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# Final impact evaluation of Farmer Field School implementation in the smallholder tea sector in Kenya, 2009–2016

Appendices

Yuca Waarts, Just Dengerink, Linda Puister-Jansen, Fedes van Rijn, Davies Onduru



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Yuca Waarts, Just Dengerink, Linda Puister-Jansen, Fedes van Rijn, Davies Onduru\*

\* ETC-East Africa

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# Appendix 1      Extended methodology for evaluating the impact of the farmer-assisted FFS model: 2013-2015

## Study design

The overall design employed in this study was a longitudinal impact evaluation using panel data that include baseline data. These baseline data informs about the status of affairs at farm level before farmers participate in an FFS, while follow-up data informs about the state of affairs after a passage of time deemed sufficient for the impact of the FFS to have emerged. The evaluation accounts for differences between the participants and non-participants and combines the difference-in-differences (DiD) approach with propensity score matching (PSM), and regression analysis to control for other factors when assessing net-effects.

The DiD approach essentially combines two type of comparisons. The first comparison focuses on the change in the longitudinal data to establish the effect before and after the situation. The second distinguishes a treatment (participating in FFS) and a comparison group (not participating in FFS) to account for external factors that influence the performance of participating farmers. Ideally, the comparison group has similar observable characteristics as those from the participants. The similarity was assessed by comparing the status quo of the two groups in the baseline situation on a number of key characteristics and performance indicators using Propensity Score Matching.

Besides being influenced by variations in individual characteristics, the performance indicators of tea farmers are also influenced by other external factors, such as agro-ecological conditions and interventions from other organisations. The influence of these confounding variables on the net-effect estimates were assessed using various regression analyses.

## Data collection

For the final impact evaluation, a mixed method approach is applied, combining quantitative and qualitative methods of data collection. While the quantitative methods is most suited to meet the research objective of assessing the contribution of the program to farmer performance and profitability, the qualitative methods are better suited to analyse the embedding and institutionalisation of FFS activities as well as the attribution to program partners of most significant changes and transformation processes.

In total, four different methods of data collection are applied for this end-term study:

1. **Quantitative data analysis of KTDA data at factory and FFS level over the period 2013–2016**

This first method of data collection is making use of the KTDA data available on its factories and farmer field schools participating in the Embedding Sustainability Program for the years 2013–2016. This data help to provide the following quantitative information:

- A profile of current farmers participating in the Embedding Sustainability Program
- A descriptive analysis of number of FFS, number of trained and graduated FFS farmers
- A longitudinal analysis of tea productivity and quality of participating farmers

2. **Quantitative survey analysis of FFS farmers and comparison group (data from 2013 and 2016)**

For the second method of data collection, a field survey was carried out during the month of February 2016, in which both non-participating and participating farmers of the Embedding Sustainability Program are interviewed. Together with the baseline survey carried out in 2013, this provides a rich body of material to assess meaningful changes in a range of result areas:

- Changes in farmer knowledge & application of GAP and improved decision making

- Changes in productivity (kg of green leaves per ha) and quality of green tea produced
- Changes in profitability of green leaf tea production and that of other crops/activities
- Changes in health and safety of farmers and workers as a result of better practices
- Changes in diversification (share of income from tea versus other sources of income)

### 3. Qualitative analysis using 4 focus groups with representative groups of farmers

An important method of qualitative data collection is the use of focus groups with four representative groups of tea farmers from two factories that participated in the Embedding Sustainability Program. The outcomes of these focus group discussions shed more light on the following:

- Effects of the Embedding Sustainability Program
- Potential spill-over effects from the Program to non-FFS farmers
- Farmer perspective on attribution of change to program partners

### 4. Qualitative interviews (15-20) with key stakeholders: IDH, KTDA and Unilever staff

A second method of qualitative data collection is the use of in-depth interviews with key stakeholders within the Embedding Sustainability Program, leading to valuable insights on:

- Attribution of most significant changes and transformation processes to partners
- The level of embedding and institutionalisation of FFS activities within KTDA
- The program contribution to the level of upscaling of FFS activities within KTDA

### Sampling farmers for the household survey

For this end-term study, the same farmers were planned to be interviewed through a household survey as in the baseline study carried out in 2013. In 2013, 240 farmers delivering to two tea factories were interviewed, 120 target group farmers randomly selected from the group of FFS participants and 120 comparison group farmers. In 2016, 206 of those farmers were interviewed again. 34 farmers could not be interviewed in 2016, because they were not available or had passed away.

Please find more information on the sampling strategy in: Waarts, Y., L. Ge, L. Puister-Jansen, D. Onduru, 2014. For all the tea in Kenya: Impact assessment and baseline situation of farmer field schools. LEI Report 2014-007. LEI Wageningen UR, The Hague, The Netherlands (<http://edepot.wur.nl/310209>).

### Focus group discussion methodology

Four focus groups were held in villages supplying to the Gachege and Mudete factories. For each factory, one focus group was held in a village with FFS farmers and another in a village with non-FFS farmers. All villages in which focus groups were held were chosen randomly. As visible in Table A1.1, group sizes ranged from 17 to 32, with considerable participation of women (ranging from 32% to 63% of participants and relatively low youth participation (ranging from 0 to 16 % of participants).

**Table A1.1** Overview of participants in focus group discussions

Factory	Village	FFS farmers?	# participants	# men	# women	# youth (18-25)
Gachege	Kabata	yes	19	4	12	3
Gachege	Mubao-ini	no	28	19	9	0
Mudete	Munzatsi	yes	17	7	7	3
Mudete	Sabatia	no	32	15	17	0

In Appendix 8 the interview guides of the focus groups are included, with the interview guide for FFS farmers in Appendix 8.1 and the interview guide for non-FFS farmers in Appendix 8.2.

### Interviews

We conducted several interviews with people involved in the various phases of the implementation of Farmer Field Schools and Rainforest Alliance certification activities within the KTDA factory system. We also conducted focus group discussions with: i) Tea Extension Services Assistants (TESAs), ii) Field



Services Coordinators (FSCs) and iii) two Regional Coordinators (RCs) together with KTDA management staff.

**Table A1.2** *List of interviewees*

Name	Organisation	Position
Peter Mbadi	KTDA	Senior manager of agriculture services
Jordy van Honk	IDH	Director Landscapes Africa / Program Director Tea
Judith Fraats	IDH	Program manager
Winnie Mwaniki	IDH	Senior Program Manager (Landscapes Kenya) & Coordinator (Tea East Africa). Previously involved with the sustainable tea programme as regional projects manager in East and South Africa at the Rainforest Alliance, and at Unilever Kenya
Richard Fairburn	IDH	Previously involved with the sustainable tea programme as Managing Director Unilever Tea East Africa and Senior Agricultural Advisor at Unilever
Marc Monsarrat	The Rainforest Alliance	

**Table A1.2** *Focus group discussions*

Focus group discussion	Organisation	Persons involved
1, Nairobi, Kenya	KTDA	<ol style="list-style-type: none"> <li>1. Senior manager of agriculture services</li> <li>2. Regional Coordinator East of Rift Valley</li> <li>3. Regional Coordinator West of Rift Valley</li> </ol>
2, Nairobi, Kenya	KTDA	Field Services Coordinators of the factories: <ol style="list-style-type: none"> <li>1. Kinoro</li> <li>2. Litein</li> <li>3. Ndimu</li> <li>4. Nyankoba</li> <li>5. Gachege</li> <li>6. Mudete</li> </ol>
3, Nairobi, Kenya	KTDA	Tea Extension Services Assistants of the factories: <ol style="list-style-type: none"> <li>1. Kinoro</li> <li>2. Litein</li> <li>3. Ndimu</li> <li>4. Nyankoba</li> <li>5. Gachege</li> <li>6. Mudete</li> </ol>

Please find more information on the interview guides for these discussions Appendices 8.3 and 8.4.

## Analyses

After concluding that the farmers interviewed with the household survey are similar to their comparison group counterparts, the group of FFS participants was compared with the comparison group, and information on their performance and statistical difference between the groups has been reported upon for the indicators under investigation (please find more information on these indicators in Appendix 2).

The findings from the statistical analyses have been triangulated with information from the other data sources, including staff interviews, focus groups, literature and previous studies from Wageningen Economic Research.

## Appendix 2 Indicators and their operationalisation

No.	Variables to be measured	Operationalisation variables	Data collection
<b>Professionalisation of farmers</b>			
1	No of graduated farmers	Number and percentage of graduated FFS participants per FFS	KTDA data
2	No of trained farmers	Number of farmers trained through FFS (TESA-led / farmer –assisted) Number of farmers trained on RA standard Number of farmers trained on specific topics (e.g. climate, gender)	KTDA data
3	Improved decision making by farmers on the essential good practices e.g. With regards to plucking, fertiliser etc.	Change in what farmers use as information source to make decisions on farm management practices	Survey
4	Knowledge acquired on GAP, and implementation of GAPs	Knowledge and implementation level (score: 0 to 1) for various practices	Survey
5	Spill-over effects of farmer training	Option 1: Knowledge exchange between FFS and non-FFS farmers Option 2: Green leaf yields changes over time of FFS participants and neighbouring non FFS participants	Survey, Focus groups Survey
<b>Yield &amp; quality improvements</b>			
7	KG Green leaves/ha	KG of green leaves per hectare	KTDA data, survey
8	Quality of Green Leaf / quality of Made tea Profitability of tea	Rejects at farm level; plucking practices	Survey, KTDA data
9	Increased profitability of sustainable tea	Profitability of green leaf production per hectare	Survey
10	Profitability of other crops/activities	Profitability of several activities (net income earned and net income/ha)	Survey
11	Effects of potential quality improvements	Regression analyses profitability – quality	Survey
<b>Diversification</b>			
12	Share of income from tea	% of total income earned with GL production per group	Survey
13	Share of income from other sources	% of total income earned from other sources per group	Survey
14	Other activities / crops	Number of income sources per farmer, and income earned per income source	Survey
<b>Health &amp; safety</b>			
15	Benefit from central sprayer groups	No of farmers who have benefited from Central sprayers Use of PPE by farmers who opt to do spray themselves	Survey
16	Safe handling of agrochemicals	No of farmers who have constructed agrochemical stores	Survey
<b>Upscaling of FFS activities</b>			
17	Number of implemented FFS	Number of FFS implemented over time compared to target	KTDA data
18	Quality of implemented FFS	Size, composition and meeting length/frequency of groups	KTDA data
19	Staff Experience of upscaling process	Experience of KTDA staff (extension, factory, management)	Interviews
20	Farmer experience of upscaling process	Experience of farmers (both TESA-led and farmer-assisted FFS)	Focus groups

