Coping with El Nino in Tanzania: Differentiated local impacts and household-level responses

HOMESTEAD HEAD LIVELIHOODS SURVEY

(October, 2017, V12)

1.1 Village ID:	
1.2 Homestead ID:	
1.3 Date and time of interview: (time = END of interview)	| | :
1.4 Enumerator:	
Name of homestead/household head: *(on the El Nino Sampling list, column "D")*	
Name of respondent : *(if not same as homestead/household head, insert on El Nino village list column "E")*	

1. Information to the respondent

We are a partnership of Tanzanian and European research organisations. During 2015-2016, Tanzania experienced a particular climate event called the El Nino, which changes patterns of rainfall and of drought. We are studying the ways that the 2015-6 El Nino climate event has affected people's livelihoods. We also study the ways in which the management of natural resources and peoples' access to these resources during the El Nino event may have been affected by wildlife management areas (WMAs) through effects on availability and quality of water and land, grazing, fish, forest products and wildlife, opportunities for jobs and businesses, for example with tourism, and also on people's social and religious lives. We will work in WMA and non-WMA villages, because the comparison can help us understand the effects on people's climate coping strategies of different ways of managing natural resources.

We are inviting people in this and other villages to discuss the social and environmental effects of the changes in seasons, rainfall, drought or temperature experienced during 2015-6, and the ways in which WMAs may have helped or hindered coping strategies, so that the government and other organizations can understand better how these changes affect different people - men and women, better-off and poorer people, sedentary and migrating people, youth and older people.

For anyone who does talk with us, anything he or she says will be kept in complete confidence. If anyone agrees to talk with us and then changes their mind partway through, they can just say at any time that they want to stop and withdraw from the interview, without this being a problem for anyone. We take care to make sure that no one is put into difficulties as a result of this research. Copies of information about our research will be left in the WMA and village government offices, and anyone with questions or concerns can contact us or the funding agency, using the contact details we provide. At the end of the study we will share the main findings with the village.

We hope this study will make it easier for people to inform the government and NGOs about resource and management needs during extreme climate events, and more generally as climate and weather patterns change. We also hope to understand more about what works best for sustainable management of local natural resources. We hope that the findings we bring back to the village at the end of the study will help you in negotiating good outcomes with the government and with businessmen.

1.1. Has this information been disseminated to the respondent and does he/she consent to participate in the interview?

Code 1:
Code 1: [Select one option] 0 = no; 1 = yes

If 1.1 = "No", then cease the interview.

2. Basic household demographics

Note: Family arrangements vary across the different groups and sites in this survey. This must be considered when choosing whom to interview to represent the family. In the case of the Maasai, the family unit (Olmarei) may include a permanent homestead (Enkang) as a socially defined unit with several women's individual houses (aji); possibly linked with multiple satellite homesteads, possibly in urban or farming areas. In other tribes practicing polygamy, men may have several dispersed households including in neighbouring villages, managed more or less individually by the individual wives. In yet other cases a household may be female headed. To accommodate this diversity of arrangements we need to identify and interview the household head (whether male or female) as the primary decision maker for all interviews (for Maasai, this is the head of the Olmarei). When asking about assets we need to emphasize that this relates to the full number of individual households under the respective household head regardless of whether they are located together in a homestead or dispersed throughout the village or between several villages. This may mean asking first about what s/he has here and then asking whether s/he has another house / homestead elsewhere. However, if we ask about perceptions about changes in access or income this should reflect the respondents' personal perception. For activities conducted by women, such as collecting water, we use the women's questionnaire (if the household head permits).

[Explain to the respondent] We would like to start by asking you some questions about yourself and your family.

2.1. [Enumerator] Record whether it is a male or a female being interviewed as the head of the household.

Code 1:

Code 1: [Select one option]
1 = Male; 2 = Female

2.2. How old are you?

Code 1:

Note: If response seems unlikely then ask about year born and calculate backwards and check consistency.

Code 1: [Select one option]
1 = < 20 years; 2 = 20-29 years; 3 = 30-39 years; 4 = 40-49 years; 5 = 50-59 years; 6 = 60-69 years;
7 = 70-79 years; 8 = 80-89 years; 9 = >89 years.
-7= refuses to answer;-8=does not apply; -9=don't know

Note: Explain to the respondent that in following we will ask about the situation now and as things have changed since the year 2014. Ask if the respondent remembers how life was for the homestead and the community in 2014 prior to the election year. Ask the respondent to think back and recall the circumstances of his/her household's livelihood around that period in the following questions.

2.3. Do you recall 2014 and are you able to recall the circumstances of your livelihood around then?

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

2.4. Were you also a homestead head (head of Olmarei) in 2014?

Code 1:

Code 1: [Select one option]

2.5. How many years of schooling have you completed?

Number:

Note: If respondent doesn't know then write -9.

2.6. What is your tribe?

Code from Tribe List:

Note: What we are interested in here is tribal origin. So try to obtain this information in a polite manner, you might have to ask for the first language etc.

2.7. What is your marital status?

Code 1:

Code 1: [Select one option]
1 = married; 2 = unmarried; 3 = divorced; 4 = widower

2.8. Tell me about the people living in your homestead/household(s) NOW: how many men, women and children are living in your homestead/households today INCLUDING YOURSELF?

Note: This question should be asked indirectly as it may be sensitive in Maasai and potentially other areas.

	Number of homestead members today *Number*	Change since 2014 *Code 1*	Reason for change *Code 2*
Children:			
0-3 years	2.8.1.	2.8.2.	*If 2.8.2 = 1,3* 2.8.3.
4-10 years	2.8.4.	2.8.5.	*If 2.8.5 = 1,3* 2.8.6.
Men:			
11-24 years	2.8.7.	2.8.8.	*If 2.8.8 = 1,3* 2.8.9.
25-50 years	2.8.10.	2.8.11.	*If 2.8.11 = 1,3* 2.8.12.
51+ years	2.8.13.	2.8.14.	*If 2.8.14 = 1,3* 2.8.15.
Women:			
11-24 years	2.8.16.	2.8.17.	*If 2.8.17 = 1,3* 2.8.18.
25-50 years	2.8.19.	2.8.20.	*If 2.8.20 = 1,3* 2.8.21.
51+ years	2.8.22.	2.8.23.	*If 2.8.23 = 1,3* 2.8.24.

If homestead head is male:

2.9. How many wives do you have now (i.e. including living separately in other locations)?

Number:

2.10. Did any member of your homestead hold any official positions, such as secretary, executive or otherwise active board member in any of the following institutions in 2014 or have they obtained such a position in the period since then?

	In 2014-5, before the election *Code 1*	**Since the 2015 election** *Code 1*
Member of village/ward/district council and/or associated committees *Note: Don't record sub-VC secretaries*	2.10.1.	2.10.2.
VC/VEO/WEO	2.10.3.	2.10.4.
Subvillage Chairman	2.10.5.	2.10.6.
[WMA only] AA/CBO member of the WMA	2.10.7.	2.10.8.
[WMA only] VGS of the WMA	2.10.9.	2.10.10.

3. Overall well-being trends

[Explain to the respondent] Now we would like to ask about your wellbeing and that of your homestead members. By wellbeing we mean your ability to be happy, healthy and successful. This includes your overall feelings about your economic, food security, social and spiritual state.

3.1. How has your personal wellbeing changed since 2014? Do you consider that your life is generally…

Code 1:

3.2. What do you see as the main challenges for you personally and your household today?
[Enumerator: Don't prompt, but if several are mentioned record them all.]

Challenge	**3.2.1. What are the main challenges that you personally and your household face nowadays?** *Select all that apply*	*Show question for any items selected in 3.2.1* **How important is this for you and your household nowadays?** *Code 1*

Land availability (e.g. access, suitability)		3.2.2.
Water availability (e.g. access, quality)		3.2.3.
Availability of natural resources (fuel, poles, etc) (e.g. access, quantity)		3.2.4.
Rain (too much/too little/ timing)		3.2.5.
Temperature (too high/ too low/ timing)		3.2.6.
Wildlife damage/ threat		3.2.7.
Pests		3.2.8.
Diseases (e.g. of people, livestock, crops)		3.2.9.
Unemployment		3.2.10.
Infrastructure (e.g. roads, shops, transport….)		3.2.11.
Education		3.2.12.
Governance/political/conflict issues		3.2.13.
External investors (too many/ too few/ non-compliant)		3.2.14.
Poverty/ inequality		3.2.15.
Women's issues		3.2.16.
Youth issues		3.2.17.
Personal relationships within the family		3.2.18.
Personal relationships with other families and social standing		3.2.19.
Family health and wellbeing		3.2.20.
Farm inputs (e.g. crop varieties, fertiliser)		3.2.21.
Other (specify)		3.2.22.

Code 1: [Select one option]
1 = Very small problem; 2 = Small problem; 3 = Moderate problem; 4 = Big problem; 5 = Very big problem;
-7 = refuses to answer; -8 = does not apply; -9 = don't know.

3.3. What were the main challenges for you personally and your household in 2014? *[Enumerator: Don't prompt, but if several are mentioned record them all.]*

Challenge	3.3.1. What were the main challenges that you personally and your household faced in 2014? *Select all that apply*	*Show question for any items selected in 3.3.1* How important was this for you and your household in 2014? *Code 1*
Land availability (e.g. access, suitability)		3.3.2.
Water availability (e.g. access, quality)		3.3.3.
Availability of natural resources (fuel, poles, etc) (e.g. access, quantity)		3.3.4.
Rain (too much/too little/ timing)		3.3.5.
Temperature (too high/ too low/ timing)		3.3.6.
Wildlife damage/ threat		3.3.7.
Pests		3.3.8.
Diseases (e.g. of people, livestock, crops)		3.3.9.
Unemployment		3.3.10.
Infrastructure (e.g. roads, shops, transport….)		3.3.11.
Education		3.3.12.
Governance/political/conflict issues		3.3.13.
External investors (too many/ too few/ non-compliant)		3.3.14.
Poverty/ inequality		3.3.15.
Women's issues		3.3.16.
Youth issues		3.3.17.
Personal relationships within the family		3.3.18.
Personal relationships with other families and social standing		3.3.19.
Family health and wellbeing		3.3.20.
Farm inputs (e.g. crop varieties, fertiliser)		3.3.21.
Other (specify)		3.3.22.

4. Shocks

[Explain to the respondent] In the following we want to learn about the number and nature of unpredictable disturbances (i.e. shocks) that have had immediate negative impact on your homesteads/households wellbeing. We ask you to only mention major shocks such as theft or loss of a major part of the households domestic animals, loss of a major part of the households crops, or a major part of the households property lost or destroyed due to fire, flood, drought etc. prolonged disease or loss of a homestead/household member that contributed to the households income or a member of the extended family where the homestead/household had to assist substantially financially for treatment or funeral. Please consider the entire/all homestead/household(s) to which you are head.

4.1. Please think back to the 2014 farming year, that's to say the farming year immediately before the year of the political campaign and general election. From 2014 to now, has the homestead/household(s) for which you are head experienced any major shocks or losses with negative effects on income, wellbeing or food security?
[Enumerator] Please supplement and ask around to clarify whether the household has experienced any shocks such as the death of a breadwinner that they are not speaking about due to taboo etc.

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

If 4.1 = "No", go to Section 5

4.2. Please tell me about the major shocks (MAJANGA) your homestead/household has suffered since 2014?
Note: In accordance with the definition in the table.

