

Household ID \_\_\_\_\_

## Adoption of Conservation Agriculture Practices in Southern Africa

International Institute of Tropical Agriculture (IITA) and  
International Maize and Wheat Improvement Center (CIMMYT)

Household Survey under the research project *Understanding and Enhancing Adoption of Conservation Agriculture in Smallholder Farming Systems of Southern Africa (ACASA)*

### Consent Form

Good morning/afternoon. My name is \_\_\_\_\_. I am from IITA/CIMMYT. IITA and CIMMYT are currently conducting a study to understand the adoption, and factors that influence adoption and abandonment of conservation agriculture practices in Malawi. Your household has been selected as one of those to which the questions will be asked. Your participation in this survey is fully voluntary and I appreciate your help in answering the questions. Your answers will be kept completely confidential. If you choose to participate, you may refuse to answer certain questions, or you may stop participating at any time [without giving any reasons to the interviewer]. Your answers will be aggregated together with the responses from other participating households and reported as anonymised data not relatable to any person. Names and contact information will not be shared publicly beyond the core research team and will only be used for interview follow-up purposes related to this study or its extension. If you have any question about this survey, you may ask me or contact **Dr. Adane Tufa at +265888014944** or **Mr. Joseph Kanyamuka at +265995967065** or **Mr Mike Kachedwa of National Commission for Science and Technology at 0999360516**. May I continue to ask the questions?

By verbally agreeing to continue this interview, you indicate your willingness to voluntarily participate in the study. Can I proceed? **Code:** 0. No; 1. Yes

### Part 0: HOUSEHOLD AND VILLAGE IDENTIFICATION

	Code		Code
Date of interview	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	13. Name of enumerator	<input type="text"/> <input type="text"/>
Household Identification	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	14. Name of supervisor:	
1. Country	<input type="text"/>		
2. Province/Region	<input type="text"/> <input type="text"/>		
3. District:	<input type="text"/> <input type="text"/>		
4. Extension Planning Area(EPA)/Cluster	<input type="text"/> <input type="text"/> <input type="text"/>	GPS reading of homestead	
5. Traditional Authority <i>Mfumu yayikulu</i>			
6. Village: <i>Mudzi</i>		15. Way point number:	

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[illegible]

16. Latitude (South)									
			0			.			

  

17. Longitude(East)									
			0			.			

  

18. Altitude (meter above sea level)									
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## PART 1: HOUSEHOLD COMPOSITION AND CHARACTERISTICS *(GAWO LOYAMBA: KAUNDULU WA PA BANJA)*

Family code	Name of household member Make a complete list of all individuals who normally live and eat their meals together in this household, starting with the head of household. (Confirm that household head here is same as household head listed on cover.) <i>Tchulani anthu ose omwe amakhala nyumba muno ndipo amadya chakudya kuchokera pakhomo pano) Kuyambira ndi mutu wa banja</i>	Sex Codes A	Age (years) <i>Zaka zawo</i>	Marital status Codes B	Education (years) Codes C <i>Maphunziro awo</i>	Relation to HH head Codes D <i>Ubale ndi mutu wa banja</i>	Main occupation Codes E <i>Ntchito yomwe amadalira pa moyo</i>
1	2	3	4	5	6	7	8
01							
02							
03							
04							
05							
06							
07							
08							
09							
10							

Codes A	Codes B		Codes C	Codes D		Codes E	
0. Female	1. Married living with spouse/s ( <i>okwatira ndipo akukhalira limodzi</i> )	5. Never married(sanakwatirepo)	0. None/Illiterate(sanapiteko ku sukulu)	1. Household head(mutu wabanja)	6. Grandchild(mdzukululu)	1. Farming (crop + livestock)(Ulimi)	5. Casual labourer non-farm(ganyu)
1. Male	2. Married but spouse away(okwatira koma wina anachoka)	6. Other, specify...	1. Adult education or one year of formal education(sukulu yakwacha)	2. Spouse (nkazi/mamuna)	7. Other relative(wachibale)	2. Salaried employment(ntchito to yolembedwa)	6. Student(mwana wasukulu)
	3. Divorced/separated ( <i>anasiyana</i> )		2. Two years of formal education (zaka ziwiri)	3. son/daughter(mwana)	8. Hired worker(wantchito)	3. Self-employed off-farm(ntchito yodzilemba)	7. Non-school-going child(mwana osapita kusukulu)
	4. Widow/widower(osiyidwa)		3. Three years formal education(zaka zitatu)	4. parent(kholo)	9. Others specify ....	4. Casual farm labourer (ganyu yapamunda)	8. Unpaid Household work.(ntchito yapakhomo yosalipilidwa)
			4. Four years of formal education (zaka zinayi) etc	5. Son/daughter-in-law(mpongozi)			9. Others specify ....

## PART 2: CONSERVATION AGRICULTURE PRACTICES, KNOWLEDGE AND ADOPTION (*GAWO LA CHIWIRI*)

**Section A:** Conservation Agriculture Practices, **sources of information**, sources of inputs (if any), and adoption.

### Degree of understanding of CA

To start us off in this section, I would like you to describe to me what you understand by conservation agriculture based on either what you have heard, observed, learned and implemented your farm. *Kodi ulimi wa mlera nthaka: mtaya khasu, kuphimbira, wa m'mayenje ndi kubwezeretsa chonde mnthaka mumaunvetsa bwanji*

**INSTRUCTIONS TO INTERVIEWER:** Please listen intently to the respondent's answer. Let them explain unrushed. Do not chime in the conversation. Do not complete any sentence for the respondent. When they are finished with answering, score the answer as follows

- 1 Incorrect [no mention of any CA technologies/practices in the answer]
- 2 Partially correct [mentioned 1 and maximum of 2 CA technologies/practices]
- 3 Correct [mentioned ALL three combinations of the 3 CA technologies]

Now I would like to ask you about the specific CA components (when you first became aware of CA, what were the main sources of information and what you have been practices, among other things) *Tsopano ndikufusani za njira zosiyanasiyana za ulimi wa mleranthaka zomwe mwakhala mukutsatira, komwe mumapeza mauthenga oyenera kutsatira paulimiwu ndi zina.)*

[illegible]

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[illegible]

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Applying fertilizer in basins/rip tines															
Use of herbicide															
Agroforestry															
Integrated pest management															
Integrate soil and water management															
Others, specify (e.g., indigenous knowledge on agronomic practices that are commonly used to manage soil fertility and soil quality)															

**PART 2: CONSERVATION AGRICULTURE PRACTICES KNOWLEDGE AND ADOPTION**

**Section A:** Conservation agriculture practices, sources of information, sources of inputs (if any), and adoption.

[illegible]

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Rotating cereals with legumes/nitrogen-fixing crops														
Intercropping cereals with legumes/nitrogen-fixing crops?														
Applying animal manure														
Apply lime in basins/rip tines														
Applying fertilizer in basins/rip tines														
Use of herbicide														
Agroforestry														
Integrated pest management														
Integrate soil and water management														
Others, specify (e.g., indigenous knowledge on agronomic practices that are commonly used to manage soil fertility and soil quality)														

**Codes HH:** 1. Lead farmer; (*mlimi wachitsanzo*) 2. Chief Extension agent (*alangizi*); 3. Cooperative/group member; (*membala wa kopaletivi*) 4. Family member; 5. Neighbour; 6. Non-neighbour relative within the village