No.	Variables to be measured	Operationalisation variables	Data collection
<b>Attribution to program partners</b>			
21	Attribution to program partners of most significant changes	Most significant change stories of farmers, KTDA, IDH and Unilever staff	Interviews, focus groups
22	Attribution to program partners of transformation processes	Process tracing (what change has occurred, why has it occurred, what was the contribution by partners)	Interviews, focus groups
<b>Institutionalisation and embedding</b>			
23	Level of institutionalisation FFS activities	Integration of FFS methodology in KTDA processes and procedures	Interviews
24	Level of embedding FFS activities	Knowledge levels of FFS methodology among farmers and KTDA staff	Interviews, Focus groups
25	Future viability FFS activities	Continuation plans for FFS implementation, financial	KTDA data, Interviews

# Appendix 3      Measurement of economic indicators

**Table 1**      *Economic indicators for green leaf production and how they were calculated*

Indicator (category)	Calculation	Additional information
<b>Productivity per hectare</b>	Production of green leaf in kilograms divided by the area in hectare	
<b>Material cost per hectare</b>		
Fertiliser cost per hectare	Number of bags applied per hectare times the price per bag, divided by the number of hectares	Missing values were assumed to be 0 cost
Herbicide cost per hectare	Number of litres applied times the price per litre, divided by the number of hectares	Missing value were assumed to be 0 cost
Seedling cost	Number of seedlings planted times the price per seedling. Divided by the number of hectares	We report on those farmers that have actually planted seedlings, not on the 'average farmer' in the sample
<b>Labour cost per hectare</b>		
Weeding	The total number of days spent by hired labour times the price per day for hiring labour. Divided by the number of hectares	
Pruning	The total number of bushes pruned by hired labour times the price for pruning a bush. Divided by the number of hectares	
Fertiliser application	The total number of bags applied by hired labour times the labour price for applying one bag of fertiliser. Divided by the number of hectares	
Herbicide application	The total number of days spent by hired labour times the price per day for hiring labour. Divided by the number of hectares	
Planting	The total number of days spent by hired labour times the price per day for hiring labour. Divided by the number of hectares	We report on those farmers that have actually planted seedlings, not on the 'average farmer' in the sample
Plucking	The number of kilograms of green leaf harvested times the price paid for plucking one kilogram of green leaf	
<b>Total cost of production</b>	Material costs + labour costs minus costs for planting (seedlings, labour)	As planting does not take place every year, and tea bushes are generally producing for decades, we have not amortised planting and seedling costs. Cost of equipment and PPE is also not taken into account because they are not yearly recurring costs
<b>Income and profitability</b>		
Gross income	Green leaf production (kg) times price per kg	The price per kg differs between factories and includes the first payment (fixed per factory) and the second payment (a bonus which is calculated based on profit made by a factory for a certain period)
Net income	Gross income minus total cost of production	
Profitability per hectare	Net income from green leaf divided by the number of hectares	

## Appendix 4 Descriptive statistics

Indicator	Group	2013					2015					Difference Mean
		Mean	Sd	Min	Max	N	Mean	Sd	Min	Max	N	
Average knowledge score	Comparison	4.70	1.28	2.21	8.24	59	6.50	2.07	2.53	9.42	59	-1.80
	FFS	5.03	0.91	2.99	7.62	147	6.14	1.65	1.71	9.67	147	-1.11
Average implementation score	Comparison	6.43	0.66	5.07	8.01	59	6.56	0.93	4.51	8.12	59	-0.13
	FFS	7.07	0.90	4.81	8.63	147	6.95	0.71	4.29	8.50	147	0.12
Productivity green leaf per hectare	Comparison	12,380	8,129	105	34,180	53	9629	6251	421	28,658	55	2,751.00
	FFS	13,151	6,892	410	32,766	136	11,339	6,129	135	34,962	138	1,812.00
Net income from green leaf	Comparison	54,893.91	83,909.31	-21,467.3	520,545.6	59	39,923.72	59,748.93	-14,589.3	341,642	62	-14,970.19
	FFS	83,975.95	77,983.16	-23,290.5	516,375.2	151	50,595.95	48,524.12	-11,868.5	347,325	147	-3,3380
Profitability green leaf per hectare	Comparison	41,1425.5	341,848.5	-57,349.38	1,298,802	56	216,334.8	183,051.7	-41,876.16	802,063.3	56	-195,090.7
	FFS	468,773	331,240.8	-4077	2,184,360	139	286,149.6	297370.6	-52,905.72	2,833,961	143	-182,623.4
Total income from other sources of income than green leaf	Comparison	13,190.91	43,692.87	-11,400	360,500	58	26,151.18	64,496.38	-2,877	438,600	61	12,960.27
	FFS	29,362.6	55,480.22	-11,000	466,000	150	37,444.72	77,882.13	-11,000	721,800	141	8,082.12
Total household income from all sources	Comparison	67,936.6	93,073.01	-21,467.3	520,545.6	59	65,653.11	81,695.04	-4,589.297	43,8600	62	-2,283.49
	FFS	113,144.1	99,046.73	-1,923.8	540,375.3	151	86,512.32	93,135.54	-4,678.05	802,012	147	-26,631.78
Total household income from all sources per household member	Comparison	19,486.52	24,276.94	-1,616.43	132,288.9	59	15,182.73	21,164.95	-1,147.32	126,435	59	-4,303.79
	FFS	28,901.32	35,788.43	0	223,968.4	147	16,666.59	21,388.88	-1,169.512	160,402.4	147	-12,234.73

\* Profitability of other crops per hectare is not included in this table as we only have information for 2015 for this indicator. It is reported in the main report.

## Appendix 5 Outputs statistical analyses

Indicator	Descriptives: difference over time						
	Comparison group		FFS group		Average treatment effect (dif-in-dif)		Regression
	Mean Difference 2015-2013	ttest	Mean Difference 2015-2013	ttest		ttest	
Average knowledge score	1.50	***	1.10	***	-0.39	0	-0.34
Average implementation score environmental practices	-0.01	0	0.01	0	0.02	0	0.19
Average implementation score social practices	0.09	***	0.04	***	0.05	*	0.46
Average implementation score production practices	0.06	***	0.01	0	0.06	**	0.48**
Productivity green leaf per hectare	-3,084.6	***	-1,708.4	***	1,376.23	*	1,258.67*
Profitability green leaf per hectare	-189,932	***	-173,439	***	16,492.9	0	7,678.97
Total household income	-21,731	*	-26,876	***	-5,145.03	0	7,678.97
Total household income per household member	-4,051.2	0	-12,235	***	-8,183.56	0	-10,141.81**
Total income from other sources of income than green leaf	11,805	0	12,054	*	249.03	0	3,381.86
Dependency ratio on tea	-0.19	***	-0.15	***	0.04	0	0.046

\* statistically significant at the 0.90 level

\*\* statistically significant at the 0.95 level

\*\*\* statistically significant at the 0.99 level

Please note that the figures in this table are for the matched farmers only for whom information is available for both 2013 and 2015. Therefore the differences in the means may be different than the differences presented in Appendix 4, which are calculated for the whole sample, so also taking into account farmers for whom we have information for either 2013 or 2015.



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## Appendix 6      The questionnaire: Gachege and Mudete factories

### Introduction to respondent

*My name is \_\_\_\_\_. I am here on behalf of ETC-East Africa and Wageningen University in Holland. We are carrying out research on the livelihoods of tea farmers. This is a follow up interview after we spoke to you or one of your family members in 2014. Your selection for this survey was done at random. If you agree to participate, the survey will take approximately one hour. We hope that the research will benefit the livelihoods of tea producers in Kenya, and that it will improve the future work of initiatives undertaken by KTDA. The researchers will keep your responses confidential. Your full name will never be used anywhere, to ensure confidentiality.*

*You are not obliged to answer questions if you do not want to and you are free to stop the interview at all times. You will not receive any direct benefit if you join this study; your participation is voluntary. But we hope that the research outcomes will be generally benefit tea producers from KTDA. Do you have any questions for me? You may ask questions about this study at any time.*

May I start the interview?      1=Yes      2=No

**Instructions for enumerators 1:** all questions need to be answered. If a respondent does not know the answer, write down -999. If a respondent does not want to answer, write -888. If the question does not apply to the respondent, write NA. For the questions on inputs, use a 0 when a farmer did not buy or use a certain input.

**Instructions for enumerators 2:** if we ask a question about “last year” or “the past 12 months” this means the year from January - December 2015.

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## KTDA Sustainable Agriculture Project

### A: Household identification + FFS

A Date of interview (dd/mm/yyyy):..... Start time: ..... End time:.....

B Name of enumerator.....

C Name of Factory: .....

1 Factory grower number (2 letters for the factory, 3 numbers for buying centre, 4 numbers for grower number)

.....

2 Name of the respondent (**Enumerator:** interview the person who attended FFS training or the person in charge of tea production):

.....

3a What is the gender of the respondent? (Circle correct number)

0 Female

1 Male

3b What is your year of birth?

.....

3c How many years of education have you followed? (number of years, 'I do not know' = -999)

.....

4 Is the respondent the household head? (Circle correct number)

0 No

1 Yes

5 How many people are part of your household? .....

6 Did you sell tea in the July 2014/ June 2015 financial year?

0 No

1 Yes

6b Did you sell tea between July 2015 and December 2015?

0 No

1 Yes

**If the answers to both questions 6 and 6b are NO, then stop the interview and go to another farmer on your list**

- 
- 7 Are you a member of a Farmer Field School (FFS)?
- 0 No --> **please go to question 7c**
  - 1 No, but a family member is an FFS member
  - 2 Yes
  - 3 Not anymore
- 7a Did you share information on good agricultural practices that you or your household member were taught during the FFS training over the last year?
- 0 No → **please go to question 7c**
  - 1 Yes
- 7b If yes, did any of your friends, relatives or neighbours that you shared information with (on FFS training) changed their tea production practices due to information they got from you?
- 0 No
  - 1 Yes
  - 2 I do not know
- 7c How often do you or your household members share information on good agricultural practices with your neighbours?
- 1 Daily
  - 2 Weekly
  - 3 Monthly
  - 4 Yearly
  - 5 Never
- 7d How often do your neighbours share information on good practices with you or your household members?
- 1 Daily
  - 2 Weekly
  - 3 Monthly
  - 4 Yearly
  - 5 Never
- 8, 9, 10, 11, 12: NA
- 13 Have you been trained as a lead farmer by Rainforest Alliance?
- 0 No
  - 1 Yes
- 14 If you are not a lead farmer, have you, or any person from your household attended Rainforest Alliance certification training?
- 0 Nobody
  - 1 Yes, me
  - 2 Yes, somebody else (.....)
  - 3 I do not know

- 
- 15a Have you or any member of your household participated in any other certification scheme training or workshops, other than by Rainforest Alliance over the past 12 months? Trainings are defined as educational events; for instance, one on one training, group training, workshop, demonstration, training during TESA visit. (E.g. UTZ Certified, Fairtrade/FLO, ISO)
- 0 No
  - 1 Yes, UTZ Certified
  - 2 Yes, FLO/Fairtrade
  - 3 Yes, ISO
  - 4 Yes, I have received training to become certified, but I do not know for which certificate
  - 5 I do not know
- 15b Have you or any member of your household participated in any non-certification scheme trainings or workshops over the past 12 months (trainings defined as educational events; for instance, one-on-one training, group training, workshop, demonstration, training during TESA visit)?
- 0 No
  - 1 Yes → **Skip question 16**
- 16 If **no**, what was the reason?
- a) No training offered
  - b) Offered, but could not get to training, no transportation or resources
  - c) Offered, but other reasons for not attending (no time, not interested in topic).
- 17 If **yes**, how many trainings (trainings defined as educational events; for instance, one on one training, group training, workshop, demonstration, training during TESA visit) have you and other persons from your household attended in the past 12 months?
- ..... trainings (enumerator: write down number of trainings)

- 18 Did the person(s) that participated in training follow the following topics? (one-on-one training, group training, workshop, demonstration, training during TESA visit)? Fill in 1 for yes or 0 for no in column 1. (If **yes**, who gave the training? Fill in number 1 to 6).