Event type	Number of events *Number*	Attribution *Code 1*
Loss of <u>more than half</u> of the main crop *(due to crop failure, pests, flood, drought, fire etc.)*	4.2.1.	4.2.2.
Loss of <u>more than half</u> of the homestead/household's GOOD (i.e. productive) land *(due to displacement/expropriation, natural disaster such as flood etc.)*	4.2.3.	4.2.4.
Loss of <u>more than half</u> of the homestead/households food stocks (i.e. grains, maize, rice etc.) *(due to theft, flood, etc.)*	4.2.5.	4.2.6.
Loss of <u>more than half</u> of the households domestic animals *(due to disease, theft, drought, etc.)*	4.2.7.	4.2.8.
Bread winner unable to work for <u>more than 3 months</u> (productive adult unable to work due to illness)	4.2.9.	4.2.10
Divorce	4.2.11.	
Death of bread winner *(i.e. a productive adult)*	4.2.12.	
Loss of other <u>major</u> assets essential for the homestead/households livelihood strategies *(due to fire, theft, flood, etc.)*	4.2.13.	4.2.14.

5. Land

We would like to ask you some questions about your land ownership and area of land cultivated now.
Note: potentially sensitive

5.1. How much land do you own in total now?

Acres:

NB: -7 = refuses to answer; -8 = does not apply; -9 = don't know

5.2. [WMA only] How much land do you own within the WMA?

Acres:

NB: -7 = refuses to answer; -8 = does not apply; -9 = don't know

5.3. How much land do you cultivate for own homestead in total?

Note: Area cultivated can exceed area of land owned, if some of the cultivated area is rented.

Acres:

NB: -7 = refuses to answer; -8 = does not apply; -9 = don't know

5.4. How much land do you cultivate for own homestead within the WMA?

Acres:

NB: -7 = refuses to answer; -8 = does not apply; -9 = don't know

5.5. How long does it take you to walk from your homestead to your land where you cultivate?

Note: If several pieces of land under cultivation, ask for most important piece of land

Code 1:

Code 1: [Select one option]
0 = within the WMA; 1 = 1-5 minutes; 2 = 6-15 minutes; 3 = 16-30 minutes; 4 = 31-60 minutes; 5 = > 1 hour;
-7 = refuses to answer; -8 = does not apply; -9 = don't know.

5.6. Have you increased or reduced your cultivated area from 2014 until now (or started or stopped cultivation altogether)?

Code 1:

Code 1: [Select one option]
0 = started for first time; 1 = increased; 2 = no change; 3 = decreased; 4 = stopped altogether;
-7 = refuses to answer; -8 = does not apply; -9 = don't know.

If 5.6 = "decreased" or "stopped altogether", go to 5.7. Otherwise go to 5.8

5.7. Why did you decrease the area you cultivate or stop cultivating altogether?

Code 1:

Code 1: [Select all that apply]
1 = village land-use plan; 2 = decreasing external support to agriculture (government, NGO, remittances);
3 = lack of own labour; 4 = lack of credit; 5 = increasing crop damage/wildlife conflict;
6 = changed market price for livestock/crops; 7 = drought; 8 = heavy rain; 9 = flood; 10 = changing seasons;
11 = changing temperature; 12 = crop disease; 13 = crop pest; 14 = change crop varieties;
30 = other (please specify); -7 = refuses to answer; -8 = does not apply; -9 = don't know.

5.8. From 2014, did you change any of your usual farming practices?

Code 1:

Code 1: [Select all that apply]
0 = no change; 1 = change crop varieties; 2 = use new inputs; 3 = new irrigation; 4 = increase labour;
5 = new protection methods against wildlife; 6 = new protection methods against pests;
7 = new protection methods against disease; 8 = new fields opened;
30 = other (please specify);

5.9. From 2014, did you go outside village lands to farm?

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

If 5.9 = "Yes" go to 5.9.1, otherwise go to 5.10

5.9.1. What was the other site/village name?

Name:

5.9.2. Had you already farmed there before 2014?

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

If 5.9.2 = "No" go to 5.9.3, otherwise go to 5.10

5.9.3. What type of field was this new venture?

Code 1:

Code 1: [Select all that apply]
1 = lowland rainfed; 2 = upland rainfed; 3 = irrigated
-7 = refuses to answer; -8 = does not apply; -9 = don't know

5.9.4. What type of crops did you plant?

Code 1:

Code 1: [Select all that apply]
1 = maize; 2 = beans; 3 = tomatoes; 4 = cassava; 5 = millet; 6 = rice; 7 = bananas; 8 = tobacco;
30 = other (please specify); -7 = refuses to answer; -8 = does not apply; -9 = don't know

5.9.5. How did you access the land?

Code 1:

Code 1: [Select all that apply]
1 = owned land already; 2 = village government; 3 = borrowed; 4 = rented; 5 = purchased; 6 = sharecropping;

30 = other (please specify); -7 = refuses to answer; -8 = does not apply; -9 = don't know

5.9.6. Why did you go outside the village?

Code 1:

Code 1: [Select all that apply]
1 = lack of opportunity in home village; 2 = able to invest surplus; 3 = spread risk; 4 = join friends/family;
5 = conditions in home village deteriorating;
30 = other (please specify); -7 = refuses to answer; -8 = does not apply; -9 = don't know

Crop loss to wildlife damage

5.10. In the last 12 months did you lose any of your crops to wildlife damage?

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

If 5.10 = "No" go to 5.10.1, otherwise go to 5.10.5

5.10.1. Did this incident (crop raiding by wildlife) happen in this village? (in case respondent has a shamba outside of village boundaries)

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

If "No" go to 5.10.2, otherwise go to 5.10.3

5.10.2. Where did the damage happen?

Name of site/village:

5.10.3. What was the estimated value of the loss?
Note: When asking this question request the respondent to estimate the area affected, the amount of crops in that area and then estimate the sales value of the crops lost based on the unit price of the specific crop and the area/amount considerations.

Value in TSh:

5.10.4. Did this estimated loss represent more than half of the total value of your agricultural harvest at the time?

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

If 5.10.4 = "No" go to 5.10.5, otherwise go to 5.10.7

5.10.5. Have you EVER lost more than half of your total agricultural crop due to wildlife damage?

Code 1:

Code 1: [Select one option]

0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

5.10.6. What year did you last experience this?

Year:

5.10.7. How has the crop damage by wildlife in your homestead changed NOW compared to the situation in 2014?

Note: If the respondent stopped cultivating between 2014 and now, ask about the period between 2014 and year where cultivation stopped.

Code 1:

Code 1: [Select one option]
1 = much worse now; 2 = worse now; 3 = no change; 4 = better now; 5 = much better now;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

5.10.8. What do you see as the reason for the change you have experienced in wildlife damage?

Code 1:

Code 1: [Select all that apply]
1 = more crops; 2 = more wildlife; 3 = wildlife behaving differently; 4 = less manpower to protect crops;
5 = threat of punishment If wildlife is harmed; 6 = rules of state institutions; 7 = WMA rules;
8 = village government rules; 9 = Customary rules;
30 = other (please specify); -7 = refuses to answer; -8 = does not apply; -9 = don't know

Crop loss to insect pests

5.11. In the last 12 months did you lose any of your crops to insect pests?

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

5.11.1. Did this incident (insect pest damage) happen in this village? (in case respondent has a shamba outside of village boundaries)

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

5.11.2. Where did the damage happen?

Name of site/village:

5.11.3. What was the estimated value of the loss?

Note: When asking this question request the respondent to estimate the area affected, the amount of crops in that area and then estimate the sales value of the crops lost based on the unit price of the specific crop and the area/amount considerations.

Value in TSh:

5.11.4. Did this estimated loss represent more than half of the total value of your agricultural harvest at the time?

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

If 5.11.4 = "No" go to 5.11.5, otherwise go to 5.11.7

5.11.5. Have you EVER lost more than half of your total agricultural crop due to insect pests?

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

If 5.11.5 = "Yes" go to 5.11.6, otherwise go to 5.11.7

5.11.6. What year did you last experience this?

Year:

5.11.7. How has the crop damage by insect pests in your homestead changed NOW compared to the situation in 2014?

Note: If the respondent stopped cultivating between 2014 and now, ask about the period between 2014 and year where cultivation stopped.

Code 1:

Code 1: [Select one option]
1 = much worse now; 2 = worse now; 3 = no change; 4 = better now; 5 = much better now;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

5.11.8. What do you see as the reason for the change you have experienced in insect pest damage?

Code 1:

Code 1: [Select all that apply]
1 = more crops; 2 = more insects; 3 = new insect pest types; 4 = less manpower to protect crops;
5 = dry weather; 6 = wet weather;
30 = other (please specify); -7 = refuses to answer; -8 = does not apply; -9 = don't know

Crop loss to diseases

5.12. In the last 12 months did you lose any of your crops to crop diseases?

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

5.12.1. Did this incident (crop loss to disease) happen in this village? (in case respondent has a shamba outside of village boundaries)

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

5.12.2. Where did the damage happen?

Name of site/village:

5.12.3. What was the estimated value of the loss?

Note: When asking this question request the respondent to estimate the area affected, the amount of crops in that area and then estimate the sales value of the crops lost based on the unit price of the specific crop and the area/amount considerations.

Value in TSh:

5.12.4. Did this estimated loss represent more than half of the total value of your agricultural harvest at the time?

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

5.12.5. Have you EVER lost more than half of your total agricultural crop due to crop disease?

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

5.12.6. What year did you last experience this?

Year:

5.12.7. How has the crop loss to disease in your homestead changed NOW compared to the situation in 2014?

Note: If the respondent stopped cultivating between 2014 and now, ask about the period between 2014 and year where cultivation stopped.

Code 1:

Code 1: [Select one option]
1 = much worse now; 2 = worse now; 3 = no change; 4 = better now; 5 = much better now;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

5.12.8. What do you see as the reason for the change you have experienced in crop disease?

Code 1:

Code 1: [Select all that apply]
1 = more crops; 2 = new crop disease types; 3 = less manpower to manage crops; 4 = dry weather;
5 = wet weather;
30 = other (please specify); -7 = refuses to answer; -8 = does not apply; -9 = don't know

6. Livestock

6.1. Have you had livestock, fishponds or beehives now or at any time since 2014?

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

If 6.1 = "No" go to 7.1

6.2. Please tell me about the livestock your homestead owned at the END OF LAST DRY SEASON (Kiangazi).

Species	How many of these animals do you own now?	How has this changed since 2014? *Code 1*	What caused this change? *Code 2*	Was the situation improved or worsened by this institution? *Code 3*
Cattle (incl. adult bulls, adult cows and calves)	6.2.1. *No. animals:*	*If 6.2.1 > 0* 6.2.2.	*If 6.2.2 = 1,2,4,5* 6.2.3.	*If 6.2.3 = 14,15,16,17* 6.2.4.
Goats (incl. kids)	6.2.5. *No. animals:*	*If 6.2.5 > 0* 6.2.6.	*If 6.2.6 = 1,2,4,5* 6.2.7.	*If 6.2.7 = 14,15,16,17* 6.2.8.
Sheep (incl. lambs)	6.2.9. *No. animals:*	*If 6.2.9 > 0* 6.2.10.	*If 6.2.10 = 1,2,4,5* 6.2.11.	*If 6.2.11 = 14,15,16,17* 6.2.12.
Donkeys or mules	6.2.13. *No. animals:*	*If 6.2.13 > 0* 6.2.14.	*If 6.2.14 = 1,2,4,5* 6.2.15.	*If 6.2.15 = 14,15,16,17* 6.2.16.
Pigs (incl. piglets) *Note: sensitive for Muslims*	6.2.17. *No. animals:*	*If 6.2.17 > 0* 6.2.18.	*If 6.2.18 = 1,2,4,5* 6.2.19.	*If 6.2.19 = 14,15,16,17* 6.2.20.
Fishponds	6.2.21. *No. ponds:*	*If 6.2.21 > 0* 6.2.22.	*If 6.2.22 = 1,2,4,5* 6.2.23.	*If 6.2.23 = 14,15,16,17* 6.2.24.
Beehives	6.2.25. *No. hives:*	*If 6.2.25 > 0* 6.2.26.	*If 6.2.26 = 1,2,4,5* 6.2.27.	*If 6.2.27 = 14,15,16,17* 6.2.28.

