

Tools for understanding the agricultural production systems and their socio-economic context in target regions for the introduction of new banana cultivars

Baseline intra-household survey

Developed for the project "Improvement of banana for smallholder farmers in the Great Lakes region of Africa"

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Ethics

This research protocol, IRB Proposal No. 2014-089, was approved by the Human Subjects Committee of Clark University on 19/06/2015.

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BACKGROUND

Within the framework of the IITA-led project "Improvement of banana for smallholder farmers in the Great Lakes region of Africa" (also known as the "Breeding Better Bananas" project, http://breedingbetterbananas.org), Bioversity International and partners conducted baseline research in the target regions of Luweero and Mbarara in Uganda, and Bukoba, Meru, Moshi and Rungwe in Tanzania during 2015-2016, prior to conducting on-station and on-farm evaluations of new NARITA banana cultivars (http://www.promusa.org/NARITA+hybrids).

Five tools were used to characterise the banana and agricultural production systems, and the socioeconomic context of these systems, in the target regions. The research used a mixed-methods, participatory and sex-disaggregated approach to ensure that the knowledge, experiences and opinions of as many people as possible were obtained.

The understanding gained from the baseline research will:

- be fed into the banana breeding pipeline at multiple entry points to assist with breeding banana cultivars that better meet the requirements of the users. Some of these entry points are: setting of breeding targets; selection of parent material; evaluation in regional on-station and on-farm trials; participatory varietal selection taking into account the criteria (or 'trait preferences') that are important to multiple and different users; facilitating access to and adoption of the new cultivars by farmers and other end-users through scaling up the supply of clean planting materials and ensuring equitable distribution of these through the 'seed' systems;
- inform the ongoing adaptive management of the project activities to ensure fair participation and decision-making by people in the affected communities;
- provide the baseline to evaluate, in conjunction with the endline, the impact of adoption of the new cultivars on households, and individuals within, in the target regions.

The five tools developed and/or adapted from existing tools for the baseline research were:

1. Baseline intra-household survey

English version; Kiswahili version; XForms version for mobile data collection

2. Trait preferences for banana products and varieties focus group discussion

English version; Kiswahili version

3. Seasonal calendar focus group discussion

English version; Kiswahili version

4. Weekly and daily calendar focus group discussion

English version; Kiswahili version

5. Community wealth ranking focus group discussion

English version; Kiswahili version

BASELINE INTRA-HOUSEHOLD SURVEY

SECTION A: SITE INFORMATION AND INFO	RMED CONSENT
Include in both complete & short versions, responde	ents answer separately if two are present
A1. Date of the interview///	
A2. Name of enumerator conducting the interview	
A3. Name of enumerator you are working with (if α	pplicable)
	A5. Region (UG only)
	A7. District (<i>TZ</i>)/Sub-county (<i>UG</i>)
A8. Ward (TZ)/Parish (UG)	A9. Village
A10. Which respondents are present? (Select all the	at apply)
□ man	
□ woman	
A11. Which respondent are you asking for consent?	? (Select all that apply)
□ man	
□ woman	
Read to the specific respondent that you are asking	for their consent to be interviewed:
"Good day, our names are	and, and we work on behalf of Bioversity
• •	(banana) hybrids, produced by NARO and IITA, will be tested for their
	zania. If any of the varieties perform well they will be recommended for
official release made available to farmers.	
	ould like to ask farmers in the different regions about their banana production
	ur households and communities—and that is why we are in your village at the
moment to conduct household surveys and a numbe	
	participate in this household survey, which we think, will take between 60-90
	roluntary and you may choose to not start the survey, stop the survey at any
	ill be perfectly fine. There are no right or wrong answers to the questions and
	rated as confidential, and analysed and reported upon without any reference
and will help scientists to develop better banana var	nformation that we are collecting will help us to implement project activities ieties that are preferred by farmers."
442 D	
A12. Do you consent to being interviewed?	
□ yes	
□ no	
If the respondent does not consent to be interviewe	ed, thank them for their time and end the interview immediately.