Topics	Attended training on this topic? [0 = No, 1 = Yes, 2= Do not know]	Name the type of organization 1= factory 2= government 3= NGO 4= input supplier 5= Local individual (e.g. neighbour) 6= others 7 = I do not know
18a Crop production (for instance new crops)	a1.....	a2i ..... a2ii ..... a2iii .....
18b Health and safety (for instance HIV/AIDS, housekeeping, food)	b1.....	b2i ..... b2ii ..... b2iii .....
18c Farm management skills (for instance record keeping, economic decision making)	c1.....	c2i ..... c2ii ..... c2iii .....
18d Chemical application (chemicals used for all farm activities)	d1.....	d2i ..... d2ii ..... d2iii .....
18e Others/ combination of topics	e1.....	e2i ..... e2ii ..... e2iii .....

- 18f Have you or any member of your household participated in any non-certification scheme trainings or workshops **in 2014** (trainings defined as educational events; for instance, one-on-one training, group training, workshop, demonstration, training during TESA visit)?

0 No --> skip to question 19  
1 Yes

- 18g How many trainings?  
..... trainings (Enumerators: write down number of trainings)

- 19 Apart from information provided in the trainings, does the extension staff provide you with information or services that helps you with your tea production?

0 No → **Please go to Section B below question 20**  
1 Yes → **please go to question 20**  
2 I don't know → **Please go to question 20**

20 Can you name the services the factory provides you with and if you are satisfied with it / them?

*(Instructions for enumerators: please read the options to the farmers and record one response/possible answer in each box according to the code)*

Services by the Factory	1: Very satisfied 2: Satisfied 3: Neutral 4: Unsatisfied 5: Very unsatisfied 6: I do not know 7: Not applicable
<b>20a Training</b>	
<b>20b Market information on inputs</b>	
<b>20c Market information on sales and prices (e.g. also of other crops than tea)</b>	
<b>20d Providing information about inspection results and corrective actions after Internal Inspections (Internal Management System)</b>	
<b>20e Providing information about the external Inspections (audit)</b>	
<b>20f Providing access to fertilizer</b>	
<b>20g Providing access to seedlings, planting material</b>	
<b>20h Providing access to pesticides</b>	
<b>20i Providing access to (micro) credits</b>	
<b>20j Insurance</b>	
<b>20k Information on Group Commercial activities; sales and marketing</b>	



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## B: Implementation of sustainable practices

1. Answering options should not be read out to the households, options are for enumerators' convenience only!
2. Select one answer option per question by circling the corresponding letter, apart from questions with questions which state multiple answers can be given
3. Do not give any additional information about the 'right' answers as we will be questioning knowledge later on.

### **Profit (questions are all related to tea)**

- 1 How many times does your household pluck tea in the same tea plot per month (this refers to a normal month- when there is no drought and it is not very cold)?
  1. 4 times (every 7-8 days)
  2. 3 times (every 10 days)
  3. 2 times (every 2 weeks)
  4. Less than twice (less than once every 2 weeks)
- 2 Where does your household experience leaf spillage at the farm, during transport to buying centre or at the buying centre?
  1. No spillage at all places
  2. Spillage in all three places
  3. Spillage at home only
  4. Spillage at BC only
  5. Spillage during transport
- 3 Does your household use a plucking stick/wand? Is the table firm (Interviewer to observe)
  1. Use stick & table firm
  2. Use stick table not firm
  3. No stick table firm
  4. No stick table not firm
- 4 If you or your household raise your own planting material: what is the success rate in your nursery?
  1. High (More than 80% success rate)
  2. Mediate (Between 80% and 50% success rate)
  3. Low (Less than 50% success rate)
  4. N/A – i.e. no planting or infilling in the last few years, used external source, or farmer does not want to tell.
- 5 What clones have been planted in your household's nursery?  
(Enumerator: multiple answers can be circled)
  1. Clones developed from own tea bushes (own nursery)
  2. Clones received from neighbours/other farmers
  3. Improved clones (VPS) from TRFK
  4. Any other/ do not know which clones
  5. N/A (no clones planted)
- 6 When are tea VP plants in-filled in the tea plots?  
(Enumerator: multiple answers can be circled)
  1. During heavy rains.
  2. During moderate/light rains.
  3. During dry season.
  4. None of the above.

- 
- 7 What is the percentage crop cover (absence of gaps in the tea) on your farm (*interviewer to ask and observe*)?
1. 90-100%
  2. 75%- 90%
  3. Less than 75%
  4. I do not know
- 8 At what height is mature tea pruned?
1. 20 inches and above
  2. Below 20 inches
  3. N/A
  4. I do not know
- 9 At what period are tea bushes pruned?
1. Dry season (January – March)
  2. Wet season (April – May/ October - December)
  3. Cold season (June – August)
  4. Warm season (September)
- 10 How often is the same tea plot/block pruned?
1. Prune every 6 (or more) years
  2. Prune every 3-5 years
  3. Prune every 1 or 2 years
- 11 What is the major tool used to prune the tea your household produces? (**Enumerator:** *multiple answers can be circled*)
1. Use pruning knife
  2. Use pruning machine
  3. Other tools
- 12 Who prunes the tea bushes and have they been trained? (**Enumerator:** *multiple answers can be circled*)
1. Untrained family member.
  2. Trained family member.
  3. Untrained non family member.
  4. Trained non family member
- 13 At what height are your bushes tipped in?
1. More than 6 inches above pruning height
  2. 4 to 6 inches above pruning height
  3. Less than 4 inches above pruning height
- 14 How frequently do you apply composted manure (= organic fertilizer)?
1. Never / do not apply
  2. Less than once every three years
  3. Every three years
  4. More often than once every three years
- 15 How frequently do you apply chemical fertilizer?
1. Once per year
  2. Twice a year
  3. More than twice per year
  4. Never / Do not apply

- 
- 16 Do you keep records on input use and production?
1. Only records on production/sales
  2. Only records on inputs
  3. Records on input use and production
  4. No records kept

**People** (question 17 about tea, other questions about the whole production system)

- 17 Who plucks your tea?
1. Only household members
  2. Regular workers
  3. Seasonal workers
  4. Mixture of household members and workers
- 18 Do you hire workers? Do you have agreements with hired workers about pay and timing of payment?
1. Yes, agreement in writing
  2. Yes, oral agreements
  3. No
  4. I do not hire workers, only family members work on the farm → **please go to question 19b**
- 19a Do your workers have access to easily accessible water for drinking and latrines?
1. Access to potable water
  2. Access to latrines
  3. Both
  4. Neither
- 19b Does your household have access to easily accessible water for drinking and latrines?
1. Access to potable water
  2. Access to latrines
  3. Both
  4. Neither
- 20 How often did your family or any of your workers need medical attention after injury on the farm for example fractures or wounds requiring stitches, in the last 12 months?
1. More than three occasions
  2. On one or two occasions
  3. No occasions
- 21 When chemicals are sprayed, which personal protective equipment (PPE) does your family or your workers use?
1. All PPE (Mask, gloves, boots, overall, goggles)
  2. Some of the above PPE
  3. No PPE
  4. N/A (don't spray)
- 22 Do you group together with other farmers to carry out certain activities e.g. sourcing of fertilizer, leaf transport, plucking, learning visits to other farmers etc.?
1. Yes
  2. No → continue with question 23

- 
- 22b If yes, do you group together with other farmers more frequently than 2 years ago?
1. Less frequent
  2. Not more or less frequent than 2 years ago
  3. More frequent
  4. I do not know
- 23 Do you turn to KTDA if you experience any problems in your tea production?
1. Yes
  2. No
- 24 Do your children go to school?
1. N/A, no, the children are too young or too old to go to school
  2. No, some children are not going to school although they have the age to attend primary or secondary school
  3. Yes, all children in the age to attend primary or secondary school are attending school
  4. Yes, all children in the age to attend primary or secondary school are attending school and one or more children are following college or university

### **Planet**

- 25 Do you collect prunings from the tea field?
1. No
  2. Yes - use as mulch elsewhere on farm
  3. Yes - use as fuel
- 26 Do you infill open areas in your tea (*Interviewer to ask and observe*)?
1. Yes
  2. No
  3. N/A (no gaps)
- 27 When do you apply fertilizer to your tea?
1. Apply fertiliser during moderate rains
  2. Apply fertiliser during heavy rains
  3. Apply fertiliser during dry periods
  4. Apply fertilizer on another moment
  5. Do not apply fertilizer
- 28 In case of chemical control in your tea (pesticides /herbicides /insecticides) how do you apply the agrochemicals?
1. Blanket spraying
  2. Edges/ spot spraying
  3. Other
  4. Do not use chemical control
  5. Central sprayers did chemical control
- 29 Does your farm border a river or water body? If so, do you have a Riparian strip covered by indigenous vegetation and how wide is it A Riparian strip is a strip of indigenous vegetation between rivers or other water bodies and cultivated field (*Interviewer to ask and observe*)?
1. No; farm does not border a river or water body
  2. Yes, farm borders a river/ water body, but no Riparian strip
  3. Yes, a strip less than 10 meter
  4. Riparian strip wider than 10 meters, but smaller than 30 meters
  5. Riparian strip wider than 30 meter