Code 1: [Select one option]
1 = much less now; 2 = less now; 3 = no change; 4 = more now; 5 = much more now;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

Code 2: [Select all that apply]
1 = drought; 2 = surface flooding; 3 = too much rain; 4 = very low temperature; 5 = very high temperature;
6 = disease; 7 = change in access to fodder/grazing; 8 = cash needs/saving of surplus;

Livestock losses to wildlife attacks

6.3. What year did you last lose livestock to a wildlife attack?
Note: If "never", record as "-8 = doesn't apply"

Year:

If 6.3 = "Never" go to 6.5, otherwise go to 6.4

6.4. How many animals did you lose in that incident?

	How many animals did you lose in that incident? *Number*
Cow/Bull/Steer/Heifer	6.4.1.
Calve	6.4.2.
Goat/Sheep	6.4.3.
Donkey/Mule	6.4.4.
Pig	6.4.5.
Fishpond/Beehive	6.4.6.
Other, specify here:	6.4.7.

Livestock losses to drought, heavy rain or flooding

6.5. What year did you last lose livestock to drought, heavy rain or flooding?
Note: If "never", record as "-8 = doesn't apply"

Year:

If 6.5 = "Never" go to 6.7, otherwise go to 6.6

6.6. How many animals did you lose in that incident?

	How many animals did you lose in that incident? *Number*
Cow/Bull/Steer/Heifer	6.6.1.
Calve	6.6.2.
Goat/Sheep	6.6.3.
Donkey/Mule	6.6.4.
Pig	6.6.5.

Fishpond/Beehive	6.6.6.
Other, specify here:	6.6.7.

Livestock losses to disease or parasite infection

6.7. What year did you last lose livestock to disease or parasite infection?
Note: If "never", record as "-8 = doesn't apply"

Year:

If 6.7 = "never" go to 6.10, otherwise go to 6.8

6.8. What was/were the particular disease(s) or parasite infestation(s) that affected your livestock in that incident?

Disease(s):

6.9. How many animals did you lose in that incident?

	How many animals did you lose in that incident? *Number*
Cow/Bull/Steer/Heifer	6.9.1.
Calve	6.9.2.
Goat/Sheep	6.9.3.
Donkey/Mule	6.9.4.
Pig	6.9.5.
Fishpond/Beehive	6.9.6.
Other, specify here:	6.9.7.

Grazing livestock
Note: The objective these questions is to see what people ACTUALLY DO (and whether there are differences between elite and other groups), rather than whether or not they know about rules and regulations. Here we DON'T ask about what is allowed/legal and not allowed/illegal.

6.10. Aside from any customary rules that are decided by the local community itself, do you graze your livestock anywhere you want?

Code 1:

Code 1: [Select all that apply]
1 = yes, because there are no conservation areas or commercial, privately owned ranches/farms near;
2 = yes, even inside GCA/NP/WMA land/commercial, privately owned ranches/farms;
3 = yes, but we have to pay to graze on commercial, privately owned ranches/farms;
4 = no, there are restrictions on commercial, privately owned ranches/farms;
5 = no, it is not allowed on GCA/NP/WMA area that is near;
6 = no, there are other restrictions not related to GCA/NP/WMA land/commercial ranches/farms;
7 = no, because we don't have any designated grazing areas;
30 = other (please specify); -7 = refuses to answer; -8 = does not apply; -9 = don't know

6.11. [WMA only] Do you graze on some or all of the WMA land?

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes, on some of the WMA land; 2 = yes, on all of the WMA land;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

If 6.11 = "No" go to 7.1, otherwise go to 6.12

6.12. [WMA only] When do you graze on WMA land?

Code 1:

Code 1: [Select one option]
1 = only some times or seasons; 2 = any times or seasons;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

6.13. [WMA only] Do you graze as many heads of livestock on WMA land as you want?

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

7. Bushmeat

7.1. When did you last consume a meal with meat in your household, at the market, or at a wedding, funeral or other ceremony?

Code 1:

Code 1: [Select one option]
0 = never; 1 = today/yesterday; 2 = past 7 days; 3 = past 30 days; 4 = past 3 months; 5 = past 6 months;
6 = past year; 7 = longer than 1 year ago (not never);
-7 = refuses to answer; -8 = does not apply; -9 = don't know

If 7.1 = "Never" go to 7.5, otherwise go to 7.2

7.2. What type of meat did you eat?

Code 1:

Code 1: [Select one option]
0 = not bushmeat; 1 = bushmeat;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

If 7.2 = "bushmeat" go to 7.4, otherwise go to 7.5

7.3. When did you last consume bushmeat?
Note: Likely to be a sensitive question

Code 1:

Code 1: [Select one option]
0 = never; 1 = today/yesterday; 2 = past 7 days; 3 = past 30 days; 4 = past 3 months; 5 = past 6 months;
6 = past year; 7 = longer than 1 year ago (not never);
-7 = refuses to answer; -8 = does not apply; -9 = don't know

If 7.3 = "Never" go to 7.5, otherwise go to 7.4

7.4. Where did you consume it?

> *Code 1:*

7.5. When was the last time you sold meat?

> *Code 1:*

If 7.5 = "never" go to 8.1, otherwise go to 7.6

7.6. What type of meat did you sell?

> *Code 1:*

If 7.6 = "bushmeat" go to 7.8, otherwise go to 7.7

7.7. When did you last sell bushmeat?
Note: Likely to be a sensitive question

> *Code 1:*

7.8. Tell us about your consumption of meat NOW compared to 2014.

Type of meat	Do you consume more or less meals with meat NOW than in 2014? *Code 1*	What caused this change? *Code 2*
Non-bushmeat	7.8.1.	*If 7.8.1 = 1,2,4,5* 7.8.2.
Bushmeat *Note: Likely to be a sensitive question*	7.8.3.	*If 7.8.3 = 1,2,4,5* 7.8.4.

8. Changes in institutionally regulated access to resources and mobility

8.1. [WMA only] Do you know what parts of your village land are included in the WMA?

Code 1:

Note: In the following we talk about access in terms of BEING ABLE TO GO into locations where relevant resources are available. We are NOT enquiring about change in abundance of resources. ALSO, we are asking about access of ALL HOMESTEAD members.

8.2. We'd like to ask about YOUR OWN AND OTHER HOMESTEAD MEMBERS' access to various resources now as compared to 2014.

Note: Enumerator, please ask about each of the various resources and services

Resource	How has your and other homestead members' ACCESS to this resource changed from 2014 to NOW? *Code 1*	What has changed to cause this? *Code 2*
Fishing	8.2.1.	*If 8.2.1 = 1,2,4,5* 8.2.2.
Wild bee honey	8.2.3.	*If 8.2.3 = 1,2,4,5* 8.2.4.
Charcoal	8.2.5.	*If 8.2.5 = 1,2,4,5* 8.2.6.
Construction materials *Note: incl. thatch, poles and rope but NOT timber*	8.2.7.	*If 8.2.7 = 1,2,4,5* 8.2.8.
Timber	8.2.9.	*If 8.2.9 = 1,2,4,5* 8.2.10.
Hunting	8.2.11.	*If 8.2.11 = 1,2,4,5* 8.2.12.
Grazing	8.2.13.	*If 8.2.13 = 1,2,4,5* 8.2.14.
Mobility of people	8.2.15.	*If 8.2.15 = 1,2,4,5* 8.2.16.
Water for livestock	8.2.17.	*If 8.2.17 = 1,2,4,5* 8.2.18.
Water for humans	8.2.19.	*If 8.2.19 = 1,2,4,5* 8.2.20.

9. Environmental income

Note [Enumerator]: In the following we will ask respondents about the contribution of selected products COLLECTED IN THE WILD to their homestead/household's livelihood. These wild products include exclusively firewood, charcoal, thatch, poles, rope, timber, wild fish and honey, bushmeat, wild vegetables/fruits and medicine plants. The importance should reflect both in terms of CASH INCOME and SUBSISTENCE use. In relation to the cash importance of the cash contribution of the various products respondents should consider products collected/harvested, processed and sold. In relation to the importance of subsistence contribution of the various products respondents should consider the cost if they had to purchase similar amounts of each product from others (i.e. pay someone to do the collection and processing for them). Hence, emphasize that we are NOT talking about the availability of the various products in the surrounding environment or the intrinsic value of environmental resources.

9.1. We would like to ask about changes in your homestead/household's use of different products such as firewood, thatch, poles, charcoal, bushmeat, wild foods, and medicinal plants for collection/processing/sale, from 2014 to the present day.

Resource	How much of this resource do you collect NOW? *Code 1*	How has the AMOUNT of this resource you collect changed since 2014? *Code 2*	Why has the AMOUNT you collect changed? *Code 3*	How much does this resource contribute to your household income NOW? *Code 4*	How has the contribution of this resource to your household income changed since 2014? *Code 2*	Why has the contribution of this natural resource to your household income changed? *Code 5*
Firewood *KUNI*	9.1.1.	9.1.2.	*If 9.1.2 = 1,2,4,5* 9.1.3.	9.1.4.	9.1.5.	*If 9.1.5 = 1,2,4,5* 9.1.6.
Charcoal *MKAA*	9.1.7.	9.1.8.	*If 9.1.8 = 1,2,4,5* 9.1.9.	9.1.10.	9.1.11.	*If 9.1.11 = 1,2,4,5* 9.1.12.

Construction materials for house, fencing and farm *NYASI ZA KUEZEKEA, NGUZO, KAMBA*	9.1.13.	9.1.14.	*If 9.1.14 = 1,2,4,5* 9.1.15.	9.1.16.	9.1.17.	*If 9.1.17 = 1,2,4,5* 9.1.18.
Timber *MBAO*	9.1.19.	9.1.20.	*If 9.1.21 = 1,2,4,5* 9.1.21.	9.1.22.	9.1.23.	*If 9.1.23 = 1,2,4,5* 9.1.24.
Wild fish *SAMAKI*	9.1.25.	9.1.26.	*If 9.1.26 = 1,2,4,5* 9.1.27.	9.1.28.	9.1.29.	*If 9.1.29 = 1,2,4,5* 9.1.30.
Wild honey *ASALI*	9.1.31.	9.1.32.	*If 9.1.32 = 1,2,4,5* 9.1.33.	9.1.34.	9.1.35.	*If 9.1.35 = 1,2,4,5* 9.1.36.
Bushmeat *NYAMA PORI*	9.1.37.	9.1.38.	*If 9.1.38 = 1,2,4,5* 9.1.39.	9.1.40.	9.1.41.	*If 9.1.41 = 1,2,4,5* 9.1.42.
Wild vegetables and fruits *MBOGA NA MATUNDA YA POLI*	9.1.43.	9.1.44.	*If 9.1.44 = 1,2,4,5* 9.1.45.	9.1.46.	9.1.47.	*If 9.1.47 = 1,2,4,5* 9.1.48.
Other *NYINGINE**	9.1.49.	9.1.50.	*If 9.1.50 = 1,2,4,5* 9.1.51.	9.1.52.	9.1.53.	*If 9.1.53 = 1,2,4,5* 9.1.54.