## PART 2: CONSERVATION AGRICULTURE PRACTICES KNOWLEDGE AND ADOPTION

**Section A:** Conservation agriculture practices, sources of information, sources of inputs (if any), and adoption

Conservation Agriculture Practices	Did you receive any support to practice {...]? ( <i>kodi munalandilako thandizo</i> )	If YES in column 25, how many years have you used this practice? ( <i>mwakhala mukuchita</i> )	Would you practice .... without additional support, e.g. seeds and fertilizer? <b>Codes</b>	What was area under this CA practice for the past 3 seasons (28a=first; 28b=second; 28c is third and	If you increased the area under CA (in question 28), what convinced you to expand use of CA? <b>Codes H</b>	If there was a decrease in area under CA (in question 28), what are the reasons? <b>Codes K</b>	What are the three main positive changes that CA has brought to your farming activities? <b>Codes H</b>	What are the current challenges that prevent you from applying this CA on the whole farm? <b>Codes K</b>
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[illegible]

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Integrated pest management																	
Integrate soil and water management																	
Others, specify (e.g., indigenous knowledge on agronomic practices that are commonly used to manage soil fertility and soil quality)																	

**PART 2: CONSERVATION AGRICULTURE PRACTICES KNOWLEDGE AND ADOPTION**

Section A: Conservation agriculture practices, sources of information, sources of inputs (if any), and adoption.

Conservation Agriculture Practices	If <b>NO</b> in column <b>21</b> , what are the main reasons why this HH never implemented this practice ....? [3 most important reasons] ( <i>ndichifukwa chani simunatenge nao mbali kuchita ulimi wa mleranthaka</i> ) <b>Codes K</b>			If <b>NO</b> in Column <b>24</b> , what are the main reasons why this HH abandoned ...? ( <i>ndichifukwa chani munasiya kutsatila ulimi wa mleranthaka?</i> ) <b>Codes K</b>			For those who abandoned or never adopted: Under what conditions will you re-adopted or adopt? ( <i>kodi mutha kusankha kapena kutsatira ulimi wa mlera nthaka pokhapokha zitatani?</i> )
<b>1</b>	<b>33a</b>	<b>33b</b>	<b>33c</b>	<b>34a</b>	<b>34b</b>	<b>34c</b>	<b>35</b>
Minimum tillage using planting basins/pothole							
Minimum tillage using ox-drawn ripping/Magoye							
Minimum tillage using tractor/mechanical drawn ripping							
Dibble stick planting							
Jab planter							
Leaving crop residues in the field and incorporating it into the soil							
Using crop residues as mulch (cut and spread on field)							
Mulching using cover crops							
Rotating cereals with legumes/ nitrogen-fixing crops							
Intercropping cereals with legumes/nitrogen-fixing crops?							
Applying animal manure							
Apply lime in basins/rip tines							
Applying fertilizer in basins/rip tines							
Use of herbicide							
Agroforestry							
Integrated pest management							

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Integrate soil and water management							
Others, specify (e.g., indigenous knowledge on agronomic practices that are commonly used to manage soil fertility and soil quality)							

**Codes F: Malawi**

1. Bunda College of Agriculture through Agricultural Innovation in dryland Africa (AIDA),
2. Farm Income Diversification Programme (FIDP), DARS,
3. International Maize and Wheat Improvement Center (CIMMYT)
4. Total Land Care (TLC)
5. Synod of Livingstonia,
6. Evangelical Lutheran Development Services (ELDS),
7. Emmanuel International,
8. Development Aid from People to People (DAPP),
9. Catholic Relief Services,
10. Danish Church Aid,
11. Norwegian Church Aid,
12. Christian Aid,
13. CARE Malawi,
14. Save the Children,
15. World Vision Malawi,
16. National Smallholder Farmer's Association of Malawi (NASFAM)

<b>Codes G</b> <ol style="list-style-type: none"> <li>1. Fellow farmers</li> <li>2. Radio/TV program</li> <li>3. Pamphlet/newspaper</li> <li>4. Workshop</li> <li>5. Field Day</li> <li>6. Demonstration plot</li> <li>7. One on one exchange extension</li> <li>8. farmer exchange visit</li> <li>9. Meeting/group meeting</li> <li>10. Training programme</li> <li>11. Other, specify ...</li> </ol>	<b>Code H</b> <ol style="list-style-type: none"> <li>1. Time saving,</li> <li>2. Reduce labour use (time)</li> <li>3. Improves yield</li> <li>4. Reduces land preparation cost</li> <li>5. Timeliness of sowing</li> <li>6. Increases organic matter content of soil/improve soil fertility</li> <li>7. Reduces soil erosion</li> <li>8. Improves water holding capacity/reduces crop losses from erratic rainfall</li> <li>9. Reduces labour cost significantly</li> <li>10. Crops grow faster</li> <li>11. Easy to control weeds</li> <li>12. Reduce weed population</li> <li>13. Others (specify):</li> </ol>	<b>Codes K</b> <ol style="list-style-type: none"> <li>1. Lacked information about the CA practices</li> <li>2. Non-availability of maize-legume seeds</li> <li>3. Limited land area to practice CA</li> <li>4. Lack of crop residues at time of planting</li> <li>5. Soil type not appropriate to practice CA</li> <li>6. Dense weeds population at the time of planting</li> <li>7. Increased weed problem following adoption of CA</li> <li>8. Increased problems with insect pests and diseases following adoption of CA</li> <li>9. Poor crop establishment following adoption</li> <li>10. Culturally unacceptable</li> <li>11. Non availability of compatible herbicides</li> <li>12. No significant difference in yield</li> <li>13. No significant labour savings</li> <li>14. The field belong to spouse claimed back the field</li> </ol>	<ol style="list-style-type: none"> <li>17. Discouraged by extension officer</li> <li>18. Lack of coverage of CA technologies by mass media</li> <li>19. High cost of fertilise</li> <li>20. No credit available to finance purchasing of key inputs (seed and fertiliser)</li> <li>21. High labour cost at time of planting</li> <li>22. Tools required for CA are not available in the area</li> <li>23. Tools required for CA are too expensive when available</li> <li>24. Herbicides are expensive when available</li> <li>25. Health risk and lack of protective garments</li> <li>26. Lack of knowledge about herbicide use</li> <li>27. CA hardens upper soil</li> <li>28. CA is labour intensive/time-consuming</li> <li>29. Difficult to obtain and protect seedlings or other incentives to use the practice (for agroforestry)</li> </ol>
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		15. Lack of supportive institutional bylaws regarding grazing and wild fires 16. Lack of technical assistance from extension workers	30. Risky/uncertain due to land tenure insecurity 31. Stopped receiving or didn't receive inputs or other incentives 32. Others, specify ....
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**PART 2: CONSERVATION AGRICULTURE PRACTICES KNOWLEDGE AND ADOPTION****Section B:** Farmers' perceptions and prejudices on new agricultural technologies.