- 
- 30 Do you have indigenous trees on your farm? If so how many in total on your land?
1. More than 10 indigenous trees
  2. Between 5 and 10
  3. Less than 5
  4. No native trees
- 31 If your farm borders a water stream, how many eucalyptus trees are growing within 10 meters of the water stream?
1. More than 50 trees
  2. Between 20 and 50 trees
  3. Between 5 and 20 trees
  4. zero to 5 trees
  5. N/A farm does not border river
- 32 if your farm borders a water body, what distance do you leave out without applying agrochemicals and chemical fertilizer, compost and organic matter?
1. No area is left
  2. 0 – 5 metres
  3. 5 – 15 metres
  4. Over 15 metres
  5. N/A farm does not border a river
- 33 How much area of the total farm is conservation area (area under indigenous trees/ natural vegetation)?
1. More than 10%
  2. Between 2 % and 10%
  3. Zero to 2 %
- 34 What is your main source of energy for domestic purposes?
1. Renewable firewood from Eucalyptus and Grivellia trees, electricity, solar, biogas
  2. A mixture of sustainable and unsustainable (petroleum products, bottled gas, ....) sources
  3. Cutting down of indigenous trees
  4. Petroleum products
- 35 What is your main source of water for domestic use?
1. River/ stream or spring
  2. Tap
  3. Harvested rainwater
- 36 How do you manage household waste water and effluent from livestock (interviewer to observe if possible)?
1. Presence of soak pits/ waste pits;
  2. Other ways of filtering water
  3. Part of the waste in soak pits, part runs directly into farm
  4. Discharge direct onto the farm or into waterways
- 37 How do you manage household solid waste?
1. No waste management in place
  2. One pit for all waste
  3. One pit for organic waste and one pit for other waste
  4. More than two pits in place: non-organic waste is further separated, for instance for plastic or glass

- 
- 38 Is waste collected and taken elsewhere?
1. Glass, plastic and other waste is collected
  2. One of three waste types is collected (either glass, or plastic, or other waste)
  3. No, recycling options known but no transportation available
  4. No, collection service is not available
  5. N/A no waste pit available
- 39 Did you construct an agro-chemical store?
- 0 No
  - 1 Yes
  - 2 I do not know



## Decision-making in tea

We also would like to ask you some questions on how you make decisions about tea production and management activities at the moment and how you made such decisions two years ago.

**(Enumerator: multiple options are possible, read the options aloud to the farmers and tick the relevant box).**

- 39a How do you generally make decisions on tea production activities at the moment and two years ago? (Enumerator, put relevant code in the box; **every row must be filled; multiple answers possible as many factors contribute to making a decision**)

Nr	Way for decision-making	Now (39a)
		No = 0 Yes = 1
0	Based on advice from my parents/friends/neighbours	
1	Based on what I did last year	
2	Based on a routine	
3	Based on the state of my tea bushes/field(s)	
4	Based on recommendations by the TESA/FSC/factory	
5	Based on regular check of my records to see whether my farm is doing well	
6	Based on comparing my records with the records of my neighbours/friends/other farmer to see how my farm is doing	
7	Based on what I learned from the training	
8	Based on information on prices for tea and other crops	
9	Based on comparing my production with figures with average tea production in Kenya to see how my farm is doing	
10	Based on my own experience	
11	Other, please specify ..... .....	
12	I do not know	

39b N/A

39c N/A

- 40a How do you decide how much fertilizer to apply on tea now, and how did you do so 2 years ago? (Enumerator, put relevant code in the box; **multiple answers possible; fill every row**)

Nr	Way for decision-making on fertilizer application on tea (more than one factor may contribute partly/wholly in making a decision)	No = 0 Yes = 1
0	I do not apply fertilizer	
1	I apply the same amount per bush / hectare as my parents / neighbours do	
2	I apply the same as last year	
3	I always apply the same amount	
4	I apply on the basis of the state of the tea bushes	
5	I apply on the basis of recommendations by the factory	
6	I apply on the basis of recommendations obtained in the training	
7	I apply on the basis of the records that I kept last year (analysed fertilizer input and yield relations)	
8	I apply on the basis of my own experience	
9	Other, please specify ( <b>one only</b> ) ..... .....	
10	I do not know	

40b N/A

- 41a How do you decide on how often to pluck tea (plucking frequency) now, and how did you decide on this 2 years ago? (Enumerator, put relevant code in the box; **multiple answers possible; fill every row**)

Nr	Way for decision-making on fertilizer application on tea (more than one factor may contribute partly/wholly in making a decision)	No = 0 Yes = 1
0	I pluck as often as my parents/neighbours/friends do	
1	I pluck as frequently as I did	
2	I pluck on the basis of the state of the tea bushes	
3	I pluck on the basis of recommendations by the factory	
4	I pluck on the basis of recommendations obtained in the training	
5	I pluck on the basis of the records that I kept last year	
6	I pluck on the basis of my own experience	
7	Other, please specify ( <b>one only</b> ) ..... .....	
8	I do not know	

41b N/A

- 42a How do you decide how to handle (apply, store etc.) agro-chemicals now and how did you do so 2 years ago? (Enumerator, put relevant code in the box; **multiple answers possible; fill every row**)

Nr	Way for decision-making	No = 0 Yes = 1
0	I do not handle/apply/store agrochemicals	
1	Based on advice from my parents/friends/neighbours	
2	Based on what I did last year	
3	Based on routine	
4	Based on recommendations by the TESA/FSC/factory	
5	Based on requirements for UTZ/RA certification	
6	Based on what I learned from the training to make my decisions	
7	Based on the basis of my own experience	
8	Other, please specify ..... .....	
9	I do not know	

- 42b N/A

## C: Tea production

We would like to know more about your tea production.

1a How many times was your tea rejected by the buying centre the last 12 months?

- 0 Never → **please skip question 1b**  
 1 Less than 3 times  
 2 More than 3 times  
 3 I do not know

1b How many kilograms of tea was rejected by the buying centre in the last 12 months?

.....

1c/1d N/A

Product	What is the area in acre on which you grow tea?	What is the total number of tea bushes owned?	What is the total amount of green leaf you produced in the last 12 months in kilograms?
Tea/ Green leaf	1e.....	1f.....	1g.....

**2. Hired labour for tea in the last year (2015). This refers to tea production within the household, not work for someone else.**

**Enumerator: Please fill out -999 when the farmer does not know. Or NA when not applicable.**

*1) How much time was spent on tea production in the last year (2015)? This can be **both family and hired labour**. We ask these questions for plucking weeding and pruning. The unit is different per activity. Example: for weeding we ask the days per year spent on weeding.*

*2) The cost of hired labour are in different units. Tea plucking is cost per kg of green leaves, while for other activities the costs per day or per bush should be stated.*

***If the labour is family labour the costs are zero.***

Activity	Quantity spent on activity by farmer or family members (NA = not applicable)	Quantity spent by hired labourers (NA = not applicable)	Unit of measurement	Price hired labour in Ksh per unit (see for unit to the right)	Per unit:
C2 Plucking	1a1.....	1a2.....	Days last year	1b.....	Ksh/Kg green tea leaves
C2 Weeding	2a1.....	2a2.....	Days last year	2b.....	Ksh/Per day
C2 Pruning	3a1.....	3a2.....	Number of bushes last year	3b.....	Ksh/ bush
C2 Applying fertilizer	4a1.....	4a2.....	Number of bags applied last year	4b.....	Ksh/bag applied

C3 How much time did you and your labourers spent on **plucking** tea in the **year 2013**?

Activity	Days spent on plucking by farmer or family members (NA = not applicable)	Days spent on plucking by hired labourers (NA = not applicable)	Unit of measurement	Price hired labour in Ksh per kilogram of green leaf plucked.	Per unit:
C3 Plucking	1a1.....	1a2.....	Days last year	1b.....	Ksh/Kg green tea leaves

**Inputs used for tea production in the last 12 months (questions 4 until 9, see next page)**

- 1) Please state the inputs used for your total tea area in the last 12 months. If the respondent has difficulties answering this question ask him/her the quantity of these inputs they might have bought and if they finished all these inputs.
- 2) As different people might use different measures this question allows for different units in question 5 and 6: for example quantity 1, unit kg or quantity 0.5, unit litre.
- 3) Write down the cost for one unit
- 4) Give respondent time to think about any other inputs used for tea

Enumerator: Please fill out -999 when the farmer does not know. And 0 when the farmer did not buy any fertilizer/chemicals/tea plants

Input	Quantity used in last 12 months 0, 1, 2, 3, ½, ¼, ⅓ etc.	Unit:	Cost per unit input (may be 0)	Number of bushes receiving input
4. Fertilizer (chemical) List common/ trade names incl. composition (N,P,K):				
1a. ....	1b. ....	Bag	1d. ....	1e. ....
2a. ....	2b. ....	Bag	2d. ....	2e. ....
3a. ....	3b. ....	Bag	3d. ....	3e. ....
4a. ....	4b. ....	Bag	4d. ....	4e. ....
5. Organic fertilisers, compost, manure List types, if any:	Quantity in last 12 months 0, 1, 2, 3, ½, ¼, ⅓ etc.	Unit	Cost per unit input (may be 0)	Number of bushes receiving input
1a. ....	1b. ....	1c. ....	1d. ....	1e. ....
2a. ....	2b. ....	2c. ....	2d. ....	2e. ....
3a. ....	3b. ....	3c. ....	3d. ....	3e. ....
4a. ....	4b. ....	4c. ....	4d. ....	4e. ....
6. Other chemicals (pesticides/ herbicides/ insecticides), if any: List common/ trade names:	Quantity in last 12 months 0, 1, 2, 3, ½, ¼, ⅓ etc.	Unit:	Cost per unit input	Number of bushes receiving input
1a. ....	1b. ....	1c. ....	1d. ....	1e. ....
2a. ....	2b. ....	2c. ....	2d. ....	2e. ....
3a. ....	3b. ....	3c. ....	3d. ....	3e. ....
4a. ....	4b. ....	4c. ....	4d. ....	4e. ....
7. New tea plants, if any	7b. ....	Number in last year:	7d. ....	
8. Other input used: 8a. ....	8b. ....	8c. ....	8d. ....	8e. ....
9. Other input used: 9a. ....	9b. ....	9c. ....	9d. ....	9e. ....



- 10a Have you bought any Personal Protective Equipment for your tea or other production in the 2014/2015 financial year?
- 0 No → **please continue with Section D on the next page**
- 1 Yes
- 2 I do not know → **Enumerator: please add -999 in the table for 1a-7a and continue with Section D on the next page**

→ **Please fill out -999 when the farmer does not know, and 0 when the question is not applicable (the farmer did not buy a certain PPE item); when a full PPE set row is filled, then fill 0 in row 1-6, column one**

10b. If yes, what did you buy?	How many?		Cost per piece
1 Overall	1a.....	Piece	1d.....
2 Hat	2a.....	Piece	2d.....
3 Mask/respirator	3a.....	Piece	3d.....
4 Gumboots	4a.....	Piece	4d.....
5 Goggles	5a.....	Piece	5d.....
6 Apron/plucking cape/nylon bags/raincoat	6a.....	Piece	6d.....
7 Full PPE set	7a.....	Piece	7d.....