Code 1: [Select one option]
0 = none at all; 1 = a very small amount; 2 = a small amount; 3 = a moderate amount; 4 = a large amount;
5 = a very large amount;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

Code 2: [Select one option]
1 = much less; 2 = less; 3 = no change; 4 = more; 5 = much more;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

Code 3: [Select all that apply]
1 = drought; 2 = flood; 3 = too much rain; 4 = too hot; 5 = too cold; 6 = disease;
7 = WMA changed rules of access;
8 = customary rules of access changed in light of other changing circumstances;
9 = village government rules of access changed in light of other changing circumstances;
10 = national government rules of access changed in light of other changing circumstances;
11 = new arrangement with non-WMA investor; 12 = changing employment or market opportunities;
13 = Change in state rules (NP/Corridor/GCA/GR etc.);
14 = Change in household labour available; 15= Change in household needs and number of dependents;
16 = Purchase/ sold assets; 17 = Availability of inputs/cash; 18 = Increase/decrease availability of resource(s)
19 = Increase/ decrease in wildlife damage; 20 = Increase/decrease in pest/ vermin damage/ disease;
21 = Health issues; 22 = Change in support; 23 = Theft/ human damage; 24= Good weather;

* Note: we don't include water and fodder for livestock from pastures. If the respondent wants to include it in 'other', explain that we exclude this here because we consider it to be a basic necessity.

10. Livelihood portfolio

Note [Enumerator]: In the following we will ask respondents about the contribution of various activities to their homestead/household's livelihood, including all members of the homestead/ household. The importance should reflect BOTH CASH INCOME AND SUBSISTENCE use. In relation to the importance of the cash contribution of the various activities respondents should consider salary and business income as well as agricultural and domestic animal produce and selected wild products collected/harvested, processed and sold. These wild products include exclusively firewood, charcoal, thatch/poles/rope, timber, wild fish and honey, bushmeat, wild vegetables/fruits and medicine plants. In relation to the importance of subsistence contribution of the various agricultural and domestic animal produce as well as the products collected in the wild respondents should consider the cost if they had to purchase similar amounts of each product from others (i.e. pay someone to do the collection and processing for them). Hence, emphasize that we are NOT talking about the availability of the various products in the surrounding environment or the intrinsic value of environmental resources.

10.1. We would like to ask about the importance of different activities and products in terms of their contribution to the overall economy (*UCHUMI WA KAYA*) of your homestead/household(s) in terms of both cash and subsistence use.

Livelihood component	How much does this contribute to your livelihood NOW? Code 1	How has this contribution to your livelihood changed since 2014? Code 2	Why has this contribution changed? Code 3
Your crops *Note: incl. grain, rice, maize, cassava, banana etc.* MAZAO YA KILIMO	10.1.1.	10.1.2.	*If 10.1.2 = 1,2,4,5* 10.1.3.

Your animal products *Note: incl. meat, milk, butter, honey, fish, egg etc.* *MAZAO YA MIFUGO*	10.1.4.	10.1.5.	*If 10.1.5 = 1,2,4,5* 10.1.6.
Collection/processing/sale and use of firewood, charcoal, thatch /poles/rope, timber, wild fish and honey, bushmeat, wild vegetables /fruits and medicine plants *UKUSANYAJI/UANDAJI/UUZAJI/MAT UMIZI YA MALIASILI*	10.1.7.	10.1.8.	*If 10.1.8 = 1,2,4,5* 10.1.9.
Wage employment *Note: paid work for someone else – regular job and casual labour* *AJIRA/KIBARUA*	10.1.10.	10.1.11.	*If 10.1.11 = 1,2,4,5* 10.1.12.
Your own business *Note: petty trade and sales, brokering, livestock trading – not crop or animal produce or wage employment just discussed* *BIASHARA BINAFSI*	10.1.13.	10.1.14.	*If 10.1.14 = 1,2,4,5* 10.1.15.
Remittance and pensions *MSAADA AMA FEDHA KUTOKA KWA NDUGU AU MARAFIKI, NA MAFAO YA UZEENI*	10.1.16.	10.1.17.	*If 10.1.17 = 1,2,4,5* 10.1.18.

Code 1: [Select one option]
0 = nothing; 1 = a very small amount; 2 = a small amount; 3 = a moderate amount; 4 = a large amount;
5 = a very large amount;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

Code 2: [Select one option]
1 = much less; 2 = less; 3 = no change; 4 = more; 5 = much more;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

Code 3: [Select all that apply]
1 = drought; 2 = flood; 3 = too much rain; 4 = too hot; 5 = too cold; 6 = disease;
7 = WMA changed rules of access;
8 = customary rules of access changed in light of other changing circumstances;
9 = village government rules of access changed in light of other changing circumstances;
10 = national government rules of access changed in light of other changing circumstances;
11 = new arrangement with non-WMA investor; 12 = changing employment or market opportunities;
13 = Change in state rules (NP/Corridor/GCA/GR etc.);
14 = Change in household labour available; 15= Change in household needs and number of dependents;
16 = Purchase/ sold assets; 17 = Availability of inputs/cash; 18 = Change in demand or availability of resource(s);
19 = Increase/ decrease in wildlife damage; 20 = Increase/decrease in pest/ vermin damage/ disease;
21 = Health issues; 22 = Change in support; 23 = Theft/ human damage; 24= Good weather;
25 = Change in production capacity or yields; 26 = Changed strategy for no particular reason; 27 = variable rainfall; 30 = other (please specify); -7 = refuses to answer; -8 = does not apply; -9 = don't know

11.   Coping strategies

"Normal" years

11.1. Is there such a thing as a "normal" year in terms of rainfall?

Code 1:

If 11.1 = "Yes" go to 11.2, otherwise go to 11.4

11.2. Has there been such a year since 2014?

Code 1:

11.3. We would like you to tell us what approaches you usually take in a normal year to help manage subsequent years' shocks (incl. environmental / family / economic / other)?

Strategy	Do YOU adopt this strategy? *Code 1*	If not, why? *Code 2*	If yes, how successful is it? *Code 3*	What affects its success? *Code 4*	If rules, are they supportive or restrictive? *Code 5*
Clear more land	11.3.1.	*If 11.3.1 = 0* 11.3.2.	*If 11.3.1 = 1* 11.3.3.	*If 11.3.1 = 1* 11.3.4.	*If 11.3.4 = 9,10,11,12,13* 11.3.5.
Grow basic range of crops	11.3.6.	*If 11.3.6 = 0* 11.3.7.	*If 11.3.6 = 1* 11.3.8.	*If 11.3.6 = 1* 11.3.9.	*If 11.3.9 = 9,10,11,12,13* 11.3.10.
Experiment with new crops	11.3.11.	*If 11.3.11 = 0* 11.3.12.	*If 11.3.11 = 1* 11.3.13.	*If 11.3.11 = 1* 11.3.14.	*If 11.3.14 = 9,10,11,12,13* 11.3.15.
Invest in farm inputs *Note: incl. fencing; farm equipment; better seed; pesticide*	11.3.16.	*If 11.3.16 = 0* 11.3.17.	*If 11.3.16 = 1* 11.3.18.	*If 11.3.16 = 1* 11.3.19.	*If 11.3.19 = 9,10,11,12,13* 11.3.20.
Invest in more livestock numbers	11.3.21.	*If 11.3.21 = 0* 11.3.22.	*If 11.3.21 = 1* 11.3.23.	*If 11.3.21 = 1* 11.3.24.	*If 11.3.24 = 9,10,11,12,13* 11.3.25.
Invest in improved livestock breeds	11.3.26.	*If 11.3.26 = 0* 11.3.27.	*If 11.3.26 = 1* 11.3.28.	*If 11.3.26 = 1* 11.3.29.	*If 11.3.29 = 9,10,11,12,13* 11.3.30.

Invest in inputs for livestock *Note: incl. vaccine; medicine; boma strengthening; fishpond or beehive construction*	11.3.31.	*If 11.3.31 = 0* 11.3.32.	*If 11.3.31 = 1* 11.3.33.	*If 11.3.31 = 1* 11.3.34.	*If 11.3.34 = 9,10,11,12,13* 11.3.35.
Invest in local business *Note: incl. livestock trade; market stall, shop or tea room; vehicle for transport business*	11.3.36.	*If 11.3.36 = 0* 11.3.37.	*If 11.3.36 = 1* 11.3.38.	*If 11.3.36 = 1* 11.3.39.	*If 11.3.39 = 9,10,11,12,13* 11.3.40.
Invest in family *Note: incl. education; health*	11.3.41.	*If 11.3.41 = 0* 11.3.42.	*If 11.3.41 = 1* 11.3.43.	*If 11.3.41 = 1* 11.3.44.	*If 11.3.44 = 9,10,11,12,13* 11.3.45.
Invest in social relations *Note: incl. support for friends; distant kin; church*	11.3.46.	*If 11.3.46 = 0* 11.3.47.	*If 11.3.46 = 1* 11.3.48.	*If 11.3.46 = 1* 11.3.49.	*If 11.3.49 = 9,10,11,12,13* 11.3.50.
Invest in a political career	11.3.51.	*If 11.3.51 = 0* 11.3.52.	*If 11.3.51 = 1* 11.3.53.	*If 11.3.51 = 1* 11.3.54.	*If 11.3.54 = 9,10,11,12,13* 11.3.55.
Save money in bank	11.3.56.	*If 11.3.56 = 0* 11.3.57.	*If 11.3.56 = 1* 11.3.58.	*If 11.3.56 = 1* 11.3.59.	*If 11.3.59 = 9,10,11,12,13* 11.3.60.
Buy insurance	11.3.61.	*If 11.3.61 = 0* 11.3.62.	*If 11.3.61 = 1* 11.3.63.	*If 11.3.61 = 1* 11.3.64.	*If 11.3.64 = 9,10,11,12,13* 11.3.65.
Participate in microfinance initiative *Note: incl. VICOBA*	11.3.66.	*If 11.3.66 = 0* 11.3.67.	*If 11.3.66 = 1* 11.3.68.	*If 11.3.66 = 1* 11.3.69.	*If 11.3.69 = 9,10,11,12,13* 11.3.70.
Other (please specify)	11.3.71.	*If 11.3.71 = 0* 11.3.72.	*If 11.3.71 = 1* 11.3.73.	*If 11.3.71 = 1* 11.3.74.	*If 11.3.74 = 9,10,11,12,13* 11.3.75.
Code 1: [Select one option] *0 = no; 1 = yes;*					

Code 2: [Select all that apply]
1 = doesn't think it would help; 2 = doesn't have the necessary resources (e.g. money, labour, time);
3 = doesn't have the necessary skills/knowledge; 4 = customary rules prevent it; 5 = village rules prevent it;
6 = WMA rules prevent it; 7 = state rules prevent it; 8 = there is social pressure not to do it;
9 = there are no opportunities to do this;
-7 = refuses to answer; -9 = don't know

Code 3: [Select one option]
0 = not successful at all; 1 = quite successful; 2 = very successful; 3 = variable success;
-7 = refuses to answer; -9 = don't know

Code 4: [Select all that apply]
1 = having sufficient money; 2 = having sufficient family labour or time; 3 = having sufficient land;
4 = having sufficient livestock; 5 = having sufficient access to NTFPs; 6 = having sufficient knowledge/skills;
7 = having sufficient opportunities for alternative income generating activities;
8 = having sufficient availability of inputs (seeds, med, vet, pesticide, fertilizer, fencing etc.);
9 = customary rules; 10 = WMA rules; 11 = village government rules;
12 = rules set by other, non-WMA investors; 13 = national laws; 14 = Intense or repeat disturbances; 15 = Stable weather; 16= Having sufficient social capital/ family links; 17 = Economic situation/ market availability;
-7 = refuses to answer; -9 = don't know