Statement	Codes
	1. Strongly disagree 2. Somewhat disagree 3. Neither agree or disagree 4. Somewhat agree 5. Strongly agree
I update myself with current information on farming practices ( <i>ndimadzionjezera ndekha maunthenga azaulimi</i> )	
I am cautious in trying out new farming practices ( <i>ndimakhala ndichidwi choyesera njira zatsopano zaulimi</i> )	
I do not see why I should change my farming practices ( <i>sindimaona chifukwa chosinthira njira yaulimi yomwe ndimatsata</i> )	
I only try out promising new practices ( <i>ndimayesera njira zatsopano zokhazo zomwe zili zopatsa chiyembekezo</i> )	
I check out for results from my neighbours field before trying out ( <i>ndimaona kaye zotsatila za pamunda wa anzanga ndisanayambe kulima pamunda wanga</i> )	
Less labour is used in CA compared to the conventional till ( <i>ntchito imakhala yochepa pa ulimi wa mleranthaka kusiyana ndi ulimi wakale</i> )	
Traditional ways of farming are the best ( <i>njira zaulimi zamakolo ndizabwino kwambiri</i> )	
Costs of land preparation is less in CA compared to conventional till ( <i>ntengo wa sosa mu ulimi wa mlera nthaka ndiwotsika kusiyanda ndi ulimi wamizere</i> )	
Yields from CA farms are higher or the same from conventional till ( <i>zokolora pa ulimi wa mleranthaka zimakhala zochuluka kusiyana ndi ulimi wamizere</i> )	
Net benefit of CA is higher compared to conventional tillage ( <i>phindu ku zokolora za ulimi wa mleranthaka ndilochuluka kusiyana ndi ulimi mamizere</i> )	
Tied ridging contributes to water retention on the field ( <i>ulimi opanda mizere umathandiza kusunga chonde mthaka</i> )	
Erosion through run-off is minimized by tied ridging ( <i>kukokoloka kwa nthaka kumacheoa pa ulimi wa ntayakhasu</i> )	

**PART 2: CONSERVATION AGRICULTURE PRACTICES KNOWLEDGE AND ADOPTION****Section C:** Conservation agriculture dis-adoption and non-adoption (*Kuleka kugwiritsa ntchito ndi kusankha kusagwiritsa ntchito ulimi wa mlera nthaka*)

For those who are aware and have either disadopted or not adopted, please rate the importance of the following barriers to adoption by your household. **First rate the categories (technical, social, extension and financial) and then the sub categories with a category.** (*kwa iwo amene akudziwa za ulimi wa mleranthaka ndipo anasankha kusagwiritsa ntchito kapena kuleka kugwiritsa ntchito, chonde sankhan mwa ndondomeko mavuto ali mmusiwa mmene angakupangitsireni kuleka kapena kusankha kusagwiritsa ntchito ulimi wa mlera nthaka*)

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Not at all (olo mpang'ono pomwe) 1..... 2.....      Of minor important(pang'ono pokha) 3..... 4.....      Moderately important(pakatikati) 5..... 6.....      Very important(ofunika kwambiri) 7..... 8.....      Extremely Important(ofunikitsitsa) 9.....10 .....

Category	Rating	Category	Rating
<b>Technical factors</b>		<b>Extension factors</b>	
Non-availability of maize-legume seeds ( <i>kusowa kwa mbeu</i> )		Lack of technical assistance from extension workers ( <i>kusowekera upangili wabwino kuchokera kwa alangizi</i> )	
Limited land area to practice CA ( <i>kuchepa kwa malo olimapo</i> )		Discouraged by extension officer ( <i>kubwezeretsedwa mmbuyo ndi alangizi</i> )	
Lack of crop residues at time of planting ( <i>kusowa kwa zotsalira mmunda nthawi yodzala</i> )		Lack of coverage of CA technologies by mass media ( <i>anthu ambiri sagwiritsa ntchito njira zimenezi</i> )	
Soil type not appropriate to practice CA ( <i>ntundu wa donti lokanika</i> )		Other, specify ....	
Dense weeds population at the time of planting making minimum till inappropriate ( <i>kuchuluka kwa tchire nthawi yodzala</i> )		Other, specify ....	
Increased weed problem following adoption of CA ( <i>kulimbikitsa mavuto odza Kamba kakuchulukwa kwa tchire mmunda</i> )		<b>Financial factors</b>	
Increased problems with insect pests and diseases following adoption of CA ( <i>kulimbikitsa mavuto odza Kamba ka kuchuluka kwa tizilombo ndi matenda okhudza mbeu mmunda</i> )		High cost of fertiliser ( <i>kukwera ntengo kwa feteleza</i> )	
Poor crop establishment following adoption		No credit available to finance purchasing of key inputs (seed and fertiliser) ( <i>kusowa kwa ndalama zogulira zipangizo zaulimiwu</i> )	
Culturally [socially] unacceptable ( <i>zosaloredwa pachikhalidwe chathu</i> )		High labour cost at time of planting ( <i>kuchuluka kwa ntchito nthawi yodzala</i> )	
Non availability of compatible herbicides ( <i>kusowekera kwa makhwala othana ndi matenda oyenerera pambeu</i> )		Other, specify ...	
No significant difference in yield ( <i>palibe kusiyana kwenikweni pazokolola</i> )		Other, specify ....	
No significant labour savings ( <i>palibe kusiyana kwenikweni pakagwiridwe kantchito mmunda</i> )			
Other, specify ....			
<b>Social factors</b>			
The field belong to spouse who claimed back the field (munda ndi amuna/akazi anga ndipo anautenga)			
Lack of supportive institutional bylaws regarding grazing and wildfires [uncontrolled grazing and crop residue burning]( <i>kusowekera kwa malamulo oletsa kuononga zachilegwedwe</i> )			

**PART 2: CONSERVATION AGRICULTURE PRACTICES KNOWLEDGE AND ADOPTION****Section D:** Conservation agriculture tools and inputs.

Tools/inputs <i>Zida</i>	Did you/family member receive this ....? <b>Codes</b> 0. No 1. Yes ( <i>kodi alipo pakhomu pano analandilako izi?</i> )	If YES in column 2, from which supplier/organization? (kuchokera kubungwe lit) <b>Codes F</b>	If YES in column 2, year first used [YYYY] <i>(Chaka hoyamba kugwiritsa ntchito)</i>	If you received multiple times, how many times did you received? <i>(Ngati munalandira maulendo angapo, anali maulendo angati)</i>	If YES in column 2, are you still using the tool? <b>Codes</b> 0. No 1. Yes <i>(pakalipano mukugwiritsabe ntchito zipangizozi?)</i>	If NO in column 2, why? (specify the main reason) <i>(chifukwa chani)</i>
1	2	3	4	5	6	7
Subsidized/free Chisel-tined ripper/Magoye ripper						
Subsidize/free mechanical/tractor ripper						
Subsidize/free Jab planter						
Subsidized/free seeds of improved maize or other crops(mbeu yotsika ntengo/yaulele)						
Subsidized/free Fertilize r(feteleza wotsika ntengo/waulele)						
Subsidized/free herbicides ( <i>mankhwala ambeu otsika ntengo/aulele</i> )						
Subsidized/free sprayer( ma sprayer otsika ntengo/aulele)						
Subsidized/free seeds of cover crops						
Subsidized/free seed/seedling of agroforestry plants						

**PART 2: CONSERVATION AGRICULTURE PRACTICES KNOWLEDGE AND ADOPTION****Section E:** Access to other extension services.(kuthekera kupeza upangiri wapadera kuchokera kwa azilangizi)