- 11 If you **bought** protective equipment (PPE), why did you buy it?  
**(Enumerator: multiple answers are possible but do not read aloud to respondent)**
- 0 I was taught in training that I can benefit from it
- 1 I need it for required practises for Rainforest Alliance or UTZ Certification
- 2 I have seen my neighbour / colleague farmer using it
- 3 I wanted to buy it for a long time but just recently got the required funds
- 4 It increases my status as a farmer
- 5 Other
- 12 Do you (or your labourers) use a tea harvesting machine for plucking tea?
- 0 No
- 1 Yes

## D: Other sources of income in the last 12 months

- 1 Can you give an approximation of the percentage of income from tea production in total household income, in the last 12 months?  
 0 100% → **please continue with question 5, but fill out 0 in the table with question 2 below.**  
 1 Between 80 and 100%  
 2 Between 60 and 79%  
 3 Between 40 and 59%  
 4 Between 20 and 39%  
 5 Less than 20%
- 2 Can you state your families' sources of income, starting with the most important income generation activity (excluding tea)? Can you give an approximation of the yearly income and costs from the activities?

**Enumerators:** you can use the bottom of the sheet to take notes before filling the table.

Help respondents with possible sources of income: vegetables, fruit, grain, dairy, calves, pigs, rabbit, chicken. Remittances, retirement, business, employment, teaching, and more.

**Enumerators:** write down -999 when the farmer does not know. And -888 when the farmer does not want to answer!

D2	Income generating activities from most to least important income generating activity		Harvest/sale (amount or number e.g. kilos, number of animals / number of items sold)	Yearly gross income from this activity (last 12 months)	Yearly costs from this activity (last 12 months)
	Category	0 = No 1 = Yes Specification if possible			
D2.1.	a. Plant production (vegetable, fruit, grain etc.)	a	b	c	d
D2.2.	a. Livestock (dairy, cows, chicken etc.)	a	b	c	d
D2.3.	a. Business (trade, shop etc.)	a	b	c	d
D2.4.	a. Employment	a	b	c	d
D2.5.	a. Services (teaching, government etc.)	a	b	c	d
D2.6.	a. Remittances	a	b	c	d
D2.7.	a. Retirement	a	b	c	d
D2.8.	a. Other....	a	b	c	d
D2.9.	a. Other.....	a	b	c	d
D2.10.	a. Other....	a	b	c	d

D2.20\_1a: now we would like to know more details on the crops you produced last year.

<i>Name of crop</i>	<b>Crop produced</b>	<b>Size of the area planted</b>	<b>How much did you produce last year? <i>See column e for correct unit of measurement</i></b>	<b>Unit of measurement</b>	<b>Last years' sale for the whole plot</b>  <i>Sale can be different than yield because family eats part of crop or part of crop is gone to waste so cannot be sold</i>	<b>Price received last year per unit</b>  <i>If there were different prices, as the average or general price</i>
<i>Name</i>	<i>0 = no (go to the next row) 1 =yes</i>	<i>In acres  -999 = I do not know</i>	<i>In number  -999 = I do not know</i>	<i>Write down relevant unit  -999 = I do not know</i>	<i>Number, of unit mentioned before  -999 = I do not know</i>	<i>In Tsh  -999 = I do not know</i>
2aa. Maize	2a	2c	2d	2e = tin	2f	2g
3aa. Beans	3a	3c	3d	3e= tin	3f	3g
4aa. Wheat	4a	4c	4d	4e = tin	4f	4g
5aa. Peas	5a	5c	5d	5e = tin	5f	5g
6aa. Vegetables	6a	6c	6d	6e = bunch	6f	6g
7aa. Potatoes / Irish potatoes	7a	7c	7d	7e = tin	7f	7g
8aa. Sweet potatoes	8a	8c	8d	8e = tin	8f	8g

9aa. Onions	9a	9c	9d	9e = tin	9f	9g
10aa. Tomato	10a	10c	10d	10e = tin	10f	10g
<i>Name of crop</i>	<b>Crop produced</b>	<b>Size of the area planted</b>	<b>How much did you produce last year? See column e for correct unit of measurement</b>	<b>Unit of measurement</b>	<b>Last years' sale for the whole plot</b>  <i>Sale can be different than yield because family eats part of crop or part of crop is gone to waste so cannot be sold</i>	<b>Price received last year per unit</b>  <i>If there were different prices, as the average or general price</i>
<i>Name</i>	<i>0 = no (go to the next row) 1 =yes</i>	<i>In acres -999 = I do not know</i>	<i>In number -999 = I do not know</i>	<i>Write down relevant unit -999 = I do not know</i>	<i>Number, of unit mentioned before -999 = I do not know</i>	<i>In Tsh -999 = I do not know</i>
11aa. Sorghum	11a	11c	11d	11e = tin	11f	11g
12aa. Millet	12a	12c	12d	12e = tin	12f	12g
13aa. Cabbage	13a	13c	13d	13e = cabbage	13f	13g
14aa. Garlic	14a	14c	14d	14e = tin	14f	14g
15aa. Groundnuts	15a	15c	15d	15e = tin	15f	15g
16aa. Trees	16a	16c	16d	16e = tree	16f	16g

**D2.20\_1b** *Cost of production per crop*

Name of the crop	Crop produced: enumerators: ask only if the crop is produced --> Check with previous question 9a	Total number of days spent on growing and harvesting crop by family members per crop last year	Total number of days spent on growing and harvesting crop by hired labourers per crop last year	Total costs for hired labour last year	Total costs for mechanical equipment (tractor etc.) last year	How much money did you spend on fertilizer to grow crop last year?	How much money did you spend on pesticides to grow crop last year?	How much money did you spend on planting material (seeds, plants) to grow crop last year?
		<i>Number of days</i>  -999 = I do not know	<i>Number of days</i>  -999 = I do not know	<i>In Tsh</i>  -999 = I do not know - NA = not applicable (no hired labour)	<i>In Tsh</i>  -999 = I do not know - NA = not applicable (not used)	<i>In Tsh</i>  -999 = I do not know - NA = not applicable	<i>In Tsh</i>  -999 = I do not know - NA = not applicable	<i>In Tsh</i>  -999 = I do not know - NA = not applicable
2aa. Maize		2i	2j	2k	2l	2m	2n	2o
3aa. Beans		3i	3j	3k	3l	3m	3n	3o
4aa. Wheat		4i	4j	4k	4l	4m	4n	4o
5aa. Peas		5i	5j	5k	5l	5m	5n	5o
6aa. Vegetables		6i	6j	6k	6l	6m	6n	6o
7aa. Potatoes / Irish potatoes		7i	7j	7k	7l	7m	7n	7o
8aa. Sweet potatoes		8i	8j	8k	8l	8m	8n	8o
9aa. Onions		9i	9j	9k	9l	9m	9n	9o

10aa. Tomato		10i	10j	10k	10l	10m	10n	10o
11aa. Sorghum		11i	11j	11k	11l	11m	11n	11o
<b>Name of the crop</b>	<b>Crop produced: enumerators: ask only if the crop is produced --&gt; Check with previous question 9a</b>	<b>Total number of days spent on growing and harvesting crop by family members per crop last year</b>	<b>Total number of days spent on growing and harvesting crop by hired labourers per crop last year</b>	<b>Total costs for hired labour last year</b>	<b>Total costs for mechanical equipment (tractor etc.) last year</b>	<b>How much money did you spend on fertilizer to grow crop last year?</b>	<b>How much money did you spend on pesticides to grow crop last year?</b>	<b>How much money did you spend on planting material (seeds, plants) to grow crop last year?</b>
		<i>Number of days</i>  -999 = I do not know	<i>Number of days</i>  -999 = I do not know	<i>In Tsh</i>  -999 = I do not know - NA = not applicable (no hired labour)	<i>In Tsh</i>  -999 = I do not know - NA = not applicable (not used)	<i>In Tsh</i>  -999 = I do not know - NA = not applicable	<i>In Tsh</i>  -999 = I do not know - NA = not applicable	<i>In Tsh</i>  -999 = I do not know - NA = not applicable
12aa. Millet		12i	12j	12k	12l	12m	12n	12o
13aa. Cabbage		13i	13j	13k	13l	13m	13n	13o
14aa. Garlic		14i	14j	14k	14l	14m	14n	14o
15aa. Groundnuts		15i	15j	15k	15l	15m	15n	15o
16aa. Trees		16i	16j	16k	16l	16m	16n	16o

3 Can you indicate the monthly income earned from all your activities except tea production over the last 12 months?

1. Less than 2000 Ksh per month
2. Between 2000 and 5 000 ksh per month
3. Between 5 000 and 10 000 ksh per month
4. Between 10 000 and 15 000 ksh per month
5. Between 15 000 and 20 000 ksh per month
6. More than 20 000 ksh per month

4a N/A

4b N/A

5 Does your household have any loans / (micro)credit at this moment?

0 No → **please skip question 6**

1 Yes

6 Whom has provided you with the loan / (micro) credit?

.....

7 Does your household have any insurance (related to agricultural production) at this moment?

0 No → **please skip question 8**

1 Yes

8 With which organisation/company did you take out the insurance?

.....

9 How did you use the income from your tea farm last year?

(**Enumerator:** ask all options and record the relevant answer code in the box).

Nr	Item	No = 0 Yes = 1
0	Buying inputs / equipment for tea production	
1	Buying inputs / equipment for other crops/animals	
2	Hire labour for tea production	
3	Hire labour for other crops/animals	
4	Buy food	
5	Medical bills for family	
6	Education fees for children	
7	Investment in business	
8	Mobile phones	
9	Buy home use items e.g. Radio/TV/sofa set	
10	Other, please specify (maximum 3, most important uses of income) ..... ..... .....	

---

## E: Knowledge and skills learned

1. Answering options should **not** be read out to the households, options are for enumerators' convenience only!

2. In this part it is encouraged that the enumerators stimulate the farmers to give more options (time to think), but never mention the options!

