



Monitoring and Evaluation Tools for District Rice Extension Plan

M&E Training for MIS Officers
Edited 2020

Program

Time	Activity
8:00	Registration
8:30	Revised M&E Tools for District Rice Extension Plan
9:00	Install M&E tools into participants PC
9:30	Exercise Table 1
10:00	Cocoa Break
10:30	Exercise Table 2
11:00	Exercise Table 3
11:30	Exercise Table 4
12:00	District Summary
13:00	Lunch
14:00	Data utilization: How to evaluate District Rice Extension Plan
14:30	Way forward / Closing

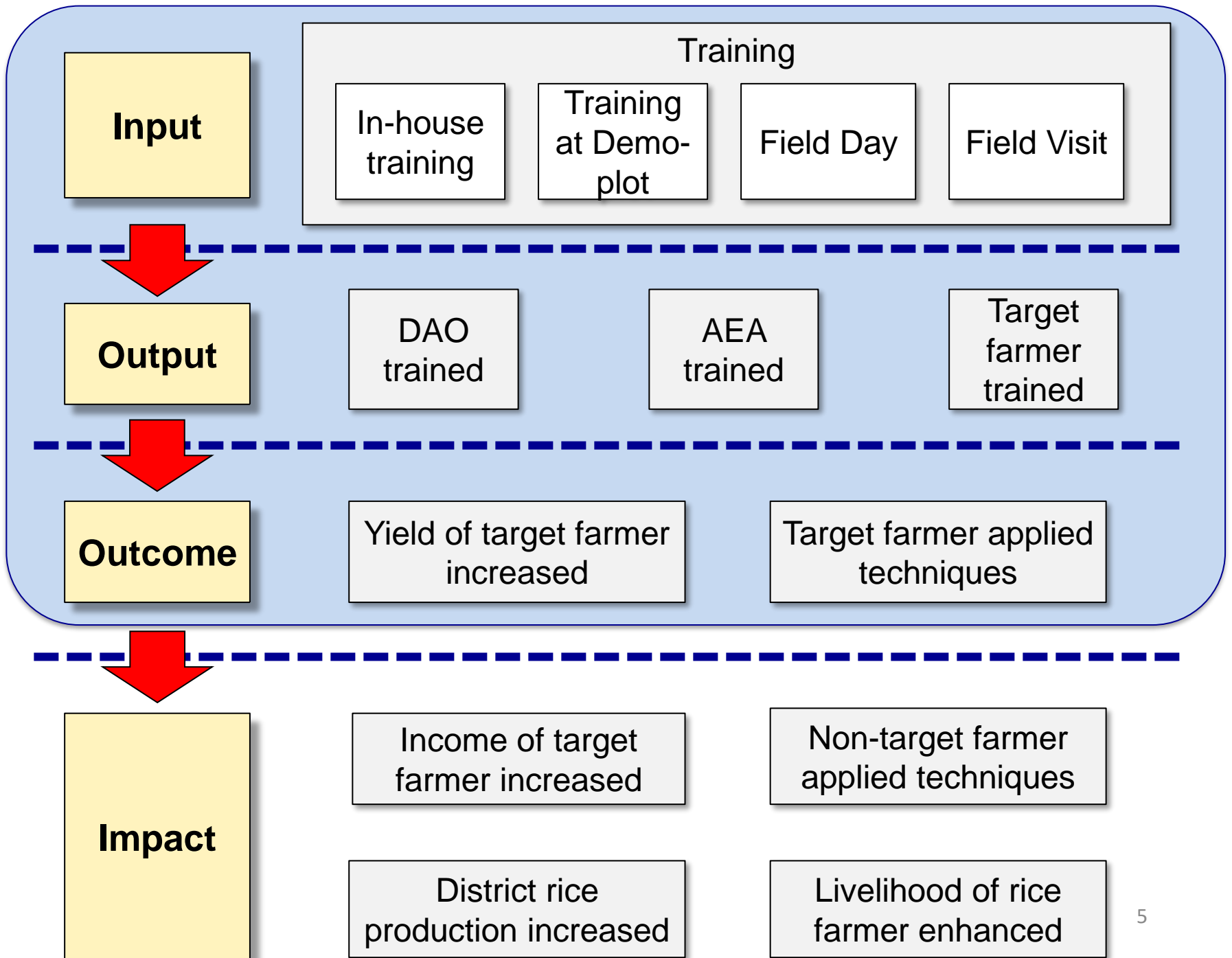
Introduction

- M&E Tool for District Rice Extension Plan is designed for district officers to be able to monitor:
 - the progress,
 - Output, and
 - Outcome of the rice extension activities.
- Then, DDA can easily explain the outcome of rice extension plan to Assembly.
- Also, M&E tool is developed in consideration of:
 - Aligning to the existing M&E system and practice in MoFA, and
 - Being simplified and user-friendly.

Highlighting outcome and impacts on the rice farmers

So that DDA can explain the outcome of rice extension plan to Assembly.

- Demo-plot: Yield Increased
- Target farmers: # of farmers applied, Yield increased. Income increased.
- Non-target farmers: # of farmers applied, Yield & Income increased.



District Rice Extension Plan

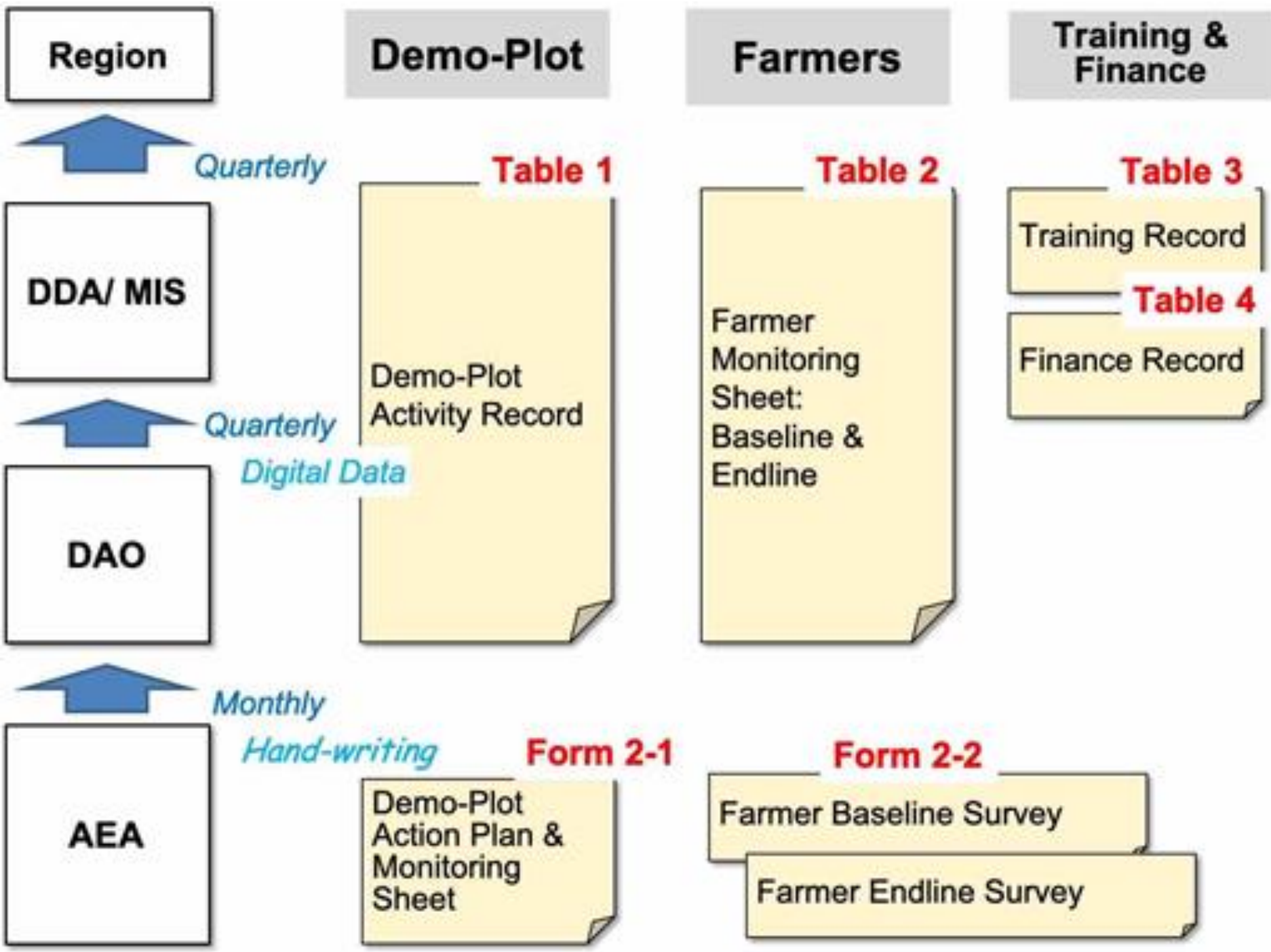
Monitoring Framework

	Activities Summary	Indicators	Source Mean of verification	Base	Target	Progr ess
Input	A set of training in the district.	-# of training conducted	Training record			
Output	DAO, AEA, and target farmers are trained.	-# of trained DAO, AEA, and target farmers	Training record, Demo-plot data			
Out- come	Target farmers apply techniques. Yield of applied farmers' field increased.	-Application rate of target farmers -Average yield of individual target farm field	Farmer data			
Impact	Livelihood of rice farmer enhanced. Improved techniques disseminated to non-target farmers Rice production in the district increased.	-Income of target farmers increased -Number of non-target farmers applied -Rice production amount	Farmer data Rice production (SRID)			

Information to be collected

Collecting information is the starting point of monitoring. All information is compiled into 4 tables;

- Table 1: Demo-Plot Information
- Table 2: Farmer Information
- Table 3: District Training Information
- Table 4: Financial Information



Region

Demo-Plot

Farmers

Training & Finance

Quarterly

Table 1

Table 2

Table 3

DDA/ MIS

Demo-Plot
Activity Record

Farmer
Monitoring
Sheet:
Baseline &
Endline

Training Record

Quarterly

Digital Data

Table 4

Finance Record

DAO

Monthly

Hand-writing

Form 2-1

Form 2-2

AEA

Demo-Plot
Action Plan &
Monitoring
Sheet

Farmer Baseline Survey

Farmer Endline Survey

AEA

Form 2-1: Demo-Plot Monitoring Sheet

Hand-writing

- Formats for Action Plan (left-half) and Monitoring (right) are combined into one sheet.
- First, develop demo-plot action plan together with target farmers group.
- Next, implement as planned. Keep attendance record.
- Then, record actual dates of implementation of each field work.
- Submit a copy to DAO every month.

Form 2: AEA Report

Form 2-1a: Demo-Plot Action Plan & Monitoring Sheet (1) Transplanting

Name of AEA Phone No. of AEA Operational Area District	Number of Group Farmers: M (Youth:) F Aged: PLWDs: →	Community: Size of Demo Plot: Rice Variety:	acre
Name of Key Farmer: Phone No. of Key Farmer:			

No.	Field work	Action Plan		Recommended tool & inputs	Monitoring			
		Week-based Time frame	Date-based Time frame (from to)		Date Implemented	No. of farmers participated	Describe each activity in detail. Evaluate each work whether it is implemented along with the guideline	Remarks on the field and crop condition, if any
1	Seed preparation	1 week before sowing		Rice seeds, salt, egg, bucket, sieve, firewood, pot, seed net		M: F:		
2	Nursery preparation	1 day before sowing		Hoe, cutlass, garden line		M: F:		
3	Nursery management	from 1 day before sowing to the day for transplanting		Hoe		M: F:		
4	Sowing	Week 0		String, stick, hoe		M: F:	Quantity of seeds: kg	
5	Land clearing	3 weeks (or more) before transplanting		Cutlass		M: F:		
6	Bund construction	1 - 2 weeks before transplanting		Hoe, spade, garden line		M: F:		
7	Ploughing	1 week before transplanting		Hoe		M: F:		
8	Puddling and or Leveling	1 day before transplanting		Hoe, spade, leveler		M: F:		
9	Uprooting and seedlings preparation	1 day before transplanting		Strings		M: F:		
10	Transplanting	3 weeks after sowing		String, stick, garden line		M: F:	Row transplanting: cm x cm	
11	1st Weeding	5 weeks after sowing		Push weeder		M: F:		
12	1st Fertilizer application	5 weeks after sowing		Fertilizer, weighing scale, containers		M: F:	Type of fertilizer applied: Quantity applied: kg	
13	Off-type removal	From 5 weeks after sowing to the day for harvesting		No tool (hand removal)		M: F:		

No.	Field work	Action Plan		Recommended tool & inputs	Monitoring			
		Week-based Time frame	Date-based Time frame (from to)		Date Implemented	No. of farmers participated	Describe each activity in detail. Evaluate each work whether it is implemented along with the guideline	Remarks on the field and crop condition, if any
14	2nd Weeding	7 weeks after sowing		Push weeder		M: F:		
15	2nd Fertilizer application	7 weeks after sowing		Fertilizer, weighing scale, containers		M: F:	Type of fertilizer applied: Quantity applied: kg	
16	3rd Weeding	10 weeks after sowing		Push weeder		M: F:		
17	3rd Fertilizer application	10 weeks after sowing		Fertilizer, weighing scale, containers		M: F:	Type of fertilizer applied: Quantity applied: kg	
18	Heading	Heading more than 50% rice plants				M: F:		
19	Bird scaring	13 - 18 weeks after sowing		Fishing net		M: F:		
20	Maturing	Accumulated temperature 850°C from heading date				M: F:		
	Harvesting	18 weeks after sowing		Sickle		M: F:	Moisture content: %	
	Threshing			Tarpaulin, Bambam box, sacks, head cartage		M: F:		
	Winnowing	18 - 19 weeks after sowing		Tarpaulin, sacks		M: F:		
	Drying					M: F:	Moisture content: Number of bags: %	Bag size:
22	Storing	18 weeks after sowing -		Storage facility, wooden pallets		M: F:		
23	Milling	18 weeks after sowing -		Sacks		M: F:		
24	Selling	18 weeks after sowing -		Sacks		M: F:		

Onsite Training (OST) Record

1 st OST		2 nd OST		3 rd OST		4 th OST		5 th OST	
Date:		Date:		Date:		Date:		Date:	
Participants: M F		Participants: M F		Participants: M F		Participants: M F		Participants: M F	
(Youth, Aged, PLWDs)		(Youth, Aged, PLWDs)		(Youth, Aged, PLWDs)		(Youth, Aged, PLWDs)		(Youth, Aged, PLWDs)	
Topics trained:		Topics trained:		Topics trained:		Topics trained:		Topics trained:	

Baseline Survey

- Conduct once
- Make interview with all group farmers to ask the production, cost and sales information
- This is to understand the real situation before the farmers use Technical Package
- “Baseline year” is defined **BEFORE participating in Tensui training**
- Fix base year and keep **baseline data** to evaluate achievement of every year

End-line Survey

- Conduct every year
- Make interview with same farmers of baseline survey
- Ask the production, cost and sales information of the current year. Data will be available from farmer record keeping sheet
- Ask the degree of technical package adaption
- Compare the result of end-line and baseline to know how much rice production and income increase after apply technical package

Baseline Format

Form 2-2a: Farmer Baseline Survey - Rice Production and Income Analysis

Farmers Name: _____ District: _____ Date of interview: _____
 Male/ Female: _____ Age: _____ PLWDs: _____ Demo-Plot Community: _____ Target Farmer / Non-Target Farmer

When did you start rice cultivation? Since: _____
 When did you FIRST participate in Tensui training? Year: _____

Please specify the year before participating Tensui training as baseline year. Year: _____

Season	Area (acre)	Rice Variety	Total No. of Bags Harvested	Unit (Size of Bag: Refer *below)	Total Production (kg)	No. of maxi bags Sold	Unit (Size of Bag: Refer *below)	Unit price to sell per maxi bags (Ghc)	Total Income (Ghc)
Major rainy season			<input type="checkbox"/> Paddy		kg	<input type="checkbox"/> Paddy <input type="checkbox"/> Milled			
Minor rainy season			<input type="checkbox"/> Paddy		kg	<input type="checkbox"/> Paddy <input type="checkbox"/> Milled			
Total									(1)

* If respondent answers the bag as "unit", please specify the type of bag:
 (ASH): KG= kilogram (kg), MinB = Minibag (size 3) 50 kg, MaxB = Maxibag (size 4) 84kg, SizF=Size 5 bag 120kg, SmG=Small Grawaa (tin) 25kg, BiG=Big Grawaa(Big tin) 64kg,
 (NOR): Bag=Maxibag 84kg, Bow=Bowl 2.5kg, Other (Specify _____with confirmation in Kilogram)

Season	Cost of Land (Ghc)	Cost of Inputs (Ghc)			Cost of Equipment (Ghc)	Cost of Labor (Ghc)	Total Cost (Ghc)
		Seeds	Fertilizer	Chemicals			
Major rainy season							
Minor rainy season							
Total							(2)
		Total: _____					

Cost of equipment includes: Push weeder, Leveler, Sickle, Hoe, Net, Tarpaulin, Bambam box, Sacks, Others

Cost of labor includes: Bund construction, Ploughing Pudding & Leveling, Transplanting, Harrowing, Sowing, Weeding, Fertilizer application, Bird scaring Harvesting, Threshing & winnowing, Drying Transportation, Milling, Others.

Net Profit = (1) Total Income – (2) Total Cost (Ghc)

AEA can calculate net profit during the survey and give feedback to farmers

Endline Format

Form 2-2b: Farmer End line Survey – Rice Production and Income Analysis

Farmers Name: _____ District: _____ Date of interview: _____
 Male/ Female: _____ Age: _____ PLWDs: _____ Community: _____ End line Year: _____

Season	Area (acre)	Rice Variety	Total No. of Bags Harvested	Unit (Size of Bag)	Total Production (kg)	No. of maxi bags Sold	Unit (Size of Bag)	Unit price to sell per maxi bags (Ghc)	Total Income (Ghc)
Major rainy season			<input type="checkbox"/> Paddy		kg	<input type="checkbox"/> Paddy <input type="checkbox"/> Milled			
Minor rainy season			<input type="checkbox"/> Paddy		kg	<input type="checkbox"/> Paddy <input type="checkbox"/> Milled			
Total									(1)

Season	Cost of Land (Ghc)	Cost of Inputs (Ghc)			Cost of Equipment (Ghc)	Cost of Labor (Ghc)	Total Cost (Ghc)
		Seeds	Fertilizer	Chemicals			
Major rainy season							
Minor rainy season							
Total							(2)
		Total:					

Cost of equipment includes: Push weeder, Leveler, Sickle, Hoe, Net, Tarpaulin, Bambam box, Sacks, Others

Cost of labor includes: Bund construction, Ploughing Pudding & Leveling, Transplanting, Harrowing, Sowing, Weeding, Fertilizer application, Bird scaring Harvesting, Threshing & winnowing, Drying Transportation, Milling, Others.

Net Profit = (1) Total Income – (2) Total Cost (Ghc)

Evaluation of Technical Adaption

Evaluation: 1. Poor (not implemented), 2. Fair (partially implemented), 3. Good (implemented thoroughly)

Note: At least 5 activities are evaluated either "Fair" or "Good", the farmer is recognized as applying the technics in the Extension Guideline.

Bund construction	Improved variety of seed	Seed selection and treatment	Sowing or transplanting in row and appropriate planting distance	Split fertilization application	Weed management	Harvesting on time	Threshing on tarpaulin

AEA Form 2-2: Farmer Monitoring Sheet cont...

Non-Target Farmer

- Those who are not part of the group, using traditional way of rice cultivation
- Ask the production, cost and sales information of the current year
- Compare result of target farmer End-line and Non-target farmer data to know the impact difference

Target Farmer / Non-Target Farmer ✓

Form 2-2a: Farmer Baseline Survey - Rice Production and Income Analysis

Farmers Name: _____ District: _____ Date of interview: _____
 Male/ Female: _____ Age: _____ PLWDs: _____ Demo-Plot Community: _____ Target Farmer / Non-Target Farmer: _____

When did you start rice cultivation? Since: _____ Please specify the year before participating *Tensui* training as baseline year. Year: _____
 When did you FIRST participate in *Tensui* training? Year: _____

Season	Area (acre)	Rice Variety	Total No. of Bags Harvested	Unit (Size of Bag; Refer *below)	Total Production (kg)	No. of maxi bags Sold	Unit (Size of Bag; Refer *below)	Unit price to sell per maxi bags (Ghc)	Total Income (Ghc)
Major rainy season			⊖Paddy		kg	⊖Paddy			
Minor rainy season			⊖Paddy		kg	⊖Paddy			
Total									(1)

* If respondent answers the bag as "unit", please specify the type of bag.
 (ASH) KG= kilogram (kg), MinB = Minibag (size 3) 50 kg, MaxB = Maxibag (size 4) 84kg, Size=Size 5 bag 120kg, SmallG=Small Grawaa (tin) 25kg, BigG=Big Grawaa(Big tin) 64kg.
 (NOR) Bag=Maxibag 84kg, Bow=Bowli 2.5kg, Other (Specify with confirmation in Kilogram)

Season	Cost of Land (Ghc)	Cost of Inputs (Ghc)			Cost of Equipment (Ghc)	Cost of Labor (Ghc)	Total Cost (Ghc)
		Seeds	Fertilizer	Chemicals			
Major rainy season							
Minor rainy season							
Total						(2)	
<i>Total:</i>							

Cost of equipment includes: Push weeder, Leveler, Sickle, Hoe, Net, Tarpaulin, Bambar box, Sacks, Others.
 Cost of labor includes: Bund construction, Ploughing Pudding & Leveling, Transplanting, Harrowing, Sowing, Weeding, Fertilizer application, Bird scaring Harvesting, Threshing & winnowing, Drying Transportation, Milling, Others.

Net Profit = (1) Total Income - (2) Total Cost (Ghc)

Compile as Demo-Plot Activity Record at District level

Demo-Plot Community	Operational Area	Demo-Plot Area (acre)	Rice Variety	Number of group farmers						Progress of Demo-Plot (date-month)							Harvest (No. of bag)*	Size of bag (kg)	Ren (mo cont)
				Male	Fem ale	Total	Yout h (18-29)	Aged (60>)	PLW Ds	SW	TP	FR1	FR2	FR3	HD	HV			
Football	J-League	0.25	Agra	9	1	10	1	0	0								5	84	
Baseball	Liga Espanola																		
Basketball	Serie A																		
Track & Field	Eredivisie																		
Swimming	Premier League																		
Karate	Bundeslega																		
0	0																		
0	0																		

- Transfer data from demo plot monitoring sheet (form2-1) submitted by AEA.
- Use one row for one demo-plot.
- Youth: 18 from 29 years old
- Aged: over 60 years old

Compile Baseline data at District level

PROFILE									BASELINE															
Demo-Plot No.	Name of Farmer	Non-target farmer?	Key farmer?	Male/Female	Age	PLW (Marked)	First participated year in <i>tensui</i> training	Baseline										Cost				Profit		
								Year	Total Area harvested (acre)	Total No. of Bags harvested	Bag size harvested (kg)*	Total production (kg)	Yield (ton/ha)*	Number of Bags sold	Rice form sold (paddy/milled rice)	Bag size sold (kg)*	Selling price per Bag (Ghc)	Total Sales (Ghc)	Land rental cost (Ghc/yr)	Inputs (Ghc)	Equipment (Ghc)	Paid labor (Ghc)	Total Cost (Ghc)	Profit (Ghc)
Football	1 a			Male			2020	2019	1.000	3.0	84	252	0.63	3	Milled	100	200	600					0	600
Baseball	2 b			Female			2019	2018	3.000			0	0.00					0					0	0
Basketball	3 c			Male			2018	2017	1.000			0	0.00					0					0	0
Track & Field	4 d			Female			2017	2016	1.000			0	0.00					0					0	0
Swimming	5											0						0					0	0
	6											0						0					0	0
	7											0						0					0	0
	8											0						0					0	0

- Transfer data from farmer monitoring sheet (form2-2a) submitted by AEA into Excel format.
- Use one row for one farmer.