Issue	Did you receive training or information on [.....] in the past season? <b>Codes</b> 0. No 1. Yes <i>(kodi munalandilako maphunziro kapena mauthenga a za[.....] mudzinja langothali?)</i>	Main information source, <b>Rank 3</b> <i>(uthengawu munaulandira kuchokera kuti)</i> <b>Codes V</b>			If YES in column 2, number of contacts during past season (days/year) <i>(mudzinja lathali mwayenderedwako kangati?)</i>	
		Rank 1	Rank 2	Rank 3	Government extension	NGOs

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1	2	3	4	5	6	7
New varieties /breeds(mitundu yatsopano yambeu)						
Agronomic practices						
Pest and disease control(kupewa matenda ndi tizilombo toononga mbeu)						
Adaptation to climate change(kusintha kwa nyengo)						
Crop storage pests(tizilombo toononga zokolora)						
Collective action/farmer organization(magulu alimi)						

**Codes L**

1. Government extension service	4. NGOs	7. Farmer field school	10. Mobile phone	13. Others, specify ....
2. Farmer Coop or groups	5. Private Company	8. Radio/TV	11. Farmer's training centers	
3. Neighbour/relative farmers	6. CGIAR center	9. Newspaper	12. Traders/Agro-dealers	

**PART 3: INPUT USE & CROP PRODUCTION**

**Section A:** Plot characterization for all crops grown by the household during the past growing season. *Chithunzithunzi cha mbewu zomwe zinalimidwa zapamunda*

**Definition:** A field is a piece of land physically separated from others; a plot is a subunit of a field. If more than one crop is grown on a field (i.e. on different plot), repeat the code in next row and use plot code. *(munda ndi malo akulu omwe agawidwa mu ma plot, plot ndi tizigawozigawo tomwe timapezeka mmunda. Ngati mbeu imodzi yadzalidwa mma plot angapo, bwerezani code mu row yotsatilayo ndikugwiritsa ntchito code ya plot yo)*

Field Code	Plot code	Plot size in <i>(kukula kwa plot)</i> hectares <b>(use area conversion chart below)</b>		Plot characteristics			Crop(s) grown (mbeu zomwe zinadzalidwa)  <b>Crop Codes</b>	Crop variety <i>(ntundu wa mbeu)</i>  <b>Variety Codes</b>	Plot owner <i>(mwiniwake wa plot)</i>  <b>Family codes</b>	Plot manager/operator <i>(amayanga'anira plot ndani)</i>  <b>Family codes</b>	Field from residential house (walking time in minutes)  <i>(nditntunda wautali bwanji kuchoka pakomopano kukafika kumundaku)</i>	Have you ever practiced minimum tillage on this plot?  <i>(kodi munachitako ulimi wantaya khasu pa plot yi)</i> <b>Codes</b> 0. No 1. Yes	If <b>YES</b> in <b>column 13</b> , which type of minimum tillage did you practice?  <i>(ndiulimi wantaya khasu uti omwe munatsatira?)</i> <b>Codes M</b>	If <b>YES</b> in <b>column 13</b> , the year first practiced  [YYYY]  <i>(chinali chaka chiti?)</i>
		GPS (ha)	Farmer's estimate (ha)	Slope	Perceived soil fertility	Perceived soil depth								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

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Slope Codes	Soil fertility Codes	Soil depth Codes	Area conversion chart			Code M
			From	To	Multiply by	
			Acre Square meter	Hectare Hectare	0.4047 0.0001	
1. Flat	1. Poor	1. Shallow				1. Using planting basins/pothole
2. Medium	2. Medium	2. Medium				2. Using ox-drawn ripping/Magoye
3. Steep	3. Very fertile	3. Deep				3. Using tractor/mechanical drawn ripping

**ART 3: INPUT USE & CROP PRODUCTION****Section A:** Plot characterization for all crops grown by the household during the past growing season**Definition:** A field is a piece of land physically separated from others; a plot is a subunit of a field. If more than one crop is grown on a field (i.e. on different plot), repeat the code in next row and use plot code.

Field Code	Plot code	If <b>YES</b> in column 13, did you continue implementing minimum tillage on this plot? <b>Codes</b> 0. No 1. Yes <i>(kodi munapitiliza kuchita ulimi nwa mthaya khasu pa plot yi?)</i>	If <b>YES</b> in column 16, for how many consecutive seasons did you practice? (kwa zaka zotsogozana zingati)	If <b>NO</b> in column 16, why did you abandon implementi ng the minimum tillage on this plot? <b>Codes K</b> <i>(nchifukwa chani munasank ha kuleka kugwirisa ntchito ulimi wa ntaya khasu)</i>	Did you practice minimum tillage (MT) on this plot in the last cropping season? <b>Codes</b> 0. No 1. Yes (kodi munapitiliz a kuchita ulimi wa ntaya khasu palot yi)	If <b>YES</b> in column 19, which MT did you practice ? <b>Codes</b> <i>(ndi njira ya iti ya ulimi wa ntaya khasu omwe munagw ritsa ntchito)</i>	If <b>YES</b> in column 19, what was the percent age of the plot covered by minimu m tillage? <i>(ndimba li yayikulu motani ya plot yi imene munach itapo</i>	Have you ever retained crop residue on this plot/field to deliberately cover the plot/field as advised by extension experts? <b>Codes</b> 0. No 1. Yes (kodi munayamba mwasiyako mapesi mwadala motsatira langizo la alangizi? )	If <b>NO</b> in column 22, what did you do with the crop residue ? <b>Codes</b> <b>N</b> (mapesi anu munac hita nawo chani?)	If <b>YES</b> in column 22, the type of crop residue ? <b>codes P</b> (ntundu wa zotsalira zamund a)	If <b>YES</b> in column 22, the year first practiced [YYYY] (chaka choyamba kuchita ulimi wantundu wu)	If <b>YES</b> in column 22, did you continue practicing crop residue retention on this plot? <b>Codes</b> 0. No 1. Yes (kodi munapitili za kupanga ulimi wosiya mapesi?)	If <b>YES</b> in column 26, for how many consecu tive seasons did you practice ? (mwakh ala mukupa nga izi kwa zaka zingati?)
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Household ID \_\_\_\_\_

							ulimiwu )						
1	2	16	17	18	19	20	21	22	23	24	25	26	27

<b>Codes N</b> 1. Left in field then ploughed/incorporated into field(zinasiyidwa mmunda ndikukwililika nthawi yolima) 2. Left in the field and grazed by animals(zinasiyidwa mmunda ndikudedwa ndi ziweto) 3. Burned on field(tinaziyatsa moto) 4. Cut & spread on the field(zinadulidwa ndikuwazidwa mmunda) 5. Cut & removed from field & fed to animals(zinadulidwa ndikukapatsa ziweto) 6. Cut & removed from field for other household use(zinakagwira ntchito ina kumunda) 7. Other, specify ....	<b>Codes P</b> 1. Leave crop residue on the field(masamba a zomera mmunda) 2. Use crop residue as mulch (cut and spread on field/plot) (mapesi ophimbira) 3. Mulching using cover crops	<b>Code MT</b> 1. Minimum tillage using planting basins/pothole(ulimi wammaenje) 2. Minimum tillage using ox-drawn ripping/Magoye(kulimira ng'ombe) 3. Minimum tillage using tractor/mechanical drawn ripping 4. Dibble stick planting 5. Jab planter
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**PART 3: INPUT USE & CROP PRODUCTION**

**Section A:** Plot characterization for all crops grown by the household during the past growing season.

**Definition:** A field is a piece of land physically separated from others; a plot is a subunit of a field. If more than one crop is grown on a field (i.e. on different plot), repeat the code in next row and use plot code.