3. Select the given option by circling the corresponding letter, more answer options can be selected

- 1 Can you mention some benefits of leaving prunings in the field?
  1. To suppress weeds
  2. To prevent soil erosion
  3. To improve soil structure
  4. Releases nutrients into the top soil at decomposition
  5. Reduces loss of water by evaporation (mulch)
  6. None of the above / I do not know
- 2 Can you mention the best height to prune mature tea?
  1. Never below 20 inches
  2. 2 inches above the former height
  3. After reaching 28 inches, the bush should be down pruned to 21 inches
  4. None of the above / I do not know
- 3 Can you mention reasons to prune tea?
  1. To maintain a manageable plucking table
  2. To rejuvenate the bush / increase production
  3. To remove diseased, dead and knotted branches
  4. None of the above / I do not know
- 4 Can you mention some recommended methods to handle weeds in tea?
  1. Slashing using panga
  2. Use of plain jembe
  3. Uprooting using hands
  4. Use of round up for perennial weeds such as couch grass (new fields and young tea only)
  5. None of the above / I do not know
- 5 Can you mention benefits of fertilizer application to tea?
  1. Get better yields of green leaf.
  2. Get better quality of green leaf
  3. Maintain the tea bush for a long time
  4. Increase nutrients to soil/improve soil fertility.
  5. None of the above / I do not know
- 6 Can you mention any benefits of plucking tea every 7 to 8 days (during normal weather)?
  1. To maintain good quality (older tea is of less quality; more than 2 leaves per bud)
  2. To maintain enough yield (if leaves are plucked too early this leads to less yield; less than 2 leaves per bud)
  3. To maintain good plucking table
  4. None of the above / I do not know
- 7 Can you mention any benefits of maintaining a plucking table? (A *plucking table* is the surface of the tea bush from which the farmer plucks the tea, 2 leaves and a bud.)
  1. Yields increase when shoots can grow because they are not hindered by shade
  2. Shoots are missed during plucking/ plucking goes faster with an even plucking table
  3. None of the above / I do not know



- 
- 8 Can you mention benefits from infilling?
1. Maximises the yield of land in tea production / increases yield
  2. Reduces weeding efforts
  3. None of the above / I do not know
- 9 Can you mention the best height for tipping-in tea?
1. 4 inches above pruning height
  2. None of the above / I do not know
- 10 A Riparian strip is a strip of indigenous vegetation between rivers or other water bodies and cultivated field. Can you mention benefits of a Riparian strip?
1. A riparian strip helps protect and conserve wetlands
  2. A riparian strip helps prevent soil erosion
  3. A riparian strip enriches biodiversity
  4. A Riparian strip forms a buffer so that pollution cannot reach the water
  5. None of the above / I do not know
- 11 What are the benefits of personal protective equipment (PPE)?
1. Protects your skin from being touched by chemicals
  2. Protects you from inhaling chemicals
  3. Protects your feet from chemicals
  4. Prevents illness
  5. None of the above / I do not know
- 12 What are the potential dangers of applying agrochemicals and fertilizer near the natural water bodies like rivers, streams, pools, ponds etc. ?
1. Kill the aquatic life (water plants and animals)
  2. Kill the plants growing near the water body
  3. Poison the people drinking water downstream
  4. None of the above / I do not know
- 13 Why is application of agrochemicals discouraged in tea?
1. High cost of agrochemicals
  2. Harmful effect on people
  3. Risk of getting into made tea
  4. Loss of market of tea
  5. Harmful effect on environment
  6. None of the above / I do not know
- 14 What methods can you use to improve the yield and quality of tea in your farm?
1. Application of the right fertilizer at the right time.
  2. Regular plucking rounds
  3. Maintaining the plucking table.
  4. Training of pluckers
  5. None of the above / I do not know
- 15 What are the benefits applying soil conservation measures?
1. Preserve soil fertility
  2. Prevent loss of soil
  3. Get high production
  4. Prevent siltation in water bodies
  5. None of the above / I do not know

## F: Experiments, dissemination and diffusion of Good Agricultural Practices

- 1 Have you experimented with or implemented any new agricultural practices or tools on your land (for example on tea, new crops, other fertilizer) in the last 12 months?
- 0 No → **skip question 2 to 6 (the table below).**
- 1 Yes

2 New practice

- 1) *Fill in any practices the farmer has experimented with, for instance new crop varieties, other fertilizer, more/less frequent maintenance, new tools, and new income generating activities).*
- 2) *Fill in if the farmer experimented alone or in a group.*
- 3) *Do not read aloud the possible reasons: let the respondents come up with reason him/herself and then write down the number which is most applicable*

What did the farmer experiment?	0=Alone or 1= in group	<b>Reason for experimentation (multiple reasons possible):</b> 1) Learned from other farmer (neighbour, family member) 2) Because of FFS 3) Because of other training 4) Because of certification 4) Other 5) I do not know
<b>Tea related</b>		
1a	1b	1c
2a	2b	2c
3a	3b	3c
4a	4b	4c
<b>Not tea-related</b>		
5a	5b	5c
6a	6b	6c
7a	7b	7c
8a	8b	8c

## G: Social indicators

1 Can you indicate to what extend you are satisfied with the following issues.

*(Enumerator: mention each question: start with “how satisfied are you with the relation with .....” see options below, then tick the relevant box after the farmer answers)*




How satisfied are you with:	1: Very satisfied 2: Satisfied 3: Neutral 4: Unsatisfied 5: Very unsatisfied
a) The relation with your neighbours	
b) The relation with your family members	
c) The relation with the tea factory	
d) Knowledge on good tea management practice	
e) Leadership skills	
f) Access to information on agri commodity prices	
g) Access to self-help activities like Merry-go-rounds	
h) Diversification of income/ number of income sources	
i) Your homestead (house, access to water/electricity etc)	
j) Your families health	
k) Possibility to send children to school	
l) Family welfare	
m) Family income	

# H1: The Farmer field school

(for respondents where a household member has participated in FFS)

If respondents did not participate in an FFS, go to question 9

- 1 Rate the various aspects of the FFS according to your expectations and usefulness. How satisfied were you with the following aspects of the FFS? (*Enumerator: put a tick in the square that corresponds with the given answer*)

Aspect: how satisfied are you with...?	 Very satisfied	 Satisfied	 Neutral	 unsatisfied	 Very unsatisfied	Not applicable
Curriculum development						
Role of facilitators						
Group organization (officials, sub group)						
Frequency of meetings						
Time necessary						
Special topic sessions						
FFS commercial activities						
Group dynamics						

- 2 Did you or your household experience any positive or negative changes because of participating in the Farmer Field School?
- a) Yes → please go to question 4
- b) No → please go to question 3
- 3 If you have not experienced such positive or negative changes because of participating in the Farmer Field School, why not?

.....

.....

- 4 What changes have you or your household experienced because of participating in the Farmer Field School? (*Enumerator: changes can be positive but also negative*)

.....

.....

.....

.....

- 5 What would you like to see changed in the organization of the Farmer Field Schools to improve its functioning in the future? (*Enumerator: write down maximum 3 changes*)

.....

.....

.....

.....

- 6 Did you graduate from your FFS?
- 0 No --> **please go to the text below question 8b**
- 1 Yes
- 2 Not yet --> **please go to the text below question 8b**
- 7 When did you graduate?
- 0 2013
- 1 2014
- 2 2015
- 8a What activities has your FFS group implemented after you have graduated?
- 0 The FFS group has not undertaken any activities since graduation --> **please go to question 8b**

Activity	How often did the activity take place since graduation?
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

- 8b If the FFS group has not undertaken any activities since graduation, why not?

.....

.....

**That was the last question in this questionnaire. Thank you very much for your time and effort to help us understand more about tea production. Is there anything else you would like to tell us or ask us?**

Do you have any comments or questions?

.....

.....

.....

.....

- 9 Could we contact you with any follow up questions by phone when needed?
- 0 No
- 1 Yes ..... (telephone number)

**Enumerator: please read through questionnaire to make sure no questions were left unanswered before leaving your farmer! (NO blanks are allowed.) Thank you!**

---

## Appendix 7      The questionnaire: Kinoro, Litein, Ndima, Nyankoba factories

### Introduction to respondent

*My name is \_\_\_\_\_. I am here on behalf of ETC-East Africa and Wageningen University in Holland. We are carrying out research on the livelihoods of tea farmers. This is a follow up interview after we spoke to you or one of your family members in 2014. Your selection for this survey was done at random. If you agree to participate, the survey will take approximately one hour. We hope that the research will benefit the livelihoods of tea producers in Kenya, and that it will improve the future work of initiatives undertaken by KTDA. The researchers will keep your responses confidential. Your full name will never be used anywhere, to ensure confidentiality.*

*You are not obliged to answer questions if you do not want to and you are free to stop the interview at all times. You will not receive any direct benefit if you join this study; your participation is voluntary. But we hope that the research outcomes will be generally benefit tea producers from KTDA. Do you have any questions for me? You may ask questions about this study at any time.*

May I start the interview?      1=Yes      2=No

**Instructions for enumerators 1:** all questions need to be answered. If a respondent does not know the answer, write down -999. If a respondent does not want to answer, write -888. If the question does not apply to the respondent, write NA. For the questions on inputs, use a 0 when a farmer did not buy or use a certain input.

**Instructions for enumerators 2:** if we ask a question about “last year” or “the past 12 months” this means the year from January 2015 - December 2015.

---

## KTDA Sustainable Agriculture Project

### A: Household identification + FFS

A Date of interview (dd/mm/yyyy):..... Start time: ..... End time:.....

B Name of enumerator.....

C Name of Factory: .....

1 Factory grower number (2 letters for the factory, 3 numbers for buying centre, 4 numbers for grower number)

--	--	--	--	--	--	--	--	--	--

2 Name of the respondent (**Enumerator:** interview the person who attended FFS training or the person in charge of tea production):

.....

3a What is the gender of the respondent? (Circle correct number)

0 Female

1 Male

3b What is your year of birth?

.....

3c How many years of education have you followed? (number of years, 'I do not know' = -999)

.....

4 Is the respondent the household head? (Circle correct number)

0 No

1 Yes

5 How many people are part of your household? .....

6 Did you sell tea in the July 2014/ June 2015 financial year?

0 No

1 Yes

6b Did you sell tea between July 2015 and December 2015?

0 No

1 Yes

**If the answers to both questions 6 and 6b are NO, then stop the interview and go to another farmer on your list**

## C: Tea production

We would like to know more about your tea production.

1a How many times was your tea rejected by the buying centre the last 12 months?

- 0 Never → **please skip question 1c**
- 1 Less than 3 times
- 2 More than 3 times
- 3 I do not know

1b NA

1c How many kilograms of your tea was rejected by the buying centre in the last 12 months?

.....

We would also would like to receive more information on green leaf produced last year.

Product	What is the area in acre on which you grow tea?	What is the total number of tea bushes owned?	What is the total amount of green leaf you produced in the last 12 months in kilograms?
Tea/ Green leaf	1e.....	1f.....	1g.....

### 2. Labour for tea (tea production within your household, not work for someone else)

**Enumerator: Please fill out -999 when the farmer does not know.**

1) How much time is spent on tea production? This can be **both family and hired labour**. We ask these questions for plucking weeding and pruning. The unit is different per activity. Example: for weeding we ask the days per year spent on weeding.

2) The cost of hired labour are in different units. Tea plucking is cost per kg of green leaves, while for other activities the costs per day or per bush should be stated.

If the labour is family labour the costs are zero.