Code 5: [Select one option]
1 = supportive; 2 = restrictive;
-7 = refuses to answer; -9 = don't know

Heavy rain

11.4. Are there ever years with very heavy rain?
Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

If 11.4 = "Yes" go to 11.5, otherwise go to 11.13

11.5. Has there been such a year since 2014?
Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

11.6. What problems do they cause?
List problems:

11.7. Do you adopt any special strategies to cope during periods of heavy rain?
Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

11.8. We would like you to tell us what approaches you usually take to help you manage during these periods?

Strategy	Do YOU adopt this strategy? *Code 1*	If not, why? *Code 2*	If yes, how successful is it? *Code 3*	What affects its success? *Code 4*	If rules, are they supportive or restrictive? *Code 5*
Change crop types grown	11.8.1.	*If 11.8.1 = 0* 11.8.2.	*If 11.8.1 = 1* 11.8.3.	*If 11.8.1 = 1* 11.8.4.	*If 11.8.4 = 9,10,11,12,13* 11.8.5.
Change livestock types used	11.8.6.	*If 11.8.6 = 0* 11.8.7.	*If 11.8.6 = 1* 11.8.8.	*If 11.8.6 = 1* 11.8.9.	*If 11.8.9 = 9,10,11,12,13* 11.8.10.
Use/ purchase additional inputs *Note: incl. seeds, pesticide/ fertilizer/ veterinary medicines*	11.8.11.	*If 11.8.11 = 0* 11.8.12.	*If 11.8.11 = 1* 11.8.13.	*If 11.8.11 = 1* 11.8.14.	*If 11.8.14 = 9,10,11,12,13* 11.8.15.
Farm more land	11.8.16.	*If 11.8.16 = 0* 11.8.17.	*If 11.8.16 = 1* 11.8.18.	*If 11.8.16 = 1* 11.8.19.	*If 11.8.19 = 9,10,11,12,13* 11.8.20.
Farm less land	11.8.21.	*If 11.8.21 = 0* 11.8.22.	*If 11.8.21 = 1* 11.8.23.	*If 11.8.21 = 1* 11.8.24.	*If 11.8.24 = 9,10,11,12,13* 11.8.25.
Seek new area outside village lands to farm/ graze/gather	11.8.26.	*If 11.8.26 = 0* 11.8.27.	*If 11.8.26 = 1* 11.8.28.	*If 11.8.26 = 1* 11.8.29.	*If 11.8.29 = 9,10,11,12,13* 11.8.30.
Seek alternative income/ employment in own village	11.8.31.	*If 11.8.31 = 0* 11.8.32.	*If 11.8.31 = 1* 11.8.33.	*If 11.8.31 = 1* 11.8.34.	*If 11.8.34 = 9,10,11,12,13* 11.8.35.
Migrate out for alternative livelihood activity	11.8.36.	*If 11.8.36 = 0* 11.8.37.	*If 11.8.36 = 1* 11.8.38.	*If 11.8.36 = 1* 11.8.39.	*If 11.8.39 = 9,10,11,12,13* 11.8.40.
Call in family members to help with extra work	11.8.41.	*If 11.8.41 = 0* 11.8.42.	*If 11.8.41 = 1* 11.8.43.	*If 11.8.41 = 1* 11.8.44.	*If 11.8.44 = 9,10,11,12,13* 11.8.45.

Take on additional paid labour	11.8.46.	*If 11.8.46 = 0* 11.8.47.	*If 11.8.46 = 1* 11.8.48.	*If 11.8.46 = 1* 11.8.49.	*If 11.8.49 = 9,10,11,12,13* 11.8.50.
Sell wild products	11.8.51.	*If 11.8.51 = 0* 11.8.52.	*If 11.8.51 = 1* 11.8.53.	*If 11.8.51 = 1* 11.8.54.	*If 11.8.54 = 9,10,11,12,13* 11.8.55.
Sell livestock	11.8.56.	*If 11.8.56 = 0* 11.8.57.	*If 11.8.56 = 1* 11.8.58.	*If 11.8.56 = 1* 11.8.59.	*If 11.8.59 = 9,10,11,12,13* 11.8.60.
Sell land	11.8.61.	*If 11.8.61 = 0* 11.8.62.	*If 11.8.61 = 1* 11.8.63.	*If 11.8.61 = 1* 11.8.64.	*If 11.8.64 = 9,10,11,12,13* 11.8.65.
Seek WMA support	11.8.66.	*If 11.8.66 = 0* 11.8.67.	*If 11.8.66 = 1* 11.8.68.	*If 11.8.66 = 1* 11.8.69.	*If 11.8.69 = 9,10,11,12,13* 11.8.70.
Seek aid from family *Note: incl. gifts of food, loan of livestock, but not labour which is above*	11.8.71.	*If 11.8.71 = 0* 11.8.72.	*If 11.8.71 = 1* 11.8.73.	*If 11.8.71 = 1* 11.8.74.	*If 11.8.74 = 9,10,11,12,13* 11.8.75.
Seek external aid *Note: incl. NGO, church, government*	11.8.76.	*If 11.8.76 = 0* 11.8.77.	*If 11.8.76 = 1* 11.8.78.	*If 11.8.76 = 1* 11.8.79.	*If 11.8.79 = 9,10,11,12,13* 11.8.80.
Other (please specify)	11.8.81.	*If 11.8.81 = 0* 11.8.82.	*If 11.8.81 = 1* 11.8.83.	*If 11.8.81 = 1* 11.8.84.	*If 11.8.84 = 9,10,11,12,13* 11.8.85.
Seek new area on village land to farm/graze/ gather	11.8.86.	*If 11.8.86 = 0* 11.8.87.	*If 11.8.86 = 1* 11.8.88.	*If 11.8.86 = 1* 11.8.89.	*If 11.8.89 = 9,10,11,12,13* 11.8.90.
Landscaping *Note: incl. defences, irrigation*	11.8.91.	11.8.92.	11.8.93.	11.8.94.	11.8.95.
Modify cropping strategy *Note: incl. replant, early harvest*	11.8.96.	11.8.97.	11.8.98.	11.8.99.	11.8.100.

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

If 11.8.1 = "Yes":

11.9. Which crop types do you use less or stop using?

Code 1:

If 11.8.1 = "Yes":

11.10. Which crop types do you use more or start using?

Code 1:

If 11.8.6 = "Yes":

11.11. Which livestock types do you use less or stop using?

Code 1:

11.12. Which livestock types do you use more or start using?

Code 1:

Code 1: [Select all that apply]
1 = cattle; 2 = goats; 3 = sheep; 4 = donkeys/mules; 5 = pigs; 6 = fishponds; 7 = beehives; 8 = improved breeds;
30 = other (please specify); -7 = refuses to answer; -8 = does not apply; -9 = don't know

Low rain

11.13. Are there ever years with very low rain?

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

11.14. Has there been such a year since 2014?

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

11.15. What problems do they cause?

List problems:

11.16. Do you adopt any special strategies to cope during periods of low rain?

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

11.17. We would like you to tell us what approaches you usually take to help you manage during these periods?

Strategy	Do YOU adopt this strategy? *Code 1*	If not, why? *Code 2*	If yes, how successful is it? *Code 3*	What affects its success? *Code 4*	If rules, are they supportive or restrictive? Code 5
Change crop types/ varieties grown	11.17.1.	*If 11.17.1 = 0* 11.17.2.	*If 11.17.1 = 1* 11.17.3.	*If 11.17.1 = 1* 11.17.4.	*If 11.17.4 = 9,10,11,12,13* 11.17.5.
Change livestock types used	11.17.6.	*If 11.17.6 = 0* 11.17.7.	*If 11.17.6 = 1* 11.17.8.	*If 11.17.6 = 1* 11.17.9.	*If 11.17.9 = 9,10,11,12,13* 11.17.10.

Use/purchase/ collect additional inputs *Note: incl. seeds, pesticide/ fertilizer/ veterinary medicines*	11.17.11.	*If 11.17.11 = 0* 11.17.12.	*If 11.17.11 = 1* 11.17.13.	*If 11.17.11 = 1* 11.17.14.	*If 11.17.14 = 9,10,11,12,13* 11.17.15.
Farm more land	11.17.16.	*If 11.17.16 = 0* 11.17.17.	*If 11.17.16 = 1* 11.17.18.	*If 11.17.16 = 1* 11.17.19.	*If 11.17.19 = 9,10,11,12,13* 11.17.20.
Farm less land	11.17.21.	*If 11.17.21 = 0* 11.17.22.	*If 11.17.21 = 1* 11.17.23.	*If 11.17.21 = 1* 11.17.24.	*If 11.17.24 = 9,10,11,12,13* 11.17.25.
Seek new area outside village lands to farm/ graze/gather	11.17.26.	*If 11.17.26 = 0* 11.17.27.	*If 11.17.26 = 1* 11.17.28.	*If 11.17.26 = 1* 11.17.29.	*If 11.17.29 = 9,10,11,12,13* 11.17.30.
Seek alternative income/ employment in own village	11.17.31.	*If 11.17.31 = 0* 11.17.32.	*If 11.17.31 = 1* 11.17.33.	*If 11.17.31 = 1* 11.17.34.	*If 11.17.34 = 9,10,11,12,13* 11.17.35.
Migrate out for alternative livelihood activity	11.17.36.	*If 11.17.36 = 0* 11.17.37.	*If 11.17.36 = 1* 11.17.38.	*If 11.17.36 = 1* 11.17.39.	*If 11.17.39 = 9,10,11,12,13* 11.17.40.
Call in family members to help with extra work	11.17.41.	*If 11.17.41 = 0* 11.17.42.	*If 11.17.41 = 1* 11.17.43.	*If 11.17.41 = 1* 11.17.44.	*If 11.17.44 = 9,10,11,12,13* 11.17.45.
Take on additional paid labour	11.17.46.	*If 11.17.46 = 0* 11.17.47.	*If 11.17.46 = 1* 11.17.48.	*If 11.17.46 = 1* 11.17.49.	*If 11.17.49 = 9,10,11,12,13* 11.17.50.
Sell wild products	11.17.51.	*If 11.17.51 = 0* 11.17.52.	*If 11.17.51 = 1* 11.17.53.	*If 11.17.51 = 1* 11.17.54.	*If 11.17.54 = 9,10,11,12,13* 11.17.55.
Sell livestock	11.17.56.	*If 11.17.56 = 0* 11.17.57.	*If 11.17.56 = 1* 11.17.58.	*If 11.17.56 = 1* 11.17.59.	*If 11.17.59 = 9,10,11,12,13* 11.17.60.
Sell land	11.17.61.	*If 11.17.61 = 0* 11.17.62.	*If 11.17.61 = 1* 11.17.63.	*If 11.17.61 = 1* 11.17.64.	*If 11.17.64 = 9,10,11,12,13* 11.17.65.
Seek WMA support	11.17.66.	*If 11.17.66 = 0* 11.17.67.	*If 11.17.66 = 1* 11.17.68.	*If 11.17.66 = 1* 11.17.69.	*If 11.17.69 = 9,10,11,12,13* 11.17.70.