Field Code	Plot code	If <b>NO</b> in column 26, why did you abandon implementing crop residue retention on this plot? (nchifukwa chani munasiya kuchita ulimiwu?)  <b>Codes K</b>  (0)	Did you practice crop residue retention on this plot in the last cropping season? <i>(kodi munachitako ulimi wophimbira pa plot yi?)</i> <b>Codes</b> 0. No 1. Yes	Do you practice cereal- legume rotation on this plot? <i>(kodi munachitapo ulimi osakaniza ndi mbeu zamugulu la nyemba pa plot yi?)</i> <b>Codes</b> 0. No 1. Yes	If <b>YES</b> in column 30, what are the sequences the cereal- legume rotated in the last five seasons? <i>(nanga mumadzala mu ndondomeko yotani)</i>  <b>Crop Codes</b>					If <b>NO</b> in column 30, Why? <i>(chifukwa chani)</i>  <b>Codes K</b>	Do you practice cereal-legume intercropping on this plot? <b>Codes</b> 0. No 1. Yes <i>(kodi mumachita ulimi opakiza mbeu za gulu ya nyemba?)</i>	If <b>YES</b> in column 33, what are the two major intercropping for the past five seasons?  <b>Crop codes</b>		If <b>NO</b> in column 33, Why?  <b>Code K</b>
1	2	28	29	30	31a	31b	31c	31d	31e	32	33	34a	34b	35

**PART 3: INPUT USE AND CROP PRODUCTION (GAWO LACHITATU)**

**Section B:** Use of seed, fertilizer, pesticides, herbicides, and lime for crop production in the past growing season. (*kagwiritsidwe ntchito kambeu, feteleza ndi makhwala opha tizilombo ndikupha ntchire mudzinja langothali* )

(Field code, plot code, and crop(s) grown in this Section should be in exactly the same order as in **Section A of Part 3** above).

Household ID\_\_\_\_\_

[illegible]

**PART 3: INPUT USE AND CROP PRODUCTION****Section C:** Labour used for land preparation and weeding.(Parcel code, plot code, and crop(s) grown in this Section should be in exactly the same order as in **Section A of Part 3** above).

Field code	Plot code	Crop(s) grown	Total labour (family and hired) used in <u>person-days</u> for land preparation and planting, weed control, and harvesting																			
			Land preparation & planting(kusosa ndi kudzala)				First weeding(kupalira koyamba)				Second weeding(kupalira kwachiwiri)				Third weeding (kupalira kwachitatu)							
			Male(amuna)	Female(akazi)	Child(ana)	Was this plot planted on time? (kodi plot yi inadzalidwa	If planted late, why?nchifukwa	Male	Female	Child	Was this plot weeded on time? 0. No; 1. Yes	If weeded late, why? Codes O	Male	Female	Child	Was this plot weeded on time? 0. No; 1. Yes	If weeded late, why? Codes O	Male	Female	Child	Was this plot weeded on time? 0. No; 1. Yes	If weeded late, why? Codes O
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23

**Codes O:** 1. Shortage of labour (fewer than needed)(kuchepa/kusowa kwa anthu ogwira ntchito); 2. Operator was sick(matenda); 3. Late onset of rainfall(kuchedwa kubwera kwa nvula); 4. Late purchase/receipt of fertilizer(kugula/kulandila feteleza mochodwa); 5. Late purchase/receipt of seed(kugula/kulandira mbeu mochodwa); 6. Lack of required implement(kuchepa kwa zipangizo zogwirira ntchito); 7. Others, specify:.....

Household ID\_\_\_\_\_

### PART 3: INPUT USE AND CROP PRODUCTION

**Section D: Labour used for fertilization. (ntchito yothira feteleza)**

(Parcel code, plot code, and crop(s) grown in this Section should be in exactly the same order as in Section A of Part 3 above)

[illegible]

**Codes O:** 1. Shortage of labour (fewer than needed); 2. Operator was sick; 3. Late onset of rainfall; 4. Late purchase/receipt of fertilizer; 5. Late purchase/receipt of seed; 6. Lack of required implement; 7. Others, specify:.....

**PART 3: INPUT USE AND CROP PRODUCTION****Section E:** Labour used for harvesting. (ntchito yokolola)

(Parcel code, plot code, and crop(s) grown in this Section should be in exactly the same order as in Section A of Part 3 above)

Field code	Plot code	Crop(s) ) grown	Total labour (family and hired) used in <u>person-days</u>																				
			Harvesting of main crop( <i>kukolora mbeu yodalilika</i> )					Harvesting of first Intercrop ( <i>kukolora mbeu yoyamba yopakizidwa</i> )					Harvesting of second Intercrop ( <i>kukolora mbeu yachiwiri kupakizidwa</i> )					Harvesting of third Intercrop ( <i>kukolora mbeu chachitatu kupakizidwa</i> )					
			Male	Female	Child	Was this plot harvested on time? 0. No; 1. Yes	If harvested late, why? <b>Codes O</b>	Male	Female	Child	Was this plot harvested on time? 0. No; 1. Yes	If harvested late, why? <b>Codes O</b>	Male	Female	Child	Was this plot harvested on time? 0. No; 1. Yes	If harvested late, why? <b>Codes O</b>	Male	Female	Child	Was this plot harvested on time? 0. No; 1. Yes	If harvested late, why? <b>Codes O</b>	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	

**Codes O:** 1. Shortage of labour (fewer than needed); 2. Operator was sick; 3. Late onset of rainfall; 4. Late purchase/receipt of fertilizer; 5. Late purchase/receipt of seed; 6. Lack of required implement; 7. Others, specify:.....

**PART 3: INPUT USE AND CROP PRODUCTION****Section F:** Labour used for threshing/shelling and transportation of produce(ntchito yosola)

(Parcel code, plot code, and crop(s) grown in this Section should be in exactly the same order as in Section A of Part 3 above)

Field code	Plot code	Crop(s) grown	Total labour (family and hired) used in person-days																							
			Threshing/shelling of main crop (kusola mbeu yodalilika)					Threshing/ shelling of first Intercrop (kusola mbeu yopakizidwa yoyamba)					Threshing/shelling of second Intercrop (kusola mbeu yopakizidwa yachiwiri)					Threshing/shelling of third Intercrop (kusola mbeu yopakizidwa yachitatu)					Transport of harvested products(ntengo onyamulira mbeu kuchoka kumunda)			
			Male	Female	Child	Was this plot threshed/shelled on time? 0. No; 1. Yes	If threshed/shelled late, why? Codes O	Male	Female	Child	Was this plot threshed/shelled on time? 0. No; 1. Yes	If threshed/shelled late, why? Codes O	Male	Female	Child	Was this plot threshed/shelled on time? 0. No; 1. Yes	If threshed/shelled late, why? Codes O	Male	Female	Child	Was this plot threshed/shelled on time? 0. No; 1. Yes	If threshed/shelled late, why? Codes O	Male	Female	Child	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	

**Codes O:** 1. Shortage of labour (kuchepa kwa anthu ogwira ntchito)(fewer than needed); 2. Operator was sick;(matenda) 3. Late onset of rainfall;(kayambidwe kanvula) 4. Late purchase/receipt of fertilizer(kugula/kulandira ferteleza mochodwa); 5. Late purchase/receipt of seed;(kugula/kulandira mbeu mochodwa) 6. Lack of required implement(kuchepa kwa zipangizo zogwirira ntchito); 7. Others, specify:.....