Compile End-line data at District level

ENDLINE													Evaluation of Technical Adaption																	
Training participated			Endline Year:										Cost			Profit (Ghc)			Score either 1. Poor, 2. Fair, 3. Good											
Year	OST 1 (mark 1)	OST 2	OST 3	Total Area harvested (acre)	Total No. of Bags harvested	Bag size harvested (kg)*	Total production (kg)	Yield (ton/ha)	Number of Bags sold	Rice form sold (paddy/milled rice)	Bag size sold (kg)*	Selling price per Bag (Ghc)	Total Sales (Ghc)	Land rental cost (Ghc/yr)	Land rental cost (in kind Ghc)	Inputs (Ghc)	Equipment (Ghc)	Paid labor (Ghc)	Total Cost (Ghc)	Profit (Ghc)	Profit per acre (Ghc/acre)	Blank	1. Bund construction	2. Improved variety of seed	3. Seed selection and treatment	4. Sowing or transplanting in row and appropriate planting distance	5. Split fertilization application	6. Weed control	7. Harvesting on time	8. Threshing on tarpaulin
				1	20	100	2,000	5.00	15	Milled	100	200	3,000	50	100	50	50	50	200	2,800	2,800		2	2	2	2	2	1	1	1
				0.25	5	100	500	5.00	5	Milled	100	200	1,000						0	1,000	4,000		2	2	1	1	1	1	1	
				0.5	9	100	900	4.50	5	Milled	100	200	1,000						0	1,000	2,000		2	2	2	2	2	1	1	2
				0.25	6	100	600	6.00	5	Milled	100	200	1,000						0	1,000	4,000		2	2	2	2	2	1	1	2
				0.5	8	100	800	4.00	2	Milled	100	200	400						0	400	800		2	2	2	2	1	2	2	2
				0.5	11	100	1,100	5.50	3	Milled	100	200	600						0	600	1,200		2	2	2	1	1	2	2	2
							0	-					0						0	0	-									
							0	-					0						0	0	-									
							0	-					0						0	0	-									

- Transfer data from farmer monitoring sheet (form2-2b) submitted by AEA into Excel format.
- Use the same row of baseline for respective farmer.
- This data are highlighted as outcome and impact on the rice farmers to be reported to decision makers in MMDAs .

Compile as Training Record at District level

Training Name	Times (1st, 2nd, ...)	Topic	Venue/ Community	Plan (day-month-year) *Type: "20/5/3" showing "3-May-2020".	Implemented (day-month-year)	Number of farmers trained (gross)						Number of officers trained (gross)			Number of officers trained district a year (Net)	
						Male	Female	Total	Youth (18-29 years old)	Aged (over 60 years old)	PLWDs	DDA/DAO	AEA	Total	DDA/DAO	AEA
ToT	1st			3-May-2020	10-May-2020	4	3	7	1	0		3	4	7	3	7
ToT	2nd			3-Jun-2020	5-Jun-2020	9	1	10	0	0	0	2	3	5		
ToT	3rd							0				3	6	9		
OST	1st							0				4	5	9		
OST	2nd							0						0		
OST	3rd							0						0		
OST	4th															
OST	5th															
OST	6th															
OST	7th															
OST	8th															
OST	9th															
OST	10th															
Field Day								0						0		
Field Trip								0						0		
								0						0		

Gross number is the sum of DAO/AEAs participated in a series of trainings of the year

Net number is head counting of DAO/AEAs in the office

- List all trainings and activities related to rice extension.
 - ✓ Every Trainings of Trainers
 - ✓ Every On-Site Trainings at all demo plots
 - ✓ Field Trip/Days at all demo plots

Report financial information for RICE EXTENSION ACTIVITY ONLY

Table 4: Financial Record (Budget for Rice Extension Activities)						Adansi Asokwa		2020					
Budget for RICE EXTENSION ACTIVITIES						Financial transfers by MMDA for RICE EXTENTION ACTIVITIES (*Type: "20/5/3" showing "3-May-2020".)							
Items	Budget Submitted (GHc, Whole DAD)	Budget Approved (GHc, Whole DAD)	Budget Approved (GHc, Rice Extension)	Releases (GHc, Rice Extension)	Expenditure (GHc, Rice Extension)	Received Date by Assembly Account (day-month-year)				Received Date by DAD Account (day-month-year)			
	2020	2020	2020	2020	2020	1st Release	2nd Release	3rd Release	4th Release	1st Release	2nd Release	3rd Release	4th Release
GOG		1,000	700	400		3-Feb-2020	5-Apr-2020	10-Jul-2020	10-Oct-2020	25-Feb-2020	5-May-2020	10-Aug-2020	5-Nov-2020
DACF													
IGF													
ABFA													
PFJ													
MAG													
Other donors		10,000	900	800		3-Mar-2020	5-May-2020			15-Mar-2020	10-May-2020		
Input dealer													
Others													

Note: In case of in-kind contribution by input dealers and farmers and Planting for Food and Jobs (PFJ), calculate the amount in GHs.
 Note: Date of financial transfers should be written as follows. Type "yyyy/mm/dd" or "yy/mm/dd" such as "2020/5/3" or "20/5/3". It will show "3-May-2020".
 Note: Input "0" if no amount is budgeted/approved/released/ expended as shown in the example above (GOG, DACF and Others (PFJ))

Points of Revision in 2019

- Major revision is done in EXCEL data entry format for MIS officer.
- Based on the year 2018 experience, data consolidation was key challenge.
- Therefore, revision in 2019 is made for introducing **a program to automatically process district average and district total.**
- Once you enter data into Excel format, you will get a set of data which are ready for use for any reports.

Did it work?

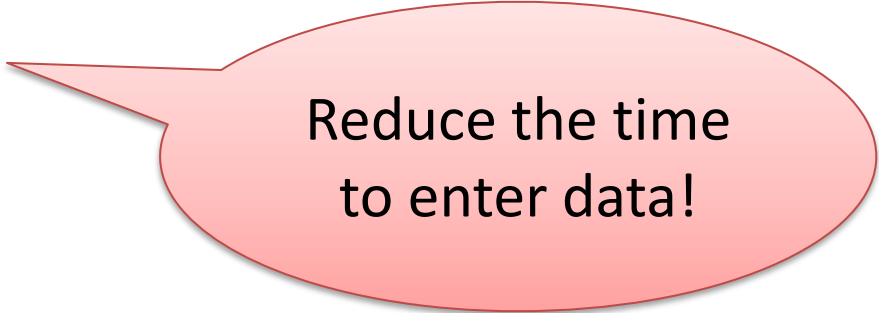
- Yes, but other challenges were observed such as time-consuming of duplicated data entry and miss-typing errors.

Points of Revision in 2020

1. DATA INPUT sheet (New)

At the beginning, district officers have to input the basic information into DATA INPUT sheet. Those are:

- Implementing year,
- Region name,
- District Name,
- MIS Officer, and
- Information of community with demo-plots.




Reduce the time to enter data!

Once these data input, the data are copied to other sheets. District officers do not necessary input those data or just choose those data from pull-down.

2. Dividing input area into 3 types of areas in Table

- 1) YELLOW CELL: Can input any data.
- 2) ORANGE CELL: Have to select data from pull-down.
- 3) GREY CELL: Cannot input. Protected.



No miss-type!

Let's Practice !!

- Please read carefully Manual for District MIS Officers from **Page 37 of M&E Tools**
- Enter sample data into Excel format
 - Data Input sheet
 - Table 1 (30 mins)
 - Table 2 (30 mins)
 - Table 3 (30 mins)
 - Table 4 (30 mins)
- Check District Summary sheet if data are automatically consolidated as either district total or district average

SHEET: “Data Input”

Please input the basic information in “Data Input” Sheet. Then, the information input is automatically input to other sheets.

Basic Information: Year of Intervention, Region, District, Operational Area, and AEA name.

- Instruction of data input:
- Please input data into the CELLS in **YELLOW COLOR**.
- Please choose data from pulldown in the CELLS in **ORANGE COLOR**.
- Please leave other cells in **GREY COLOR**. These parts are protected area. You cannot input data.

1. Protected area.

Instruction:
Please input data into the CELLS in **YELLOW COLOR**.

Please choose data from pulldown in the CELLS in **ORANGE COLOR**.

Please leave other cells. CELLS in **GREY COLOR** is protected. You cannot type.

Year	2020
Region	shanti
District	Adansi Asokwa
MIS Officer	

1. Data selection area

No.	Community	Establishment year	Operational Area	AEA Name
1	Football	2020	J-League	Lionel Messi
2	Baseball	2019	Liga Espanola	Cristiano Ronald
3	Basketball	2018	Serie A	Diego Maradona
4	Track & Field	2017	Fredivisie	Ruud Gullit
5	Swimming	2016	Premier League	David Beckham
6	Karate	2015	Bundeslega	Franz Beckenbauer
7				
8				
9				
10				
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20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30	shanti			

1. Data input area

SHEET: "Table 1_Demo-Plot"

Input Data

Table 1: Demo-Plot Activity Record Summary		Adansi Asokwa														2020					
Demo-Plot Community	Operational Area	Demo-Plot Area (acre)	Rice Variety	Number of group farmers					Progress of Demo-Plot (date-month-year) (*Type: "20/5/3" showing "3-May-2020".*)								Harvest (No. of be ^m)*	Size of bag (kg)	Total Harvest (kg)	Yield (ton/ha)	Remarks (moisture content %)
				Male	Female	Total	Youth	Aged	PLWDs	SW	TP	FR1	FR2	FR3	HD	HV					
Soccer	J-League	0.25	Agra	9	1	10	1	0	0	20-May-2018	4-Jun-2018	18-Jun-2018	2-Jul-2018	31-Jul-2018	30-Aug-2018	28-Sep-2018	5	84	420	4.20	
Baseball	Liga Espanola	0.25	Agra	8	2	10											6	84	504	5.04	
Basketball	Serie A	0.25	Agra	7	3	10											7	84	588	5.88	
Track & Field	Eredivisie	0.25	Agra	6	4	10											8	84	672	6.72	
Swimming	Premier League	0.25	Agra	5	5	10											7	84	588	5.88	
Baseball	Bundeslega	0.25	Agra	4	6	10											6	84	504	5.04	
		0				0															
		0				0															
		0				0															
		0				0															
		0				0															

Type date in a way as:
 "20/5/3" shows "3-May-2020".
 "5/3" shows "3-May-2020".
 "18/5/3" shows "3-May-2018".

SW: Sowing, TP: Transplanting, FR: Fertilization, HD: Heading date, HV: Harvesting

No need to input. Automatically processed.

Choose data from pulldown.

No need to input. Automatically processed.

SHEET: "Table 2_Farmer" Baseline

No need to input.
Automatically processed.

Table 2: Farmer Monitoring Sheet Summary (Baseline)&(Endline) Adansi Asokwa 2020

PROFILE									BASELINE										Cost			Profit (Ghc)				
Demo-Plot Community	No.	Name of Farmer	Non-target farmer?	Key farmer?	Male/ Female	Age	PLWD (Mark 1)	First participated year	Base Year	Total Area harvested (acre)	Total No. of Bags harvested	Bag size harvested (kg)*	Total production (kg)	Yield (ton/ha)*	Number of Bags sold	Rice form sold (paddy/milled rice)	Bag size sold (kg)*	Selling price per Bag (Ghc)	Total Sales (Ghc)	Land rental cost (Ghc/yr)	Land rental cost (in kind: No. of bags)	Inputs (Ghc)	Equipment (Ghc)	Paid labor (Ghc)	Total Cost (Ghc)	Profit (Ghc)
Football	1	a			Male			2019	1.00	3.0	120	360	0.90	3	Milled	100	200	600							0	600
Baseball	2	b			Female			2016	0.25	2.0	100	200	2.00	4	Milled	100	200	800							0	800
Basketball	3	c			Male			2017	1.00	4.0	120	480	1.20	3	Milled	100	200	600							0	600
Track & Field	4	d			Female			2016	1.00	5.0	120	600	1.20	4	Milled	100	200	800							0	800
Swimming	5				Male			2018	0.50	3.0	100	300	1.50	1	Milled	100	200	200							0	200
Football	6				Male			2019	0.50	3.0	100	300	1.50	1	Milled	100	200	200							0	200
	7											0						0							0	0
	8																	0							0	0

Annotations for input fields:

- Choose from pulldown (for Name of Farmer, Gender, Age, PLWD, First participated year, Rice form sold, Bag size sold)
- Input (for Base Year, Total Area harvested, Total No. of Bags harvested, Bag size harvested, Total production, Yield, Number of Bags sold, Selling price per Bag, Total Sales, Land rental cost, Land rental cost (in kind), Inputs, Equipment, Paid labor, Total Cost, Profit)
- Choose from pulldown (for Total No. of Bags harvested, Bag size harvested, Total production, Yield, Number of Bags sold, Selling price per Bag, Total Sales, Land rental cost, Land rental cost (in kind), Inputs, Equipment, Paid labor, Total Cost, Profit)

SHEET: "Table 2_Farmer" Endline

ENDLINE																				Evaluation of Technical Adaption											
Training participated				Endline Year:							Cost					Profit (GHc)			Score either 1. Poor, 2. Fair, 3. Good												
Year	OST 1 (mark 1)	OST 2	OST 3	Total Area harvested (acres)	Total No. of Bags harvested	Bag size harvested	Total production (kg)	Yield (ton/ha)	Number of Bags sold	Rice form sold (milled rice)	Bag size sold (kg)	Selling price per Bag (GHc)	Total Sales (GHc)	Land rental cost (GHc)	Land rental cost (in kind)	Inputs (GHc)	Equipment (GHc)	Paid labor (GHc)	Total Cost (GHc)	Profit (GHc)	Profit per acre (GHc/acre)	Blank	1. Bund construction	2. Improved variety of seed	3. Seed selection and treatment	4. Sowing or transplanting in row and appropriate planting distance	5. Split fertilization application	6. Weed control	7. Harvesting	8. Threshing on time	
				1	20	100	2,000	5.00	15	Milled	100	200	3,000	50	100	50	50	50	200	2,800	2,800		2	2	2	2	2	1	1	1	1
				0.25	5	100	500	5.00	5	Milled	100	200	1,000						0	1,000	4,000		2	2	1	1	1	1	1	1	
				0.5	9	100	900	4.50	5	Milled	100	200	1,000						0	1,000	2,000		2	2	2	2	2	1	1	2	2
				0.25	6	100	600	6.00	5	Milled	100	200	1,000						0	1,000	4,000		2	2	2	2	2	1	1	2	2
				0.5	8	100	800	4.00	2	Milled	100	200	400						0	400	800		2	2	2	2	1	2	2	2	2
				0.5	11	100	1,100	5.50	3	Milled	100	200	600						0	600	1,200		2	2	2	1	1	2	2	2	2
							0	-					0						0	0	-										
							0	-					0						0	0	-										
							0	-					0						0	0	-										

Choose from pulldown

Input

Choose from pulldown

Input

Choose from pulldown

Input

Input

Choose from pulldown

No need to input. Automatically processed.

SHEET: "Table 3_Training"

Table 3: Training Record		Adansi Asokwa					2020											
Training Name	Times (1st, 2nd, ...)	Topic	District Code	Venue/ Community	Plan (day-month-year) <small>*Type: "20/5/3" showing "3-May-2020"</small>	Implemented (day-month-year)	Number of farmers trained (gross)						Number of officers trained (gross)			Number of officers trained district a year (NET)		
							Male	Female	Total	Youth	Aged	PLWDs	DDA/DAO	AEA	Total	DDA/DAO	AEA	Total
ToT	1st				3-May-2020	10-May-2020	4	3	7	1	0	0	3	4	7	3	7	1
ToT	2nd				3-Jun-2020	5-Jun-2020	9	1	10	0	0	0	2	3	5			
ToT	3rd								0				3	6	9			
OST	1st								0				4	5	9			
OST	2nd								0					0				
OST	3rd								0					0				
OST	4th								0					0				

Choose from pulldown

Input

Type date

Input

Input

No need to input. Automatically processed.

Input net number (=number of person).

SHEET: "Table 4_Finance"

Table 4: Financial Record (Budget for Rice Extension Activities)						Adansi Asokwa		2020									
Budget for RICE EXTENSION ACTIVITIES						Financial transfers by MMDA for RICE EXTENSION ACTIVITIES (*Type: "20/5/3" showing "3-May-2020".)											
Items	Budget Submitted (GHc, Whole DAD)	Budget Approved (GHc, Whole DAD)	Budget Approved (GHc, Rice Extension)	Releases (GHc, Rice Extension)	Expenditure (GHc, Rice Extension)	Received Date by Assembly Account (day-month-year)				Received Date by DAD Account (day-month-year)				Duration (days)			
	2020	2020	2020	2020	2020	1st Release	2nd Release	3rd Release	4th Release	1st Release	2nd Release	3rd Release	4th Release	1st Release	2nd Release	3rd Release	4th Release
GOG		1,000	700	40		3-Feb-2020	5-Apr-2020	10-Jul-2020	10-Oct-2020	25-Feb-2020	5-May-2020	10-Aug-2020	5-Nov-2020	22	30	31	0
DACF														0	0	0	0
IGF														0	0	0	0
ABFA														0	0	0	0
PFJ														0	0	0	0
MAG														0	0	0	0
Other donors		10,000	900	800		3-Mar-2020	5-May-2020			15-Mar-2020	10-May-2020			12	5	0	0
Input dealer														0	0	0	0
Others														0	0	0	0
														0	0	0	0
														0	0	0	0
														0	0	0	0
														0	0	0	0
														0	0	0	0

Choose from pulldown

Input

Type date in a way that
 "20/5/3" shows "3-May-2020".
 "5/3" shows "3 -May-2020".
 "18/5/3" shows "3-May-2018".

No need to input. Automatically processed.

Order of fund sources are fixed. If you have other resources, choose from pulldown under "others"

DATA UTILIZATION

District Summary Adansi Asokwa 2020

Table 1: Summary of Demo-Plot

No.	Community	Demo-Plot Area (acre)	Number of group farmers						Harvest (kg)	Yield (ton/ha)
			Male	Female	Total	Youth	Aged	PLWDs		
Total	7	1.5	39	21	60	1	0	0	3276	5.46
14	0	0	0	0	0	0	0	0	0	-
15	0	0	0	0	0	0	0	0	0	-
16	0	0	0	0	0	0	0	0	0	-
17	0	0	0	0	0	0	0	0	0	-
18	0	0	0	0	0	0	0	0	0	-
19	0	0	0	0	0	0	0	0	0	-
20	0	0	0	0	0	0	0	0	0	-

Table 2: Summary of Impacts on Farmers

No.	Community	Number of Target Farmers	# of Male farmer	# of Female farmer	Baseline						Endline											
					# of Farmer	Area Harvested (acre)	Total Harvested (kg)	Average Yield (ton/ha)	Total Profit (Ghc)	Average Profit (Ghc/acre)	# of Farmer	Area Harvested (acre)	Total Harvested (kg)	Average Yield (ton/ha)	% Increase	Total Profit (Ghc)	Average Profit/ Acre (Ghc/acre)	% Increase	# of Farmer Applied	# Male applied	# Female applied	Application rate (%)
Total		6	4	2	6	4.25	2,240	1.43	3,200	1,000	6	3.00	5,900	5.00	249%	5,800	2,467	147%	5	4	1	83%
1	Football	2	2	0	2	1.50	660	1.20	800	500	2	1.50	3,100	5.25	338%	3,400	2,000	300%	2	2	0	100%
2	Baseball	1	0	1	1	0.25	200	2.00	800	3,200	1	0.25	500	5.00	150%	800	4,000	25%	0	0	0	0%
3	Basketball	1	1	0	1	1.00	480	1.20	600	600	1	0.50	900	4.50	275%	600	2,000	233%	1	1	0	100%
4	Track & Field	1	0	1	1	1.00	600	1.50	800	800	1	0.25	600	6.00	300%	800	4,000	400%	1	0	1	100%

Table 3: Training Summary

	Training	Times	Number of farmers trained (gross)						Number of officers trained (gross)		
			Male	Female	Total	Youth	Aged	PLWDs	DDA/DAO	AEA	Total
1	ToT	3	13	4	17	1	0	0	8	13	21
2	OST	10	0	0	0	0	0	0	4	5	9
3	Field Day	1	0	0	0	0	0	0	0	0	0
4	Field Trip	1	0	0	0	0	0	0	0	0	0
5	Others	0	0	0	0	0	0	0	0	0	0
6		0	0	0	0	0	0	0	0	0	0
Total	Total	15	13	4	17	1	0	0	12	18	30
									Number of officers trained (net)		
									3	7	10

- OST1 Seed treatment
- OST2 Land development (Bund construction)
- OST3 Nursery preparation and sowing
- OST4 Transplanting
- OST5 1st fertilizer application and weeding
- OST6 2nd fertilizer application and weeding
- OST7 3rd fertilizer application (young panicle observation)
- OST8 Heading date
- OST9 Harvest on time, threshing on tapuain

Table 4: Summary of Financial Record

	Budget Amount for RICE EXTENSION	Expended (Ghc)	%
Total	1,600	1,200	75%
Government source	700	400	57%
GOG	700	400	57%
DACF	0	0	-
IGF	0	0	-
ABFA	0	0	-
Other sources	900	800	89%
PFJ	0	0	-
Input dealer	0	0	-
MAG	0	0	-
Other donors	900	800	89%
Others	0	0	-
0	0	0	-
0	0	0	-

How to Evaluate Rice Extension Plan

Indicator		Baseline	Target 2020	Progress/Achievement 2020
INPUT	Budget for Rice Extension Plan (GHc)			
	Number of trainings			
OUTPUT	Number of DAO trained (gross/net)			
	Number of AEA trained (gross/net)			
	Number of target farmers trained (male) (gross/net)			
	Number of target farmers trained (female) (gross/net)			
OUTCOME	Number of target farmers adapted (male) (net)			
	Number of target farmers adapted (female) (net)			
	Adaptation rate (%)			
	Average yield of target farmers applied (ton/ha)			
IMPACT	Average income of target farmers from rice (GHc/year)			
	Number of non-target farmers applied (person)			

Transfer Target Value from your Rice Extension Plan

How to Evaluate Rice Extension Plan

Indicator		Baseline	Target 2020	Progress/Achievement 2020
INPUT	Budget for Rice Extension Plan (GHc)			
	Number of trainings			
OUTPUT	Number of DAO trained (gross/net)			
	Number of AEA trained (gross/net)			
	Number of target farmers trained (male) (gross/net)			
	Number of target farmers trained (female) (gross/net)			
OUTCOME	Number of target farmers adapted (male) (net)			
	Number of target farmers adapted (female) (net)			
	Adaptation rate (%)			
	Average yield of target farmers applied (ton/ha)			
IMPACT	Average income of target farmers from rice (GHc/year)			
	Number of non-target farmers applied (person)			

Transfer Baseline data compiled by MIS officer



How to Evaluate Rice Extension Plan

Indicator		Baseline	Target 2020	Progress/Achievement 2020
INPUT	Budget for Rice Extension Plan (GHc)			
	Number of trainings			
OUTPUT	Number of DAO trained (gross/net)			
	Number of AEA trained (gross/net)			
	Number of target farmers trained (male) (gross/net)			
	Number of target farmers trained (female) (gross/net)			
OUTCOME	Number of target farmers adapted (male) (net)			
	Number of target farmers adapted (female) (net)			
	Adaptation rate (%)			
	Average yield of target farmers applied (ton/ha)			
IMPACT	Average income of target farmers from rice (GHc/year)			
	Number of non-target farmers applied (person)			

Report progress every quarter and annual achievement at the end of the year.

Data are available from MIS officer.



Results in 2019

As of April 2020

District	No. of demo-plot	Demo-plot Yield (t/ha)	Farmer Yield (t/ha)	Farmer Profit (GHc/acre)	Application rate
Adansi North	3	5.18	2.43	1,223	63%
Adansi Asokwa	4	6.00	1.76	N/A	69%
Adansi South	11	5.18	5.41	2,357	96%
Ahafo Ano North	4	5.25	5.23	2,777	100%
Asante Akim North	1	5.40	5.51	4,263	71%
Atwima Mponua	12	5.73	5.42	1,948	100%
Afigya Kwabre North	2	4.20	N/A	N/A	N/A
Afigya Kwabre South	3	3.60	2.91	1,695	42%
Amansie West	4	5.27	2.27	3,387	59%
Asante Akim South	12	4.44	1.50	N/A	53%

Results in 2019 cont..