Seek aid from family *Note: incl. gifts of food, loan of livestock, but not labour which is above*	11.17.71.	*If 11.17.71 = 0* 11.17.72.	*If 11.17.71 = 1* 11.17.73.	*If 11.17.71 = 1* 11.17.74.	*If 11.17.74 = 9,10,11,12,13* 11.17.75.
Seek external aid *Note: incl. NGO, church, government*	11.17.76.	*If 11.17.76 = 0* 11.17.77.	*If 11.17.76 = 1* 11.17.78.	*If 11.17.76 = 1* 11.17.79.	*If 11.17.79 = 9,10,11,12,13* 11.17.80.
Other (please specify)	11.17.81.	*If 11.8.81 = 0* 11.17.82.	*If 11.8.81 = 1* 11.17.83.	*If 11.8.81 = 1* 11.17.84.	*If 11.8.84 = 9,10,11,12,13* 11.17.85.
Seek new area on village land to farm/graze/ gather	11.17.86.	*If 11.17.86 = 0* 11.17.87.	*If 11.17.86 = 1* 11.17.88.	*If 11.17.86 = 1* 11.17.89.	*If 11.17.89 = 9,10,11,12,13* 11.17.90.
Landscaping *Note: incl. defences, irrigation*	11.17.91.	11.17.92.	11.17.93.	11.17.94.	11.17.95.
Modify cropping strategy *Note: incl. replant, early harvest*	11.17.96.	11.17.97.	11.17.98.	11.17.99.	11.17.100.

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

Code 2: [Select all that apply]
1 = doesn't think it would help; 2 = doesn't have the necessary resources (e.g. money, labour, time);
3 = doesn't have the necessary skills/knowledge; 4 = customary rules prevent it; 5 = village rules prevent it;
6 = WMA rules prevent it; 7 = state rules prevent it; 8 = there is social pressure not to do it;
9 = there are no opportunities to do this;
-7 = refuses to answer; -9 = don't know

Code 3: [Select one option]
0 = not successful at all; 1 = quite successful; 2 = very successful;
-7 = refuses to answer; -9 = don't know

Code 4: [Select all that apply]
1 = having sufficient money; 2 = having sufficient family labour or time; 3 = having sufficient land;
4 = having sufficient livestock; 5 = having sufficient access to NTFPs; 6 = having sufficient knowledge/skills;
7 = having sufficient opportunities for alternative income generating activities;
8 = having sufficient availability of inputs (seeds, med, vet, pesticide, fertilizer, fencing etc.);
9 = customary rules; 10 = WMA rules; 11 = village government rules;
12 = rules set by other, non-WMA investors; 13 = national laws; 14 = Intense or repeat disturbances; 15 = Stable weather; 16= Having sufficient social capital/ family links; 17 = Economic situation/ market availability
-7 = refuses to answer; -9 = don't know

Code 5: [Select one option]
1 = supportive; 2 = restrictive;
-7 = refuses to answer; -9 = don't know

11.18. Which crop types do you use less or stop using?

Code 1:

Code 1: [Select all that apply]
1 = maize; 2 = peas; 3 = beans; 4 = rice; 5 = millet; 6 = cassava; 7 = fruits; 8 = vegetables; 9 = sesame/sunflower;
10 = non-food crops (tobacco or cotton); 11 = improved varieties;
30 = other (please specify); -7 = refuses to answer; -8 = does not apply; -9 = don't know

11.19. Which crop types do you use more or start using?

Code 1:

Code 1: [Select all that apply]
1 = maize; 2 = peas; 3 = beans; 4 = rice; 5 = millet; 6 = cassava; 7 = fruits; 8 = vegetables; 9 = sesame/sunflower;
10 = non-food crops (tobacco or cotton); 11 = improved varieties;
30 = other (please specify); -7 = refuses to answer; -8 = does not apply; -9 = don't know

11.20. Which livestock types do you use less or stop using?

Code 1:

Code 1: [Select all that apply]
1 = cattle; 2 = goats; 3 = sheep; 4 = donkeys/mules; 5 = pigs; 6 = fishponds; 7 = beehives; 8 = improved breeds;
30 = other (please specify); -7 = refuses to answer; -8 = does not apply; -9 = don't know

11.21. Which livestock types do you use more or start using?

Code 1:

Code 1: [Select all that apply]
1 = cattle; 2 = goats; 3 = sheep; 4 = donkeys/mules; 5 = pigs; 6 = fishponds; 7 = beehives; 8 = improved breeds;
30 = other (please specify); -7 = refuses to answer; -8 = does not apply; -9 = don't know

Rain falling at unexpected times

11.22. Are there ever years when rain comes at unexpected times?

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

11.23. Has there been such a year since 2014?

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

11.24. What problems do they cause?

List problems:

11.25. Do you adopt any special strategies to cope during years when rain comes at unexpected times?

Code 1:

If 11.25 = "Yes" go to 11.26, otherwise go to 11.31

11.26. We would like you to tell us what approaches you usually take to help you manage during these periods?

Strategy	Do YOU adopt this strategy? *Code 1*	If not, why? *Code 2*	If yes, how successful is it? *Code 3*	What affects its success? *Code 4*	If rules, are they supportive or restrictive? Code 5
Change crop types/ varieties grown	11.26.1.	*If 11.26.1 = 0* 11.26.2.	*If 11.26.1 = 1* 11.26.3.	*If 11.26.1 = 1* 11.26.4.	*If 11.26.4 = 9,10,11,12,13* 11.26.5.
Change livestock types used	11.26.6.	*If 11.26.6 = 0* 11.26.7.	*If 11.26.6 = 1* 11.26.8.	*If 11.26.6 = 1* 11.26.9.	*If 11.26.9 = 9,10,11,12,13* 11.26.10.
Use additional inputs *Note: incl. seeds, pesticide/ fertilizer/ veterinary medicines*	11.26.11.	*If 11.26.11 = 0* 11.26.12.	*If 11.26.11 = 1* 11.26.13.	*If 11.26.11 = 1* 11.26.14.	*If 11.26.14 = 9,10,11,12,13* 11.26.15.
Farm more land	11.26.16.	*If 11.26.16 = 0* 11.26.17.	*If 11.26.16 = 1* 11.26.18.	*If 11.26.16 = 1* 11.26.19.	*If 11.26.19 = 9,10,11,12,13* 11.26.20.
Farm less land	11.26.21.	*If 11.26.21 = 0* 11.26.22.	*If 11.26.21 = 1* 11.26.23.	*If 11.26.21 = 1* 11.26.24.	*If 11.26.24 = 9,10,11,12,13* 11.26.25.
Seek new area outside village lands to farm/ graze/gather	11.26.26.	*If 11.26.26 = 0* 11.26.27.	*If 11.26.26 = 1* 11.26.28.	*If 11.26.26 = 1* 11.26.29.	*If 11.26.29 = 9,10,11,12,13* 11.26.30.
Seek alternative income/ employment in own village	11.26.31.	*If 11.26.31 = 0* 11.26.32.	*If 11.26.31 = 1* 11.26.33.	*If 11.26.31 = 1* 11.26.34.	*If 11.26.34 = 9,10,11,12,13* 11.26.35.

Migrate out for alternative livelihood activity	11.26.36.	*If 11.26.36 = 0* 11.26.37.	*If 11.26.36 = 1* 11.26.38.	*If 11.26.36 = 1* 11.26.39.	*If 11.26.39 = 9,10,11,12,13* 11.26.40.
Call in family members to help with extra work	11.26.41.	*If 11.26.41 = 0* 11.26.42.	*If 11.26.41 = 1* 11.26.43.	*If 11.26.41 = 1* 11.26.44.	*If 11.26.44 = 9,10,11,12,13* 11.26.45.
Take on additional paid labour	11.26.46.	*If 11.26.46 = 0* 11.26.47.	*If 11.26.46 = 1* 11.26.48.	*If 11.26.46 = 1* 11.26.49.	*If 11.26.49 = 9,10,11,12,13* 11.26.50.
Sell wild products	11.26.51.	*If 11.26.51 = 0* 11.26.52.	*If 11.26.51 = 1* 11.26.53.	*If 11.26.51 = 1* 11.26.54.	*If 11.26.54 = 9,10,11,12,13* 11.26.55.
Sell livestock	11.26.56.	*If 11.26.56 = 0* 11.26.57.	*If 11.26.56 = 1* 11.26.58.	*If 11.26.56 = 1* 11.26.59.	*If 11.26.59 = 9,10,11,12,13* 11.26.60.
Sell land	11.26.61.	*If 11.26.61 = 0* 11.26.62.	*If 11.26.61 = 1* 11.26.63.	*If 11.26.61 = 1* 11.26.64.	*If 11.26.64 = 9,10,11,12,13* 11.26.65.
Seek WMA support	11.26.66.	*If 11.26.66 = 0* 11.26.67.	*If 11.26.66 = 1* 11.26.68.	*If 11.26.66 = 1* 11.26.69.	*If 11.26.69 = 9,10,11,12,13* 11.26.70.
Seek aid from family *Note: incl. gifts of food, loan of livestock, but not labour which is above*	11.26.71.	*If 11.26.71 = 0* 11.26.72.	*If 11.26.71 = 1* 11.26.73.	*If 11.26.71 = 1* 11.26.74.	*If 11.26.74 = 9,10,11,12,13* 11.26.75.
Seek external aid *Note: incl. NGO, church, government*	11.26.76.	*If 11.26.76 = 0* 11.26.77.	*If 11.26.76 = 1* 11.26.78.	*If 11.26.76 = 1* 11.26.79.	*If 11.26.79 = 9,10,11,12,13* 11.26.80.
Other (please specify)	11.26.81.	*If 11.8.81 = 0* 11.26.82.	*If 11.8.81 = 1* 11.26.83.	*If 11.8.81 = 1* 11.26.84.	*If 11.8.84 = 9,10,11,12,13* 11.26.85.
Seek new area on village land to farm/graze/ gather	11.26.86.	*If 11.26.86 = 0* 11.26.87.	*If 11.26.86 = 1* 11.26.88.	*If 11.26.86 = 1* 11.26.89.	*If 11.26.89 = 9,10,11,12,13* 11.26.90.

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

If 11.26.1 = "Yes"

11.27. Which crop types do you use less or stop using?

Code 1:

If 11.26.1 = "Yes"

11.28. Which crop types do you use more or start using?

Code 1:

If 11.26.6 = "Yes"

11.29. Which livestock types do you use less or stop using?

Code 1:

11.30. Which livestock types do you use more or start using?

Code 1:

Code 1: [Select all that apply]
1 = cattle; 2 = goats; 3 = sheep; 4 = donkeys/mules; 5 = pigs; 6 = fishponds; 7 = beehives; 8 = improved breeds;
30 = other (please specify); -7 = refuses to answer; -8 = does not apply; -9 = don't know

Other extreme climatic events

11.31. Are there ever years with other extreme climatic events, such as very high or very low temperatures or very high winds?

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

11.32. Has there been such a year since 2014?

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

11.33. What problems do they cause?

List problems:

11.34. Do you adopt any special strategies to cope during periods of very high or very low temperatures or very high winds?

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

11.35. We would like you to tell us what approaches you usually take to help you manage during these periods?

Strategy	**Do YOU adopt this strategy?** *Code 1*	**If not, why?** *Code 2*	**If yes, how successful is it?** *Code 3*	**What affects its success?** *Code 4*	**If rules, are they supportive or restrictive?** Code 5
Change crop types/ varieties grown	11.35.1.	*If 11.35.1 = 0* 11.35.2.	*If 11.35.1 = 1* 11.35.3.	*If 11.35.1 = 1* 11.35.4.	*If 11.35.4 = 9,10,11,12,13* 11.35.5.