SECTION B: RESPONDENT(S) REGISTER

 ${\it Include\ in\ both\ complete\ \&\ short\ versions,\ respondents\ answer\ together\ if\ two\ are\ present}$

B1. Household u	inique ID (This is one	e of the codes that	have been supplie	d to you at the be	ginning of the day,	e.g. 001, 002, 003,
004. Make sure y	you use each code o	nly once for one ho	usehold.)			
B2. Lati	ling of the location of tude (e.g. N 0°24′39 gitude (e.g. E 32°56	9″)				
	find you again if wo	•	• •		· ·	· ·
B5. Name of ma	le respondent					
B6. Age of male respondent? (Years)	B7. Marital status of male respondent? (See code #1)	B8. Relationship of male respondent to head of household? (See code #2)	B9. Main occupation of male respondent? (See code #3)	B10. Level of education of male respondent? (See code #4)	B11. Can male respondent read or write? (See code #5, select all that apply)	B12. How many years has male respondent lived in the village?
B14. Age of	male respondent _	B16.	B17. Main	B18. Level of	B19. Can of	B20. How
famala	atatus of	Dalationship of	accumpation of	advication of	famala	ma a m 1 / 1 / 2 a m a

B14. Age of	B15. Marital	B16.	B17. Main	B18. Level of	B19. Can of	B20. How
female	status of	Relationship of	occupation of	education of	female	many years
respondent?	female	female	female	female	respondent	has female
(Years)	respondent?	respondent to	respondent?	respondent?	read or write?	respondent
	(See code #1)	head of	(See code #3)	(See code #4)	(See code #5,	lived in the
		household?			select all that	village?
		(See code #2)			apply)	

SECTION C: HOUSEHOLD REGISTER

Include in complete version only, respondents answer together if two are present

Read to the respondent(s):

"The household roster should include all people that "live together and eat out of the same pot". Include the following people: someone temporarily gone for less than six months, students studying away from home, workers who have stayed in the house for at least six months, and someone that lives away from home but is VERY involved in household management decisions. Family members that live somewhere else and only come to visit and bring or send money are not household members."

C1. Including the respondent(s), how many people currently reside in the household?	
C2. Not including the respondent(s), how many people currently reside in the household?	
cz. Not including the respondent(s), now many people currently reside in the nodseriold:	-

Ask the following questions about each member of the household but do not include the respondents as they have already provided their details! List the household members in order of the children of the female respondent, the next wife and her children, other adult family members and their children, and finally other children without parents in the household.

	C3. Sex of household member? (M for male, F for female)	C4. Age of household member? (Years)	C5. Marital status of household member? (See code #1)	C6. Relationship of household member to head of household? (See code #2)	C7. Level of education of household member? (See code #4)	C8. Can household member read or write? (See code #5, select all that apply)
1						
2						
3						
4						
5						
6						
7						
8						
9						
11						
12						

SECTION D: PROGRESS OUT OF POVERTY INDEX (PPI) INDICATORS

Include in complete version only, respondents answer together if two are present

The 2009 Uganda Progress out of Poverty Index®

Material reproduced from www.progressoutofpoverty.org/country/uganda with the permission of Innovations for Poverty Action (IPA)

To be used when in Uganda. Circle the appropriate response.

D1_UG. How many members does the household have?

A = six or more

B = four or five

C = three

D = two

E= one

D2_UG. Do all children ages 6 to 18 currently attend school (public, private, NGO/religious, or boarding)?

A = not all attend school

B = all attend government schools

C = no children ages 6 to 18

D = all attend, and one or more attend a private,

NGO/religious, or boarding school

D3_UG. What is the highest grade that the female head/spouse completed (consider only female headed household)?

A = no female head/spouse

B = P.5 or less, or none

C = P.6

D = P.7 to S.6

E = higher than S.6

D4_UG. What is the major construction material of the roof?

A = thatch, straw, or other

B = iron sheets, or tiles

D5_UG. What is the major construction material of the external wall?

A = un-burnt bricks, mud and poles, thatch/straw, timber, stone, burnt bricks with mud, other

B = burnt bricks with cement, or cement blocks

D6_UG. What is the *main* source of lighting in your dwelling?