Household ID \_\_\_\_\_

**PART 3: INPUT USE AND CROP PRODUCTION****Section G:** Rental value of land, total harvest (ntengo obwereketsa malo)

(Parcel code, plot code, and crop(s) grown in this Section should be in exactly the same order as in Section A of Part 3 above)

Field code	Plot code	Crop(s) grown (mbeu zomwe zinadzali dwa)	Cost of hired labour (MWK/ZMW/ZWD)		Wage rate per person on day	Did you hire oxen? <b>Codes</b> 0. No 1. Yes(kodi munabw ereka ng'ombe zolima?)	Cost of oxen hired (MWK/ZMW/ZWD) (ntengo wobwereker a ng'ombe zolima)	Did you hire tractor? <b>Codes</b> 0. No 1. Yes(kodi munabw ereka thilekita?)	Cost of tractor hired (MWK/ZMW/ZWD) (ntengo obwerekera thirekita)	Land rent (MWK/ZMW/ZWD)		Total harvested per plot(zokolora pa plot iliyo se)							Stress incidence on the field <b>Code J</b>	
			Total labour units used(nte ngo wa anganyu)							Total land rented(mun apanga rent malo akulu bwanji?)	Rent per unit (specify unit)	Main crop	Unit Codes	First intercrop	Unit Codes	Second intercrop	Unit Codes	Third intercrop		Unit Codes
			Male	Female																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

**Codes J:** 0. No stress; 1. Insect pests; 2. Diseases; 3. Water logging; 4. Drought; 5. Frost; 6. Hailstorm; 7. Animal trampling; 8. Others, specify.....**ART 4: HOUSEHOLD ASSETS** (Productive assets, household items, livestock assets, etc.)

S. No.	Asset	Number (put zero if you don't own anything) (zilipo zingati)	Original purchase price (MWK/ZMW/ZWD) (if more than one item reported in column 2, take average price)(ntengo ogulira)	If you would sell [...] how much would you receive from the sale? (MWK/ZMW/ZWD) (if more than one item reported in column 2 take average price)(mungagulitse ndala zingati mene katunduyi alili pakali pano?)
	1	2	3	4

Household ID \_\_\_\_\_

1	Jab planter			
2	Chisel-tined rippers oxen-drawn			
3	Chisel-tined rippers tractor-drawn			
4	Dibble stick			
5	Direct seeder – animal drawn			
6	Hoe ( <i>khasu/jembe</i> )			
7	Axe			
8	Panga knife, machete, slashers,			
9	Ox-cart			
10	Ox-plough			
11	Knapsack sprayer			
12	Water pump			
13	Spade or shovel			
14	Bicycle			
15	Motorbike			
16	Cars			
17	Picks-ups			
18	Trucks (lorry)			
19	Motorized grain mill			
20	Goats and Sheep (Shoats)			
21	Chicken			
22	Cattle			
23	Pigs			
24	Rabbits			
25	Doves			
26	Guinea fowls			
27	Donkey			
28	Horse			
29	Thatch roofed house			
30	Iron sheet roofed house			
31	Bed			
32	Mattress			
33	Radio or CD player			
34	Cell phone			
35	Furniture – sofa set			
36	Furniture - chairs			
37	Furniture – table			

Household ID \_\_\_\_\_

38	Sewing machine			
39	Wood stove			
40	Kerosene stove			
41	Electric stove			
42	Gas cooker			
43	Freezer			
44	Plantation crops (sugar cane, banana, tea, coffee)			
45	Other, specify.....			

**PART 5: TRANSFER AND OTHER SOURCES OF INCOME LAST YEAR**

Sources of income  Codes W	Number of units worked/ received	Unit (e.g. month, week, day, year, kg, no.)	Amount per unit (Cash & in-kind)		Total income (cash & in-kind)		Total income (MWK/ZMW/ZWD)
			Cash (MWK/ZMW/ZWD)	Payment in kind (cash equivalent)	Cash (MWK/ZMW/ZWD)	Payment in kind (cash equivalent)	
1	2	3	4	5	6= 2x4	7=2x5	8= 6+7

<b>Codes W</b> 1. Rented/sharecropped out land 2. Rented out oxen for ploughing 3. Salaried employment 4. Farm labour wages 5. Non-farm labour wages 6. Non-farm agribusiness NET income (e.g. grain milling/trading) 7. Other business NET income (shops, trade, tailor, sales of beverages etc.)	8. Pension income 9. Drought/flood relief 10. Safety net or food for work 11. Remittances (sent from non-resident family and relatives living elsewhere) 12. Marriage Gifts 13. Sales of firewood/charcoal 14. Brick making 15. Poles from own and communal forests	16. Sale of crop residues 17. Quarrying stones 18. Rental property (other than land and oxen) 19. Interest from deposits 20. Social cash transfer 21. Other, specify .....
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**PART 6: ACCESS TO CREDIT****Section A:** Household credit need and sources during past growing season. If the credit is in non-cash form, indicate the cash equivalent or value.

			If YES in column 2
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Did you need credit to purchase any of these?(kodi munabwereka ngongole kut mugule katundu uyu?) <b>Codes X</b>	Did you get it? (ngongol eyi munaipe za?) <b>Codes</b> 0. No 1. Yes	If <b>NO</b> in <b>column 2</b> , then why not? ( <i>nchifukwa chani simunaipeze?</i> ) <b>codes Y</b>	Source of Credit (munaip eza kuti ngongol eyi) <b>Codes Z</b>	How much did you get? (munabwereka ndalama zinggati) (MWK/ZMW/ZWD)	Did you get the amount you wanted (munapatsidwa ndalama yomwe mumafuna?) <b>Codes</b> 0. No 1. Yes	Have you repaid the loan(munabw eza ngongoleyi?) <b>Codes</b> 0. No 1. Yes
1	2	3	4	5	6	7