As of April 2020

District	No. of demo-plot	Demo-plot Yield (t/ha)	Farmer Yield (t/ha)	Farmer Profit (GHc/acre)	Application rate
Ejura Sekyedumase	4	3.96	3.48	703	86%
Offinso North	6	6.97	3.00	N/A	96%
Sekyere Central	5	7.13	2.06	830	96%
Amansie Central	2	4.62	2.88	505	78%
Mampong Municipal	3	5.51	1.85	250	39%
Sekyere Afram Plains	2	6.89	1.66	784	40%
Sekyere East	5	2.82	2.31	996	93%
Sekyere Kumawu	3	6.40	2.54	1,708	56%
Sekyere South	6	2.66	1.99	1,351	100%
Regional Average		5.2	3.02	1,652	72%

Way Forward: Timing of Report Submission

- Follow MoFA M&E System
 - Every month
 - Every quarter
 - End of the year
 - Submit to DA/ RAD M&E
- To PCU
 - When you submit report through MoFA M&E System, please cc to PCU
 - Also submit filled-in M&E tools to PCU

Way Forward:

Set the deadline of data submission

- 2nd Quarterly Report:
- Baseline data:
- 3rd Quarterly Report:
- End-line data:
- Annual Report:

**The Project for the Sustainable Development of
Rain-Fed Lowland Rice Production Phase 2 (Tensui 2)**

Monitoring and Evaluation Tool (M&E Tool) for District Rice Extension Plan



TENSUI RICE Phase II

July 2020

**Project Coordinating Unit, TENSUI RICE Phase II
Ministry of Food and Agriculture (MoFA)
Japan International Cooperation Agency (JICA)**

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Abbreviation

AEA	Agricultural Extension Agent
DAD	District Agriculture Department
DAO	District Agriculture Officer
DCD	District Coordinating Director
DCE	District Coordinating Executive
DDA	District Director of Agriculture
JICA	Japan International Cooperation Agency
KF	Key Farmer
M&E	Monitoring and Evaluation
MIS	Management Information System (Officer)
MMDA	Metropolitan, Municipal and District Assembly
MoFA	Ministry of Food and Agriculture
PCU	Project Coordinating Unit
PPRSD	Plant Protection and Regulatory Service Division
RAD	Regional Agriculture Department
RAO	Regional Agriculture Officer
RDA	Regional Director of Agriculture
TOT	Training of Trainers
WIAD	Women in Agricultural Development

Monitoring and Evaluation Tool

Introduction

The Project for the Sustainable Development of Rain-Fed Lowland Rice Production Phase 2 (Tensui 2) is under implementation by Ministry of Food and Agriculture (MoFA) in collaboration with Japan International Cooperation Agency (JICA) from April 2016 to February 2021. Phase 1 of the project (Tensui 1: 2009-2014) developed a technical package to increase yields and farmers' income and compiled it into a Rice Extension Guideline (Guideline) which was approved by MoFA. The Project outline of Tensui 2 is shown below.

Overall Goal	Domestic rice production is increased.
Project Purpose	The rice cultivation practice based on the Extension Guideline developed in Phase 1 is disseminated in 35 Metropolitan, Municipal District Assemblies (MMDAs) of Ashanti and Northern Regions.
Output 1	Target MMDAs increase the capacity to develop their District Rice Extension Plan and to estimate needed budget for its implementation.
Output 2	Using the Extension Guidelines, the trainings are conducted in target MMDAs.
Output 3	The capacity of Regional Agricultural Department (RAD) and District Agricultural Department (DAD) regarding monitoring and evaluation is increased.
Output 4	The Extension Guideline is fine-tuned.

District governments (MMDAs) are expected to develop and manage their own District Rice Extension Plan according to Guideline in the midst of ongoing process of decentralization.

This booklet of Monitoring and Evaluation Tools (M&E Tool) is designed for facilitating M&E activities of the District Rice Extension Plan for the district agriculture officers (DAOs), agricultural extension agents (AEAs), and regional agriculture officers (RAOs). M&E Tool is developed in consideration of: 1) aligning to the existing monitoring system and practice in MoFA; and 2) being simplified and user-friendly. Putting into practice of M&E Tool can:

- ✓ Strengthen the capacities of DAO, AEA and RAO to undertake M&E,
- ✓ Provide information of rice extension activities, which facilitates the existing MoFA M&E and periodical reporting process, and
- ✓ Contribute to the improvement of the existing MoFA M&E system.

Introducing M&E Tool can also expedite implementing and achieving the target set in the District Rice Extension Plan, which can contribute to the better livelihood of farmers in the districts.

Developing and Revising M&E Tool

This booklet of M&E Tool is revised as Version 4 through learning from the experience in 2017, 2018 and 2019 practices. M&E Tool should be fine-tuned to the local conditions and workable. M&E Tool is being continuously revised and improved by learning from the experience. The time frame and process of developing M&E Tool is shown as follows:

<u>Time frame</u>	<u>Action</u>
February 2017	Developing M&E Tool Version 0 based on the comments in M&E Workshop held in Ashanti and Northern Regions.
April - December 2017	Introducing M&E Tool into practice at the field
February 2018	Review and revise the M&E Tool incorporating lessons learnt from the experience of the practices.
March 2018	Revising M&E Tool as Version 2.
March – December 2018	Introducing M&E Tool Version 2.
February 2019	Revising M&E Tool as Version 3.
March – December 2019	Practice M&E Version3.
June 2020	Revising M&E Tool as Version4.
July – December 2020	Practice M&E Version 4.

1. Monitoring and Evaluation (M&E)

Monitoring is a process of 1) collecting data, 2) checking the progress and achievements, and 3) identifying challenges and necessary actions of plan, program and project. The result is utilized to feed them back into the plan as part of management cycle. Evaluation is conducted at the end of planning period to assess its performance. The results of and lessons learnt from evaluation are shared among stakeholders and utilized for the next planning.

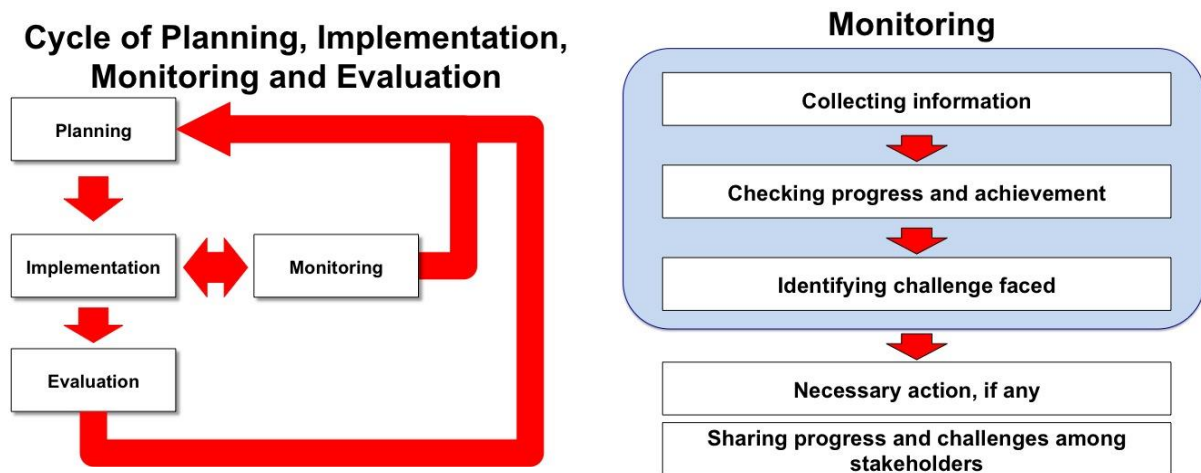


Figure 1 Plan, Program and Project Cycle and Monitoring

2. Existing MoFA Monitoring System

Given the direction by Ministry of Food and Agriculture (MoFA), regions and districts prepare annual plans fine-tuned to the specific local situation. MoFA introduced uniform formats for M&E. Progress and challenges of the annual plan is monitored and reported periodically. The monitoring report at field level is sent to higher entities vertically and horizontally, as shown in the figure below.

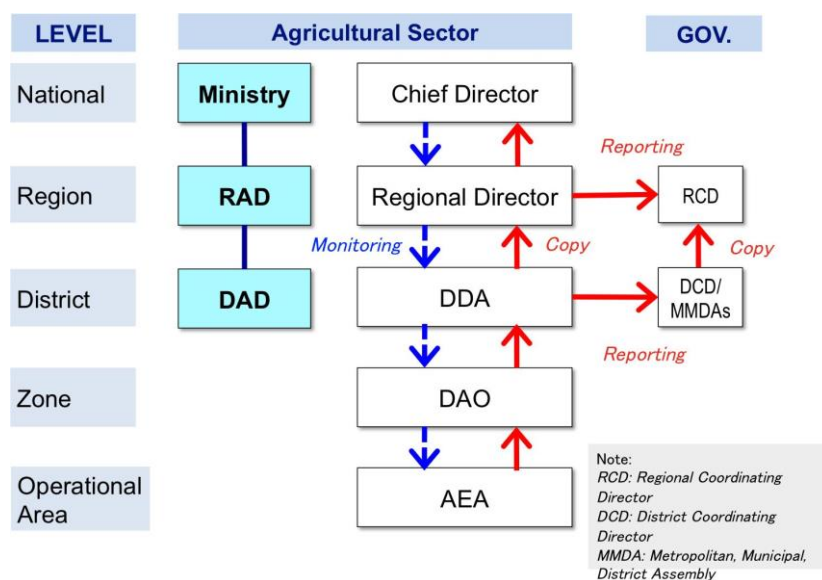


Figure 2 MoFA Monitoring Flow

At district level, AEAs submit monitoring report to respective DAO. District M&E/MIS officer compiles DAO's monitoring reports and submit to District Director of Agriculture (DDA). DDA

reports to District Coordinating Director (DCD) of MMDAs and copies to Regional Agricultural Department (see the figure below).

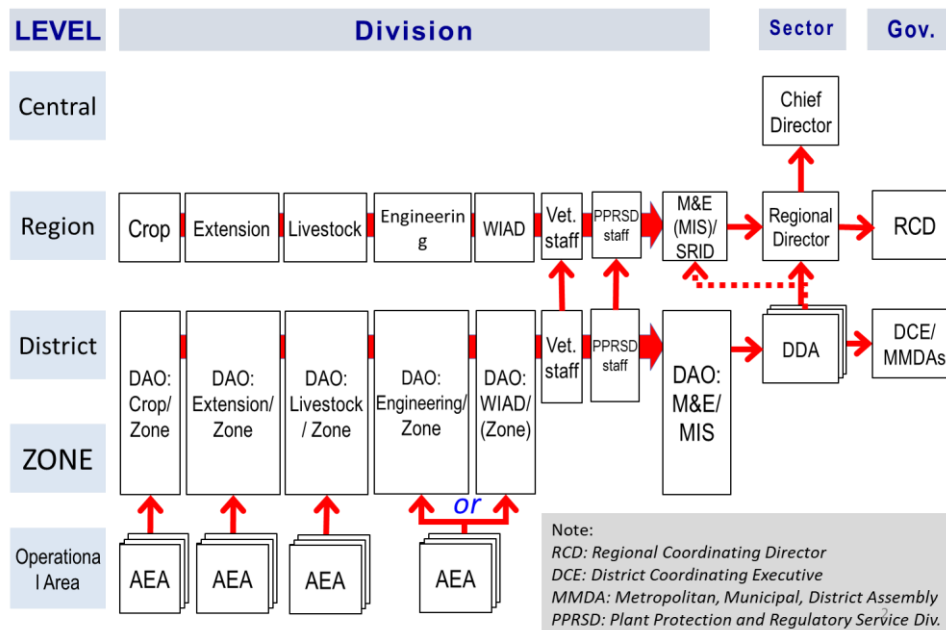


Figure 3 Reporting Flow at District & Region

Types and frequencies of those monitoring and its reporting are shown in the table below. The information included in the existing monitoring report on rice cultivation is area planted, area harvested, land intensification status, production, and average wholesale price of local rice.

Table 1 Types and Frequency of Monitoring Reports

	Annual Plan	Monitoring Frequency	Reporting				Evaluation (Project/program base)
			Monthly Report	Quarterly Report	Annual Report	Situational Report	
Ministry	✓	2 times a year					✓
Regional Director	✓	Quarterly		✓	✓	✓	✓
DDA (District)	✓	Fortnightly		✓	✓	✓	✓
DAO (Zone)		Weekly		✓	✓	✓	
AEA (Operational Area)		4 times a week	✓	✓	✓	✓	

Source: PCU, Tensui 2 Project

3.2 Approach at the Field Level

Key extension approach at the ground level is as follow.

- A set of Demonstration plots (**Demo-Plots**) and group of farmers (**Group Farmer**) in communities is a core component of the extension at the field.

Demo-Plot and Direct Beneficiaries

Demo-Plots are established in communities to demonstrate the improved rice cultivation technical packages. Group Farmer is formed as target farmers (Target Farmer). They are direct beneficiaries trained during Onsite Training. Group Farmers are expected: 1) to learn the rice cultivation techniques at Demo-Plots, 2) to operate Demo-Plots, and 3) to apply the techniques into their farms.

Indirect Beneficiaries

Farmers nearby Demo-Plots are non-target farmers (Non-Target Farmers) as indirect beneficiaries. They are expected to observe Demo-Plot and to copy and apply the techniques into their own fields. Field day (Field Day) is a tool to disseminate technical packages to Non-Target Farmers.

Replication of Demo-Plot and Group Farmer

A core component (Demo-Plot and Group Farmer) is replicated in other places to disseminate the improved rice cultivation techniques to be expanded into other areas.

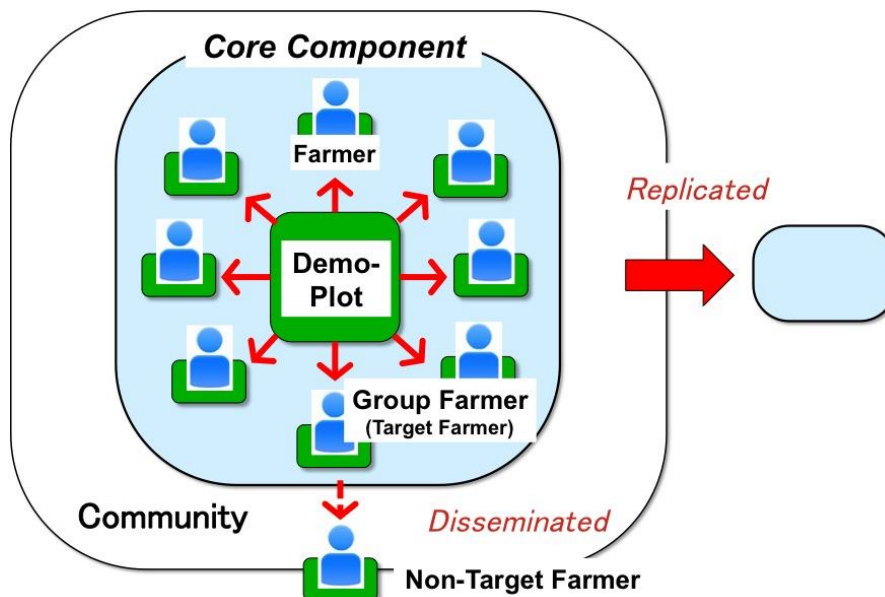


Figure 4 Demo-Plot and Group Farmer

3.3 Cascade Training

To introduce the field level extension, five steps of cascade trainings are introduced. Beneficiaries of trainings would in turn become trainers in the next step of cascade training.

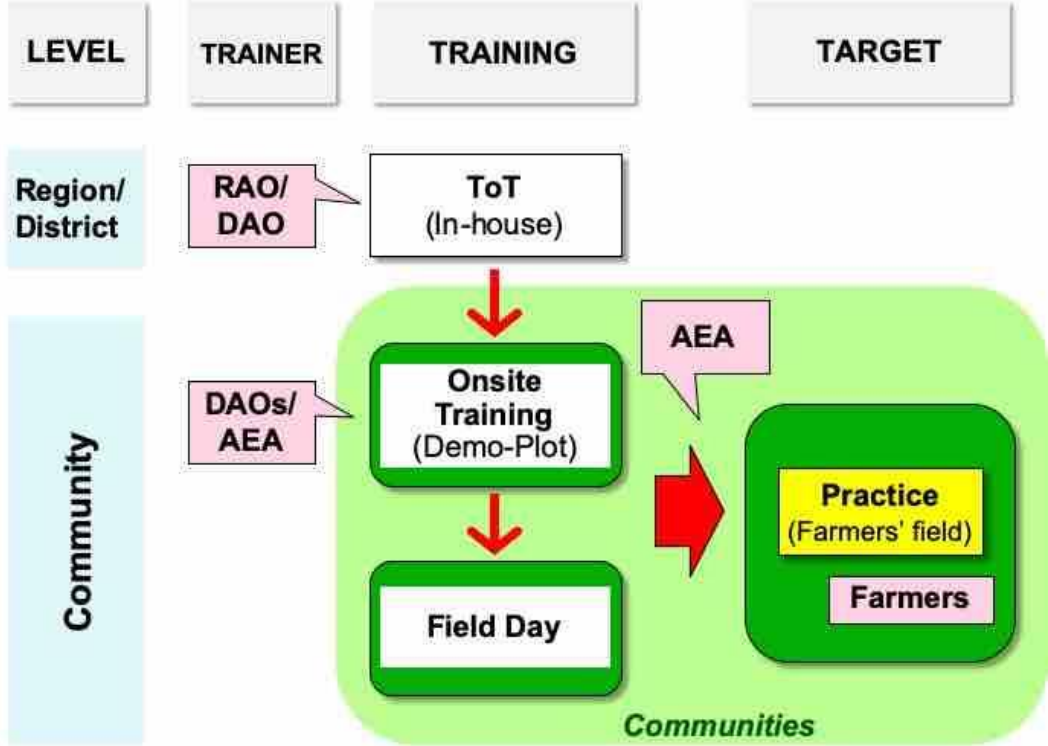


Figure 5 Cascade Training

Trainings are divided into three stages: 1) theoretical (In-House Training), 2) Practical Training (Onsite Training), and 3) Observation.

Training of trainers (ToT) is a theoretical in-house training at the district level (at the regional level as optional), and **Onsite Training** is a practical training at the communities.

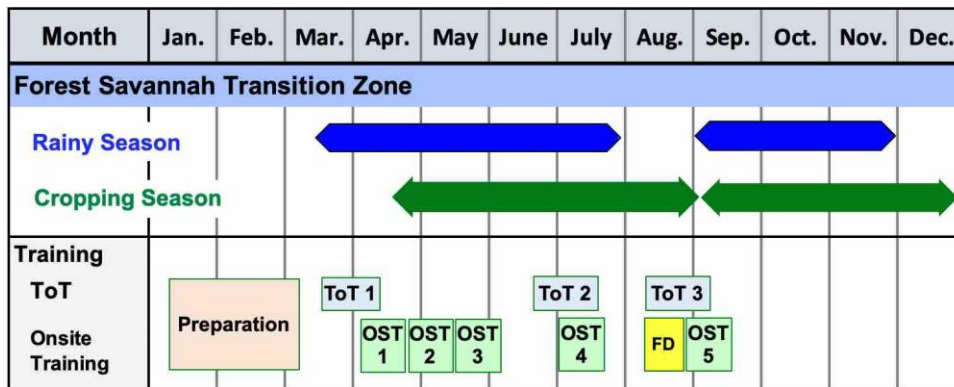
Onsite Training is the key training at the field level to train Group Farmers (Target Farmers) at Demo-Plots. After learning the technical package at Demo-Plot, Target Farmers are expected to practice on their own field and adopt the improved techniques.

Field Trip can give opportunities to AEAs for mutual learning of the experience by observing the progressive cases. **Field Day** is organized to show improved rice cultivation techniques to Non-Target Farmers and potential buyers.

Annual Schedule of the Model

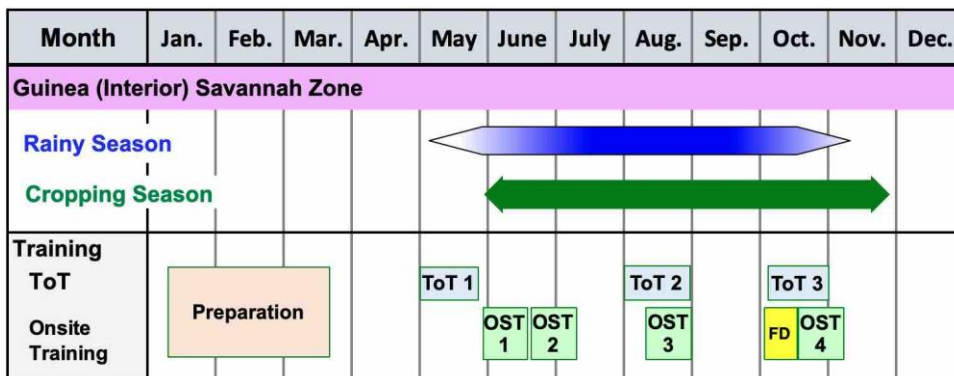
The proposed timing of each activity is shown below.

Yearly Activity Calendar for Forest Savannah Transition Zone (Ashanti)



Note: ToT: Training of trainers; OST: Onsite Training; FD: Field Day; FT: Field Trip

Yearly Activity Calendar for Guinea Savannah Zone (Northern)



Note: ToT: Training of trainers; OST: Onsite Training; FD: Field Day; FT: Field Trip

Figure 6 Annual Calendar

4. M&E Tool Proposed for Rice Extension Plan/ District Annual Plan

4.1 Planning

In planning Rice Extension Plan, causal sequence of intervention should be structured, as shown in the figure below. Shaded area in the figure is area of control within plan. Outside area is area of impact which plan cannot control but can make impacts on. Planning and monitoring framework is developed with monitoring indicators (table below). A plan is prepared with “District Rice Extension Plan (Form 4) shown in Annex.

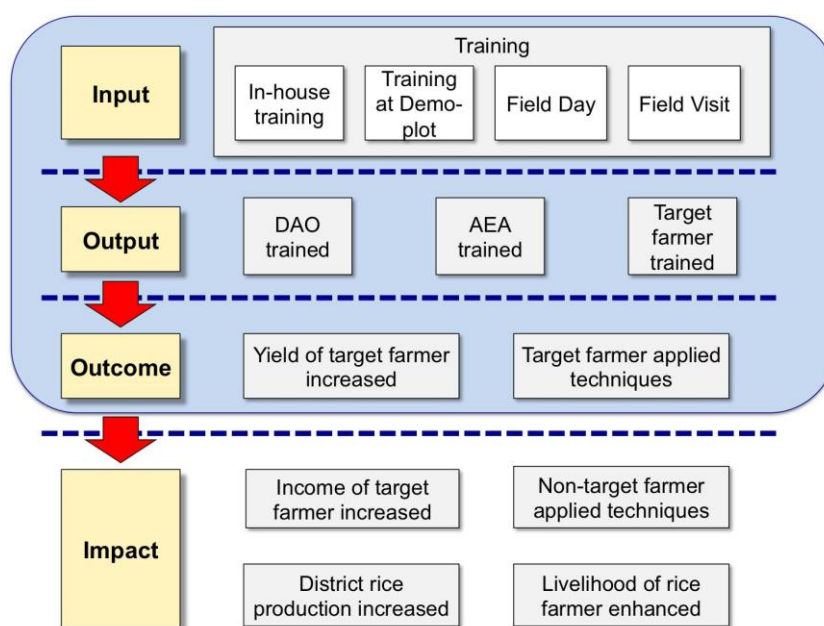


Figure 7 Causal Sequence

Table 3 Plan and Monitoring Framework

	Activity Summary	Indicators	Source Means of verification	Base	Target	Progress
Input	A set of training in the district.	- # of training conducted	- Training record			
Output	Training of DAO, AEA, and target farmers	- # of trained DAO, AEA, and target farmers	- Training record - Demo-plot record			
Outcome	- Target farmers apply the techniques - Yield of target farmers field increased	- Application rate of target farmers - Average yield of individual target farm field	- Farmer data			
Impact	- Livelihood of rice farmer enhanced - Improved techniques disseminated to non-target farmers - Rice production in the district increased	- Income of target farmers increased - Number of non-target farmers applied - Rice production amount	- Farmer data			

4.2 Monitoring

Monitoring activities are conducted during the implementation. When problems and challenges are found, necessary actions are to be taken.

Collecting information is the starting point of monitoring. Collected information is reported in line with the existing MoFA monitoring system. Community level Information is collected by AEA and reported to DAO responsible for responsive Operational Areas. DAO in charge of M&E/ MIS (DAO M&E/MIS) compiles the information from respective AEA through DAOs. DAO M&E/MIS prepares monitoring and evaluation reports. Report checked by DDA is submitted to DCE, and its copy is sent to Region. DAO in charge of M&E plays a key role in monitoring and evaluation of Rice Extension Plan.

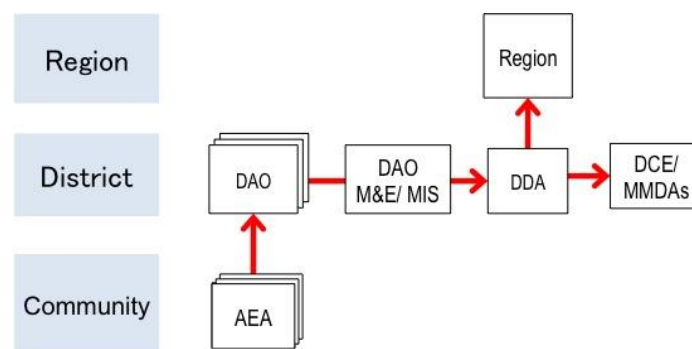


Figure 8 Reporting Flow

Information to be collected

A proper monitoring enables to highlight outcome and impacts on the farmers so that DDA can explain the outcome to Assembly. Outcome and impact information to be highlighted are:

- Demo-plot: yield increased
- Target Farmers: # of farmers applied, yield increased, income increased
- Non-target farmers: # of farmers applied, yield increased, income increased

Methods to collect information:

The monitoring flow is as shown below. AEAs prepare “Demo-Plot Action Plan” and monitor demo-plots and farmers and collect the information with “AEA Report format (Form 2)”. AEA reports monthly to DAO with AEA Report. DAOs compile and tabulate data on demo-plots and farmers based on AEA Report. DAOs report DAO/MIS quarterly. DDA/MISs compile data on demo-plots and farmers based on DAO reports. DDA/MIS also compile the information on training and finance. DDA/MIS reports to Region quarterly with “District Quarterly Report (Form 1)”.

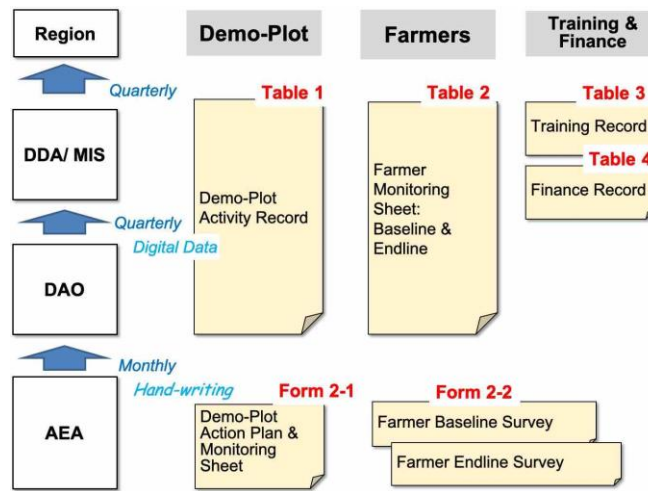


Figure 9 Monitoring Flow

Processing Information to Report

AEAs report to DAOs with “AEA Report” to DAOs. DAO/MISs report to Region with “District Quarterly Report”. All district information collected is compiled into 4 tables.

DAO/ MIS	Form 1: District Quarterly Report	Table 1: Demo-Plot Activity Record Summary Table 2: Farmer Monitoring Sheet Summary: Baseline & Endline Table 3: Training Record Table 4: Financial Record
AEA	Form 2: AEA Report	Form 2-1: Demo-Plot Action Plan & Monitoring Sheet Form 2-2a: Farmer Baseline Survey Form 2-2b: Farmer Endline Survey

4.3 Evaluation

Evaluation is conducted at the end of the annual plan to 1) assess the achievement & impacts, and 2) identify the challenges and possible actions to be taken. Evaluation is made with “Annual Report (Form 3)” shown in Annex.

Annual Plan

	Summary	Baseline	Target	Achievement
Inputs	Training			
Outputs	# of trained/ participated			
Outcome	Yield increased			
Impacts	Income increased Non-target farmers applied			

Evaluation

1. Assess achievement

2. Analyze factors

3. Identify challenges & actions to be taken

Source: PCU, Tensui 2 Project

Figure 10

Evaluation

Example of Quarterly Report: 4th QUARTER 2018												
Activities: Finance												
Total approved budget, releases and expenditure (Gh¢) by MMDA for Rice Extension Activities.												
Items	Budgeted Estimated (Gh¢)		Approved Budget (Gh ¢)		Released (Gh ¢)			Expenditure (Gh ¢)				
	2018		2018		2018			2018				
MAG	12,500	12,500	12,500	12,500	12,500	12,500	12,500	12,500	12,500	12,500	12,500	
GOG	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	
Private					500	500	500	500	500	500	500	
TOTAL	15,500	15,500	15,500	15,500	16,000	16,000	16,000	16,000	16,000	16,000	16,000	
Note: In case of in-kind contribution by input dealers and farmers and Planting for Food and Jobs, calculate the amount in GHS.												
Analysis: District mobilized resources in collaboration with the private sector.												
Activities: Training												
Program Objective	Activity	Target group	Number of Participants / Beneficiaries					Number of Beneficiaries			Outcome	Source of Funds (MAG, GOG, IGF, etc)
			Male	Female	Youth	Aged	PLW Ds	DAO	AEA	Farm er		
Food security and	Joint Training on improved technical package of Rain-Fed Lowland Rice	DAOs and AEAs	15	5	1	0	0	5	12		DAOs and AEAs obtain the knowledge and skill to conduct On-Site Training	MAG

On-Site Training on improved technical package of Rain-Fed Lowland Rice at the established demo-plot in AAA community.	AEAs and Farmer groups	17	5	1	1	0		12	10	Farmers obtain knowledge and skill to produce more.	MAG
On-Site Training on improved technical package of Rain-Fed Lowland Rice at the established demo-plot in BBB community.	AEAs and Farmer groups	7	3						10	Farmers obtain knowledge and skill to produce more.	GOG
On-Site Training on improved technical package of Rain-Fed Lowland Rice at the established demo-plot in CCC community.	AEAs and Farmer groups	8	2						10	Farmers obtain knowledge and skill to produce more.	GOG
Field Day	Farmers	40	20	2	5	1	5	5	50	Farmers are expected to learn techniques.	GOG
Field trip	Farmers and AEAs	17	5				1	1	10	AEAs and Farmers are expected to learn good practice.	MAG
Total		104	40	4	6	1	11	30	90		

Analysis: Timely resource mobilization resulted in successful training.

Status Report: Rice Extension Activities

Demo-Plot Achievement:

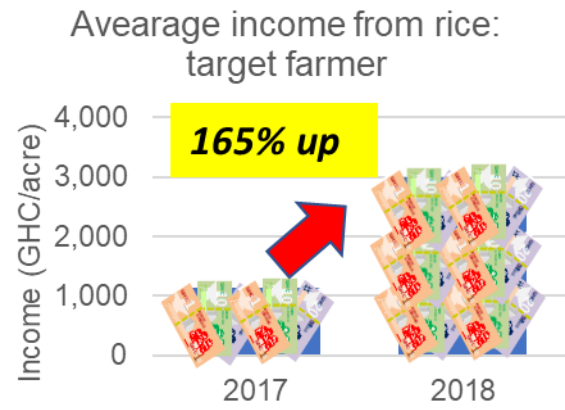
Community	Group member					Area Size (acre)	Quantity of paddy harvested (kg)	Yield (Mt/ha)
	Male	Female	Youth	Aged	PLWDs			
AAA	6	4	0	1	0	0.25	627	6.2
BBB	7	3	1	0	0	0.25	546	5.4
CCC	8	2	1	1	0	0.25	526	5.2
Total/ Av.	21	9	2	2	0	0.75	1,700	5.6

- 3 demo-plot established.
- 30 farmers trained.
- 5.6 MT/ha of yield was achieved on average

Outcome of targeted farmers

Community	Number of Farmers Trained	Number of Farmers Applied	Average Area Harvested (ha)	Average Quantity of Paddy harvested (kg)	Yield (Mt/ha)	Average income from rice (GHC/acre)	Average income from rice (GHC/area) in previous year	Income increase (%)
AAA	10	8	0.20	444	5.49	3,330	1,214	174%
BBB	10	6	0.25	520	5.14	3,120	1,093	186%
CCC	10	4	0.50	850	4.20	2,550	1,093	133%
Total/ Av.	30	18	0.95	1,814	4.72	3,000	1,133	165%

- 18 (60%) farmers applied the improved technical packages.
- They achieved 4.34 MT/ha of yield on average.
- They earned 3,000 GHC/area on average increased 165 %.



Impact on non-target farmers

Community	Number of Non-Target Farmers Applied	Average Area Harvested (ha)	Average Quantity of Paddy harvested (kg)	Yield (Mt/ha)	Income from rice (GHC/area)	Income from rice (GHC) in previous year	Income increase (%)
AAA	6	0.2	350	4.32	2,625	1,335	97%
BBB	3	0.25	380	3.76	2,280	1,093	109%
CCC	1	0.4	550	3.40	2,063	1,032	100%
Total/ Av.	10	0.85	1280	3.72	2,259	1,153	96%

- 10 surrounding farmers applied improved technical packages.
- They earned 2,259GHC/area on average increased 96 %.

Monitoring and Evaluation Tool (M&E Tool) for District Rice Extension Plan

Version 4

ANNEX: M&E Formats

Form 1: District Quarterly Report	17
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Form 1: District Quarterly Report

Table 1: Demo-Plot Activity Record (Data Entry Form)

Demo-Plot Community	Operational Area	Demo-Plot Area (acre)	Rice Variety	Number of group farmers						Progress of Demo-Plot (date-month)							Harvest (No. of bag)*	Size of bag (kg)	Remarks (moisture content %)
				Male	Female	Total	Youth (18-29)	Aged (60>)	PLWDs	SW	TP	FR1	FR2	FR3	HD	HV			
Football	J-League	0.25	Agra	9	1	10	1	0	0								5	84	
Baseball	Liga Espanola																		
Basketball	Serie A																		
Track & Field	Eredivisie																		
Swimming	Premier League																		
Karate	Bundeslega																		
0	0																		
0	0																		

Note: OST (On-site training), SW (Sowing), TP (Transplanting), FR (Fertilization), HD (Heading date), HV (Harvesting)

* As for number of bags harvested, indicate the size of bag or weight of bag. Also indicate moisture content of paddy in Remarks column.

Table 2: Farmer Monitoring Sheet: Baseline (Data Entry Form)

PROFILE									BASELINE																	
Demo-Plot Community	No.	Name of Farmer	Non-target farmer?	Key farmer?	Male/Female	Age	PLWD (Mark 1)	First participated year in <i>tensui</i> training	Baseline										Cost					Profit (GHc)		
									Year	Total Area harvested (acre)	Total No. of Bags harvested	Bag size harvested (kg)*	Total production (kg)	Yield (ton/ha)*	Number of Bags sold	Rice form sold (paddy/milled rice)	Bag size sold (kg)*	Selling price per Bag (GHc)	Total Sales (GHc)	Land rental cost (GHc/yr)	Inputs (GHc)	Equipment (GHc)	Paid labor (GHc)	Total Cost (GHc)	Profit (GHc)	Profit per acre (Ghc/acre)
Football	1	a			Male			2020	2019	1.000	3.0	84	252	0.63	3	Milled	100	200	600					0	600	600
Baseball	2	b			Female			2019	2018	3.000			0	0.00					0					0	0	0
Basketball	3	c			Male			2018	2017	1.000			0	0.00					0					0	0	0
Track & Field	4	d			Female			2017	2016	1.000			0	0.00					0					0	0	0
Swimming	5												0						0					0	0	
	6												0						0					0	0	
	7												0						0					0	0	
	8												0						0					0	0	
	9												0						0					0	0	
	10												0						0					0	0	

Table 2: Farmer Monitoring Sheet: End-line (Data Entry Form)

ENDLINE																			Evaluation of Technical Adaption											
Training participated													Cost				Profit (GHc)		Score either 1. Poor, 2. Fair, 3. Good											
Year	OST 1 (mark 1)	OST 2	OST 3	Total Area harvested (acre)	Total No. of Bags harvested	Bag size harvested (kg)*	Total production (kg)	Yield (ton/ha)*	Number of Bags sold	Rice form sold (paddy/milled rice)	Bag size sold (kg)*	Selling price per Bag (GHc)	Total Sales (GHc)	Land rental cost (GHc/yr)	Inputs (GHc)	Equipment (GHc)	Paid labor (GHc)	Total Cost (GHc)	Profit (GHc)	Profit per acre (Ghc/acre)	1. Bund construction	2. Improved variety of seed	3. Seed selection and treatment	4. Sowing or transplanting in row and appropriate planting distance	5. Split fertilization application	6. Weed control	7. Harvesting on time	8. Threshing on tarpaulin	Applied (yes/no)*	
				1	20	100	2,000	5.00	15	Milled	100	200	3,000	50	50	50	50	200	2,800	2,800	2	2	2	2	2	1	1	1	yes	
				0.25	10		0	0.00					0					0	0	0	2	2	1	1	1	1	1	1	No	
				0.5	20		0	0.00					0					0	0	0	2	2	2	2	2	1	1	2	yes	
				0.25	30		0	0.00					0					0	0	0	2	2	2	2	2	1	1	2	yes	
							0						0					0	0											
							0						0					0	0											
							0						0					0	0											
							0						0					0	0											
							0						0					0	0											
							0						0					0	0											

Table 3: Training Record (Data Entry Form)

Training Name	Times (1st, 2nd, ...)	Topic	Venue/ Community	Plan (day-month-year) <i>*Type: "20/5/3" showing "3-May-2020".</i>	Implemented (day-month-year)	Number of farmers trained (gross)						Number of officers trained (gross)			Number of officers trained in district a year (NET)		
						Male	Female	Total	Youth (18-29 years old)	Aged (over 60 years old)	PLWDs	DDA/DAO	AEA	Total	DDA/DAO	AEA	Total
ToT	1st			3-May-2020	10-May-2020	4	3	7	1	0	0	3	4	7	3	7	10
ToT	2nd			3-Jun-2020	5-Jun-2020	9	1	10	0	0	0	2	3	5			
ToT	3rd							0				3	6	9			
OST	1st							0				4	5	9			
OST	2nd							0						0			
OST	3rd							0						0			
OST	4th							0						0			
OST	5th							0						0			
OST	6th							0						0			
OST	7th							0						0			
OST	8th							0						0			
OST	9th							0						0			
OST	10th							0						0			
Field Day								0						0			
Field Trip								0						0			
								0						0			
								0						0			
								0						0			
								0						0			
								0						0			
								0						0			

Table 4: Financial record

Total approved budget, releases and expenditure (Gh¢) by MMDA for **Rice Extension Activities**.

Financial transfers by MMDA for **Rice Extension Activities**.

Budget for RICE EXTENSION ACTIVITIES						Financial transfers by MMDA for RICE EXTENSION ACTIVITIES (*Type: "20/5/3" showing "3-May-2020".)							
Items	Budget Submitted (GHc, Whole DAD)	Budget Approved (GHc, Whole DAD)	Budget Approved (GHc, Rice Extension)	Releases (GHc, Rice Extension)	Expenditure (GHc, Rice Extension)	Received Date by Assembly Account (day-month-year)				Received Date by DAD Account (day-month-year)			
	2020	2020	2020	2020	2020	1st Release	2nd Release	3rd Release	4th Release	1st Release	2nd Release	3rd Release	4th Release
GOG		1,000	700	400		3-Feb-2020	5-Apr-2020	10-Jul-2020	10-Oct-2020	25-Feb-2020	5-May-2020	10-Aug-2020	5-Nov-2020
DACF													
IGF													
ABFA													
PFJ													
MAG													
Other donors		10,000	900	800		3-Mar-2020	5-May-2020			15-Mar-2020	10-May-2020		
Input dealer													
Others													

Note: In case of in-kind contribution by input dealers and farmers and Planting for Food and Jobs, calculate the amount in GHS.

No.	Field work	Action Plan			Monitoring				
		Week-based Time frame	Date-based Time frame (from to)	Recommended tool & inputs	Date Implemented	No. of farmers participated		- Describe each activity in detail, - Evaluate each work whether it is implemented along with the guideline	Remarks on the field and crop condition, if any
						Male	Female		
13	Off-type removal	From 5 weeks after sowing to the day for harvesting		No tool (hand removal)					
14	2nd Weeding	7 weeks after sowing		Push weeder					
15	2nd Fertilizer application	7 weeks after sowing		Fertilizer, weighing scale, containers			Type of fertilizer applied: Quantity applied: kg		
16	3rd Weeding	10 weeks after sowing		Push weeder					
17	3rd Fertilizer application	10 weeks after sowing		Fertilizer, weighing scale, containers			Type of fertilizer applied: Quantity applied: kg		
18	Heading	Heading more than 50% rice plants							
19	Bird scaring	13 - 18 weeks after sowing		Fishing net					
20	Maturing	Accumulated temperature 950 °C from heading date							
	Harvesting	19 weeks after sowing		Sickle			Moisture content: %		
	Threshing	(determined by observation)		Tarpaulin, Bambam box, sacks					
21	Winnowing			Tarpaulin, sacks					
	Drying	19 weeks after sowing					Moisture content: % Number of bags:	Bag size:	
22	Storing	19 weeks after sowing ~		Storage facility, wooden pallets					
23	Milling	19 weeks after sowing ~		Sacks					
24	Selling	19 weeks after sowing ~		Sacks					

Onsite Training (OST) Record

	1 st OST	2 nd OST	3 rd OST	4 th OST	5 th OST
Date					
Topic					
Participants	M: F:	M: F:	M: F:	M: F:	M: F:
	Youth: Aged: PLWDs:	Youth: Aged: PLWDs:	Youth: Aged: PLWDs:	Youth: Aged: PLWDs:	Youth: Aged: PLWDs:

Form 2-1b: Demo-Plot Action Plan & Monitoring Sheet (2) Direct Sowing Ashanti Region

Name of AEA:	Number of Group Farmers: M: F:	Community:
Phone No. of AEA:	(Youth: Aged: PLWDs:)	Size of Demo Plot: acre
Operational Area:	Name of Key Farmer:	Rice Variety:
District:	Phone No. of Key Farmer:	

No.	Field work	Action Plan				Monitoring			
		Week-based Time frame	Date-based Time frame (from to)	Recommended tool & inputs	Date Implemented	No. of farmers participated		- Describe each activity in detail, - Evaluate each work whether it is implemented along with the guideline	Remarks on the field and crop condition, if any
						Male	Female		
1	Land clearing	3 weeks (or more) before sowing		Cutlass					
2	Bund construction	1 week before sowing		Hoe, spade, flat compactor, garden line					
3	Ploughing	1 week before sowing		Hoe					
4	Seed preparation	1 week before sowing		Rice seeds, salt, egg, bucket, sieve, firewood, pot, seed net					
5	Sowing	Week 0		Hoe, line drawer			Quantity of seeds: kg Sowing method: Row distance: cm		
6	1st Weeding	3 weeks after sowing		Weeding hoe					
7	1st Fertilizer application	3 weeks after sowing		Fertilizer, weighing scale, containers			Type of fertilizer applied: Quantity applied: kg		
8	2nd Weeding	5 weeks after sowing		Weeding hoe					
9	2nd Fertilizer application	5 weeks after sowing		Fertilizer, weighing scale, containers			Type of fertilizer applied: Quantity applied: kg		
10	Off-type removal	from 15 weeks after sowing to the day of harvesting		No tool (hand removal)					
11	3rd Weeding	10 weeks after sowing		Weeding hoe					
12	3rd Fertilizer application	10 weeks after sowing		Fertilizer, weighing scale, containers			Type of fertilizer applied:		

No.	Field work	Action Plan			Date Implemented	Monitoring			
		Week-based Time frame	Date-based Time frame (from to)	Recommended tool & inputs		No. of farmers participated		- Describe each activity in detail, - Evaluate each work whether it is implemented along with the guideline	Remarks on the field and crop condition, if any
						Male	Female		
							Quantity applied: kg		
13	Heading	Heading more than 50% rice plants							
14	Bird scaring	13 - 17 weeks after sowing		Fishing net					
15	Maturing	Accumulated temperature 950°C from heading date							
	Harvesting	19 weeks after sowing (determined by observation)		Sickle			Moisture content: %		
	Threshing			Tarpaulin, Bambam box, sacks, head carriage					
16	Winnowing	19 weeks after sowing		Tarpaulin, sacks					
	Drying						Moisture content: % Number of bags:	Bag size:	
17	Storing	19 weeks after sowing ~		Storage facility, wooden pallets					
18	Milling	19 weeks after sowing ~		Sacks					
19	Selling	19 weeks after sowing ~		Sacks					

Onsite Training (OST) Record

	1 st OST	2 nd OST	3 rd OST	4 th OST	5 th OST
Date					
Topic					
Participants	M: F:	M: F:	M: F:	M: F:	M: F:
	Youth: Aged: PLWDs:	Youth: Aged: PLWDs:	Youth: Aged: PLWDs:	Youth: Aged: PLWDs:	Youth: Aged: PLWDs:

Form 2-1c: Demo-Plot Action Plan & Monitoring Sheet (3) Direct Sowing Northern Region

Name of AEA:	Number of Group Farmers: M: F:	Community:
Phone No. of AEA:	(Youth: Aged: PLWDs:)	Size of Demo Plot: acre
Operational Area:	Name of Key Farmer:	Rice Variety:
District:	Phone No. of Key Farmer:	

No.	Field work	Action Plan			Date Implemented	No. of farmers participated		Monitoring	Remarks on the field and crop condition, if any
		Week-based Time frame	Date-based Time frame (from to)	Recommended tool & inputs		Male	Female		
1	Land clearing	3 weeks (or more) before sowing		Cutlass					
2	Ploughing	1 week before sowing		Tractor					
3	Bund construction	1 week before sowing		Hoe, spade, compactor, slapper, garden line					
4	Harrowing	1 week before sowing		Tractor, Harrow					
5	Seed preparation	1 week before sowing		Rice seeds, salt, egg, bucket, sieve, firewood, pot, seed net					
6	Sowing	Week 0		Hoe, line drawer			Quantity of seeds: kg Sowing method: Row distance: cm		
7	1st Weeding	3 weeks after sowing		Weeding hoe					
8	1st Fertilizer application	3 weeks after sowing		Fertilizer, weighing scale, containers			Type of fertilizer applied: Quantity applied: kg		
9	2nd Weeding	5 weeks after sowing		Weeding hoe					
10	2nd Fertilizer application	5 weeks after sowing		Fertilizer, weighing scale, containers			Type of fertilizer applied: Quantity applied: kg		
11	Off-type removal (for seed production)	from 5 weeks after sowing to the day of harvesting		No tool (hand removal)					
12	3rd Weeding	10 weeks after sowing		Weeding hoe					

No.	Field work	Action Plan			Date Implemented	No. of farmers participated		Monitoring - Describe each activity in detail, - Evaluate each work whether it is implemented along with the guideline	Remarks on the field and crop condition, if any
		Week-based Time frame	Date-based Time frame (from to)	Recommended tool & inputs		Male	Female		
13	3rd Fertilizer application	10 weeks after sowing		Fertilizer, weighing scale, containers				Type of fertilizer applied: Quantity applied: kg	
14	Heading	Heading more than 50% rice plants							
15	Bird scaring	13 - 17 weeks after sowing		Fishing net					
16	Maturing	Accumulated temperature 950 °C from heading date							
	Harvesting	17 weeks after sowing (determined by observation)		Sickle				Moisture content: %	
	Threshing			Tarpaulin, Bambam box, sacks, head carriage					
17	Winnowing	17 weeks after sowing		Tarpaulin, sacks					
	Drying							Moisture content: % Number of bags:	Bag size:
18	Storing	17 weeks after sowing ~		Storage facility, wooden pallets					
19	Milling	17 weeks after sowing ~		Sacks					
20	Selling	17 weeks after sowing ~		Sacks					

Onsite Training (OST) Record

	1 st OST	2 nd OST	3 rd OST	4 th OST	5 th OST
Date					
Topic					
Participants	M: F:	M: F:	M: F:	M: F:	M: F:
	Youth: Aged: PLWDs:	Youth: Aged: PLWDs:	Youth: Aged: PLWDs:	Youth: Aged: PLWDs:	Youth: Aged: PLWDs:

Form 2-2a: Farmer Baseline Survey - Rice Production and Income Analysis

Farmers Name: _____ District: _____ Date of interview: _____

Male/ Female: _____ Age: _____ PLWDs: _____ Demo-Plot Community: _____ Target Farmer / Non-Target Farmer

Key Farmer: Yes / No

When did you start rice cultivation? Since: _____

Please specify the year before participating *Tensui* training as

When did you FIRST participate in *Tensui* training? Year: _____

baseline year. Year: _____

Season	Area (acre)	Rice Variety	Total No. of Bags Harvested	Unit (Size of Bag: Refer *below)	Total Production (kg)	No. of maxi bags Sold	Unit (Size of Bag: Refer *below)	Unit price to sell per maxi bags (GHc)	Total Income (GHc)
Major rainy season			<input type="checkbox"/> Paddy		kg	<input type="checkbox"/> Paddy <input type="checkbox"/> Milled			
Minor rainy season			<input type="checkbox"/> Paddy		kg	<input type="checkbox"/> Paddy <input type="checkbox"/> Milled			
Total									(1)

* If respondent answers the bag as "unit", please specify the type of bag:

(ASH): KG= kilogram (kg), MinB = Minibag (size 3) **50 kg**, MaxB = Maxibag (size 4) **84kg**, SizeF=Size 5 bag **120kg**, SmG=Small Grawaa (tin) **25kg**, BiG=Big Grawaa(Big tin) **64kg**,

(NOR): Bag=Maxibag **84kg**, Bowl=Bowl **2.5kg**, Other (Specify :with confirmation in Kilogram)

Season	Cost of Land (GHc)	Cost of Inputs (GHc)			Cost of Equipment (GHc)	Cost of Labor (GHc)	Total Cost (GHc)
		Seeds	Fertilizer	Chemicals			
Major rainy season							
Minor rainy season							
Total							(2)
		<i>Total:</i>					

Cost of equipment includes: Push weeder, Leveler, Sickle, Hoe, Net, Tarpaulin, Bambam box, Sacks, Others

Cost of labor includes: Bund construction, Ploughing Pudding & Leveling, Transplanting, Harrowing, Sowing, Weeding, Fertilizer application, Bird scaring
Harvesting, Threshing & winnowing, Drying Transportation, Milling, Others.