A = firewood

B = tadooba, or other

C = paraffin lantern, or electricity (grid, generator,

solar)

D7_UG. What is the type of toilet that is mainly used in your household?

A = bush (none)

B = covered pit latrine (private or shared), VIP latrine (private or shared), uncovered pit latrine, flush toilet (private or shared), or other

D8_UG. Does any member of your household own electronic equipment (e.g., TV, radio, cassette, etc.) at present?

A = no

B = yes

D9_UG. Does every member of the household have at least two sets of clothes? (Clothes in good or average condition only.)

A = no

B = yes

D10_UG. Does every member of the household have at least one pair of shoes? (Shoes in good condition only. Slippers, 'tire' shoes [lugabire], and gumboots are not considered as shoes.)

A = no

B = yes

The 2007 Tanzania Progress out of Poverty Index®

Material reproduced from www.progressoutofpoverty.org/country/tanzania with the permission of Innovations for Poverty Action (IPA)

To be used when in Tanzania. Circle the appropriate response.

D1_TZ. How many household members are 17- years-old or younger?

A = four or more

B = three

C = two

D = one

E = none

D2_TZ. Do all children ages 6 to 17 attend school?

A = no

B = yes, or no children ages 6 to 17

D3_TZ. Can the female head/spouse read and write?

A = no

B = yes, but not in Kiswahili nor English

C = no female head/spouse

D = yes, only in Kiswahili

E = yes, in English (regardless of others)

D4_TZ. What is the main building material of the floor of the main dwelling?

A = earth

B = concrete, cement, tiles, timber, or other

D5_TZ. What is the main building material of the roof of the main dwelling?

A = mud and grass

B = grass, leaves, bamboo

C = concrete, cement, metal sheets (GCI), asbestos

sheets, tiles, or other

D6_TZ. How many bicycles, mopeds, motorcycles, tractors, or motor vehicles does your household own?

A = none

B = one

C = two or more

D7_TZ. Does your household own any radios or radio cassettes?

A = no

B = yes

D8_TZ. Does your household own any lanterns?

A = no

B = yes

D9_TZ. Does your household own any irons (charcoal or electric)?

A = no

B = yes

D10_TZ. How many tables does your household own?

A = none

B = one

C = two

D = three or more

SECTION E: HOUSEHOLD SOURCES OF INCOME

Include in complete version only, respondents answer together if two are present

	E1. Select all the sources of household income (cash and	E2. Rank all the sources of household income. (From the
	in-kind) in the past 12 months. (See code #6, select all	first most important to the least important)
	that apply)	
1		
2		
3		
4		
5		
6		
7		
8		
E3. Ho	w would you rate the importance of banana to the <i>househo</i>	Id income? (Emphasize that this section is asking about the
income	of the whole household, not only of the respondent)	
	very important	
	somewhat important	
	neither important nor unimportant	
	somewhat unimportant	
	very unimportant	
	nat percentage of the household income is made from banan	nas? (Emphasize that this section is asking about the income
ot the v	whole household, not only of the respondent)	

SECTION F: HOUSEHOLD LIVESTOCK

Include in complete version only, respondents answer together if two are present

F1. D0	es the nousehold own any livestock?	
	yes	
	no	
	don't know	
	other, please specify	
F2. Ple	ase specify 'other'	
If yes,	please answer the following questions:	
	F3. Which livestock does the household own? (See code	F4. How many of these livestock does the household
	#7, select all that apply)	own?
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

SECTION G: PREPARING FOR RESPONDENT(S) TO BE INTERVIEWED SEPARATELY

 ${\it Include\ in\ both\ complete\ \&\ short\ versions,\ respondents\ answer\ together\ if\ two\ are\ present}$

	G2. Plot name
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
Read	to the respondent(s) before they separate and answer the remaining questions from their own perspective:
becau	we would like to interview the man and the women separately—you will both be asked exactly the same questions but use we understand that different people in the household farm different plots and crops and have different knowledge and iences, we would like to interview the men and women separately.
This v	vill also help us to save time!"
interv	Thich respondent are you now interviewing? (Should be the same respondent that you asked for consent to be viewed) I man

SECTION H: BANANA VARIETIES GROWN

Include in both complete & short versions, respondents answer separately if two are present

Ask the following questions for each banana variety grown by the household.