<b>Codes X</b> 1. None (palibe chifukwa) 2. Buying seeds (kugulira mbeu) 3. Buying fertilizer (kugulira feteleza) 4. Buying herbicide/ pesticides(kugulira mankhwala opha ntchire nfi tizilombo mmunda) 5. Buying farm implements (kugulira zipangizo zaulimi) 6. Buying bicycle (kugulira njinga) 7. Buying oxen for traction 8. Buying other livestock (kugulira ziweto) 9. Irrigation system.(kupangira ulimi wothilira) 10. Seed drill or minimum tillage 11. Non-farm business or trade 12. To pay for land rent(kubwerekera malo olimapo) 13. Buy food(kugulira chakudya) 14. Consumption needs(kumangitsira) (health/education/travel/tax,)	<b>Codes Y</b> 1. No reason(palibe chifukwa) 2. Borrowing is riskys(ngongole ndiyoopsya) 3. Interest rate is high(chiongola dzanja ndichokwera) 4. Too much paper work/ procedures(ndondomeko yotenga ngongole ndiyaitali) 5. Expected to be rejected, so did not try it(ndinkayembekezera kut sangandibwereke ngongole) 6. Have no asset for collateral(nalibe katundu wa chikole) 7. No money lenders in this area for this purpose(mulibe obwereketsa ndalama mdera lino) 8. Lenders don't provide the amount needed(obwereketsa ndalama samapeletsa ndalama yomwe munthu ukuifuna) 9. No credit association available 10. Not available on time(samapeleka nthawi yomweyo) 11. Other, specify.....	<b>Codes Z</b> 1. Money lender(akatapila) 2. Farmer group/coop(kopaletivi) 3. Microfinance(bungwe lobwereketsa ndalama) 4. Bank(banki) 5. Savings and Credit 6. Relative/friend /neighbor(achibale) 7. Other, specify.....
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Household ID \_\_\_\_\_

# **PART 7: LABOR CONSTRAINTS AND MECHANIZATION OPTIONS**

## **Section A:** Labour constraints and the need or mechanization of different farming operations

1, How many men and women in the household are working full time on the farm? (a) \_\_\_\_\_ men; (b) \_\_\_\_\_ women(ndi amuna ndi akazi angati omwe amakalima?)

Activity	What implement/tool do you mainly use to undertake [...]?(mamagwiritsa ntchito zipangizo ziti pogwirantchito izi) <b>Codes AO</b>	Do you face labour shortage [...]?(kodi mumakumana ndi vutola kusowa kwa anthu ogwirantchito kumunda?) <b>Codes</b> 0. No; 1. Yes	If YES in column 3, what options do you use to overcome the labour shortage?(mumagwiritsa ntchito njirayansi pofuna kuthana ndi vutoli) <b>Codes AA</b> (4a first option and 4b second option, based on importance)		If YES in column 3, which crops are most affected? (ndimbeu ziti zomwe zimakhudzidwa ndi vutoli?) <b>Crop Codes</b>	If YES in column 3 and you used hired labour, how much do you pay per person per day or per area or amount? (mumalipilandalama zingati patsiku mukalemba anthu aganyu)				
						Area	Unit	Amount	Unit	Rate (MWK/ZMW/ZWD)
1	2	3	4a	4b	5	6a	6b	6c	6d	7e
Land preparation(kusosa)										
Planting (kudzala)										
Apply fertilizer (kuthira feteleza)										
Weeding(kupalira)										
Harvesting(kukolola)										
Threshing/shelling(kusola/kutong'ola)										
Transport of farm produce(kunyamula mbeu kuchoka kumunda)										
Others, specify ...										

**AO:** 1. Manually operated; 2. Animal drawn; 3. Motorized

**Codes AA:** 0. Did nothing; 1. Hired labour; 2. Hired oxen; 3. Hired tractor/machinery; 4. Bought herbicides

**Codes AB:** 1. Not available; 2. Expensive;

6. If a crop was affected by the labor constraint, what is the nature of the effect? (ngati mbeu inakhudzika ndi vutola kusowa kwa ogwira ntchito vuto lake linali lotani?)(a)\_\_\_\_\_ (b)\_\_\_\_\_ (**Codes:** 1. Late planting;(kudzalidwa mochodwa) 2. Weed infestation;(inagwira/inapezana ndi tchire) 3. Late harvesting(kukolola mochodwa)

Household ID \_\_\_\_\_

**PART 8: SOCIAL CAPITAL AND NETWORKING**

1. Number of years the head of the household has been living in this *village (kodi mutu wabanja lino wakhala mmudzi muno kwathawi yaitali bwanji?)*.....
2. Number of people that you can rely on for critical support in times of need within this village (anthu amene mungawadalire nyengo yamavuto mmudzi muno ndi angati?)  
Relative(achibale)..... Non-Relatives(anthu oti siachibale).....
3. Number of people you can rely on for support in times of need outside of this village(anthu amwene mungawadalire nyengo yamavuto omwe sakhala mmudzi muno ndiangati? )  
Relative(achibale)..... Non-Relatives(anthu oti siachibale).....
4. Are any of your friends or relatives in leadership positions in formal or informal institutions within or outside this village? **Codes:** 0. No; 1. Yes (kodi muli ndi achibale omwe ali ndi udindo mumabungwe amudzimuno?)
5. Number of traders that you know in this village who could buy your produce(kodi ndiamalonda angat amene mumawadziwa omwe atha kugula zokolora zanu?).....
6. Number of traders that you know outside this village who could buy your produce(ndi amalonda angat amene mumawadziwa omwe atha kugula zokolora zanu kwa mudzi uno?).....
7. Can you rely on government support (food aid, etc.) if your crop fails? **Codes:** 0. No; 1. Yes (kodi mbeu zanu zitapanda kuchita bwino, mungadalire thandizo laboma?)
8. Have you and/or your spouse been member/s of farmers' organization (formal and informal groups/cooperative/union)? **Codes:** 0. No; 1. Yes (kodi alipo pakhomu pano anakhalapo membala wa bungwe lililose?)
9. If **YES** for #8 for how many years have been a member of that coop/group/union? \_\_\_\_\_ years(kwazaka zingat)
10. What were the main reasons for joining farmers' organization?(nchifukwa chani analowa/munalowa mubwengweli)
  - a. Obtain better access to input (seed, fertilizer) (kuti tikhale ndi kuthekera kopeza zipangizo zaulimi)
  - b. Obtain better access to credit(kuti tikhale ndi kuthelera kopeza ngongole)
  - c. Receive help in selling crops (kupeza chithandiza kuti tigulitse zokolora)
  - d. Other, specify \_\_\_\_\_
11. What is your current status in the coop/group/union?(muli ndi udindo wanji pakali pano mugululi)
  - a. Chairman (atcheya)
  - b. Member of committee(membala wa komiti)
  - c. Member of management staff(membala wa olongosola mapologalamu)
  - d. Simple member (membala wamba)

[illegible]

Household ID \_\_\_\_\_

Cooperative/group member or leader												
Family member												
Neighbour												
Relative within this village												
Relative outside this village												
Non-relative within this village												
Non-relative outside this village												
Trader within this village												
Trader outside this village												

**PART 9: LABOR CONSTRAINTS AND MECHANIZATION OPTIONS****Section A:** Ownership and use of draught animal power and motorized mechanizations (umwini komaso kagwiritsidwe ntchito ka zipangizo zaulimi)

Mechanization option (mitundu ya zipangizo zolimira)	Do you know or heard about [...]?( <i>kodi mukudziwa kapena munavapo?</i> )	If <b>YES in column 2</b> , have you ever used [...]?( <i>nanga munagwiritsako ntchito?</i> ) <b>Codes</b> 0. No; 1. Yes	If <b>YES in column 3</b> , for what activities do you use it?( <i>nditchito ziti zomwe munagwiritsirako ntchito?</i> ) <b>Codes AC</b>	If <b>YES in column 3</b> , do you own [...]?( <i>kodi chipangizochi ndichanu?</i> ) <b>Codes</b> 0. No; 1. Yes	If <b>YES in column 3</b> , do you hire [...]?( <i>kodi mumachita kubwereka chipangizochi?</i> ) <b>Codes</b> 0. No; 1. Yes	If <b>YES in column 4</b> , what is the rate? ( <i>mumalipila ndalama zingati?</i> )	
						Rate	Unit <b>Unit codes</b>
1	2	3	4	5	6	7a	7b
Draft animal power (DAP)(ngolo)							
Two-wheel tractor (2WT)(thilekita yamateyala awiri)							
Four-wheel tractor (4WT)(thilekita yamateyala folo)							

**Code AC:** 1. Land preparation(kusosa); 2. Ripping;(kutipula) 3. Planting;(kudzala) 4. Shelling/threshing;(kusenga) 5. Transport;(kunyamula) 4. Others, specify ...

## **PART 9: LABOR CONSTRAINTS AND MECHANIZATION OPTIONS**

**Section B:** Willingness to pay for small scale mechanization services: the case of two-wheel tractor-based mechanization services

### **Two-wheel tractor (2WT)**

Two-wheel tractor is a tractor with one axle, self-powered and self-propelled. It can pull and power trailers, cultivator or harrow, ripper, ploughs, various seeders and harvesters and thus can accomplish ripping, planting, fertilizer application, boom spraying, transportation, grass cutting, milling, shelling, threshing and water uplifting. Two-wheel tractors till 2.5 – 3 times that of the conventional animal power.

**Direction:** Assume there is an individual who offers 2WT-based services for which you have to pay certain amount of money. The amount you pay for the service should be based on your need for the service and affordability of the service, and other necessary expenditures you need to prioritize. Besides, there is no credit available to pay for the services.

**Initial prices of the service will be randomly assigned to respondents.**

#### **a. Willingness to pay for land preparation and planting (MWK/ZMW/ZWD per acre)**

- i. Would you be willing to pay MWK \_\_\_\_ per acre of land tilled using 2WT pulled tiller?
- ii. If no, would you be willing to pay MWK \_\_\_\_ per acre of land tilled using 2WT pulled tiller?
- iii. If yes, would you be willing to pay MWK \_\_\_\_ per acre of land tilled using 2WT pulled tiller?

Table 1. Bid structure for elicitation of willingness to pay for ploughing one acre

Bid label	Malawi		
	Initial bid	Follow-up bid for ... response	
		NO	YES
Bid 1	18750	17625	19875
Bid 2	19875	18683	21068
Bid 3	21000	19740	22260
Bid 4	22125	20798	23453
Bid 5	23250	21855	24645
Bid 6	24375	22913	25838
Bid 7	25500	23970	27030
Bid 8	26625	25028	28223
Bid 9	27750	26085	29415
Bid 10	28875	27143	30608
Bid 11	30000	28200	31800

*Household ID* \_\_\_\_\_

**b. Willingness to pay for shelling/threshing service per ton of maize/groundnut/soybean/beans...**

- i. Would you be willing to pay MWK \_\_\_\_ per ton of maize shelled using 2WT propelled stationary maize sheller?
- ii. If no, would you be willing to pay MWK \_\_\_\_ per ton of maize shelled using 2WT propelled stationary maize sheller?
- iii. If no (no, no); what is the minimum amount in MWK you would like to pay per ton of maize shelled using 2WT propelled stationary maize sheller?
- iv. If yes, would you be willing to pay MWK \_\_\_\_ per ton of maize shelled using 2WT propelled stationary maize sheller?
- v. If yes (yes, yes); what is the maximum amount in MWK you would like to pay per ton of maize shelled using 2WT propelled stationary maize sheller?

**Table 2. Bid structure for elicitation of willingness to pay for shelling /threshing service per ton of maize**

Bid label	Malawi		
	Initial bid	Follow-up bid for ... response	
		NO	YES
Bid 1	7500	7050	7950
Bid 2	7950	7473	8427
Bid 3	8400	7896	8904
Bid 4	8850	8319	9381
Bid 5	9300	8742	9858
Bid 6	9750	9165	10335
Bid 7	10200	9588	10812
Bid 8	10650	10011	11289
Bid 9	11100	10434	11766
Bid 10	11550	10857	12243
Bid 11	12000	11280	12720

**Crop Codes**

1. Maize(chimanga)	8. Irish Potato(mbatatesi)	15. Wheat	22. Pumpkin(maungu)	29. Popcorn	36. Kale	43. Virginia
2. Cassava(chinagwa)	9. Bambara nut(nzama)	16. Groundnut(ntedza)	23. Kenaf	30. Linseed	37. Pineapple(nanazi)	tobacco(fodya)
3. Soybean(soya)	10. common beans	17. Onion(anyezi)	24. Cotton(thonje)	31. Rapeseed	38. Banana(nthochi)	44. Burley tobacco
4. Pigeon	11. Rice(mpunga)	18. Pepper	25. Coffee(khofi)	32. Niger seed	39. Orange(maolenji)	45. Other (specify)
Pea(nandolo)	12. Sorghum(mapira)	(tsabola)(Paprika)	26. cow pea(khobwe)	33. Barley	40. Mango(mango)	
5. Sweet	13. Sunflower(mpendadzuwa)	19. Tomato(tomato)	27. Cashew nuts	34. Kenal	41. Sugar cane(nzimbe)	
Potato(mbatata)	14.Sesame	20. Cabbage (kabichi)	28. Velvet beans	35. Garlic	42. Eucalyptus	
6. Sorghum		21. Carrot				
7. Millet						

**Unit Codes**

Household ID \_\_\_\_\_

UNIT	CODE	UNIT	CODE	UNIT	CODE	UNIT	CODE
GRAM	1	90 KG BAG	9	PAIL (SMALL)	17	WHEEL BARROW: MEDIUM	25
KILOGRAM	2	PIECE	10	PAIL (LARGE)	18	WHEEL BARROW: BIG/LARGE	26
2 KG BAG	3	BALE	11	NO. 10 PLATE	19	WHEEL BARROW: EXTRA LARGE	27
3 KG BAG	4	OX-CART	12	NO. 12 PLATE	20		
3.7 KG BAG	5	MILLILITER	13	BUNCH: SMALL	21		
5 KG BAG	6	LITRE	14	BUNCH: MEDIUM	22		
10 KG BAG	7	BUCKET	15	BUNCH: BIG/LARGE	23		
50 KG BAG	8	WHEELBARROW	16	WHEEL BARROW: SMALL	24		

#### WEIGHT CONVERSION FACTORS

Groundnuts		Soya, Beans, Cowpeas, pigeon peas, sweet peas	
Measure	Weight	Measure	Weight
1 Pail	= 9 Kgs	1 pail	=26kgs
1 x 50 Kg Bag	= 2.5 pails (unshelled)	3 pails	=78kgs
1 x 50 Kg Bag	= 22.5 Kgs	1 x 50 kg bag	=78kgs
1 x 90 Kg Bag	= 40.5 Kgs	1 basket	=2 pails (52 kgs)
1 oxcart	= 170 Kgs (5 x 34 kg Bags)	1 basin	=13 kgs
1 Basket	= 1.5 pails (13.5 Kgs)		
100kg bag	= 45 kgs		

**Note: shelled weight = 0.6\*unshelled groundnuts weight)**