Net Profit = (1) Total Income – (2) Total Cost	(GHc)
---	--------------

Form 2-2b: Farmer End line Survey – Rice Production and Income Analysis

Farmers Name: _____ District: _____ Date of interview: _____
 Male/ Female: _____ Age: _____ PLWDs: _____ Demo-Plot Community: _____ End line Year: _____
 Participation in: OST(SW) 1: Yes / No OST 2(LD): Yes / No OST 3(TP): Yes / No OST 4(FT): Yes / No OST 5(HV): Yes / No

Season	Area (acre)	Rice Variety	Total No. of Bags Harvested	Unit (Size of Bag)	Total Production (kg)	No. of maxi bags Sold	Unit (Size of Bag)	Unit price to sell per maxi bags (GHc)	Total Income (GHc)
Major rainy season			<input type="checkbox"/> Paddy		kg	<input type="checkbox"/> Paddy <input type="checkbox"/> Milled			
Minor rainy season			<input type="checkbox"/> Paddy		kg	<input type="checkbox"/> Paddy <input type="checkbox"/> Milled			
Total									(1)

Season	Cost of Land (GHc)	Cost of Inputs (GHc)			Cost of Equipment (GHc)	Cost of Labor (GHc)	Total Cost (GHc)
		Seeds	Fertilizer	Chemicals			
Major rainy season							
Minor rainy season							
Total							(2)
		<i>Total:</i>					

Cost of equipment includes: Push weeder, Leveler, Sickle, Hoe, Net, Tarpaulin, Bambam box, Sacks, Others

Cost of labor includes: Bund construction, Ploughing Pudding & Leveling, Transplanting, Harrowing, Sowing, Weeding, Fertilizer application, Bird scaring Harvesting, Threshing & winnowing, Drying Transportation, Milling, Others.

Net Profit = (1) Total Income – (2) Total Cost	(GHc)
---	--------------

Evaluation of Technical Adaption

Evaluation: 1. Poor (not implemented), 2. Fair (partially implemented), 3. Good (implemented thoroughly)

Note: At least 5 activities are evaluated either "Fair" or "Good", the farmer is recognized as applying the technics in the Extension Guideline.

Bund construction	Improved variety of seed	Seed selection and treatment	Sowing or transplanting in row and appropriate planting distance	Split fertilization application	Weed management	Harvesting on time	Threshing on tarpaulin

Form 3: Annual Report: Evaluation

District:

Region:

Year:

1. Introduction

** Objective of the evaluation is to assess the implementation of the annual plan at the end of planning period. The results of and lessons learnt from evaluation are shared among stakeholders and utilized for the annual planning in the next year.*

2. Achievement

2.1 Whole District *(Data to be obtained from SRID)*

	Last Year	Target	Achievement
Rice cultivation area in district (ha)			
Rice production in district (tons)			
Average yield in district (ton / ha)			

2.2 Demo Plot Achievement *(attach Table1 Demo Plot Activity Record Summary)*

Name of Community	Area (acre)	No. of bag harvested	Yield (ton / ha)

2.3 Annual Target of Rice Extension Plan and Achievement *(attach Table2 Farmer Monitoring Sheet Summary and Table3 Training Record)*

	Indicator	Target	Baseline	Achievement/End line
INPUT	Number of trainings conducted			
OUTPUT	Number of DAO trained			
	Number of AEA trained			
	Number of target community			
	Number of target farmers trained			
OUTCOME	Number of target farmers trained (female)			
	Number of target farmers applied			
	Number of target farmers applied (female)			
	Application rate (%)			
IMPACT	Average yield of individual farmers applied (ton/ha)			
	Average income of target farmers from rice (GHC/ year)			
	Number of non-target farmers applied (person)			

2.4 Good practice identified

Name of community	Person practicing	Good practice	Remarks

3. Evaluation

3.1 Performance

**Narrative summary.*

3.2 Analysis:

**Analyzing causes of outputs and outcomes: supporting factors and constraints, i.e., weather, techniques, extension approaches, costs, selection of sites, ...*

Analysis

Item	Contributing factors
What went right	
1.	
2.	
3.	
What went wrong	
1.	
2.	
3.	

3.3 Challenges and possible actions

Challenges	Possible action to be taken
1.	
2.	
3.	

Form 4: District Rice Extension Plan

1. District Information

General information

Item	Number	Remarks
Population		
Total household		
Number of farmers		
Number of rice farmers		
Male		
Female		
Total area		

Rice Cultivation (Year)

Items	Total	Rain-fed lowland	Irrigated	Upland
Potential rice cultivation area				
Area under rice cultivation				

2. Agricultural Extension Capacity

Human resources

Position	Number required	Number at post	Remarks Experience of rice extension/ project
Director			
DAO Crop			
DAO Extension			
DAO Livestock			
DAO Engineering			
DAO WIAD			
DAO M&E/ MIS			
Veterinary Staff			
PPRSD Staff			
AEA			
Total			

AEA to farmer ratio: *1:4,000 (example)*

Physical resources

Item	Number	Available	Remarks
Automobile			
Motor bike			
Bicycle			
Total			

Others

Division of the District

Name of Zone	DAO in charge	Name of Operational Area	AEA in charge	Number of Community	Number of Rice Cultivating Community
Total					

3. Target

Target in whole district

	2015 (Baseline)	2016	2017	2018	2019	2020
Rice Cultivation Area (ha)						
Rain-fed lowland						
Irrigated						
Upland						
Total						
Rice Production (tons)						
Rain-fed lowland						
Irrigated						
Upland						
Total						
Average Yield of Rice (ton / ha)						
Rain-fed lowland						
Irrigated						
Upland						
Total						
Rain-fed lowland						
Number of target community						
Number of target farmers (total)						
Number of target farmers (male)						
Number of target farmers (female)						

Annual Target

	Indicator	Last Year (Baseline)	This Year (Target)
OUTPUT	Number of training conducted		
OUTPUT	Number of DAOs trained		
	Number of AEAs trained		
	Number of target community		
	Number of target farmers trained (male)		
	Number of target farmers trained (female)		
OUTCOME	Number of target farmers applied (male)		
	Number of target farmers applied (female)		
	Application rate (%)		
	Average yield of individual farmers applied (ton/ ha)		
IMPACT	Average income of target farmers from rice (GHC/ year)		
	Number of non-target farmers applied (person)		

Manual for District MIS Officers

MIS officers collect the data from AEAs and DAOs and enter those data into 5 kinds of EXCEL format.

Excel file consists of data sheets.

Sheet:

“0_Data Input”

“Table 1_Demo”

“Table 2_Farmer”

“Table 3_Training”

“Table 4_Finance”

Once all sheets are input, the District Summary sheet is automatically filled (see the figure in the right). Data are already consolidated as either district total or district average, which are ready for use for any reports.

District Summary		Adansi Asokwa							2020													
Table 1: Summary of Demo-Plot																						
No.	Community	Demo-Plot Area (acre)	Number of group farmers				Harvest (kg)	Yield (ton/ha)														
			Male	Female	Total	Youth	Aged	PLWDs														
Total	7	1.5	39	21	60	1	0	0	3276	5.46												
14	0	0	0	0	0	0	0	0	0	-												
15	0	0	0	0	0	0	0	0	0	-												
16	0	0	0	0	0	0	0	0	0	-												
17	0	0	0	0	0	0	0	0	0	-												
18	0	0	0	0	0	0	0	0	0	-												
19	0	0	0	0	0	0	0	0	0	-												
20	0	0	0	0	0	0	0	0	0	-												
Table 2: Summary of Impacts on Farmers																						
No.	Community	Number of Target Farmers	# of Male farmer	# of Female farmer	Baseline						Endline											
					# of Farmer	Area Harvested (acre)	Total Harvested (kg)	Average Yield (ton/ha)	Total Profit (Ghc)	Average Profit (Ghc/acre)	# of Farmer	Area Harvested (acre)	Total Harvested (kg)	Average Yield (ton/ha)	% Increase	Total Profit (Ghc)	Average Profit/ Acre (Ghc/acre)	% Increase	# of Farmer Applied	# Male applied	# Female applied	Application rate (%)
Total		6	4	2	6	4.25	2,240	1.43	3,200	1,000	6	3.00	5,900	5.00	249%	5,800	2,467	147%	5	4	1	83%
1	Football	2	2	0	2	1.50	660	1.20	800	500	2	1.50	3,100	5.25	338%	3,400	2,000	300%	2	2	0	100%
2	Baseball	1	0	1	1	0.25	200	2.00	800	3,200	1	0.25	500	5.00	150%	800	4,000	25%	0	0	0	0%
3	Basketball	1	1	0	1	1.00	480	1.20	600	600	1	0.50	900	4.50	275%	600	2,000	233%	1	1	0	100%
4	Track & Field	1	0	1	1	1.00	600	1.50	800	800	1	0.25	600	6.00	300%	800	4,000	400%	1	0	1	100%
Table 3: Training Summary																						
Training	Times	Number of farmers trained (gross)							Number of officers trained (gross)			OST1	Seed treatment									
		Male	Female	Total	Youth	Aged	PLWDs	DDA/DAO	AEA	Total												
1	ToT	3	13	4	17	1	0	0	8	13	21											
2	OST	10	0	0	0	0	0	0	4	5	9											
3	Field Day	1	0	0	0	0	0	0	0	0	0											
4	Field Tnp	1	0	0	0	0	0	0	0	0	0											
5	Others	0	0	0	0	0	0	0	0	0	0											
6		0	0	0	0	0	0	0	0	0	0											
Total	Total	15	13	4	17	1	0	0	12	18	30											
											Number of officers trained (net)											
											3	7	10									
Table 4: Summary of Financial Record																						
	Budget Amount for RICE EXPENSES	Expended (Ghc)	%																			
Total	1,600	1,200	75%																			
Government source	700	400	57%																			
GOG	700	400	57%																			
DACF	0	0	-																			
IGF	0	0	-																			
ABFA	0	0	-																			
Other sources	900	800	89%																			
PFJ	0	0	-																			
Input dealer	0	0	-																			
MAG	0	0	-																			
Other donors	900	800	89%																			
Others	0	0	-																			
0	0	0	-																			
0	0	0	-																			

SHEET: "Data Input"

Please input the basic information in "Data Input" Sheet. Then, the information input is automatically input to other sheets.

Basic Information: Year of Intervention, Region, District, Operational Area, and AEA name.

Instruction of data input:

1. Please input data into the CELLS in YELLOW COLOR.
2. Please choose data from pulldown in the CELLS in ORANGE COLOR.
3. Please leave other cells. These parts are protected area. You cannot input data.

1. Protecte
d area.

Instruction:

Please input data into the CELLS in **YELLOW COLOR**.

Please choose data from pulldown in the CELLS in **ORANGE COLOR**.

Please leave other cells. CELLS in GREY COLOR is protected. You cannot type.

Year	20
Region	Ashanti
District	Adansi Asokwa
MIS Officer	

1. Data
selection area

Information Demo-Plot Community

No.	Community	Establishment year	Operational Area	AEA Name
1	Football	2020	J-League	Lionel Messi
2	Baseball	2019	Liga Espanola	Cristiano Ronald
3	Basketball	2018	Serie A	Diego Maradona
4	Track & Field	2017	Eredivisie	Ruud Gullit
5	Swimming	2016	Premier League	David Beckham
6	Karate	2015	Bundeslega	Franz Beckenbauer
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30	Ashanti			

1. Data
input
area

SHEET: "Table 1_ Demo-Plot"

Input Data

Table 1: Demo-Plot Activity Record Summary																					
		Number of group farmers								Progress of Demo-Plot (date-month-year) (*Type: "20/5/3" showing "3-May-2020".)											
Demo-Plot Community	Operational Area	Demo-Plot Area (acre)	Rice Variety	Male	Female	Total	Youth	Aged	PLWDs	SW	TP	FR1	FR2	FR3	HD	HV	Harvest (No. of bag)	Size of bag (kg)	Total Harvest (kg)	Yield (ton/ha)	Remarks (moisture content %)
Football	J-League	0.25	Agra	9	1	10	1	0	0	20-May-2018	4-Jun-2018	18-Jun-2018	2-Jul-2018	31-Jul-2018	30-Aug-2018	28-Sep-2018	5	84	420	4.20	
Baseball	Liga Espanola	0.25	Agra	8	2	10											6	84	504	5.04	
Basketball	Serie A	0.25	Agra	7	3	10											7	84	588	5.88	
Track & Field	Eredivisie	0.25	Agra	6	4	10											8	84	672	6.72	
Swimming	Premier League	0.25	Agra	5	5	10											7	84	588	5.88	
Karate	Bundeslega	0.25	Agra	4	6	10											6	84	504	5.04	
	0	0				0													0	-	
	0	0				0													0	-	
	0	0				0													0	-	
	0	0				0													0	-	

Type date in a way as:
 "20/5/3" shows "3-May-2020".
 "5/3" shows "3-May-2020".
 "18/5/3" shows "3-May-2018".

No need to input. Automatically processed.

Choose data from pulldown.

No need to input. Automatically processed.

Baseline

SHEET: "Table 2_Farmer"

Table 2: Farmer Monitoring Sheet Summary (Baseline)&(Endline)																							Adansi Asokwa			2020																			
PROFILE																							BASELINE																						
Demo-Plot Community	No.	Name of Farmer	Non-target farmer?	Key farmer?	Male/ Female	Age	PLWD (Mark 1)	First participated year	Baseline										Cost					Profit (Ghc)																					
									Base Year	Total Area harvested (acre)	Total No. of Bags harvested	Bag size harvested (kg)*	Total production (kg)	Yield (ton/ha)*	Number of Bags sold	Rice form sold (paddy/milled rice)	Bag size sold (kg)*	Selling price per Bag (Ghc)	Total Sales (Ghc)	Land rental cost (Ghc/yr)	Land rental cost (in kind: No. of bags)	Inputs (Ghc)	Equipment (Ghc)	Paid labor (Ghc)	Total Cost (Ghc)	Profit (Ghc)	Profit per acre (Ghc/acre)																		
Football	1	a			Male			2016	1.00	3.0	120	360	0.90	3	Milled	100	200	600								0	600	600																	
Baseball	2	b			Female	1		2016	0.25	2.0	100	200	2.00	4	Milled	100	200	800								0	800	3,200																	
Basketball	3	c			Male	1		2017	1.00	4.0	120	480	1.20	3	Milled	100	200	600								0	600	600																	
Tennis & Football	4	d			Female	1		2016	1.00	5.0	120	600	1.50	4	Milled	100	200	800								0	800	800																	
Swimming	5	e			Male	1		2019	0.50	3.0	100	300	1.00	1	Milled	100	200	200								0	200	400																	
Football	6	f			Male	1		2016	0.50	3.0	100	300	1.50	1	Milled	100	200	200								0	200	400																	
pull down	7	g			Female	1																			0	0	-																		
pull down	8	h			Female	1																			0	0	-																		

Endline

ENDLINE																							Evaluation of Technical Adaption									
Training participated			Endline Year:							Cost										Profit (Ghc)			Score either 1. Poor, 2. Fair, 3. Good									
Year	OST 1 (mark 1)	OST 2	OST 3	Total Area harvested (acre)	Total No. of Bags harvested	Bag size harvested (kg)*	Total production (kg)	Yield (ton/ha)	Number of Bags sold	Rice form sold (paddy/milled rice)	Bag size sold (kg)*	Selling price per Bag (Ghc)	Total Sales (Ghc)	Land rental cost (Ghc/yr)	Land rental cost (in kind: Ghc)	Inputs (Ghc)	Equipment (Ghc)	Paid labor (Ghc)	Total Cost (Ghc)	Profit (Ghc)	Profit per acre (Ghc/acre)	Blank	1. Bund construction	2. Improved variety of seed	3. Seed selection and treatment	4. Sowing or transplanting in row and appropriate planting distance	5. Split fertilization application	6. Weed control	7. Harvesting on time	8. Threshing on tarpaulin	Applied (yes/no)*	
				1.00	3	100	2,000	5.00	3	Milled	100	200	3,000	50	100	50	50	50	200	2,800	2,800			2	2	2	2	2	1	1	2	yes
				0.25	5	100	500	5.00	5	Milled	100	200	1,000						0	1,000	4,000			2	2	1	1	1	1	1	No	
				0.5	9	100	900	4.50	5	Milled	100	200	1,000						0	1,000	2,000			2	2	2	2	2	1	1	2	yes
				0.25	6	100	600	6.00	5	Milled	100	200	1,000						0	1,000	4,000			2	2	2	2	2	1	1	2	yes
				0.5	8	100	800	4.00	2	Milled	100	200	400						0	400	800			2	2	2	2	1	2	2	2	yes
				0.5	11	100	1,100	5.50	3	Milled	100	200	600						0	600	1,200			2	2	2	1	1	2	2	2	yes
				0	-	-	0	-	-				0						0	0	-										No	
				0	-	-	0	-	-				0						0	0	-											No
				0	-	-	0	-	-				0						0	0	-											No

SHEET: "Table 3_Training"

Table 3: Training Record			Adansi Asokwa				2020											
Training Name	Times (1st, 2nd, ...)	Topic	District Code	Venue/Community	Plan (day-month-year) <small>*Type: "20/5/3" showing "3-May-2020"</small>	Implemented (day-month-year)	Number of farmers trained (gross)						Number of officers trained (gross)			Number of officers trained in district a year (NET)		
							Male	Female	Total	Youth	Aged	PLWDs	DDA/DAO	AEA	Total	DDA/DAO	AEA	Total
ToT	1st				3-May-2020	10-May-2020	4	3	7	1	0	0	3	4	7	3	7	10
ToT	2nd				3-Jun-2020	5-Jun-2020	9	1	10	0	0	0	2	3	5			
ToT	3rd								0				3	6	9			
OST	1st								0				4	5	9			
OST	2nd								0									
OST	3rd								0									
OST	4th		Input		Type date				0				Input					

Input net number (number of person).

SHEET: "Table 4_Finance"

Table 4: Financial Record (Budget for Rice Extension Activities)						Adansi Asokwa										2020			
Budget for RICE EXTENSION ACTIVITIES						Financial transfers by MMDA for RICE EXTENSION ACTIVITIES (*Type: "20/5/3" showing "3-May-2020")													
Items	Budget Submitted (GHc, Whole DAD)	Budget Approved (GHc, Whole DAD)	Budget Approved (GHc, Rice Extension)	Releases (GHc, Rice Extension)	Expenditure (GHc, Rice Extension)	Received Date by Assembly Account (day-month-year)				Received Date by DAD Account (day-month-year)				Duration (days)				Remarks	
	2020	2020	2020	2020	2020	1st Release	2nd Release	3rd Release	4th Release	1st Release	2nd Release	3rd Release	4th Release	1st Release	2nd Release	3rd Release	4th Release		
GOG		1,000	700	400		3-Feb-2020	5-Apr-2020	10-Jul-2020	10-Oct-2020	25-Feb-2020	5-May-2020	10-Aug-2020	5-Nov-2020	22	30	31	26		
DACF														0	0	0	0		
IGF														0	0	0	0		
ABFA														0	0	0	0		
PFJ														0	0	0	0		
MAG														0	0	0	0		
Other donors		10,000	900	800		3-Mar-2020	5-May-2020			15-Mar-2020	10-May-2020			12	5	0	0		
Input dealer														0	0	0	0		
Other														0	0	0	0		

No need to input. Automatically processed.

Note: In case of in-kind contribution by input dealers and farmers and Planting for Food and Jobs (PFJ), calculate the amount in GHs.
 Financial transfers should be written as follows. Type 'yyyy/mm/dd' or 'yy/mm/dd' such as "2020/5/3" or "20/5/3". It will show "3-May-2020".
 "0" if no amount is budgeted/approved/released/ expended as shown in the example above (GOG, DACF and Other (PFJ)).

Type date in a way that
 "20/5/3" shows "3-May-2020".
 "5/3" shows "3-May-2020".
 "18/5/3" shows "3-May-2018".

**M&E Tool for
District Rice Extension Plan**

July 2020

Instruction:

Please input data into the CELLS in **YELLOW COLOR**.

Please choose data from pulldown in the CELLS in **ORANGE COLOR**.

Please leave other cells. CELLS in GREY COLOR is protected. You cannot type.

Year	
Region	
District	
MIS Officer	

Information Demo-Plot Community

No.	Community	Establishment year	Operational Area	AEA Name
1				
2				
3				
4				
5				
6				
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30				

Form 2-1a: Demo-Plot Action Plan & Monitoring Sheet (1) Transplanting

Name of AEA:	Number of Group Farmers: M: F:	Community:
Phone No. of AEA:	(Youth (18-29): Aged (60>): PLWDs:)	Size of Demo Plot: acre
Operational Area:	Name of Key Farmer:	Rice Variety:
District:	Phone No. of Key Farmer:	

No.	Field work	Action Plan			Monitoring			
		Week-based Time frame	Date-based Time frame (from to)	Recommended tool & inputs	Date Implemented	No. of farmers participated	- Describe each activity in detail, - Evaluate each work whether it is implemented along with the guideline	Remarks on the field and crop condition, if any
1	Seed preparation	1 week before sowing		Rice seeds, salt, egg, bucket, sieve, firewood, pot, seed net		M: F:		
2	Nursery preparation	1 day before sowing		Hoe, cutlass, garden line		M: F:		
3	Nursery management	from 1 day before sowing to the day for transplanting		Hoe		M: F:		
4	Sowing	Week 0		String, stick, hoe		M: F:	Quantity of seeds: kg	
5	Land clearing	3 weeks (or more) before transplanting		Cutlass		M: F:		
6	Bund construction	1 - 2 weeks before transplanting		Hoe, spade, garden line		M: F:		
7	Ploughing	1 week before transplanting		Hoe		M: F:		
8	Puddling and or Leveling	1 day before transplanting		Hoe, spade, leveller		M: F:		
9	Uprooting and seedlings preparation	1 day before transplanting		Strings		M: F:		
10	Transplanting	3 weeks after sowing		String, stick, garden line		M: F:	Row transplanting: cm x cm	
11	1st Weeding	5 weeks after sowing		Push weeder		M: F:		
12	1st Fertilizer application	5 weeks after sowing		Fertilizer, weighing scale, containers		M: F:	Type of fertilizer applied: Quantity applied: kg	
13	Off-type removal	From 5 weeks after sowing to the day for harvesting		No tool (hand removal)		M: F:		

No.	Field work	Action Plan			Monitoring			
		Week-based Time frame	Date-based Time frame (from to)	Recommended tool & inputs	Date Implemented	No. of farmers participated	- Describe each activity in detail, - Evaluate each work whether it is implemented along with the guideline	Remarks on the field and crop condition, if any
14	2nd Weeding	7 weeks after sowing		Push weeder				
15	2nd Fertilizer application	7 weeks after sowing		Fertilizer, weighing scale, containers		M: F:	Type of fertilizer applied: Quantity applied: kg	
16	3rd Weeding	10 weeks after sowing		Push weeder		M: F:		
17	3rd Fertilizer application	10 weeks after sowing		Fertilizer, weighing scale, containers		M: F:	Type of fertilizer applied: Quantity applied: kg	
18	Heading	Heading more than 50% rice plants						
19	Bird scaring	13 - 18 weeks after sowing		Fishing net		M: F:		
20	Maturing	Accumulated temperature 950°C from heading date						
	Harvesting	19 weeks after sowing (determined by observation)		Sickle		M: F:	Moisture content: %	
	Threshing			Tarpaulin, Bambam box, sacks, head carriage		M: F:		
21	Winnowing	19 weeks after sowing		Tarpaulin, sacks		M: F:		
	Drying					M: F:	Moisture content: % Number of bags:	Bag size:
22	Storing	19 weeks after sowing ~		Storage facility, wooden pallets		M: F:		
23	Milling	19 weeks after sowing ~		Sacks		M: F:		
24	Selling	19 weeks after sowing ~		Sacks		M: F:		

Onsite Training (OST) Record

<u>1st OST</u>	<u>2nd OST</u>	<u>3rd OST</u>	<u>4th OST</u>	<u>5th OST</u>
Date:	Date:	Date:	Date:	Date:
Participants: M F (Youth, Aged, PLWDs)	Participants: M F (Youth, Aged, PLWDs)	Participants: M F (Youth, Aged, PLWDs)	Participants: M F (Youth, Aged, PLWDs)	Participants: M F (Youth, Aged, PLWDs)
Topics trained:	Topics trained:	Topics trained:	Topics trained:	Topics trained:

Form 1: Farmer Baseline Survey - Rice Production and Income Analysis

Farmers Name: _____ District: _____ Date of interview: _____

Male/ Female: _____ Age: _____ PLWDs: _____ Demo-Plot Community: _____ Target Farmer / Non-Target Farmer

Key Farmer: Yes / No

When did you start rice cultivation? Since: _____

Please specify the year before participating *Tensui* training as baseline

When did you FIRST participate in *Tensui* training? Year: _____

year. Year: _____

Season	Area (acre)	Rice Variety	Total No. of Bags Harvested	Unit (Size of Bag: Refer *below)	Total Production (kg)	No. of maxi bags Sold	Unit (Size of Bag: Refer *below)	Unit price to sell per maxi bags (GHc)	Total Sales (GHc)
Major rainy season			<input type="checkbox"/> Paddy		kg	<input type="checkbox"/> Paddy <input type="checkbox"/> Milled			
Minor rainy season			<input type="checkbox"/> Paddy		kg	<input type="checkbox"/> Paddy <input type="checkbox"/> Milled			
Total									(1)

* If respondent answers the bag as "unit", please specify the type of bag:

(ASH): KG= kilogram (kg), MinB = Minibag (size 3) **50 kg**, MaxB = Maxibag (size 4) **84kg**, SizF=Size 5 bag **120kg**, SmG=Small Grawaa (tin) **25kg**, BiG=Big Grawaa(Big tin) **64kg**,

(NOR): Bag=Maxibag **84kg**, Bow=Bowl **2.5kg**, Other (Specify _____:with confirmation in Kilogram)

	Cost of Land (GHc)	Cost of Inputs (GHc)			Cost of Equipment (GHc)	Cost of Labor (GHc)	Total Cost (GHc)
		Seeds	Fertilizer	Chemicals			
Major rainy season							
Minor rainy season							
Total							(2)
		<i>Total:</i>					

Cost of equipment includes: Push weeder, Leveler, Sickle, Hoe, Net, Tarpaulin, Bambam box, Sacks, Others

Cost of labor includes: Bund construction, Ploughing Pudding & Leveling, Transplanting, Harrowing, Sowing, Weeding, Fertilizer application, Bird scaring Harvesting, Threshing & winnowing, Drying Transportation, Milling, Others.

Net Profit = (1) Total Income – (2) Total Cost	(GHc)
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TRAINING ON NUTRITION AND RICE RECIPE DEMONSTRATION, FOR WIAD OFFICERS

1. Program for Parboiled Rice Recipes

Time	Activity
8:00	Registration
8:10	Opening Prayer Opening Remarks Introduction of Participants Welcome Address by RDA Purpose of Workshop
8:40	1) Learning nutrition improvement activities for TENSUI2
9:40	2) Sharing the OST material
10:00	3) Mock presentation of OST material by participants
10:30	4) Practical cooking demonstration (parboiled rice TZ)
11:30	5) Practical cooking demonstration (parboiled rice porridge)
12:30	Tasting Rice Porridge and Rice TZ
14:00	Closing Remarks

2. Program for Unpolished Rice Recipes

Time	Activity
8:00	Registration
8:10	Opening Prayer Opening Remarks Introduction of Participants Welcome Address by RDA Purpose of Workshop
8:40	1) Learning nutrition improvement activities for TENSUI2
9:40	2) Sharing the OST material
10:00	3) Mock presentation of OST material by participants
10:30	4) Practical cooking demonstration (unpolished rice banku)
11:30	5) Practical cooking demonstration (unpolished rice porridge)
12:30	Tasting Rice Porridge and Rice TZ
14:00	Closing Remarks



MOFA/JICA TENSUI RICE PROJECT

Nutrition Improvement

Training of Trainers

-Parboiled Rice-

Farm
Management

Sustainable Development of Rain-fed Lowland Rice Production
MoFA/JICA TENSUI RICE PROJECT PHASE II

Contents

1. Background:

- Process of developing views of nutrition improvement in TENSUI2

2. Reviewing the verification survey 2019

3. Understanding why parboiled rice is “nutritious”

4. Towards extension:

- Let's practice use of the OST material!
- Let's practice demonstration of the parboiled rice flour recipes!

1. Background

-Process of developing views of nutrition improvement in TENSUI2-

A survey was done in October 2017 to grasp nutritional conditions:

1. Nutritional Problems in Rural Areas of Northern Region

- Insufficient amount/frequency of food consumption during rainy seasons
- Limited of foods available (meat, fish, etc.)

2. Limited Consumption of Rice

- Low consumption of rice with the recognition of rice as a cash crop
- Few varieties of recipes

Cooking demonstration was done in October 2018 to introduce a few rice recipes as a trial:

- Especially, parboiled rice flour porridge and parboiled rice flour TZ were preferred by target farmers

Nutritional analysis was then done to compare parboiled rice and non-parboiled rice:

3. Nutritional Advantage of Parboiled Rice

- Thiamine (vitamin B1) and niacin (vitamin B3): 3 times of those of non-parboiled rice
- Iron: 15% higher than that of non-parboiled rice



2. Reviewing the Verification Survey 2019

Outlines of the survey

Objectives:

- To verify farmers' acceptability for parboiled rice flour dishes suggested as alternatives of maize flour dishes
- To confirm nutritional values of parboiled rice flour dishes and maize flour dishes

Period:

October 2019 – December 2019

Target:

East Gonja, Mion, Yendi (9 communities in maize/yam consumption areas, 90 farmers in total)

Methods:

- Questionnaire surveys on contents and frequencies of meals (baseline/endline)
- Cooking demonstration using illustrated recipes (rice-soya weanimix porridge/parboiled rice flour TZ)
- Nutrition analysis in Japan (conventional dishes vs. parboiled rice flour dishes)



1. RICE-SOYA WEANIMIX PORRIDGE

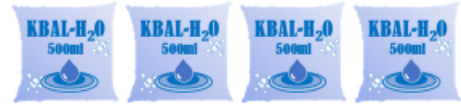


INGREDIENTS

(No. of Servings - 4 adults or 6 children)



Rice-Soya Weanimix: 1 cup (200g)



Water: 2L



or



Powder milk:
To taste



Salt and Sugar: To taste

We did baseline surveys, recipe distribution, cooking demonstrations and endline surveys...

...you can increase the amount of soybean ratio from 4:1 to 3:1

1. RICE-SOYA WEANIMIX PORRIDGE

METHODS



1 Bring water to boil.



2 Mix weanimix with water to form slurry.



3 Pour the slurry into the boiled water, add salt.



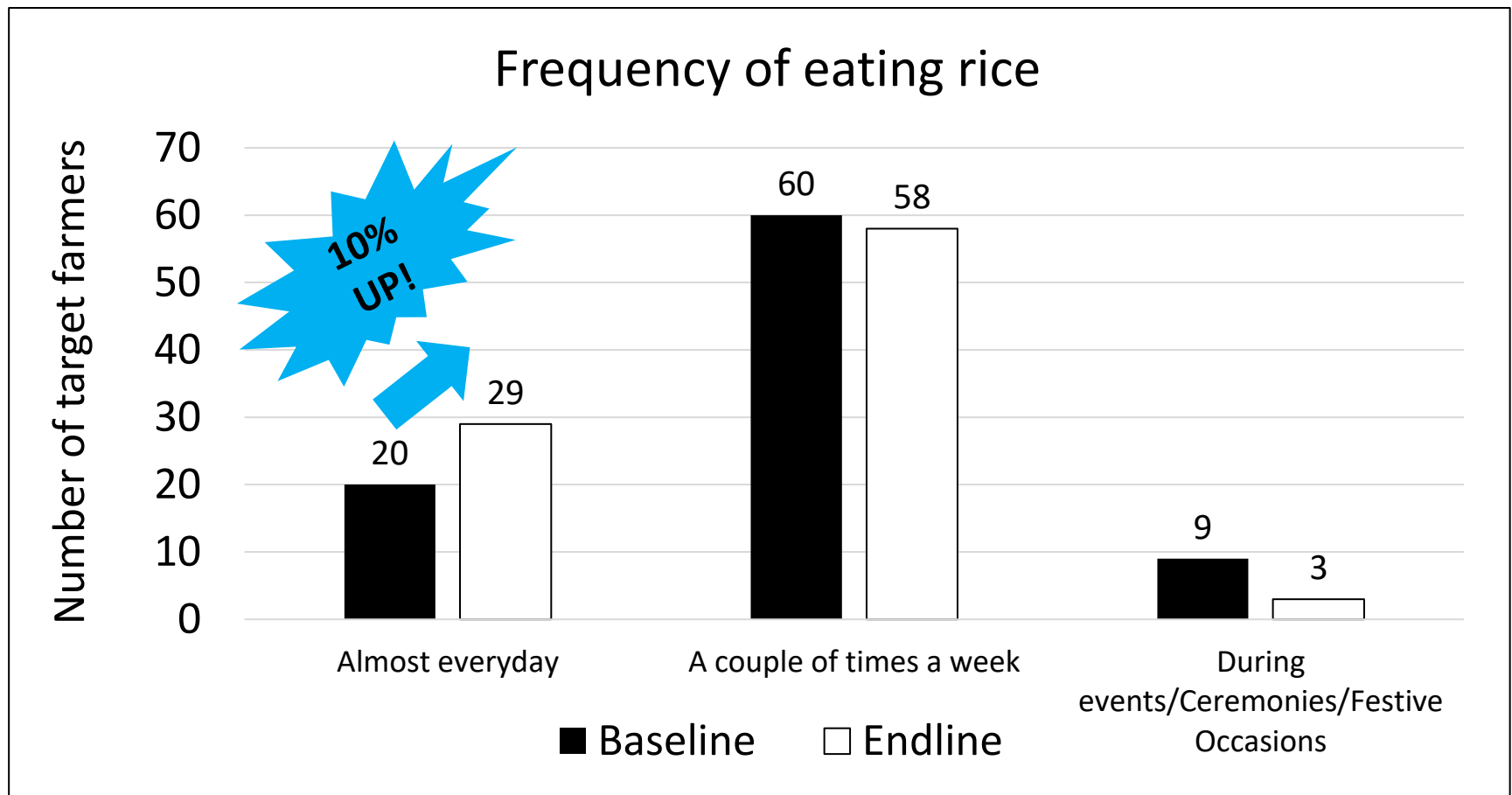
2. Reviewing the Verification Survey 2019 (contd.)

Results and findings

1. Questionnaire surveys: After introducing the recipes, more target farmers prepared the rice dishes almost everyday (10% increase) whereas less famers consumed rice only 2-3 times a week or occasionally.
2. Nutritional analysis: Parboiled rice flour dishes are richer in vitamin Bs, iron and protein per meal than maize flour dishes, which reach higher daily values.
3. Use of the illustrated recipes worked well for farmers to understand the cooking methods better.

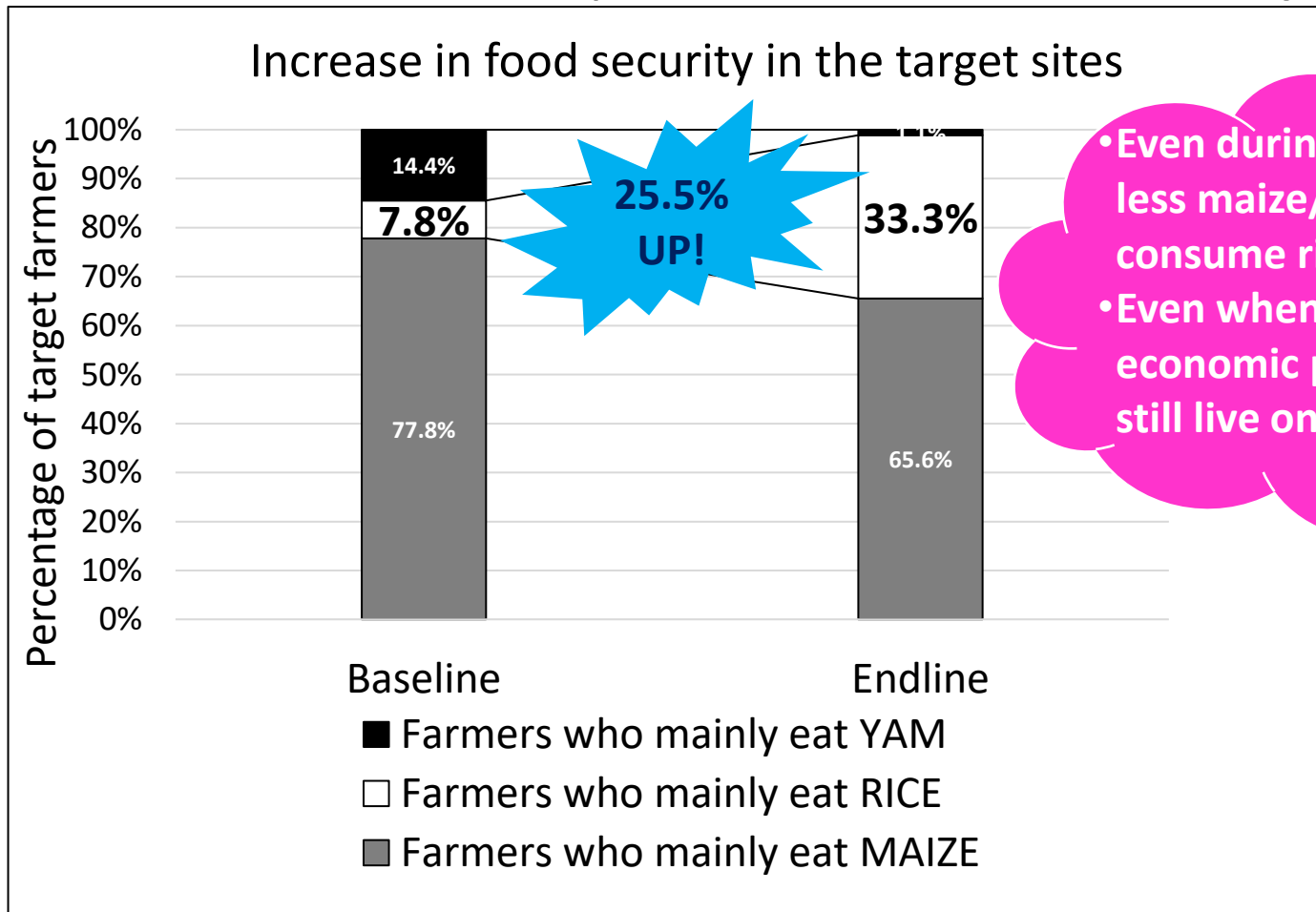
2. Reviewing the Verification Survey 2019 (contd.)

Result 1: Consumption of Parboiled Rice by Farmers



2. Reviewing the Verification Survey 2019 (contd.)

Result 1: Consumption of Parboiled Rice by Farmers

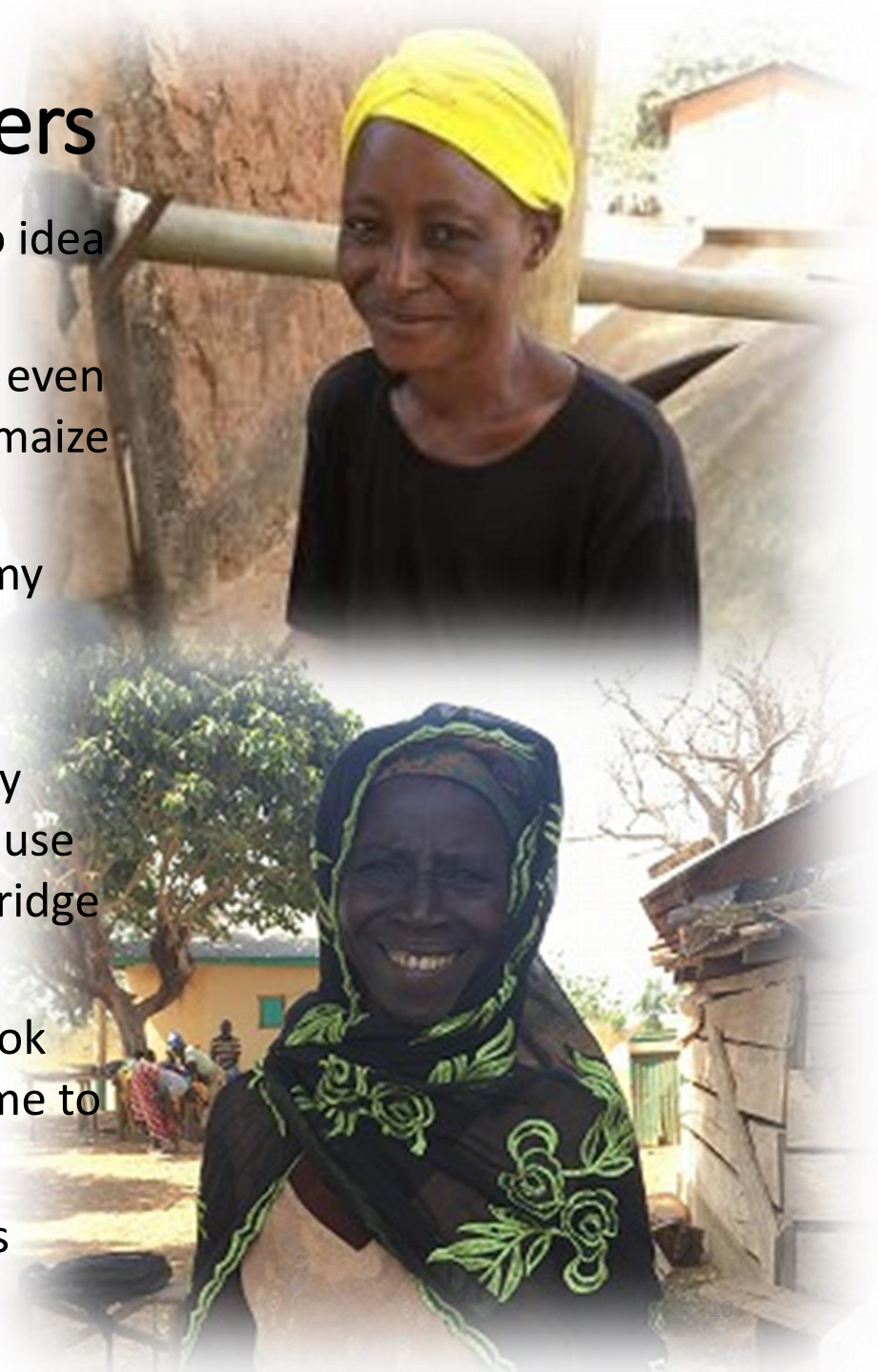


- Even during the season with less maize/yam, farmers can consume rice as a staple food.
- Even when they face economic problems, they can still live on rice they grow!



Voices from target farmers

- Before attending demonstration, I had no idea that TZ can be made with rice flour.
- Now, I can cook TZ for my family anytime even when we have no enough money to buy maize flour because we have rice at home.
- Rice TZ is tasty as same as maize TZ and my husband likes it very much.
- I want to cook rice flour porridge with soy flour for my children every morning because they love it and eat much more than porridge made from maize, millet or sorghum.
- Another advantage is that it is easy to cook rice flour porridge, taking only a short time to prepare.
- I also started selling rice flour porridge as new business!

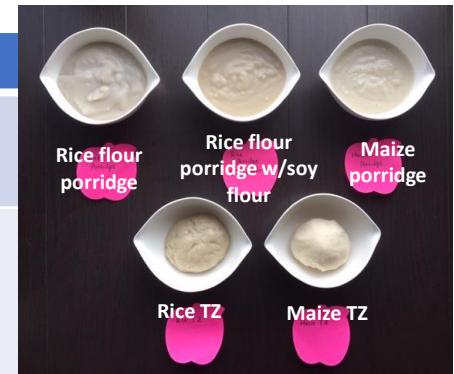


2. Reviewing the Verification Survey 2019 (contd.)

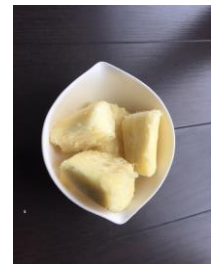
Results 2: Nutritional Contents of Main Staple Foods

Target Staple Foods to be Analyzed

Dishes			Conditions of Ingredients
Porridge	Parboiled rice flour	rice	Grinded after being roasted
	Parboiled rice flour (w/soy flour)	rice (w/soy)	-Grinded after being roasted -Including 20% soy flour
	Corn dough		Whole grain, grinded after being fermented
TZ	Parboiled flour		-Grinded without being roasted -Including 25% cassava flour (<i>konkonte</i>)
	Maize flour		-Dehusked, grinded without being roasted -Including 25% cassava flour (<i>konkonte</i>)
Boiled yam	Yam		Boiled



Rice and maize dishes



Boiled yam

2. Reviewing the Verification Survey 2019 (contd.)

Results 2: Nutritional Contents of Main Staple Foods

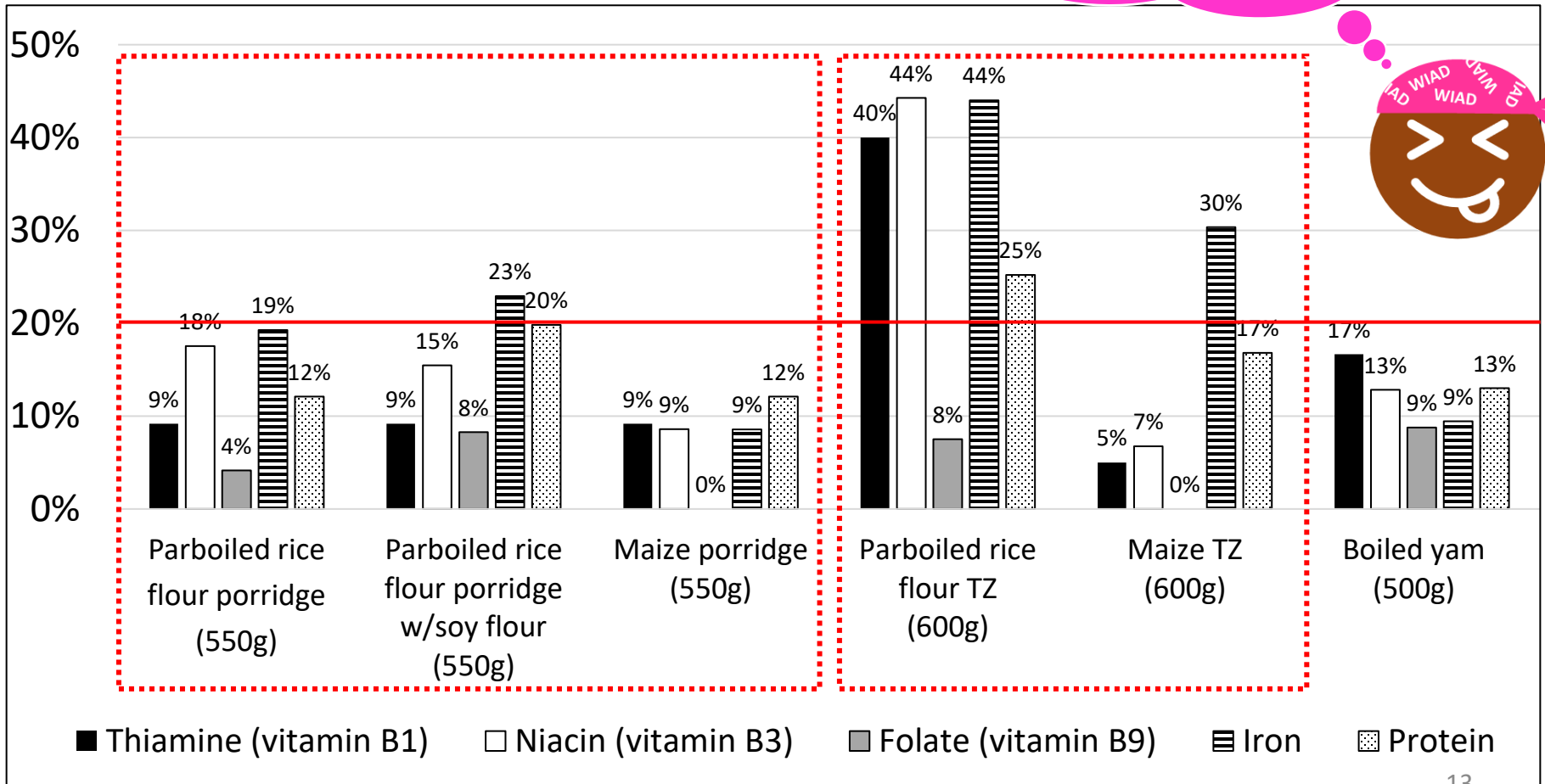
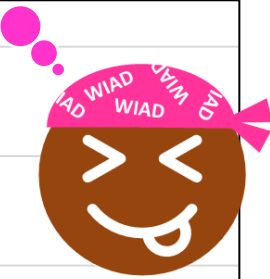
Target nutrients which were analyzed

Target Nutrients	Remarks
Thiamine (vitamin B ₁)	Effective to prevent beriberi
Niacin (vitamin B ₃)	Effective to prevent pellagra
Folate (vitamin B ₉)	Effective to prevent fetal growth restriction
Iron	Effective to prevent anemia
Protein	Insufficient in rural areas of whole Ghana

2. Reviewing the Verification Survey 2019 (contd.)

Results 2: Nutritional Contents of Main Staple Foods (Percentage Daily Value)

Parboiled rice dishes can alternate maize dishes with sufficient nutrients!



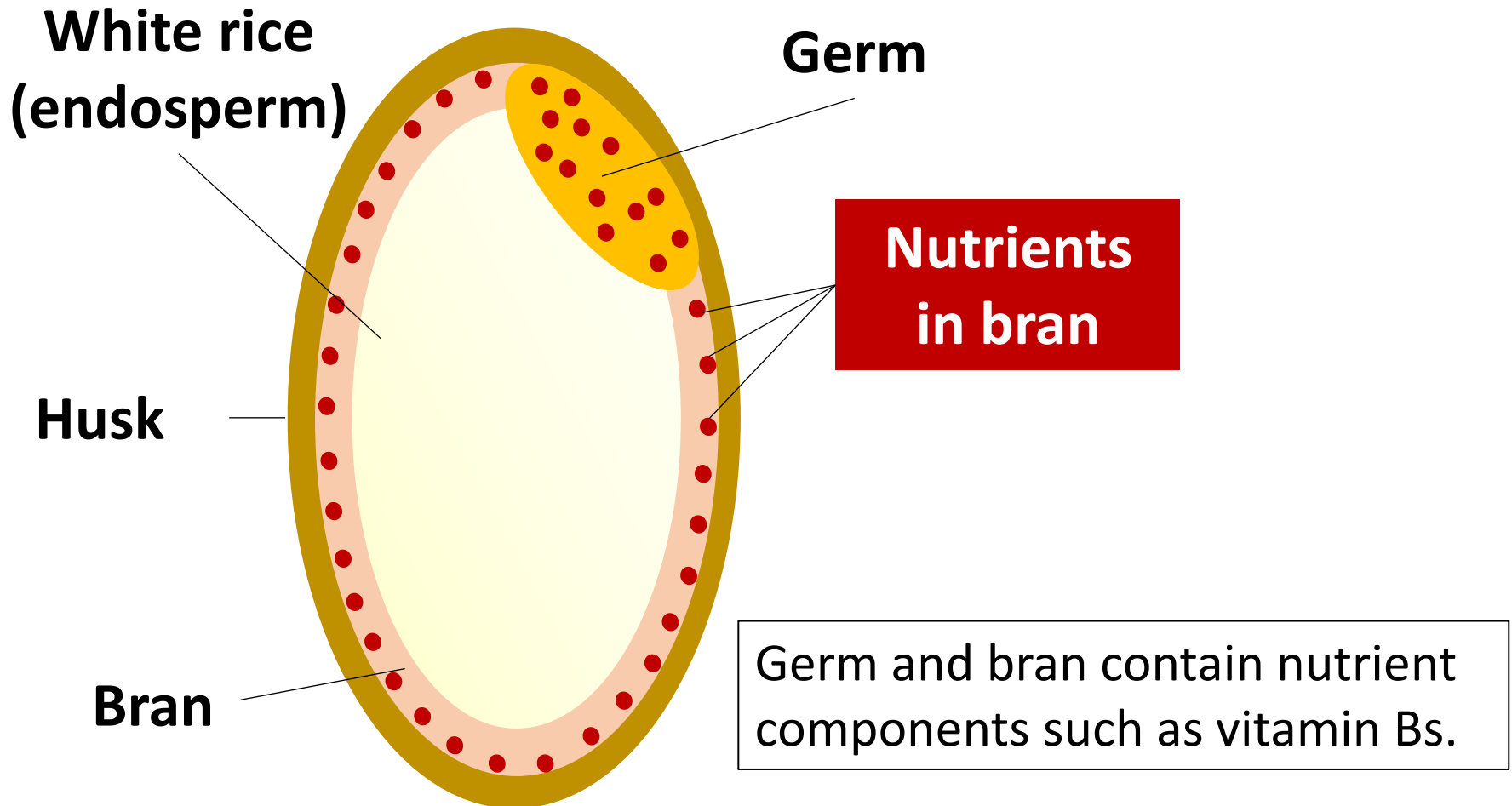
Remarks

General Rule to Evaluate Percent Daily Value of Food

% DV	Evaluation
20% ≤	A nutrient per serving is high, rich source of a nutrient, etc.
10% - 19%	A nutrient per serving is moderate, good source of a nutrient, etc.
≤ 5%	A nutrient per serving is low

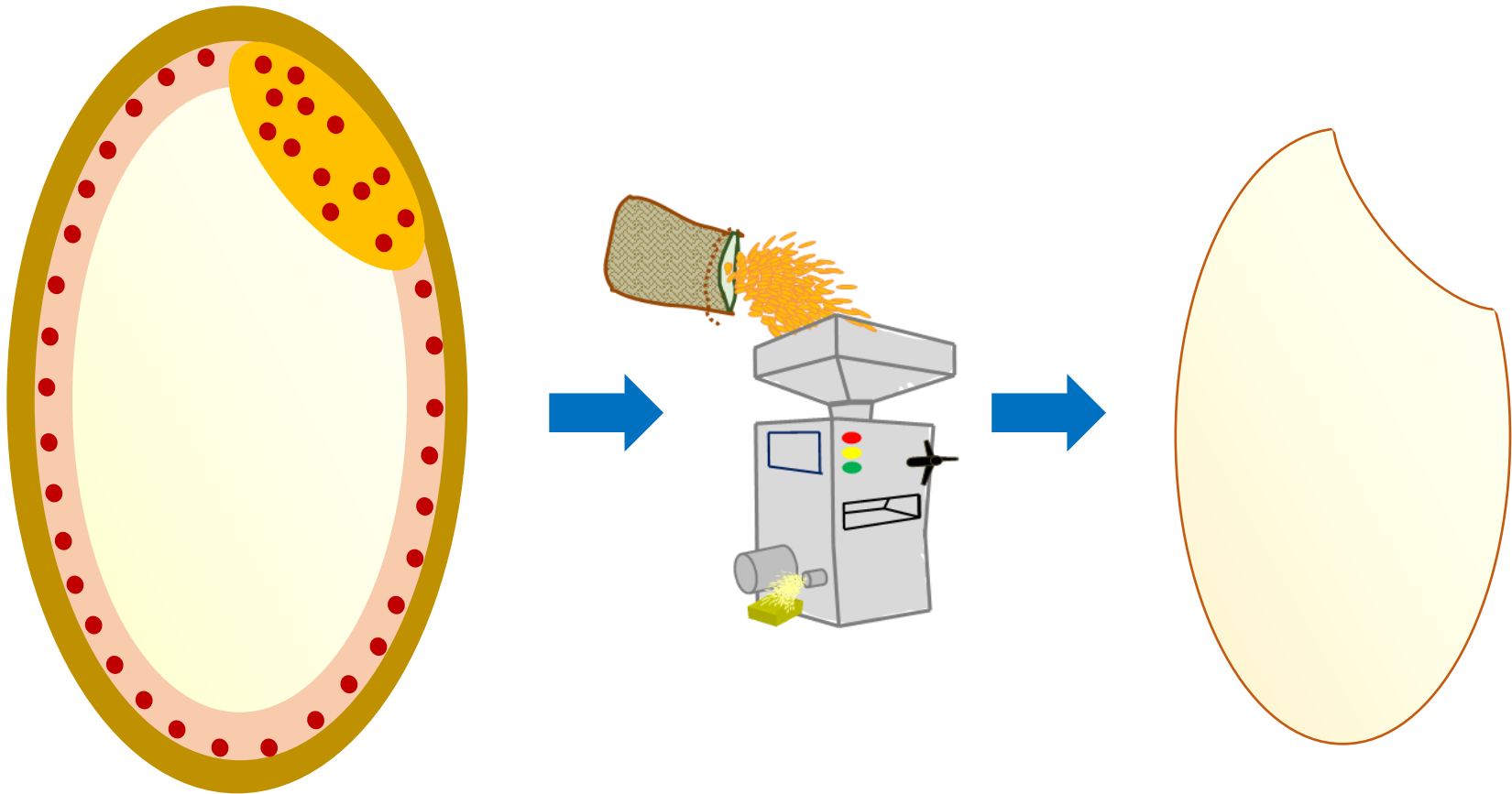
Source: Code of Federal Regulations, Title 21, Chapter I, Subchapter B, Part 101, Subpart D, Section 101.54 (US Food and Drug Administration. April 1, 2017. Retrieved August 25, 2018)

3. Understanding why parboiled rice is “nutritious”



3. Understanding why parboiled rice is “nutritious” (contd.)

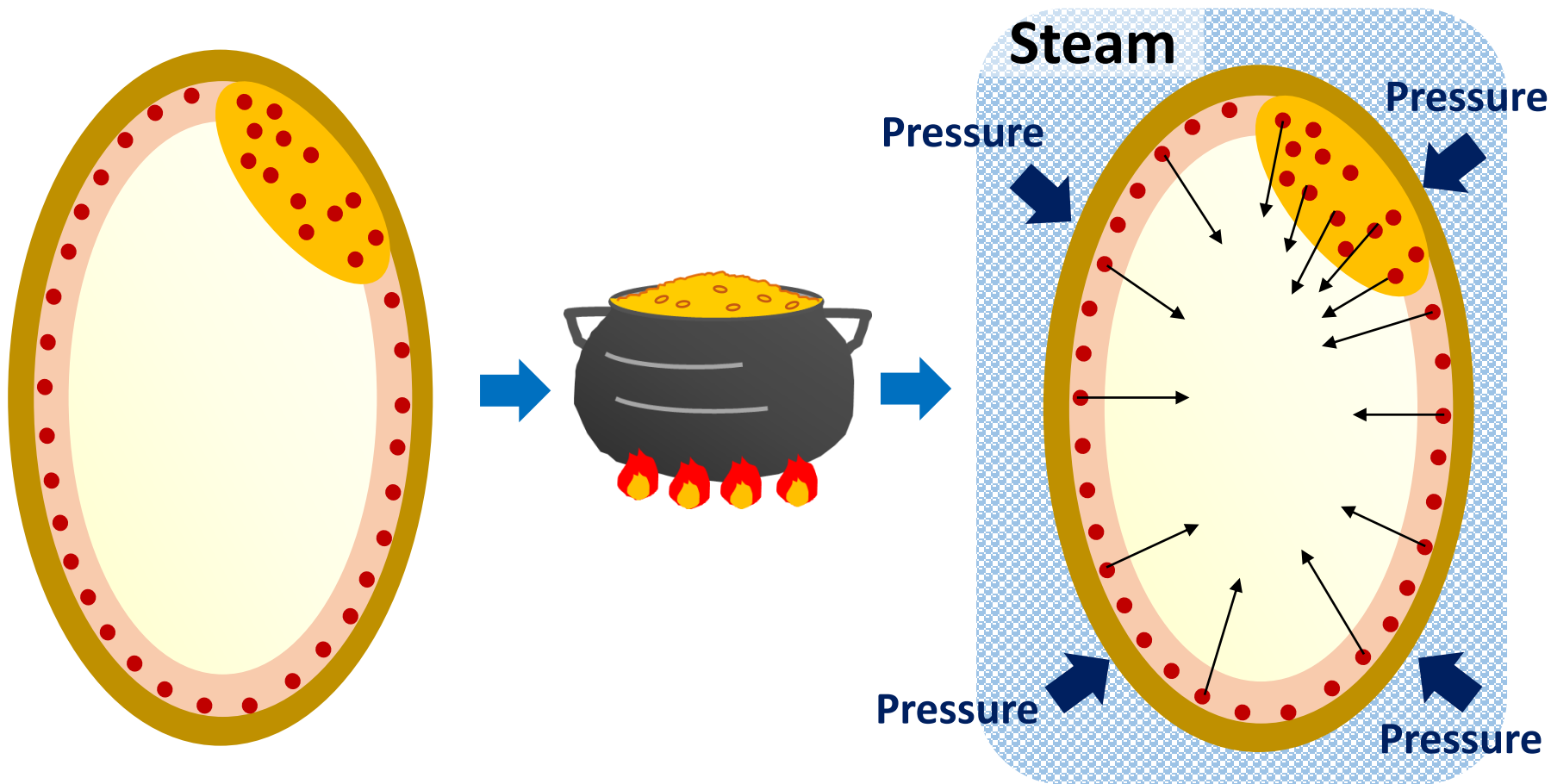
Non-parboiled Rice



As for non-parboiled rice, all the outer parts are removed after milling. Consequently, important nutrient components are lost in non-parboiled white rice.

3. Understanding why parboiled rice is “nutritious” (contd.)

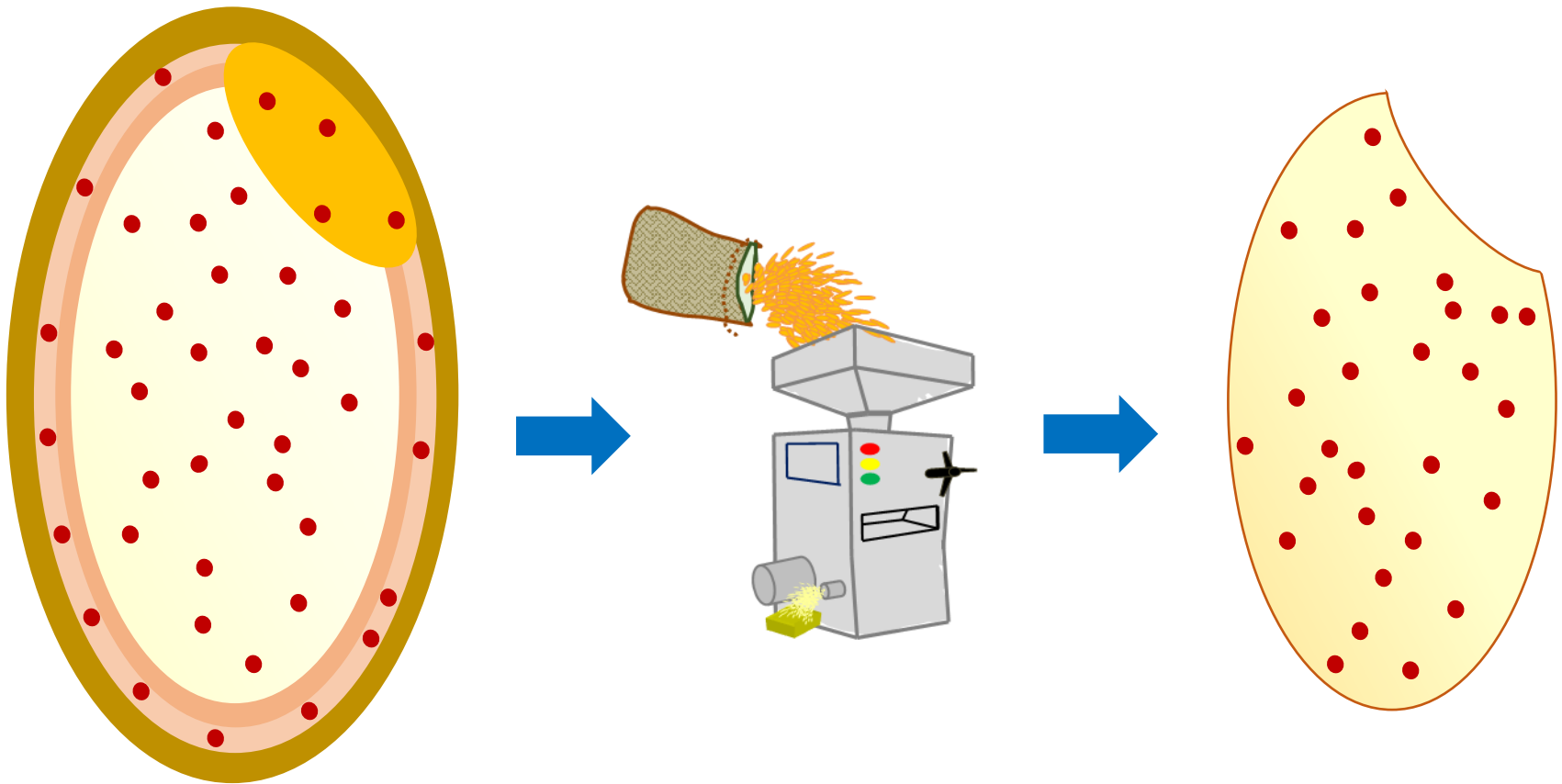
Parboiled Rice



As for parboiled rice, paddies are steamed inside the parboiling pot. During this process, nutrient components inside the germ/bran move to white rice with pressure from outside.

3. Understanding why parboiled rice is “nutritious” (contd.)

Parboiled Rice



After parboiling, nutrient components of the germ/bran retain in white rice. Consequently, even after milling, white rice contain nutrient components originally from the bran. This is how parboiling process increases nutritive value of white rice.

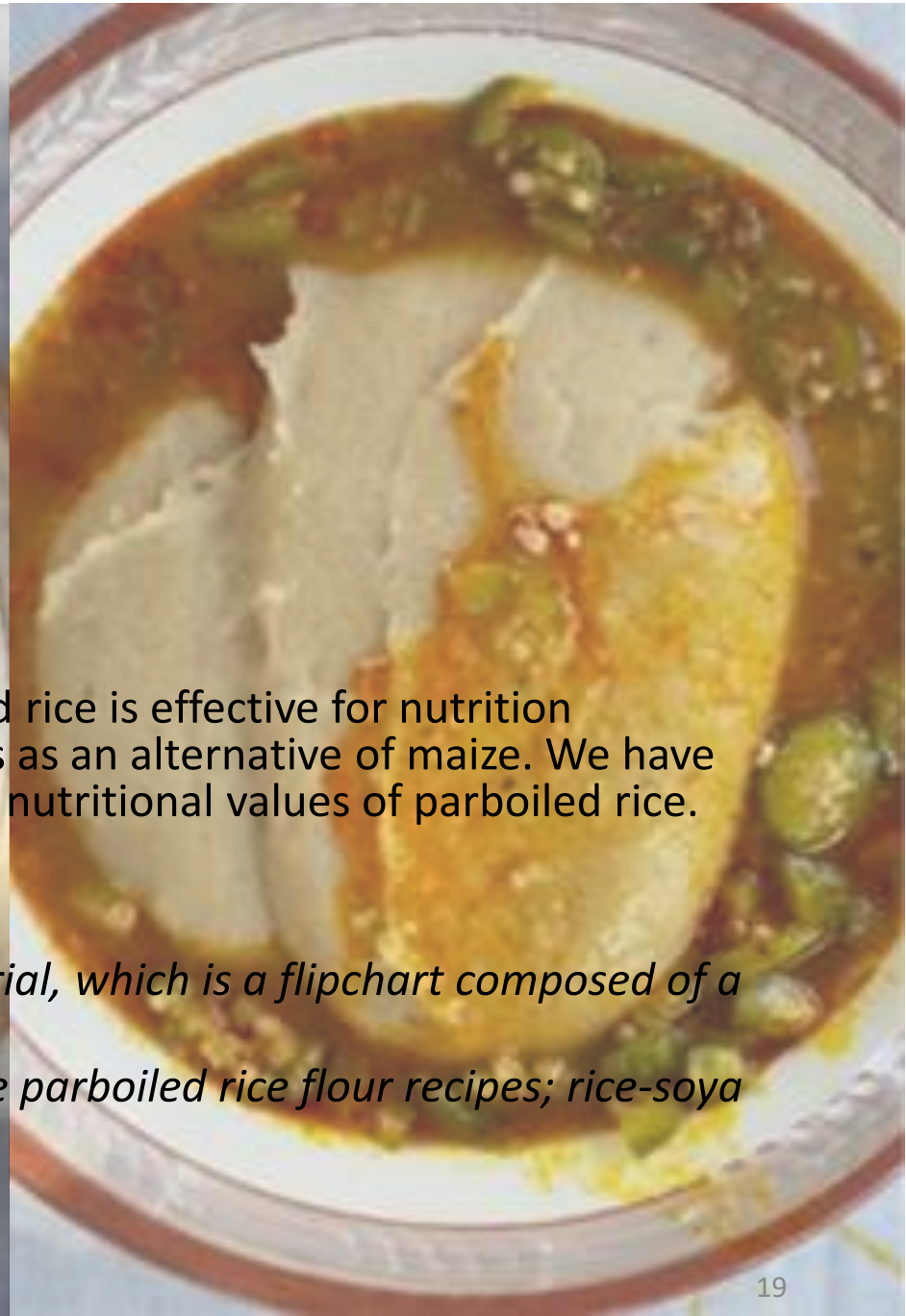


4. Towards Extension (contd.)

Now, we have confirmed that parboiled rice is effective for nutrition improvement and preferred by farmers as an alternative of maize. We have also learned the mechanism for higher nutritional values of parboiled rice.

Towards extension,

- *Let's practice use of the OST material, which is a flipchart composed of a theoretical part and a recipe part.*
- *Let's practice demonstration of the parboiled rice flour recipes; rice-soya weanimix porridge and TZ!*





MOFA/JICA TENSUI RICE PROJECT

Nutrition Improvement

Training of Trainers

-Unpolished Rice-

Farm
Management

1. Background

-Process of developing views of nutrition improvement in Ashanti

A survey was done in October 2017 to grasp nutritional conditions:

1. Nutritional Status Rural Areas is not bad

- Through meals at the community level, mainly fat and carbohydrates are taken. Not enough intake of vegetables, animal protein, iron and calcium.
- However, farmers have possibilities to eat three times a day throughout the year, not particularly serious situation.

2. Knowledge on Nutrition in Rural Areas

- Farmers have basic knowledge of nutrition due to knowledge sharing by health centers and hospitals
- In addition, maternal and child health handbooks contain important nutrition information are distributed by health posts, providing opportunities for mothers to learn.

➤ Therefore, as of 2017, the Project had no particular plan of the activities for nutrition improvement in Ashanti region.



How about Northern region?

1. Background cont..

-Process of developing views of nutrition improvement in Northern-

A survey was done in October 2017 to grasp nutritional conditions:

1. Nutritional Problems in Rural Areas of Northern State

- Insufficient amount/frequency of food consumption during rainy seasons
- Limited of foods available (meat, fish, etc.)

2. Limited Consumption of Rice

- Low consumption of rice with the recognition of rice as a cash crop
- Few varieties of recipes

Cooking demonstration was done in October 2018 then verification survey was conducted in November-December 2019 to introduce parboiled rice flour recipes:

- Parboiled rice flour porridge and parboiled rice flour TZ were preferred by target farmers

Nutritional analysis was then done to compare parboiled rice and non-parboiled rice:

3. Nutritional Advantage of Parboiled Rice

- Thiamine (vitamin B1) and niacin (vitamin B3): 3 times of those of non-parboiled rice
- Iron: 15% higher than that of non-parboiled rice
- Parboiled rice flour dishes are richer in vitamin Bs, iron and protein per meal than maize flour dishes, which reach higher daily values.

 **To expand this activity, we will focus on unpolished rice to introduce to Ashanti, where parboiled rice is not common as Northern.**

What TENSUI2 can do for Ashanti is...

Trial for introducing unpolished rice to explore a future valuable possibility for:

➤ **Higher nutrient contents of unpolished rice**

Higher contents of vitamin Bs, iron and protein, etc. can be expected in bran and germs kept after removing husk

➤ **Unpolished rice as alternatives of traditional foods**

Rice flour dishes can be preferred by farmers as alternatives of maize flour dishes.