Activity	Quantity (0 when farmer/labourer did not spend time on activity)	Unit of measurement	Cost (Family labour cost = 0)	Per unit:
C2 Plucking	1a .....	Days last year	1b.....	Ksh/Kg green tea leaves
C2 Weeding	2a.....	Days last year	2b.....	Per day
C2 Pruning	3a.....	Number of bushes last year	3b.....	Ksh/ bush
C2 Applying fertilizer	4a.....	Number of bags applied last year	4b.....	Ksh/bag applied

C3 How much time did you and your labourers spent on **plucking** tea in the **year 2013**?

Activity	Days spent on plucking by farmer or family members (NA = not applicable)	Days spent on plucking by hired labourers (NA = not applicable)	Unit of measurement	Price hired labour in Ksh per kilogram of green leaf plucked.	Per unit:
C3 Plucking	1a1.....	1a2.....	Days last year	1b.....	Ksh/Kg green tea leaves

#### Inputs used for tea production in the last 12 months (questions 4 until 9)

- 1) Please state the inputs used for your total tea area in the last 12 months. If the respondent has difficulties answering this question ask him/her the quantity of these inputs they might have bought and if they finished all these inputs.
- 2) As different people might use different measures this question allows for different units in question 5 and 6: for example quantity 1, unit kg or quantity 0.5, unit litre.
- 3) Write down the cost for one unit
- 4) Give respondent time to think about any other inputs used for tea

Enumerator: Please fill out -999 when the farmer does not know. And 0 when the farmer did not buy any fertilizer/chemicals/tea plants.

Input	Quantity used in last 12 months 0, 1, 2, 3, ½, ¼, ⅓ etc.	Unit:	Cost per unit input (may be 0)	Number of bushes receiving input
4. Fertilizer (chemical) List common/ trade names incl. composition (N,P,K):				
1a. ....	1b. ....	Bag	1d. ....	1e. ....
2a. ....	2b. ....	Bag	2d. ....	2e. ....
3a. ....	3b. ....	Bag	3d. ....	3e. ....
4a. ....	4b. ....	Bag	4d. ....	4e. ....
5. Organic fertilisers, compost, manure List types, if any:	Quantity in last 12 months 0, 1, 2, 3, ½, ¼, ⅓ etc.	Unit	Cost per unit input	Number of bushes receiving input
1a. ....	1b. ....	1c. ....	1d. ....	1e. ....
2a. ....	2b. ....	2c. ....	2d. ....	2e. ....
3a. ....	3b. ....	3c. ....	3d. ....	3e. ....
4a. ....	4b. ....	4c. ....	4d. ....	4e. ....
6. Other chemicals (pesticides/ herbicides/ insecticides), if any: <b>List common/ trade names:</b>	Quantity in last 12 months 0, 1, 2, 3, ½, ¼, ⅓ etc.	Unit:	Cost per unit input	Number of bushes receiving input
1a. ....	1b. ....	1c. ....	1d. ....	1e. ....
2a. ....	2b. ....	2c. ....	2d. ....	2e. ....
3a. ....	3b. ....	3c. ....	3d. ....	3e. ....
4a. ....	4b. ....	4c. ....	4d. ....	4e. ....
7. New tea plants, if any	7b. ....	Number in last year:	7d. ....	
8. Other input used: 8a. ....	8b. ....	8c. ....	8d. ....	8e. ....
9. Other input used: 9a. ....	9b. ....	9c. ....	9d. ....	9e. ....

## D: Other sources of income in the last 12 months

- 1 Can you give an approximation of the percentage of income from tea production in total household income, in the last 12 months?
  - 0 100% → **please continue with question 4**
  - 1 Between 80 and 100%
  - 2 Between 60 and 79%
  - 3 Between 40 and 59%
  - 4 Between 20 and 39%
  - 5 Less than 20%
- 2 Can you state your families' sources of income, starting with the most important income generation activity (excluding tea)? Can you give an approximation of the yearly income and costs from the activities?

**Enumerators:** you can use the bottom of the sheet to take notes before filling the table.

Help respondents with possible sources of income: vegetables, fruit, grain, dairy, calves, pigs, rabbit, chicken. Remittances, retirement, business, employment, teaching, and more.

**Enumerators:** write down -999 when the farmer does not know. And -888 when the farmer does not want to answer! **(Every row must have an answer in column 1)**

D2	Income generating activities from most to least important income generating activity		Yearly gross income from this activity (last 12 months)	Yearly costs from this activity (last 12 months)
	Category	I	ii	iii
		0 = No 1 = Yes		
D2.1.	a. Plant production (vegetable, fruit, grain etc.)	A	c	d
D2.2.	a. Livestock (dairy, cows, chicken etc.)	A	c	d
D2.3.	a. Business (trade, shop etc.)	A	c	d
D2.4.	a. Employment	A	c	d
D2.5.	a. Services (teaching, government etc.)	A	c	d
D2.6.	a. Remittances	A	c	d
D2.7.	a. Retirement	A	c	d
D2.8.	a. Other....	A	c	d
D2.9.	a. Other.....	A	c	d

D2	Income generating activities <i>from most to least important income generating activity</i>		Yearly gross income from this activity (last 12 months)	Yearly costs from this activity (last 12 months)
	Category	I	ii	iii
		0 = No 1 = Yes		
D2.10.	a. Other....	A	c	d

3 Can you indicate the monthly income earned from all your activities except tea production over the last 12 months? (**Read answer options and ask farmer to select one**)

7. Less than 2000 Ksh per month
8. Between 2000 and 5 000 ksh per month
9. Between 5 000 and 10 000 ksh per month
10. Between 10 000 and 15 000 ksh per month
11. Between 15 000 and 20 000 ksh per month
12. More than 20 000 ksh per month

# H1: The Farmer field school

(for respondents where a household member has participated in FFS)

If respondents did not participate in an FFS, go to question 9

1-5 NA

6 We understand that you participated in a Farmer Field School. Did you graduate from your FFS?

0 No --> please go to the text below question 8b

1 Yes

2 Not yet --> please go to the text below question 8b

7 In which year did you graduate?

.....

8a What activities has your FFS group implemented after you have graduated?

0 The FFS group has not undertaken any activities since graduation --> please go to question 8aa

Activity <i>E.g.: exchange visit, meeting in which KTDA gave us information, credit provision</i>	How often did the activity take place since graduation? <i>(this can also be continuous!)</i>
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

8aa Did your Farmer Field School group become a formal registered organisation?

0 No

1 Yes

2 Yes, type of organisation: .....(please specify)

3 I do not know

8b If the FFS group has not undertaken any activities since graduation, why not?

.....

.....

That was the last question in this questionnaire. Thank you very much for your time and effort to help us understand more about tea production. Is there anything else you would like to tell us or ask us?

Do you have any comments or questions?

.....

.....

.....

.....

- 
- 9        Could we contact you with any follow up questions by phone when needed?
- 0        No
- 1        Yes ..... (telephone number)

**Enumerator: please read through questionnaire to make sure no questions were left unanswered before leaving your farmer! (NO blanks are allowed.) Thank you!**

---

## Appendix 8 Interview guides of focus group discussions and staff interviews

### *Appendix 8.1: Interview guide of focus group discussions with FFS farmers*

<b>1</b>	<b>Identification (to be filled out by enumerator)</b>
1.1	Name of enumerator:
1.2	Name of facilitator:
1.3	Name of village:
1.4	Name of the factory:
1.5	Name of the Buying Centre/LCC:
1.6	Participation in FFS (yes/no):
1.7	Number of focus group participants:
1.8	Number of men in the focus group:
1.9	Number of women in the focus group:
1.10	Number of youth in the focus group (18-25):
Remarks, if any	

<b>2.</b>	<b>Professionalisation of farmers</b>
2.1	What are the most important things you learned from your participation in the FFS during the past 2 years? Rank the things learnt (1 = most important, 10 = least important)
2.2	Are there any differences in the way you farm now and the way in which you farmed before joining the FFS? If so, please explain the difference, in specifics. What made you change the way you farm?
2.3	Do you exchange information you learned from the FFS with farmers that did not participate in the FFS? If so, why? How often? Which type of information? And did those farmers implement what they learnt from you? Please give examples.
<b>3.</b>	<b>Yield &amp; quality improvements</b>
3.1	Do you see any changes in how many kilograms of green leaves you harvest as compared to before joining the FFS? If so, can you describe this change? Please also indicate why this change occurred, if it did.
3.2	Do you see any changes in the quality of the green leaves you harvest as compared to before joining the FFS? If so, can you describe these changes? Please also indicate why this change occurred, if it did.
<b>4.</b>	<b>Diversification</b>
4.1	Do you use more, less or the same amount of land as compared to before joining the FFS? Can you describe the changes, if any? And why the change occurred?
4.2	Do you have more, less or the same number of income earning activities as compared to before joining the FFS? Can you describe the changes, if any? And why the change occurred?
4.3	Over the past 2 years, were there any differences in the diet of your family? Which ones? And why did it change? <i>Note to facilitator: it may be that people now eat more food, but also a greater diversity of food types (e.g. many types of vegetables, meat, dairy instead of mainly maize and some types of vegetables). Please probe and try to get specific answers on the change, if any.</i>
<b>5.</b>	<b>Health &amp; safety</b>
5.1	Do you see any changes in your health as compared to two years ago? If so, which changes? And why did the change occur?
5.2	Is there any difference in how you treat pests in tea now and two years ago (e.g. spraying/chemicals)? If so, which are the differences? And why did it change? What do you think about the introduction of central spraying groups? Have you hired such people to spray? Why (not)? <i>Note to facilitator: central spraying groups have been introduced, please probe to see whether they know about it after first asking whether people handle chemicals different than before they were introduced and why. It could be that they do things differently because of learning from FFS, and/or that they use central spraying groups, or that they do not use them because of the cost.</i>
<b>6</b>	<b>FFS activities</b>
6.1	Is your FFS group still active? If so, what kind of activities are implemented? How often? What would you like the FFS group to do in the future? Do you think that will actually happen? Why (not)?
6.2	What do you recommend KTDA to do in implementing new trainings (in general)? Which type of training has given you the most benefits? Should KTDA do everything the same, or different? Why and how? What do you recommend KTDA to do in implementing new Farmer Field Schools. Should they do everything the same, or different? Why and how?
6.3	Are there any other changes on your farm or in your life that occurred because of FFS participation? If so, what kind of changes, and why did they come about?

Thank you for your participation in this focus group session. Do you have any comments?



---

*Appendix 8.2: Interview guide of focus group discussions with non-FFS farmers*

<b>1</b>	<b>Identification (to be filled out by enumerator)</b>
1.1	Name of enumerator:
1.2	Name of facilitator:
1.3	Name of village:
1.4	Name of the factory:
1.5	Name of the Buying Centre/LCC:
1.6	Participation in FFS (yes/no): --> <b>should be no, but check!</b>
1.7	Number of focus group participants: --> <b>should be 0, but check!</b>
1.8	Number of men in the focus group:
1.9	Number of women in the focus group:
1.10	Number of youth in the focus group (18-25):
Remarks, if any	

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<b>2.</b>	<b>Professionalisation of farmers</b>
2.1	What are the most important things you learned about farming during the past 2 years, if anything was learnt? Rank the things learnt (1 = most important, 10 = least important). From whom did you learn?
2.2	Are there any differences in the way you farm now and the way in which you farmed 2 years ago? If so, please explain the difference, in specifics. What made you change the way you farm?
2.3	Did you learn new things about farming from FFS members? If so, what did you learn? How often did you exchange with FFS members? And did you implement what you learnt? Please give examples if you did.
<b>3.</b>	<b>Yield &amp; quality improvements</b>
3.1	Do you see any changes in how many kilograms of green leaves you harvest as compared to 2 years ago? If so, can you describe this change? Please also indicate why this change occurred, if it did.
3.2	Do you see any changes in the quality of the green leaves you harvest as compared to 2 years ago? If so, can you describe these changes? Please also indicate why this change occurred, if it did.
<b>4.</b>	<b>Diversification</b>
4.1	Do you use more, less or the same amount of land as compared to two years ago? Can you describe the changes, if any? And why the change occurred?
4.2	Do you have more, less or the same number of income earning activities as compared to two years ago? Can you describe the changes, if any? And why the change occurred?
4.3	Over the past 2 years, were there any differences in the diet of your family? Which ones? And why did it change? <i>Note to facilitator: it may be that people now eat more food, but also a greater diversity of food types (e.g. many types of vegetables, meat, dairy instead of mainly maize and some types of vegetables). Please probe and try to get specific answers on the change, if any.</i>
<b>5.</b>	<b>Health &amp; safety?</b>
5.1	Do you see any changes in your health as compared to two years ago? If so, which changes? And why did the change occur?
5.2	Is there any difference in how you treat pests in tea now and two years ago (e.g. spraying/chemicals)? If so, which are the differences? And why did it change? What do you think about the introduction of central spraying groups? Have you hired such people to spray? Why (not)? <i>Note to facilitator: central spraying groups have been introduced, please probe to see whether they know about it after first asking whether people handle chemicals different than before they were introduced and why. It could be that they do things differently because of learning from FFS, and/or that they use central spraying groups, or that they do not use them because of the cost.</i>
<b>6</b>	<b>FFS activities</b>
6.1	Would you like to join a Farmer Field School? Why (not)?
6.2	What do you recommend KTDA to do in implementing new trainings (in general)? Which type of training has given you the most benefits? Should KTDA do everything the same, or different? Why and how? You have probably heard about how Farmer Field Schools are implemented. What do you recommend KTDA to do in implementing new Farmer Field Schools? Should they do everything the same, or different? Why and how?
6.3	Are there any other changes on your farm or in your life that occurred in the last 2 years If so, what kind of changes, and why did they come about?

Thank you for your participation in this focus group session. Do you have any comments or suggestions?

**1 Identification**

---

a) Name of enumerator:

---

b) Date of interview:

---

c) Name of Respondent:

---

d) Function in Company/Organisation:

---

**2 Project involvement**

---

a) Since when are you involved in the FFS projects of KTDA?

---

b) What has been your contribution to the KTDA Embedding Sustainability Program?

---

c) Which persons (name/function/organisation) do you work with within the KTDA Embedding Sustainability Program?

---

**3 Level of Upscaling**

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a) To what extent did you contribute to increasing the number of FFS in the KTDA Embedding Sustainability Program? If so, how?

---

b) What have been the challenges you faced in increasing the number of FFS in the Embedding Sustainability Program?

---

c) What differences do you see in the way FFS are been set up in the Embedding Sustainability Program as compared to before?

---

d) In your perception, what has been the main motivation of farmers to join the Farmer Field Schools?

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**4 Level of embedding & institutionalisation**

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a) In your view, how did farmers respond to the introduction of Farmer Field Schools in the Embedding Sustainability Program?

---

b) In your experience, what happens with FFS groups after their first period of intensive training?

---

c) Since 2013 farmer graduates assist the FFS trainings? What do you think of their contribution?

---

d) How important do you feel that the FFS are for the work KTDA is doing?

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**5 Attribution most significant changes (on key indicators)**

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- a) What, in your view, has been the contribution of the KTDA Embedding Sustainability Program to the farming practices of farmers?  

---
- b) To what extent do you think that Farmer Field Schools contributed to the tea productivity and quality of farmers? And how?  

---
- c) What is your perception of how the KTDA Embedding Sustainability Program has impacted farmer costs and profits?  

---
- d) To what extent do you feel that the KTDA Embedding Sustainability Program has led to income diversification of tea farmers? Why (not)?  

---
- e) To what extent do you feel that the Farmer Field Schools have contributed to the health and safety of tea farmers? Why?  

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**6 Attribution of transformation processes**

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- a) Which persons or organisations have played an essential role in contributing to the upscaling of KTDA's FFS activities? How?  

---
- b) Which persons or organisations have played an essential role in contributing to the embedding and institutionalisation of KTDA's activities? How?  

---
- c) Which persons or organisations have played an essential role in increasing the cost-effectiveness of KTDA's FFS activities? How?  

---
- d) Which persons or organisations have played an essential role in boosting spill-over effects of KTDA's FFS activities? How?  

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**7 Future viability FFS activities**

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- a) What, according to you, is needed to further expand the number of FFS in the future?  

---
  - b) To what extent do you feel that the Farmer Field Schools will remain expanding without external funding?  

---
  - c) After the end of the KTDA Embedding Sustainability Program, what will happen with the cost per farmer for the FFS activities?  

---
  - d) What, in your view, would be the best way forward to ensure that FFS stay active in the future?  

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#### Appendix 8.4: Interview guide of staff interviews with management staff

In this interview we will ask you about your experiences with the Farmer Field School activities of KTDA. The interview will take about 45 minutes and consists of three parts. In the first part I will ask you about your involvement in KTDA's Farmer Field School activities. In the second part I will ask you to share your perception of the impact Farmer Field Schools have had since their introduction by KTDA in 2006. In the third and final part I will ask about your experiences with the Embedding Sustainability Program, that is, the type of Farmer Field School activities carried out since 2013. Any data collected through this interview will be treated confidentially.

### Part I: Your involvement in KTDA's Farmer Field School Activities

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#### 1 Identification

e) Name of enumerator:

f) Date of interview:

g) Name of Respondent:

h) Function in Company/Organisation:

---

#### 2 Project involvement

d) Since when are you involved in the Farmer Field School activities of KTDA

e) What has been your contribution to the Farmer Field School Activities of KTDA

f) Which persons (name/function/organisation) do you work with on the Farmer Field School activities?

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### Part II: Your perception of the contribution of Farmer Field Schools over the past 10 years

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#### 3 Professionalisation of farmers

a) What, in your view, has been the contribution of the Farmer Field Schools to the farming practices of farmers? Can you give any examples?

b) What has been the contribution of the different project partners (KTDA, IDH, Unilever) to the objective of farmer professionalisation?

c) Is there a difference between the professionalisation of farmers of extension-led and farmer-assisted Farmer Field Schools? If so, what difference?

---

#### 4 Tea Productivity

a) What, in your view, has been the contribution of the Farmer Field Schools to the tea productivity of farmers? Can you give any examples?

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b) What has been the contribution of the different project partners (KTDA, IDH, Unilever) to the objective of higher tea productivity?

---

c) Is there a difference between the tea productivity of extension-led and farmer-assisted Farmer Field Schools? If so, what difference?

---

**5 Tea quality**

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d) What, in your view, has been the contribution of the Farmer Field Schools to tea quality? Can you give any examples?

---

e) What has been the contribution of the different project partners (KTDA, IDH, Unilever) to the objective of higher tea quality?

---

f) Is there a difference between the tea quality of farmers of extension-led and farmer-assisted Farmer Field Schools? If so, what difference?

---

**6 Costs and profits**

---

d) What, in your view, has been the contribution of the Farmer Field Schools to the costs and profits of farmers? Can you give any examples?

---

e) What has been the contribution of the different project partners (KTDA, IDH, Unilever) to the costs and profits of farmers?

---

f) Is there a difference between the costs and profits of farmers of extension-led and farmer-assisted Farmer Field Schools? If so, what difference?

---

**7 Income diversification**

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g) What, in your view, has been the contribution of the Farmer Field Schools to income diversification of farmers? Can you give any examples?

---

h) What has been the contribution of the different project partners (KTDA, IDH, Unilever) to the objective of income diversification?

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i) Is there a difference between the level of income diversification of extension-led and farmer-assisted Farmer Field Schools? If so, what difference?

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**8 Health & Safety**

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g) What, in your view, has been the contribution of the Farmer Field Schools to the health and safety of farmers? Can you give any examples?

---

h) What has been the contribution of the different project partners (KTDA, IDH, Unilever) to the objective of improved farmer health and safety?

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i) Is there a difference between the health and safety of farmers of extension-led and farmer-assisted Farmer Field Schools? If so, what difference?

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## Part III: Your experience with the Embedding Sustainability Program since its start in 2013

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### 9 Level of Upscaling

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- e) What is your view on the way in which Farmer Field School activities have expanded since the start of the Embedding Sustainability Program in 2013?  

---
- f) What have been the main challenges in increasing the number of Farmer Field Schools over the past three years?  

---
- g) Did you experience any efficiency gains in organising Farmer Field Schools since the start of the KTDA Embedding Sustainability Program?  

---
- h) In your perception, what has been the main motivation of farmers to join the Farmer Field Schools over the past three years?  

---

### 10 Level of embedding & institutionalisation

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- e) What is your perception of how farmers have responded to the introduction of Farmer Field Schools?  

---
- f) In your experience, what are the challenges facing Farmer Field Schools groups after the end of the initial period of intensive training?  

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- g) What, in your view, has been the contribution of the role of the FFS graduates introduced in the KTDA Embedding Sustainability Program?  

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- h) To what extent do you feel that the Farmer Field Schools have become part and parcel of the way in which KTDA operates?  

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### 11 Future viability FFS activities

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- a) Do you see any differences between how Farmer Field Schools were organised previously and how they are organised now?  

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  - b) What do you expect in terms of further upscaling of the FFS activities after the end of the KTDA Embedding Sustainability Program?  

---
  - c) In your view, what financial resources will sustain the FFS activities of KTDA in the future?  

---
  - d) What do you expect to happen to the cost-efficiency of FFS activities after the end of the KTDA Embedding Sustainability Program?  

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  - e) How should Farmer Field Schools be organised differently than they are currently set up?  

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  - f) What, in your view, would be the best way forward to ensure the continuation of the FFS activities after the KTDA Embedding Sustainability Program?  

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