and civil society and non-governmental organisations (NGOs), including Christian Aid (CA). The goal of CARI is to significantly improve the livelihoods of 120,000 rice farmers in Nigeria, Ghana, Burkina Faso and Tanzania by increasing the competitiveness of domestic rice supply to meet increasing regional demand.

Terms of Reference was developed between Christian Aid (CA) and Food Research Institute (FRI) with respect to training 36 trainers (ToTs) by FRI.

In July, trainings for master trainers were held in the Upper East Regional capital Bolgatanga and in the Northern Regional capital Tamale. The CARI approved materials for rice parboiling and business skills models were used for the training.

The TOR of the training was designed to strengthen the capacities of the ToTs, to enable them adopt improved rice processing techniques in training rice processor who will consistently produce high quality parboiled rice.

This monitoring and evaluations (M&E) for the ToTs was held from 10th October to 17th October 2016, on rice secondary post-harvest operations focusing on cleaning, winnowing, sorting, heat soaking, drying, milling and basic business economic models for increased

profitability. Two communities each were selected from Upper East Region and Northern Region for the M&E program. Saboro and Sumburungu in the Upper East Region whiles Kpalsolgu and Kushebo in the Northern Region.

1.2 Objective

The main objective of the M&E was to ascertain if the training delivered by the ToTs had essentially helped to train the beneficiaries on the improved rice processing technologies to ensure understanding of food security, enhanced marketability and increase in processers' incomes.

1.3 Methodology.

The methodology employed for the training included plenary discussions, illustrations (picture blocks), practical sessions and experience sharing. A ranking of weak, fair, good, very good and excellent was used to give a general indication of means of verification. Some form of assumptions were considered. Participants were taken through a basic parboiling economics and business model (refer to Figure 1).

The necessary material inputs for the M&E was the responsibility of Christian Aid. To facilitate the training session, picture blocks, rice paddy, fuel-wood, water and Parboiling vessel were used. They were structured to help the facilitators to deliver key information on the unit operations involved in improved parboiling practices and the practical session.

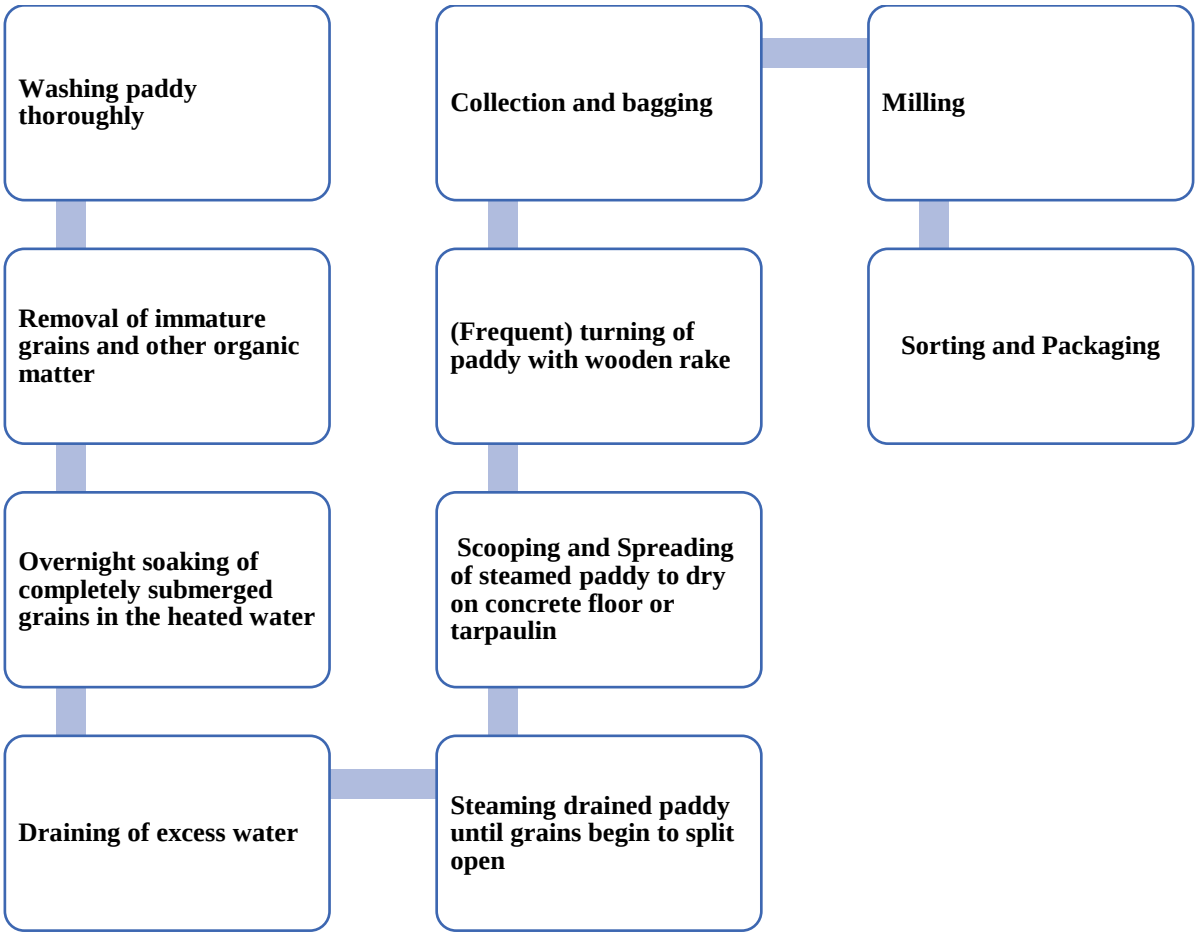

Figure 1: Flow diagram showing the unit operations for parboiling rice

1.4 Training Results.

The ToTs, reviewed all the parboiling technology transfers and economics course. They were monitored and evaluated during the training sessions. The ranking results was based on the activities outlined. The evaluated results are as shown in a tabular form. (Refer to Appendix) Tables 1 to 4).

1.5 Key Findings

At the end of the training participants became familiar with the role rice par-boilers could play in producing good quality parboiled rice by looking at current practices and exploring ways in which they can be improved in the value-chain. The trainees demonstrated that they have:

i. Gained more knowledge in primary and secondary processing of rice.

ii. Gained a deeper understanding of what quality rice is and the role processors and other actors in the rice value chain must play in ensuring the production of quality rice.

iii. Gained skill in the use of the improved parboiling vessel and appreciated the advantages associated with its use.

iv. Became aware of the critical unit operations in the parboiling process that adversely affect the quality of parboiled rice.

v. Considered embracing the idea of packaging (parboiled) rice as a way of standardizing weight and adding value to the product.

vi. Awareness of depreciations and cash flow activities, such as break-even, profit and loss margins.

1.6 Challenges

Due to the rainfall pattern in Upper East Region, the parboiled paddy was not milled for eventual assessment of the final product. However, we were convinced that the ToTs responsible for those communities can do the assessment.

1.7 Recommendation

1. For the business model sessions which were scored as fair, it is recommended that the business model be redesigned to be simple in order to suit processors who cannot read and write.

2. Trainers should emphasize on the importance of drying, milling and packaging of the parboiled rice.
3. Trainers should make the processors aware of the donors of the funds for the training.

References

NRDS, 2015. National Rice Development Strategy, Ministry of Food and Agriculture, Ghana

Appendix
Ballot sheet for monitoring and Evaluation

Table 1: KUMBUMGU KPALSOGU COMMUNITY – NORTHERN REGION

Item	Activities	Weak	Fair	Good	Very good	Excellent	Comment/ observation
1.	Overview and general presentation of picture blocks			√			Emphasis on who were the Donors, inadequate
Understanding practical session							
2.	Understanding practical session			√			
3.	Hygienic practices				√		
4.	Quality of raw material			√			
5.	Washing and heat soaking				√		
6.	Steaming and drying					√	
7.	Drying and milling					√	
8.	Sorting and storage			√			
9.	Packaging			√			
10.	Business Model		√				
11.	General score			**Good**			

Table 2: KUMBUMGU KUSHEBO COMMUNITY, NORTHERN REGION

Item	Activities	Weak	Fair	Good	Very good	Excellent	Comment/ observation
1.	Overview and general presentation of picture blocks			√			Emphasis on who were the Donors, inadequate
Understanding practical session							
2.	Understanding practical session			√			
3.	Hygienic practices				√		
4.	Quality of raw material			√			
5.	Washing and heat soaking				√		
6.	Steaming and drying					√	
7.	Drying and milling					√	
8.	Sorting and storage				√		
9.	Packaging			√			
10.	Business Model		√				Fairness rating in this case means that the business model should be redesigned to suit processors who cannot read and write.
11.	General score				**Very**		

					good		

Table 3: NAVRONGO- SABORO COMMUNITY:
UPPER EAST REGION.

Item	**Activities**	**Weak**	**Fair**	**Good**	**Very good**	**Excellent**	**Comment/ observation**
1.	Overview and general presentation of picture blocks			√			Emphasis on who were the Donors, inadequate
Understanding practical session							
2.	Understanding practical session				√		
3.	Hygienic practices		√				
4.	Quality of raw material			√			
5.	Washing and heat soaking			√			
6.	Steaming and drying					√	
7.	Drying and milling			√			the rains disrupted the drying
8.	Sorting and storage			√			
9.	Packaging		√				There was not much emphasis on packaging.
10.	Business Model		√				Articulation was average.
11.	General score			Good			

Table 4: SUMBRUNGU-BOLGATANGA COMMUNITY.
UPPER EAST REGION.

Item	Activities	Weak	Fair	Good	Very good	Excellent	Comment/ observation
1.	Overview and general presentation of picture blocks				√		Emphasis on who were the Donors, inadequate
Understanding practical session							
2.	Understanding practical session					√	
3.	Hygienic practices				√		
4.	Quality of raw material				√		
5.	Washing and heat soaking				√		
6.	Steaming and drying					√	
7.	Drying and milling		√				Understanding on drying and milling should be emphasized.
8.	Sorting and storage			√			
9.	Packaging		√				Understanding on packaging should be well emphasized.
10.	Business Model				√		
11.	General score				Very good		

SELECTED PICTURE PRESENTATIONS.

Figure 1. Picture Block Presentation.

Figure 2. Participant in a training Session

Figure 3. Setting The Stove

Figure 4. Washing& Cleaning

Figure 5. Setting The Fire for Soaking

Figure 6. Ready to Steam.

Figure 7. Patio Drying

Figure 8. Milling Machine

Figure 9. Milling

Figure 10. Package Samples.