Change livestock types used	11.35.6.	*If 11.35.6 = 0* 11.35.7.	*If 11.35.6 = 1* 11.35.8.	*If 11.35.6 = 1* 11.35.9.	*If 11.35.9 = 9,10,11,12,13* 11.35.10.
Use additional inputs *Note: incl. seeds, pesticide/ fertilizer/ veterinary medicines*	11.35.11.	*If 11.35.11 = 0* 11.35.12.	*If 11.35.11 = 1* 11.35.13.	*If 11.35.11 = 1* 11.35.14.	*If 11.35.14 = 9,10,11,12,13* 11.35.15.
Farm more land	11.35.16.	*If 11.35.16 = 0* 11.35.17.	*If 11.35.16 = 1* 11.35.18.	*If 11.35.16 = 1* 11.35.19.	*If 11.35.19 = 9,10,11,12,13* 11.35.20.
Farm less land	11.35.21.	*If 11.35.21 = 0* 11.35.22.	*If 11.35.21 = 1* 11.35.23.	*If 11.35.21 = 1* 11.35.24.	*If 11.35.24 = 9,10,11,12,13* 11.35.25.
Seek new area outside village lands to farm/ graze/gather	11.35.26.	*If 11.35.26 = 0* 11.35.27.	*If 11.35.26 = 1* 11.35.28.	*If 11.35.26 = 1* 11.35.29.	*If 11.35.29 = 9,10,11,12,13* 11.35.30.
Seek alternative income/ employment in own village	11.35.31.	*If 11.35.31 = 0* 11.35.32.	*If 11.35.31 = 1* 11.35.33.	*If 11.35.31 = 1* 11.35.34.	*If 11.35.34 = 9,10,11,12,13* 11.35.35.
Migrate out for alternative livelihood activity	11.35.36.	*If 11.35.36 = 0* 11.35.37.	*If 11.35.36 = 1* 11.35.38.	*If 11.35.36 = 1* 11.35.39.	*If 11.35.39 = 9,10,11,12,13* 11.35.40.
Call in family members to help with extra work	11.35.41.	*If 11.35.41 = 0* 11.35.42.	*If 11.35.41 = 1* 11.35.43.	*If 11.35.41 = 1* 11.35.44.	*If 11.35.44 = 9,10,11,12,13* 11.35.45.
Take on additional paid labour	11.35.46.	*If 11.35.46 = 0* 11.35.47.	*If 11.35.46 = 1* 11.35.48.	*If 11.35.46 = 1* 11.35.49.	*If 11.35.49 = 9,10,11,12,13* 11.35.50.
Sell wild products	11.35.51.	*If 11.35.51 = 0* 11.35.52.	*If 11.35.51 = 1* 11.35.53.	*If 11.35.51 = 1* 11.35.54.	*If 11.35.54 = 9,10,11,12,13* 11.35.55.
Sell livestock	11.35.56.	*If 11.35.56 = 0* 11.35.57.	*If 11.35.56 = 1* 11.35.58.	*If 11.35.56 = 1* 11.35.59.	*If 11.35.59 = 9,10,11,12,13* 11.35.60.
Sell land	11.35.61.	*If 11.35.61 = 0* 11.35.62.	*If 11.35.61 = 1* 11.35.63.	*If 11.35.61 = 1* 11.35.64.	*If 11.35.64 = 9,10,11,12,13* 11.35.65.
Seek WMA support	11.35.66.	*If 11.35.66 = 0* 11.35.67.	*If 11.35.66 = 1* 11.35.68.	*If 11.35.66 = 1* 11.35.69.	*If 11.35.69 = 9,10,11,12,13* 11.35.70.

Seek aid from family *Note: incl. gifts of food, loan of livestock, but not labour which is above*	11.35.71.	*If 11.35.71 = 0* 11.35.72.	*If 11.35.71 = 1* 11.35.73.	*If 11.35.71 = 1* 11.35.74.	*If 11.35.74 = 9,10,11,12,13* 11.35.75.
Seek external aid *Note: incl. NGO, church, government*	11.35.76.	*If 11.35.76 = 0* 11.35.77.	*If 11.35.76 = 1* 11.35.78.	*If 11.35.76 = 1* 11.35.79.	*If 11.35.79 = 9,10,11,12,13* 11.35.80.
Other (please specify)	11.35.81.	*If 11.8.81 = 0* 11.35.82.	*If 11.8.81 = 1* 11.35.83.	*If 11.8.81 = 1* 11.35.84.	*If 11.8.84 = 9,10,11,12,13* 11.35.85.
Seek new area on village land to farm/graze/ gather	11.35.86.	*If 11.35.86 = 0* 11.35.87.	*If 11.35.86 = 1* 11.35.88.	*If 11.35.86 = 1* 11.35.89.	*If 11.35.89 = 9,10,11,12,13* 11.35.90.

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know

Code 2: [Select all that apply]
1 = doesn't think it would help; 2 = doesn't have the necessary resources (e.g. money, labour, time);
3 = doesn't have the necessary skills/knowledge; 4 = customary rules prevent it; 5 = village rules prevent it;
6 = WMA rules prevent it; 7 = state rules prevent it; 8 = there is social pressure not to do it;
9 = there are no opportunities to do this;
-7 = refuses to answer; -9 = don't know

Code 3: [Select one option]
0 = not successful at all; 1 = quite successful; 2 = very successful;
-7 = refuses to answer; -9 = don't know

Code 4: [Select all that apply]
1 = having sufficient money; 2 = having sufficient family labour or time; 3 = having sufficient land;
4 = having sufficient livestock; 5 = having sufficient access to NTFPs; 6 = having sufficient knowledge/skills;
7 = having sufficient opportunities for alternative income generating activities;
8 = having sufficient availability of inputs (seeds, med, vet, pesticide, fertilizer, fencing etc.);
9 = customary rules; 10 = WMA rules; 11 = village government rules;
12 = rules set by other, non-WMA investors; 13 = national laws;
-7 = refuses to answer; -9 = don't know

Code 5: [Select one option]
1 = supportive; 2 = restrictive;
-7 = refuses to answer; -9 = don't know

11.36. Which crop types do you use less or stop using?

Code 1:

Code 1: [Select all that apply]
1 = maize; 2 = peas; 3 = beans; 4 = rice; 5 = millet; 6 = cassava; 7 = fruits; 8 = vegetables; 9 = sesame/sunflower;
10 = non-food crops (tobacco or cotton); 11 = improved varieties;
30 = other (please specify); -7 = refuses to answer; -8 = does not apply; -9 = don't know

11.37. Which crop types do you use more or start using?

Code 1:

Code 1: [Select all that apply]
1 = maize; 2 = peas; 3 = beans; 4 = rice; 5 = millet; 6 = cassava; 7 = fruits; 8 = vegetables; 9 = sesame/sunflower;
10 = non-food crops (tobacco or cotton); 11 = improved varieties;
30 = other (please specify); -7 = refuses to answer; -8 = does not apply; -9 = don't know

11.38. Which livestock types do you use less or stop using?

Code 1:

Code 1: [Select all that apply]
1 = cattle; 2 = goats; 3 = sheep; 4 = donkeys/mules; 5 = pigs; 6 = fishponds; 7 = beehives; 8 = improved breeds;
30 = other (please specify); -7 = refuses to answer; -8 = does not apply; -9 = don't know

11.39. Which livestock types do you use more or start using?

Code 1:

Code 1: [Select all that apply]
1 = cattle; 2 = goats; 3 = sheep; 4 = donkeys/mules; 5 = pigs; 6 = fishponds; 7 = beehives; 8 = improved breeds;
30 = other (please specify); -7 = refuses to answer; -8 = does not apply; -9 = don't know

12. Direct income and benefits

Note: In the following a "salary" is defined to include any payment or compensation INCLUDING per diems and allowances for undertaking the relevant activity. "Patrolling" refers to any activity concerned with enforcing or monitoring rules and regulations in relation to natural resource use in a state protected area or on WMA/village land. "Working for tourists and researchers" refers to any paid work such as guiding or functioning as an interpreter, porter or cook on trips into the WMA/village land as well as in relation to cultural visits or research in the village. "Servicing tourists and researchers" refers to providing transport, accommodation, food or other services not included under "work". "Selling crafts and souvenirs" refer to sale of items to tourists and researchers not included under services. "Income generating projects" refers to income from any externally implemented income generating activities such as bee hives, fish ponds, woodlots etc. "Making and maintaining communal and tourism infrastructure" includes boundary clearing, trails and roads as well as shelters and other facilities used by tourists and researchers in state protected areas or on WMA/village land.

12.1. Have you or other members of your homestead earned income from the following sources during the past 12 months?

Activity	12.1.1. Have you or other	*Show question for any items*

	members of your homestead earned income from this in the last 12 months? *Select all that apply*	selected in 12.1.1 **What is your net income from this activity in the past 12 months?** *TSh*
[WMA only] **Patrolling in the WMA/on village land**		12.1.2.
Patrolling in a state protected area		12.1.3.
WMA or VNRC duty (allowances etc.)		12.1.4.
Servicing tourists, hunters, and researchers		12.1.5.
Selling crafts and souvenirs		12.1.6.
Other, please specify:		12.1.7.

12.2. Has any member of your homestead received any individual benefits since 2014?
Note: Please probe for the various options.

Type of benefit	What was the last year you received this benefit? *Year*	What is the approximate value of the benefit from 2014 to now? *TSh*	Who provided this benefit? *Code 1*
Scholarship for children to study	12.2.1.	12.2.2.	12.2.3.
Donation of cows	12.2.4.	12.2.5.	12.2.6.
Donation of pigs	12.2.7.	12.2.8.	12.2.9.
Donation of chicken	12.2.10.	12.2.11.	12.2.12.
Donation of fish farm	12.2.13.	12.2.14.	12.2.15.
Donation of bee hives	12.2.16.	12.2.17.	12.2.18.
Microfinance (e.g. small loans, VICOBA)	12.2.19.	12.2.20.	12.2.21.
Other, specify:	12.2.22.	12.2.23.	12.2.24.

Code 1: [Select all that apply]
1 = WMA; 2 = church; 3 = government; 4 = project/NGO (e.g. Friends of Mbarangandu); 5 = family and friends;
6 = other external aid (please specify);
-7 = refuses to answer; -8 = does not apply; -9 = don't know

12.3. Can you tell us what public development projects were built/repaired in your village and ward from 2014 up until now, where your homestead usually has to CONTRIBUTE with CASH or IN KIND?
Enumerator: First ask the respondent to name all projects between 2014 and now, independent whether the homestead actually had to contribute or not.

Public development project	Was this project built or repaired between 2014 and now? *Code 1*	Would your homestead have had to contribute to the project, either fully or partly? *Code 1*	Has your homestead's contribution to this project been reduced by, or exempted because of help from others, including local institutions? *Code 2*	To what extent were your homestead's contributions reduced? *Code 3*
Primary or secondary school (village or ward level)	12.3.1.	*If 12.3.1 = 1* 12.3.2.	*If 12.3.2 = 1* 12.3.3.	*If 12.3.2 = 1* 12.3.4.
Village office	12.3.5.	*If 12.3.5 = 1* 12.3.6.	*If 12.3.6 = 1* 12.3.7.	*If 12.3.6 = 1* 12.3.8.
Health centre (village or ward level)	12.3.9.	*If 12.3.9 = 1* 12.3.10.	*If 12.3.10 = 1* 12.3.11.	*If 12.3.10 = 1* 12.3.12.
Road	12.3.13.	*If 12.3.13 = 1* 12.3.14.	*If 12.3.14 = 1* 12.3.15.	*If 12.3.14 = 1* 12.3.16.
Water (wells, piped, etc)	12.3.17.	*If 12.3.17 = 1* 12.3.18.	*If 12.3.18 = 1* 12.3.19.	*If 12.3.18 = 1* 12.3.20.
Other, specify:	12.3.21.	*If 12.3.21 = 1* 12.3.22.	*If 12.3.22 = 1* 12.3.23.	*If 12.3.22 = 1* 12.3.24.