Jasmine 85 of Frenchman, Tapa

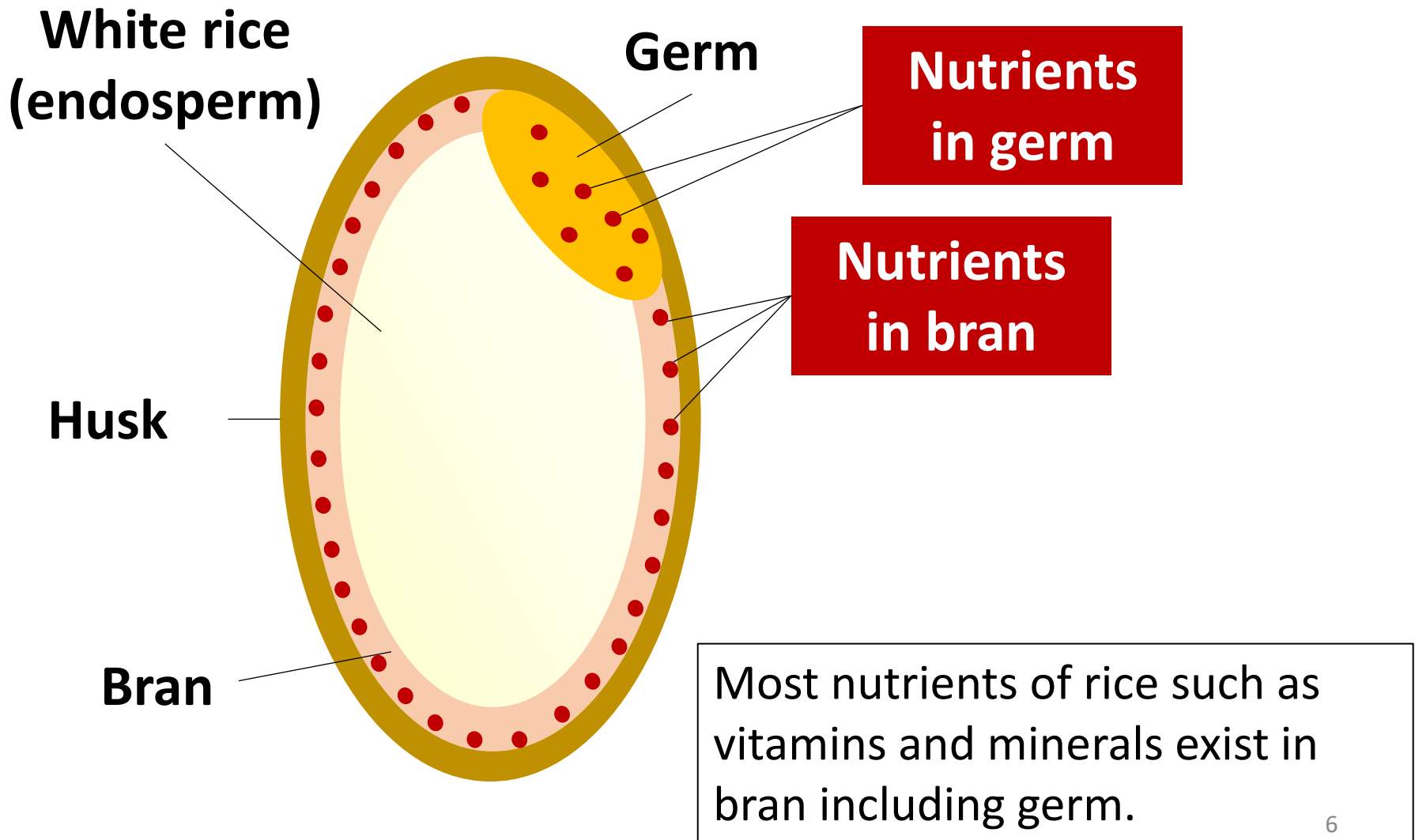


Japanese traditional “genmai” bowl

Nutrient contents of unpolished rice and polished rice in general

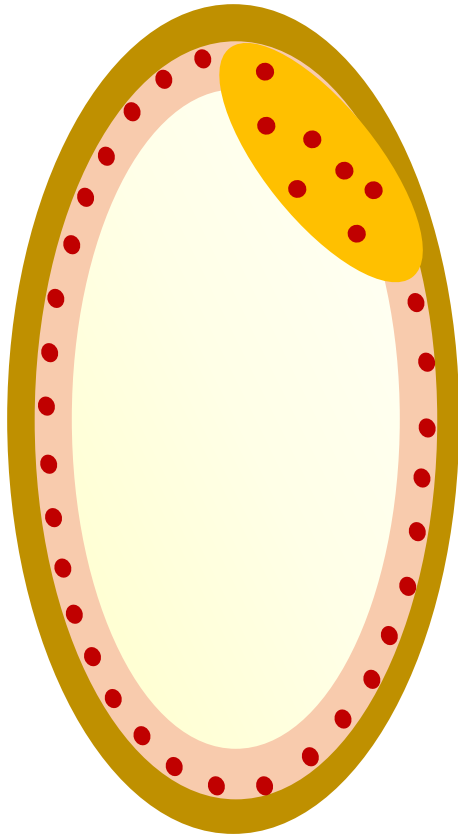
Nutrients		Unpolished rice (100g)	Polished rice (100g)	Unpolished /Polished
Vitamins	E (D- α -tocopherol)	1.2mg	0.1mg	1200%
	B1 (thiamine)	0.41mg	0.08mg	516%
	B3 (niacin) equivalent	8.0mg	2.6mg	308%
	B9 (folate)	27mcg	12mcg	225%
	B7 (biotin)	6.0mcg	1.4mcg	429%
Minerals	Potassium	230mg	89mg	258%
	Magnesium	110mg	23mg	478%
	Phosphorus	290mg	95mg	305%
	Iron	2.1mg	0.8mg	263%
Energy		353kcal	358kcal	99%
Protein		6.8g	6.1g	111%

Why is unpolished rice “nutritious”?

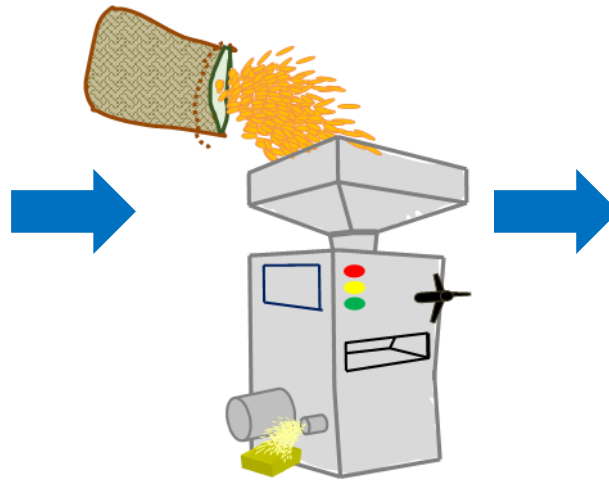


Why is unpolished rice “nutritious”?” (contd.)

Polished Rice



Paddy

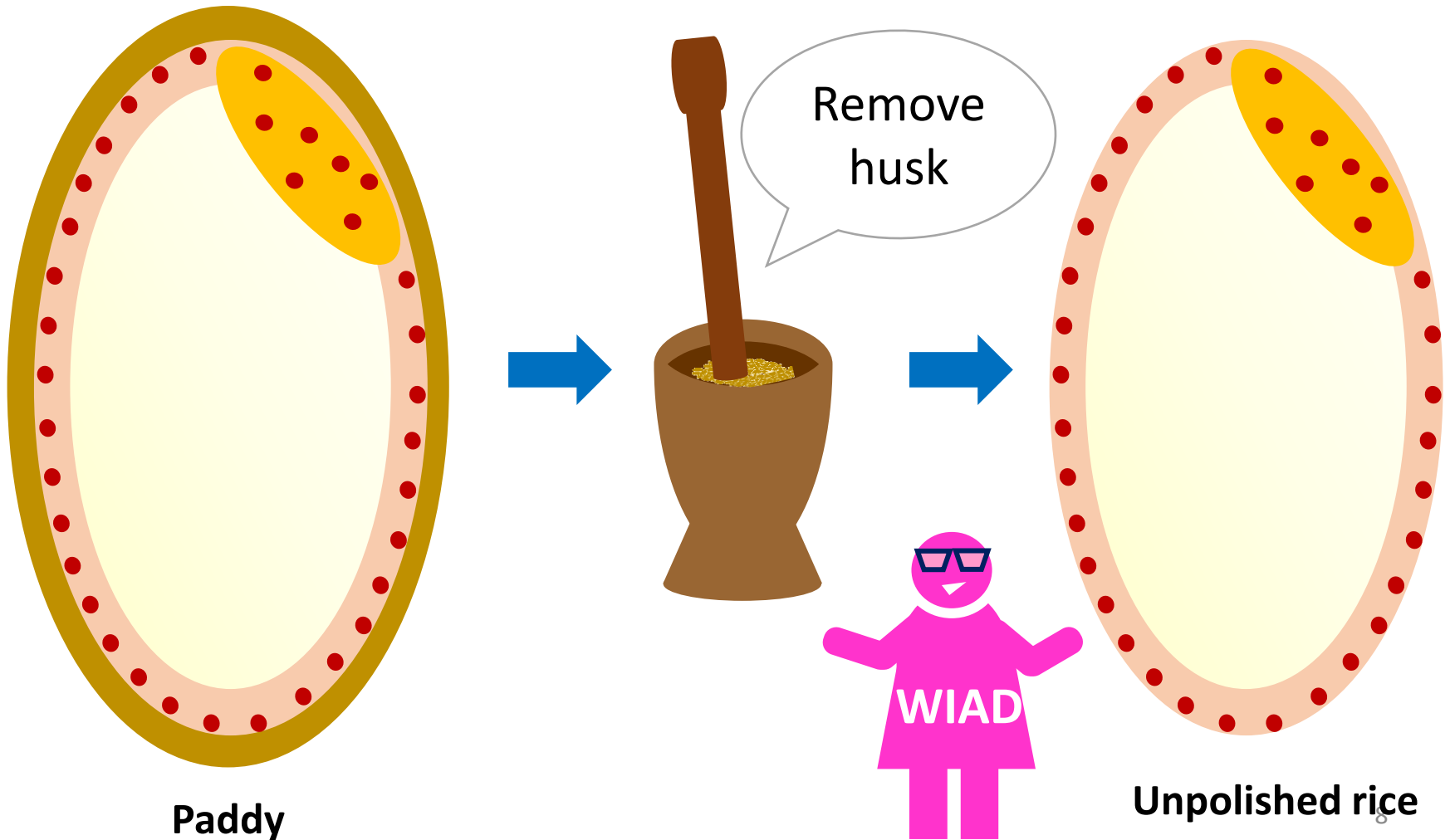


Polished rice

After milling, all the outer parts are removed including bran. Then, important nutrient components are lost in polished rice!

Why is unpolished rice “nutritious”?” (contd.)

Unpolished Rice



Paddy

Unpolished rice



Unpolished rice flour porridge



Unpolished rice flour porridge w/soy flour

Nutrition analysis



Unpolished rice flour banku



Maize banku

Target rice/maize menu which were analyzed

Menu/Main Ingredients		Conditions of ingredients
Porridge	Unpolished rice flour	-----
	Unpolished rice flour (w/soy flour)	-Including 20% soy flour
	Maize flour	Analyzed in 2019 using maize from Northern region
Banku	Unpolished rice flour dough	-Grinded after being soaked in water for a night -Including 25% cassava dough (<i>bankey mmore</i>) made from commercial cassava flour (<i>konkonte</i>)
	Maize flour dough	-Dehusked -Grinded after being soaked in water for 3 nights -Including 25% cassava dough (<i>bankey mmore</i>) made from commercial cassava flour (<i>konkonte</i>)

Remark: In the recipe to distribute to farmers, 40% of cassava dough is used whereas this analysis has applied 25% of cassava dough to reduce its effects as much as possible, keeping the original texture of banku.

Nutrition analysis (contd.)

Target nutrients which were analyzed

Target nutrients	Remarks
Thiamine (vitamin B ₁)	Effective to prevent beriberi
Niacin (vitamin B ₃)	Effective to prevent pellagra
Folate (vitamin B ₉)	Effective to prevent fetal growth restriction
Iron	Effective to prevent anaemia
Protein	Insufficient in rural areas of whole Ghana

Nutrition analysis (contd.)

Nutrient contents of raw rice (/100g)

Nutrients	Unit	Unpolished rice (Japan standard)	Polished rice (Japan standard)	Unpolished rice/Polished rice	
				TENSUI 2	Japan Standard
Thiamine (vitamin B1)	mg	0.37 (0.41)	0.1 (0.08)	370%	516%
Niacin (vitamin B3)	mg	5.71 (8.0)	1.48 (2.6)	386%	308%
Folate (vitamin B9)	mcg	46 (27)	22 (12)	209%	225%
Iron	mg	1.31 (2.1)	0.79 (0.8)	166%	263%
Protein	g	8.9 (6.8)	8.8 (6.1)	101%	111%

Japan Food Analysis Center, October 2020

Discussion

- Contents of the nutrient components analyzed showed higher values in the unpolished rice than in the polished rice except protein. Keeping germs and bran can increase nutritive value at a certain level like cases of Japan.
- As for unpolished rice/polished rice ratio, niacin's ratio was 25% more than the Japan standard whereas others were 7%-38% lower than the Japan standard.
- Nutritive values of Ghanaian unpolished rice and those of Japanese unpolished rice can be different, considering that rice varieties, growth conditions or processing methods differ between them (At the moment, it is difficult to discuss the analysis results as a general Ghanaian case since there is no data accumulated in Ghana to compare with).

Nutrition analysis (contd.)

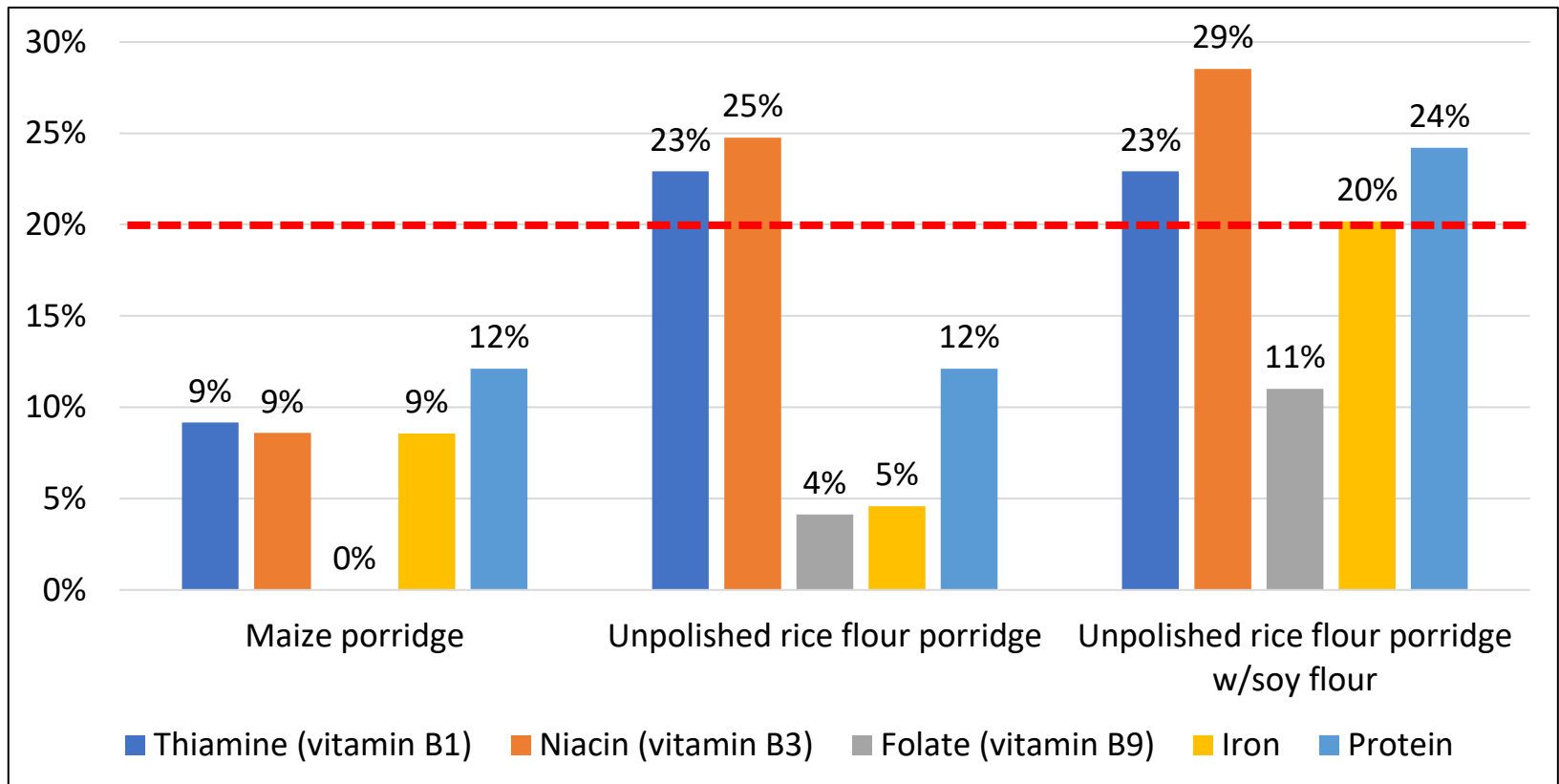
General Rule to Evaluate Percent Daily Value of Food

% DV	Evaluation
20% ≤	A nutrient per serving is high, rich source of a nutrient, etc.
10% - 19%	A nutrient per serving is moderate, good source of a nutrient, etc.
≤ 5%	A nutrient per serving is low

Source: Code of Federal Regulations, Title 21, Chapter I, Subchapter B, Part 101, Subpart D, Section 101.54 (US Food and Drug Administration. April 1, 2017. Retrieved August 25, 2018)

Nutrition analysis (contd.)

Nutritional contents of the rice/maize flour porridge (Percentage Daily Value)

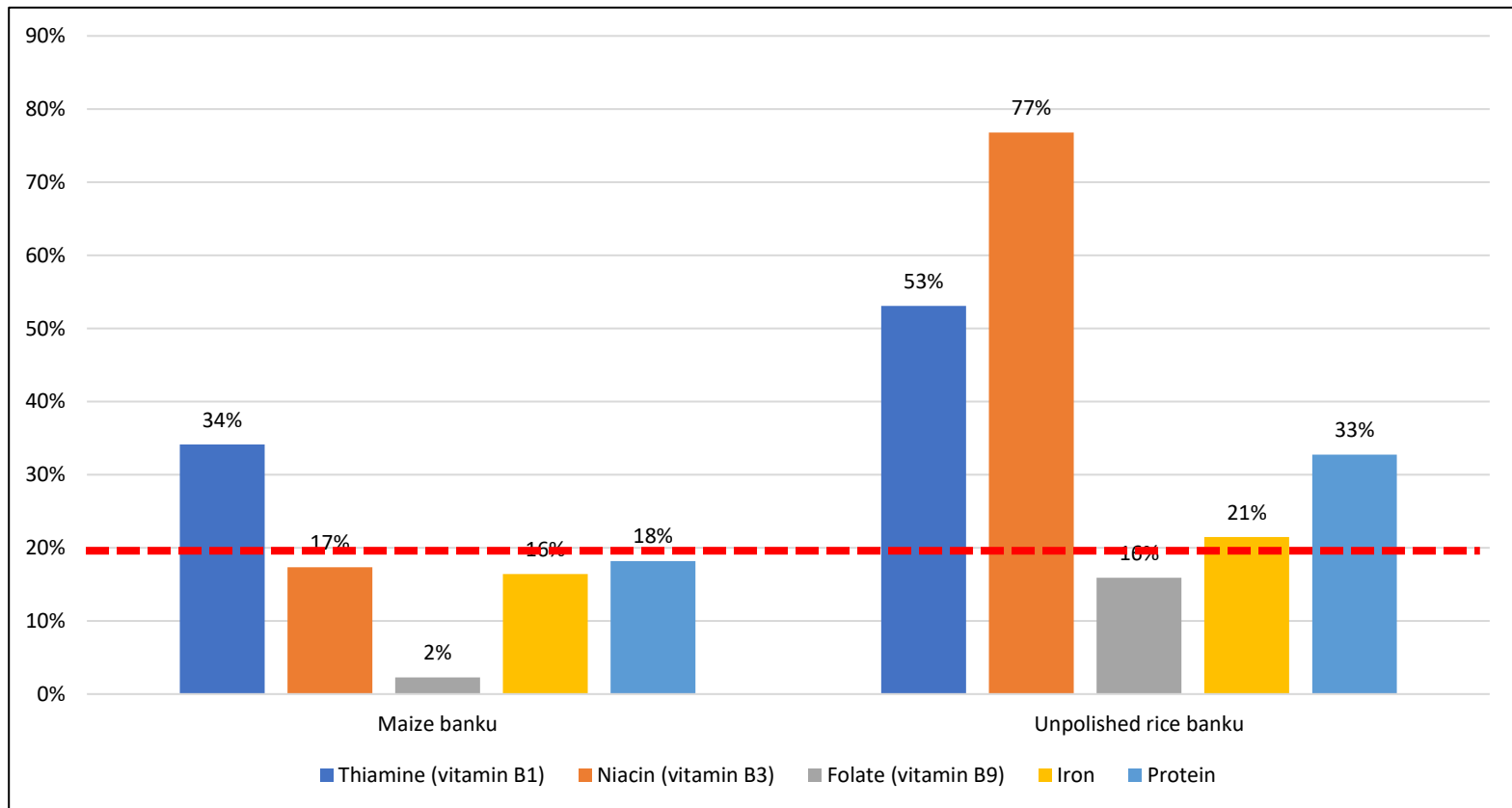


Nutritional contents of the rice/maize flour porridge (Percentage Daily Value)

- Unpolished rice flour porridge was rich in thiamine and niacin (%DV = more than 20%) with double amount of those in maize porridge (%DV = 9%). Iron and folate in the unpolished rice flour porridge showed lower value and protein was include at the moderate level, which is equal to maize.
- However, addition of soy flour can increase %DV of iron and protein up to more than 20% and folate up to more than 10%.
- Therefore, it can be said that it is possible to obtain adequate amount of nutrition from the unpolished rice flour porridge with soy flour.

Nutrition analysis (contd.)

Nutritional contents of the rice/maize banku (Percentage Daily Value)



Nutritional contents of the rice/maize banku (Percentage Daily Value)

- % DV of most nutrient components exceeded 20%, indicating that unpolished rice banku is rich in these nutrients. %DV of folate exceeded 10%, present at the adequate level.
- %DV of thiamine and niacin were 53% and 77%, respectively. It will be better to be aware of side effects through excessive intake of niacin and consider acceptable combination with the unpolished rice banku and other foods (As for thiamine, no side effects caused by excessive intake have been reported up to date).
- %DV of iron and protein in the unpolished rice banku were 21% and 33%, respectively, indicating that the unpolished rice banku is rich in those nutrients. As for the maize banku, %DV of all its nutrients exceeded 10%, indicating that they are adequately included, especially thiamine with 34% %DV. Contents of the nutrients are still higher in the unpolished rice banku.
- %DV of folate in maize banku was 2%, which is very low, but the deficiency can be compensated by the unpolished rice banku with the adequate amount of folate.

Conclusion

Based on the nutrition analysis, we can conclude that:

- %DV of most target nutrient components in the unpolished rice dishes are same or more than those in the maize dishes.
- Higher values of nutrient contents were shown notably in the banku with the dense ingredients. Furthermore, addition of the soya flour to the unpolished rice flour porridge was effective to increase its nutrients at the certain level.
- Iron content in the unpolished rice flour porridge was lower than that of the maize flour porridge but it is possible to compensate the deficiency and obtain the abundant amount of iron by adding the soya flour.
- It can be then concluded that the unpolished rice dishes can be suggested as an option of main staple foods to compensate the nutrients which cannot be adequately obtained from the maize dishes, with consideration of ways of eating in relation to the nutrients present in low or very high concentrations.
- Excessive intake of niacin at once may cause harmless niacin flush. Higher amount of niacin is included in meat, fish, groundnuts or mushrooms. Therefore, avoid overconsumption of the unpolished rice banku at once when it is combined with such niacin-rich foods.

Towards Extension

Unpolished rice is richer in nutrients than polished rice because bran and germs are kept.

Towards extension,

- *Let's practice use of the OST material, which is a flipchart composed of a theoretical part and a recipe part.*
- *Let's practice demonstration of the unpolished rice flour recipes; rice-soya weanimix porridge and banku!*
- *Let's check the accessibility to unpolished rice at rural area or consumer level.*