	H1. Banana variety name	H2. Type of banana? (See code #8)	H3. Local or introduced ? (See codes #9)	H4. Is this variety for home consumption, for sale? (See code #10, select all that apply)	H5. What products are made with this variety? (See code #11, select all that apply)	H6. How happy are you with this variety? (See code #12)	H7. What do you like best about this variety?	H8. What do you like least about this variety?
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

	H1. Banana variety name	H2. Type of banana? (See code #8)	H3. Local or introduced ? (See codes #9)	H4. Is this variety for home consumption, for sale? (See code #10, select all that apply)	H5. What products are made with this variety? (See code #11, select all that apply)	H6. How happy are you with this variety? (See code #12)	H7. What do you like best about this variety?	H8. What do you like least about this variety?
12								
13								
14								
15								
16								
17								
18								
19								
20								

Н9. Do у	ou <i>personally</i> e	arn income from selling any of th	ne banana types? (Select all that app	oly, and emphasize that this section
is asking	about the perso	onal income of only the responder	nt, rather than of the whole househo	ld)
	no income earn	ed		
	cooking banana	1		
	roasting banana	a		
	dessert banana			
	beverage banar	าล		
	don't know			
	other, please sp	pecify		
H10. Ple	ase specify 'oth	er'		
If yes, pl	ease answer the	e following questions:		
Month	S	H11. Which months are the	H12. Which months are the	H13. Which months are the
		peak season for producing	off-peak season for producing	moderate season for producing
		bananas?	bananas (very little	bananas (in between the
			production)?	extremes of the peak and the
			,	off-peak seasons)? (Select all
				the remaining months that
				were not identified as being
				part of the peak nor the off-
				peak season, but ask the
				respondent first if that is
				correct)
January	У			correcty
F a la				
Februa	ry			
March				
April				
Zhiii				
May				

June

July

August

September

October

November

December

If yes, please answer the following questions:

Types of banana	H14. How much income do you earn from selling the banana type(s) in a typical month	H15. How much income do you earn from selling the banana type(s) in a typical month	H16. How much income do you earn from selling the banana type(s) in a typical month
	during the <i>peak</i> banana	during the <i>off-peak</i> banana	during the <i>moderate</i> banana
	production season? (Local	production season? (Local	production season? (Local
	currency)	currency)	currency)
Cooking banana			
Roasting banana			
Dessert banana			
Beverage banana			
Other, if specified in			
H10			

H18. Ple	ease specify 'other'
	other, please specify
	don't know
	macro-propagated plantlets
	tissue-culture plantlets
ш	SUCKETS

For each type of planting material used, where do you get it from? (Select all that apply)

Source of planting	H19. Suckers	H20. Tissue-culture	H21. Macro-	H22. Other, as
material		plantlets	propagated plantlets	specified
Own household				
Community				
Agricultural extension				
service				
NGO				
Research station				
Private business				
Don't know				
Other, please specify				

H23. Do	you experience any of these constraints to banana production? (Select all that apply)
	sun
	drought
	too much water
	wind
	weevil
	weevil bugs on the leaves
	Bacterial wilt (BXW)
	Fusarium wilt (Panama)
	Sigatoka
	Bunchy top (BBTD)
	nematodes
	pests and diseases (general)
	poor soil fertility
	none
	don't know
	other, please specify
H24. Ple	ase specify 'other'

SECTION I: INDIVIDUAL PLOTS OF LAND

Include in both complete & short versions, respondents answer separately if two are present

Ask these questions for each plot that the household has access to.

Plot number (Take answer to question G1)	1	2	3	4
11. Plot name? (Take answer to question G2)				
I2. Plot area (acres)?				
13. Distance of plot from the house – in km or miles? (<i>Circle measurement used</i>)				
14. Distance of plot from the house – in minutes?				
I5. Is this plot owned by someone in the household? (See code #13)				
16. How was this plot acquired? (See code #14)				
17. Who in the household acquired this plot? (See code #2, select all that apply)				
18. Who manages this plot? (See code #2, select all that apply)				
19. Who provides labour on this plot? (See code #2, select all that apply)				
I10. Who decides on which crops to grow on this plot? (See code #2, select all that apply)				
I11. Which crops are grown on this plot? (See code #15, select all that apply)				

Plot number (Take answer to question G1)	1	2	3	4
I12. Are any crops on this plot for home consumption? (See code #13)				
I13. If yes, which crops? (See code #15, select all that apply)				
I14. Are any crops on this plot for selling? (See codes #13)				
I15. If yes, which crops? (See code #15, select all that apply)				
I16. Do you have decision-making powers to sell any crops on this plot?				
(See code #13)				
I17. If yes, which crops? (See code #15, select all that apply)				
I18. Do you sell any crops from this plot yourself (the actual exchange				
with money)? (See code #13)				
I19. If yes, which crops? (See code #15, select all that apply)				
I20. Do you control the income from the sale of any crops on this plot?				
(See code #13)				
I21. If yes, which crops? (See code #15, select all that apply)				
121. If yes, which crops: (See code #15, select un that apply)				

If bananas are grown, collect the following information for each plot they are grown on. I22. Plot name_ Banana variety number: 1 2 3 I23. Variety name? 124. Extent of area under cultivation, answer one of the following acres - % of plot number of mats **122. Plot name** (fill in as required) (fill in as required) Banana variety number: (fill in as required) (fill in as required) (fill in as required) I23. Variety name? 124. Extent of area under cultivation, answer one of the following acres % of plot number of mats I22. Plot name (fill in as required) Banana variety number: I23. Variety name? 124. Extent of area under cultivation, answer one of the following acres % of plot number of mats

SECTION J: BANANA VARIETIES NOT GROWN ANYMORE

Include in both complete & short versions, respondents answer separately if two are present

J1. Are there banana varieties that you used to grow but do not grow anymore?							
	yes						
	no						
	don't know						

If yes, please answer the following questions.

	J2. Banana variety Name	J3. Type of banana? (See code #8)	J4. Local or introduced? (See code #9)	J5. How many years did you grow this variety for?	J6. Why is this variety not grown anymore?	J7. How do you feel about the loss of this variety from your farm? (See code #12)
1						
2						
3						
4						
5						
6						
7						
8						

SECTION K: FOOD SECURITY

Include in both complete & short versions, respondents answer separately if two are present

K1. Were	there any mo	nths, in th	he past	12 mon	ths, in w	hich yo	ou did not	have enough t	ood to mee	et your family	s needs?	
	yes											
	no											
	don't know											
K2. If yes	, in which moi	nths did th	ne famil	y not ha	ve eno	ugh foo	d to meet	their needs? (Select all th	at apply)		
January	February	March	April	May	June	July	August	September	October	November	December	
	-	I.				I	· ·	•	•	•	· I	
K3. If yes	, what are the	main rea	sons for	there r	ot bein	g enou	gh food? (Select all that o	apply)			
	floods											
	drought											
	irregular rains											
	crop seasonali	ty										
	crop pests and	-										
	livestock pests	and disea	ises									
	high food price	es										
	high costs of a		linputs									
	lost employme	nt	-									
	allocation of m		to cash o	crops								
	death of house			·								
	theft of produ	ctive asset	ts									
	erosion/landsl											
	don't know											
	other, please s	pecify										
	,	,										
K4. Pleas	e specify 'othe	er'										
Househ	old member	K5. If	ves. ho	w manv	meals a	dav di	id these	K6. How i	many meals	a day did the	se	
			-	-		-	e was NO		household members eat when there was			
			gh food							(Answer this q		
		35						_		swer to questi		
Househ	old head							55,5501			,	
Spouse												
2,5000												
Other a	dult males											

Other adult females

Boys

Girls

SECTION L: IMPORTANCE OF THE DIFFERENT CROPS TO FOOD AND INCOME SECURITY

Include in both complete & short versions, respondents answer separately if two are present

Importance of crops for household food consumption:

	L1. Across the year, which crops are the most important	L2. Rank the crops that are most important for your
	for your household food consumption? (See code #15,	household food consumption. (From the first most
	select all that apply)	important to the least important)
1		
2		
3		
4		
5		
6		
7		
8		

Importance of crops for household income:

	L3. Across the year, which crops are the most important	L4. Rank the crops that are most important for your
	for your household income? (See code #15, select all that	household income. (From the first most important to the
	apply)	least important)
1		
2		
3		
4		
5		
6		
7		
8		

SECTION M: PERSONAL SOURCES OF INCOME

Include in both complete & short versions, respondents answer separately if two are present

	M1. Select all your sources of personal income?	M2. Rank all the sources of your personal income. (From
	(Select all that apply, and emphasize that this section is	the first most important to the least important.)
	asking about the personal income of only the respondent,	
	rather than of the whole household)	
1		
2		
3		
3		
4		
5		
6		
7		
,		
8		
	ow would you rate the importance of banana to your <i>person</i>	
person	al income of only the respondent, not of the whole household	")
	very important	
	somewhat important	
	neither important nor unimportant	
	somewhat unimportant	
	very unimportant	
N// \A/	hat percentage of your <i>personal</i> income is made from bana	nas? (Emphasize that this section is asking about the
	al income of only the respondent, not of the whole household	
pc13011	at meanie of only the respondent, not of the whole household	/

SECTION N: AGRICULTURAL EXTENSION

Include in both complete & short versions, respondents answer separately if two are present

N1. Ha	ve you participated in any agricultural extension activities in the past three years?
N2. If v	yes, please describe
	(as, p. case 4 cost. in C
NI2 If v	ves, where have you participated in agricultural extension activities?
-	research station
_	-
_	
_	
N4. Ple	ease specify 'other'
	here were an opportunity to learn about new improved banana hybrids, would you be interested in participating?
	yes
	don't know
N6. Ple	ease provide a reason for the above answer
	here were an opportunity to test new banana hybrids in one of your plots, would you be interested in participating?
Ц	don't know
N8. Ple	ease provide a reason for the above answer
N9. If y	yes, in which plot(s) do you think the new banana hybrids would be tested in?
	lease provide a reason(s) for the above answer
	Ve are at the end of the survey but before we finish, do you have any questions or comments for the organisers of this
hrolect	t?

Read to the respondent: "Thank you so much for taking the time to answer these questions with us today, we appreciate it!"

SECTION O: ENUMERATOR IMPRESSIONS

Include in both complete & short versions

Enumerator – please answer the following questions privately, immediately after the interview:

 with ease with some persuasion with difficulty it was impossible O2. Overall, how did the respondent give answers to your questions? willingly reluctantly with persuasion it was hard to get answers O3. How often do you think the respondent was telling the truth? all of the time most of the time sometimes rarely O4. Please write any other notes, comments, observations, etc.	O1. In your opinion, how did you establish rapport with this respondent?	
 with difficulty it was impossible O2. Overall, how did the respondent give answers to your questions? willingly reluctantly with persuasion it was hard to get answers O3. How often do you think the respondent was telling the truth? all of the time most of the time sometimes rarely 		with ease
 □ it was impossible O2. Overall, how did the respondent give answers to your questions? □ willingly □ reluctantly □ with persuasion □ it was hard to get answers O3. How often do you think the respondent was telling the truth? □ all of the time □ most of the time □ sometimes □ rarely 		with some persuasion
O2. Overall, how did the respondent give answers to your questions? willingly reluctantly with persuasion it was hard to get answers O3. How often do you think the respondent was telling the truth? all of the time most of the time sometimes rarely		with difficulty
 □ willingly □ reluctantly □ with persuasion □ it was hard to get answers O3. How often do you think the respondent was telling the truth? □ all of the time □ most of the time □ sometimes □ rarely 		it was impossible
 □ willingly □ reluctantly □ with persuasion □ it was hard to get answers O3. How often do you think the respondent was telling the truth? □ all of the time □ most of the time □ sometimes □ rarely 	O2. Overall, how did the respondent give answers to your questions?	
 □ reluctantly □ with persuasion □ it was hard to get answers O3. How often do you think the respondent was telling the truth? □ all of the time □ most of the time □ sometimes □ rarely 		
☐ it was hard to get answers O3. How often do you think the respondent was telling the truth? ☐ all of the time ☐ most of the time ☐ sometimes ☐ rarely		
O3. How often do you think the respondent was telling the truth? all of the time most of the time sometimes rarely		with persuasion
□ all of the time □ most of the time □ sometimes □ rarely		it was hard to get answers
 □ most of the time □ sometimes □ rarely 	O3. How often do you think the respondent was telling the truth?	
□ sometimes □ rarely		all of the time
□ rarely		most of the time
		sometimes
O4. Please write any other notes, comments, observations, etc.		rarely
	O4. Please write any other notes, comments, observations, etc.	

SECTION P: CODES

#4 #7 #1 1 = single 1 = no formal education 1 = cattle 2 = cohabitating 2 = nursery 2 = goat3 = married (monogamous) 3 = primary 3 = donkey 4 = married (polygamous) 4 = secondary 4 = sheep5 = divorced 5 = post-secondary 5 = pig6 = widowed 6 = don't know 6 = rabbit 7 = don't know 7 = other, please specify 7 = chicken 8 = other, please specify 8 = turkey 9 = duck #5 #2 1 = can read 10 = goose 1 = household head 2 = can write 11 = pigeon 2 = husband 3 = cannot read or write 12 = other, please specify 3 = wife (monogamous) 4 = wife 1 (polygamous) 1 = agriculture 5 = wife 2 (polygamous) 1 = cooking banana 2 = roasting banana 6 = wife 3 (polygamous) 2 = livestock 7 = parent 3 = fish3 = dessert banana 4 = beverage banana 8 = parent in law 4 = bees9 = sibling 5 = don't know 5 = grasshoppers 10 = child 6 = business 6 = other, please specify 11 = grandchild 7 = construction, brick-laying 12 = friend 8 = transportation 1 = local 13 = employee 9 = wood products 2 = introduced 14 = don't know 10 = non-wood forest products 11 = casual labour 3 = don't know 15 = other, please specify 12 = salary 4 = other, please specify #3 13 = allowance from spouse 1 = agriculture 14 = food aid 15 = remittance from family 1 = home consumption 2 = livestock 3 = business, self employed member(s) 2 = for sale 4 = construction, bricklaying 16 = gifts, assistance 3 =don't know 4 = other, please specify 5 = transportation 17 = pension 6 = timber, charcoal, wood products 18 = rental income 7 = non-timber forest products 19 = finance 8 = housework 20 = no income 9 = salaried professional 21 = don't know 10 = casual temporary labour 22 = other, please specify 11 = studying 12 = no occupation (adult) 13 = no occupation (child) 14 = don't know

15 = other, please specify

#11

1 = matooke 2 = katogo 3 = machalari 4 = mtori 5 = roasted 6 = chips 7 = flour 8 = juice 9 = beer

11 = gin 12 = eaten ripe 13 = pancakes

14 = don't know

10 = wine

15 = other, please specify

#12

1 = very happy 2 = happy

3 = neither happy or unhappy

4 = unhappy 5 = very unhappy

#13

1= yes 2= no

3 = don't know

4= other, please specify

#14

1 = inherited 2 = purchased 3 = gift 4 = rented

5 = borrowed6 = encroachment

7 = don't know

8 = other, please specify

#15

1 = cooking bananas2 = roasting bananas3 = dessert bananas4 = beverage bananas

4 = beverage ba 5 = avocado 6 = beans 7 = cabbage 8 = carrot 9 = cassava 10 = coffee 11 = eggplant

12 = green leafy vegetables

13 = groundnuts 14 = Irish potato 15 = jackfruit 16 = maize 17 = mango 18 = millet 19 = onion 20 = passion fruit

21 = peas 22 = pineapple 23 = pumpkin 24 = rice 25 = sorghum 26 = soybean 27 = sunflower 28 = sweet potato

29 = taro 30 = tea 31 = tomato 32 = wheat 33 = yam 34 = don't know

35 = other, please specify

36 = none