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know.

Code 2: [Select all that apply]
0 = no; 1 = WMA; 2 = church; 3 = government; 4 = project/NGO (e.g. Friends of Mbarangandu);
5 = other external aid; 6 = family and friends;
-7 = refuses to answer; -8 = does not apply; -9 = don't know.

Code 3: [Select one option]
0 = 0; 1 = <25%; 2 = 26-50%; 3 = 51-75%; 4 = 76-100%;
-7 = refuses to answer; -8 = does not apply; -9 = don't know.

13.   Conflict between villages and between people in this village

Conflict with other villages over natural resources

13.1. Has any member of your household been in conflict with MEMBERS OF OTHER VILLAGES regarding NATURAL RESOURCES-related issues since 2014?

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know.

If 13.1 = "Yes":

13.2. Please tell us about these conflicts.

Resource	Has conflict occurred over this resource? Code 1	What form has the conflict taken? Code 2	Which authorities do people look to to resolve these conflicts? Code 3	Have the FREQUENCY of these conflicts changed from 2014 to now? Code 4	Have the SEVERITY of these conflicts changed from 2014 to now? Code 4
Water for people	13.2.1.	*If 13.2.1 = 1* 13.2.2.	*If 13.2.1 = 1* 13.2.3.	*If 13.2.1 = 1* 13.2.4.	*If 13.2.1 = 1* 13.2.5.
Water for livestock	13.2.6.	*If 13.2.6 = 1* 13.2.7.	*If 13.2.6 = 1* 13.2.8.	*If 13.2.6 = 1* 13.2.9.	*If 13.2.6 = 1* 13.2.10.
Farming land	13.2.11.	*If 13.2.11 = 1* 13.2.12.	*If 13.2.11 = 1* 13.2.13.	*If 13.2.11 = 1* 13.2.14.	*If 13.2.11 = 1* 13.2.15.
Grazing land	13.2.16.	*If 13.2.16 = 1* 13.2.17.	*If 13.2.16 = 1* 13.2.18.	*If 13.2.16 = 1* 13.2.19.	*If 13.2.16 = 1* 13.2.20.
Fishponds	13.2.21.	*If 13.2.21 = 1* 13.2.22.	*If 13.2.21 = 1* 13.2.23.	*If 13.2.21 = 1* 13.2.24.	*If 13.2.21 = 1* 13.2.25.
Beehives	13.2.26.	*If 13.2.26 = 1* 13.2.27.	*If 13.2.26 = 1* 13.2.28.	*If 13.2.26 = 1* 13.2.29.	*If 13.2.26 = 1* 13.2.30.
Timber	13.2.31.	*If 13.2.31 = 1* 13.2.32.	*If 13.2.31 = 1* 13.2.33.	*If 13.2.31 = 1* 13.2.34.	*If 13.2.31 = 1* 13.2.35.
NTFPs*	13.2.36.	*If 13.2.36 = 1* 13.2.37.	*If 13.2.36 = 1* 13.2.38.	*If 13.2.36 = 1* 13.2.39.	*If 13.2.36 = 1* 13.2.40.

* Note: NTFPs = non-timber forest products, and includes medicinal plants, wild fish, wild honey, firewood, charcoal, thatch, poles and rope.

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know.

Code 2: [Select all that apply]
1 = trespass; 2 = theft; 3 = threats; 4 = damage to resource; 5 = attacks on self/members of homestead;
30 = other (please specify); -7 = refuses to answer; -8 = does not apply; -9 = don't know.

Code 3: [Select all that apply]
1 = village government; 2 = district government; 3 = national government; 4 = WMA;
5 = village natural resource committee; 6 = police;
30 = other (please specify); -7 = refuses to answer; -8 = does not apply; -9 = don't know.

Code 4: [Select one option]
1 = much less frequent; 2 = less frequent; 3 = no change; 4 = more frequent; 5 = much more frequent;
-7 = refuses to answer; -8 = does not apply; -9 = don't know.

Conflict between people living in this village over natural resources

13.3. Has any member of your household been in conflict with OTHER PEOPLE IN THIS VILLAGE regarding NATURAL RESOURCES-related issues since 2014?

Code 1:

If 13.3 = "Yes":

13.4. Please tell us about these conflicts.

Resource	Has conflict occurred over this resource? *Code 1*	What form has the conflict taken? *Code 2*	Which authorities do people look to to resolve these conflicts? *Code 3*	Have the FREQUENCY of these conflicts changed from 2014 to now? *Code 4*	Have the SEVERITY of these conflicts changed from 2014 to now? *Code 4*
Water for people	13.4.1.	*If 13.4.1 = 1* 13.4.2.	*If 13.4.1 = 1* 13.4.3.	*If 13.4.1 = 1* 13.4.4.	*If 13.4.1 = 1* 13.4.5.
Water for livestock	13.4.6.	*If 13.4.6 = 1* 13.4.7.	*If 13.4.6 = 1* 13.4.8.	*If 13.4.6 = 1* 13.4.9.	*If 13.4.6 = 1* 13.4.10.
Farming land	13.4.11.	*If 13.4.11 = 1* 13.4.12.	*If 13.4.11 = 1* 13.4.13.	*If 13.4.11 = 1* 13.4.14.	*If 13.4.11 = 1* 13.4.15.
Grazing land	13.4.16.	*If 13.4.16 = 1* 13.4.17.	*If 13.4.16 = 1* 13.4.18.	*If 13.4.16 = 1* 13.4.19.	*If 13.4.16 = 1* 13.4.20.
Fishponds	13.4.21.	*If 13.4.21 = 1* 13.4.22.	*If 13.4.21 = 1* 13.4.23.	*If 13.4.21 = 1* 13.4.24.	*If 13.4.21 = 1* 13.4.25.
Beehives	13.4.26.	*If 13.4.26 = 1* 13.4.27.	*If 13.4.26 = 1* 13.4.28.	*If 13.4.26 = 1* 13.4.29.	*If 13.4.26 = 1* 13.4.30.
Timber	13.4.31.	*If 13.4.31 = 1* 13.4.32.	*If 13.4.31 = 1* 13.4.33.	*If 13.4.31 = 1* 13.4.34.	*If 13.4.31 = 1* 13.4.35.
NTFPs*	13.4.36.	*If 13.4.36 = 1* 13.4.37.	*If 13.4.36 = 1* 13.4.38.	*If 13.4.36 = 1* 13.4.39.	*If 13.4.36 = 1* 13.4.40.

* Note: NTFPs = non-timber forest products, and includes medicinal plants, wild fish, wild honey, firewood, charcoal, thatch, poles and rope.

14.   Conflict with authorities

Note: In the following we use the term 'in conflict' in the meaning of being arrested, fined, having produce or tools confiscated or similar official action, irrespective of its legitimacy. This section therefore refers to CONFLICT WITH AUTHORITIES. Conflict with other individuals within the village or other villages is dealt with in later sections.

Conflict over wildlife

14.1. Has any member of your household been accused of any of the following WILDLIFE-related conflicts by any authority since 2014?
Note: Sensitive question

Form of conflict	14.1.1. Has this happened since 2014? *Select all that apply*	*Show question for any items selected in 14.1.1* **Which authority were you in conflict with?** *Code 1:*	*Show question for any items selected in 14.1.1* **Were you sanctioned?** *Code 2:*	*Show question for any items selected in 14.1.1* **Did you believe the sanction was fair?** *Code 2:*
Trespass		14.1.2.	14.1.3.	14.1.4.
Poaching		14.1.5.	14.1.6.	14.1.7.
Making threats		14.1.8.	14.1.9.	14.1.10.
Harming wildlife		14.1.11.	14.1.12.	14.1.13.
Physical attack on personnel		14.1.14.	14.1.15.	14.1.16.
Other (please specify)		14.1.17.	14.1.18.	14.1.19.

Conflict over natural resources

14.2. Has any member of your household been accused of any of the following NATURAL RESOURCE-related conflicts by any authority since 2014?
Note: Sensitive question

Form of conflict	14.2.1. Has this happened since 2014? *Select all that apply*	*Show question for any items selected in 14.1.1* **Which authority were you in conflict with?** *Code 1:*	*Show question for any items selected in 14.1.1* **Were you sanctioned?** *Code 2:*	*Show question for any items selected in 14.1.1* **Did you believe the sanction was fair?** *Code 2:*
Trespass		14.2.2.	14.2.3.	14.2.4.
Theft/poaching		14.2.5.	14.2.6.	14.2.7.
Making threats		14.2.8.	14.2.9.	14.2.10.
Damaging a natural resource		14.2.11.	14.2.12.	14.2.13.
Physical attack on personnel		14.2.14.	14.2.15.	14.2.16.
Other (please specify)		14.2.17.	14.2.18.	14.2.19.

Code 1: [Select all that apply]
1 = NP/GR/GCA patrols; 2 = WMA patrols; 3 = village government; 4 = non-WMA investor; 5 = NGO;
30 = other (please specify);

Code 2: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know.

15.   Human casualties and injuries from wildlife and rangers

15.1. Since 2014, has <u>any member of your homestead</u> experienced casualties or permanent injuries from encounters with <u>wildlife</u> or with <u>people working to conserve wildlife</u>?

Code 1:

Code 1: [Select one option]
0 = no; 1 = 1 incident; 2 = 2 incidents; 3 = 3 incidents; 4 = 4 incidents; 5 = more than 4 incidents;
-7 = refuses to answer; -8 = does not apply; -9 = don't know.

If 15.1 = "No" go to 16.1, otherwise go to 15.2

15.2. When did it happen last?

Year:

15.3. Who was injured or killed?

Code 1:

Code 1: [Select all that apply]
1 = respondent; 2 = wife or husband of respondent; 3 = brother or sister of the respondent; 4 = child;
30 = other (please specify); -7 = refuses to answer; -8 = does not apply; -9 = don't know.

15.4. What was the nature of the injury?

Code 1:

Code 1: [Select one option]
1 = death; 2 = permanently disabled; 3 = severe injury; 4 = minor injury; 5 = emotional distress and anxiety;
30 = other (please specify); -7 = refuses to answer; -8 = does not apply; -9 = don't know.

15.5. What caused the injury/death?

Code 1:

Code 1: [Select one option]
1 = people (ranger, game scout, guard, etc.); 2 = lion; 3 = elephant; 4 = hippo; 5 = buffalo; 6 = leopard;
30 = other (please specify); -7 = refuses to answer; -8 = does not apply; -9 = don't know.

15.6. In response to the incident, did rangers attend?

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know.

15.7. Was evidence presented to any authority?

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know.

15.8. Did wildlife authorities take any action?

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know.

15.9. Did you receive compensation?

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know.

If 15.9 = "Yes":

15.10. Were you satisfied with the level of compensation?

Code 1:

Code 1: [Select one option]
0 = no; 1 = yes;
-7 = refuses to answer; -8 = does not apply; -9 = don't know.

16.   Enumerator assessment of the interviewee

Note: The interview is now finished. Don't forget to record GPS coordinates of the respondents homestead on paper.

16.1. How reliable is the information generally provided by the interviewee?

Code 1:

Code 1: [Select one option]
0 = completely unreliable; 1 = poor; 2 = reasonably reliable; 3 = very reliable

16.2. List the numbers of any sections and/or questions where you think answers are less reliable

Question numbers: