

APPENDIX

SMALLHOLDER FARMERS' MINDSET OF TRANSFORMATIVE THINKING RELEVANT FOR SUSTAINABLE AGRICULTURE IN RURAL MALAWI

Consent Form

Participation is voluntary

Participation in the project is voluntary. If you chose to participate, you can withdraw your consent at any time without giving a reason. All information about you will then be made anonymous. There will be no negative consequences to your beneficiary status in the TRANSFORM project for you if you chose not to participate or later decide to withdraw.

Your personal privacy – how we will store and use your personal data.

We will only use your personal data for the purpose(s) specified in this information letter. We will process your personal data confidentially and in accordance with data protection legislation (the General Data Protection Regulation and Personal Data Act).

The information collected will be primarily accessible to NMBU through Professor Bishal Sitaula and his PhD student, Austin Tibu. All the names and contact details will be replaced with codes before further analysis to prevent leakage of your personal data. No personal names and contacts will be published from the data in this study.

The study intends not to archive the data. The data will only be analysed for the purpose of the PhD study which will be wind up in 2025. The data will not be stored beyond the 2025 study period.

What will happen to your personal data at the end of the research project?

The project is scheduled to end in August 2025. Almost all the data will be destroyed by the end of the study because it is solely collected to achieve the doctoral purpose. TRANSFORM project collects its own data where possible. As indicated early on, names and all personal contacts will be coded before further data analysis in this study. The codes will attach to each response as soon as the fieldwork is complete in May 2023.

Your rights

So long as you can be identified in the collected data, you have the right to:

- access the personal data that is being processed about you.
- request that your personal data is deleted.
- request that incorrect personal data about you is corrected/rectified, and
- send a complaint to the Data Protection Officer or The Norwegian Data Protection Authority regarding the processing of your personal data

What gives us the right to process your personal data?

We will process your personal data based on your consent.

Where can I find out more?

If you have questions about the project, or want to exercise your rights, contact:

- NMBU via *Professor Bishal Sitaula at the Faculty for Life Sciences, email: bishal.sitaula@nmbu.no* or by telephone +4767231372
- NMBU Data Protection Officer: *[Jan Olav Aarflot, by email: jan.olav.aarflot@nmbu.no* or by telephone +4790636301

- Data Protection Services, by email: (personverntjenester@sikt.no) or by telephone: +47 53 21 15 00.

I have received and understood information about the project entitled ***SMALLHOLDER FARMERS' MINDSET OF TRANSFORMATIVE THINKING RELEVANT FOR SUSTAINABLE AGRICULTURE IN RURAL MALAWI***

and have been given the opportunity to ask questions. I give consent:

- to participate in (*the collection and sharing of the information I provide, with the partner organizations listed in the list I have been shown/provided. I understand that such collection and sharing is strictly limited on a need to know basis, to information that is necessary in order for NMBU and partner organizations to better understand and meet my household's needs (livelihood, resilience and crop productivity). I understand that at any time, I may request and obtain an up-to-date list of partner organizations with whom the information I have provided has been, is being or will be shared with. I have understood that the interview will not result in direct support to me or the community*)
- to participate in (*the questionnaire interviews and focus group discussions*) – if applicable
- for my personal data to be stored until the end of the study in 2025

I give consent for my personal data to be processed until the end date of the project in August 2023

(Signed by participant, date)

Household Characteristics

HOUSEHOLD IDENTIFICATION	NAME	CODE
Household head		
Name of village		
Traditional Authority		
District		
Region		
Name of interviewee		Sex 1= Male 2=Female
Level of education		
Enumeration area		
Residence area	Husband's village (1)	
	Wife's village (2)	
	Neutral Village (3)	
Name of Enumerator		

	A1	A2	A3	A4	A5				
01									
02									
03									
04									
05									
06									
07									
08									
09									
10									
11									
12									
13									
14									
15									
16									
17									
18									

Code: A2 1=female 2=male

A3 1= husband 2= wife 3= son 4= daughter 5= Grandchild 6=Brother 7=sister 8=neice

9= nephew 10=Father 11=Mother 12=other relatives (specify)

A4 1=Married 2=Widowed 3=Divorced 4= separated 5=Never married

A6.4 0=none 1=std 1-4 2= std 5-8 3= Attend sec 4=MSCE 5=Techn. Colle

6=University

A7.1 0=none 1= Farming 2=bussiness 3=ganyu (labour) 4=Salaried work 5= full time schooling, 6= Unemployed, 7= schooling (part time attendance) and farming, 8=other (specify)

A7.2 0=Has to take care of siblings, 1=Has to help out on farm, 2=Has to help out with family business, 3=No point in attending school, 4=Fees, 5=Others (specify)

A10 0=none 1=once 2=twice 3=three times 4=whole season

B. Assets owned by the household

Items	Does your household own the following items B1 1=yes 0=no (go to B6)	How many items do you have? B2	How much did you pay for it? (MK) B2.1	When did you acquire them? (year) B3	When acquired, was item new? B3.1 1=yes 0=no	If you were to sell them today what will be the price? (MK) B4
Car						
Ox cart						
Bicycle						
Wheelbarrow						
Hoe						
Panga						
Axe						

Table								
Sewing machine								
Radio								
Plough								
Pressing iron								
Television								
Cellphones								
Others (specify)								
			1 =lose 2 =sell 3 =stolen 4 =damaged/won out 5=gave out 6=other(specify)					

B9.2: 1= husband 2= wife 3= son 4= daughter, 5=other, specify

B11. If you need more land for cultivation do you have any available for you?

1-Yes How?

2-No why?

B12 If you were to buy land how much will you be willing to pay for one acre?

(MK).....

Definition of parcel: A unit of land with permanently defined borders based on ownership and spatial characteristics.

Cs0a (makes production and investment decisions) 1=Husband/male head, 2=Wife/female head, 3=Joint husband/wife, 4=Sons, 5=daughters, 6=Others, specify

Cs0b 1=Husband, 2=Wife, 3=Joint husband/wife, 4=Sons, 5=daughters, 6=both (children), 7=Others, specify

Cs1 1=Sons, 2=daughters, 3=both (children) , 4=brothers, 5=sisters, 6=others,

Cs2 1=Divorce, 2=Death of spouse, 3=Emigration, 4= end of contract, 5= none 6=others

Cs3 1=Village Chief, 2=Brother, 3=Brother in law, 4=Sister in law, 5=none, 6= owner, 7=government, 8= uncle, 9= others

Cs4 1=Plant trees, 2=Plant vertiva and 3=Rhodes (Nsenjere) grass, 4= registered, 5=none, 6=others

Cc: Crops grown on each plot Household ID (number):

Plot ID	What crops were grown on this plot last season (2022/23)?				Identify type of Cropping System	What factors are taken into account in making decision on what crops to grow on each plot or leaving the plot fallow? (in order of priority starting with the most important)	What major reasons did the household have for mono-cropping or mixed cropping? (in order of priority starting with the most important)												
	1 st <i>Cc1</i>	2 nd <i>Cc2</i>	3 rd <i>Cc3</i>	4 th <i>Dc4</i>							<i>Cc5</i>	<i>Cc7</i>				<i>Cc8</i>			
1																			
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
	Crop codes 0 fallow 1 Maize Hybrid 2 Composite Maize (OPV) 3 Maize Local 4 Beans Dry 5 Beans Green (Zitheba) 6 Peas 7 Ground nuts	14 Tomatoes 15 Onions 16 Lettuce 17 Rape 18 Mpiru 19 Pumpkins 20 Garlic 21 Cucumber 22 rice 23 Millet 24 sorghum 25 sugarcane	1= Mixed cropping 2= Mono- cropping 3= Intercropping	1= Land availability 2= Labour availability 3= Prevailing market prices 4= Seeds, fertilizer, availability 5= Meeting household basic consumption needs Credit 6= Past crop performance (in previous seasons 7= Expected rainfall patterns. 8= Crop rotation 9= Other (specify)	1= Maximize revenue from land 2= Allow positive complementarity effects among crops (e.g. N- fixing,) 3= Save time and labour in crop management 4= To produce quality standards for exclusive for marketing 5= other														

	8 Tobacco 9 Cassava 10 Pigeon peas 11 Irish potato 12 Sweet Potato 13 Cabbage	26 soybeans 27 others (specify)			
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D. Harvest

How much did you harvest last season (2021/22)

Plot ID	Crop code	Harvest 2021/2022							Indicate the state of the yield in the 5 past years.	Indicate the major reasons for the change
		1 st		2 nd		3 rd		4 th Others		
		Quantity	Unit Code	Quantity	Unit code	Quantity	Unit code	Estimated value		
	<i>D1</i>	<i>D2</i>	<i>D3</i>	<i>D4</i>	<i>D5</i>	<i>D6</i>	<i>D7</i>	<i>D8</i>	<i>D10</i>	<i>D11</i>
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
	Use Crop codes									

Code D3, D5, D7: 1= basket 2=oxcart 3=pail 4=wheelbarrow 5=bags (50kg) 6=bags

(90kg) 7= bales 8=Nkhokwe 9= lichelo (basin) 10=others

D10: 1=increasing 2=decreasing 3=constant

E: Membership to Farmer Groups

Group ID	Organization <i>E15</i>	Membership Characteristics				
		Project Financing the Group? <i>E16</i>	Role in the Group <i>E17</i>	How many years of membership <i>E18</i>	Trainings Received in each group <i>E19</i>	Was problem identification conducted by participants at the beginning of the Group <i>E20</i>
1						
2						
3						
4						
5						
6						
7						
8						

9						
10						
11						
12						
13						
14						
15						
	1= Farmer Field School 2=Farmer Cooperative 3=Farmer club 4=Association 5= Others (specify)	1=Government 2=Non Governmental Organization 3=United Nations Organization 4=Research/Academic organization 5= Civil Society Organizaton 6=Farmers Organization 7=Others	1= Lead Farmer 2= Community Facilitator 3=Committee member 4=Ordinary Member 5=Non member 6=Others	Number of seasons	1= More than 1X per season 2= 1X per season 3=less than 1X per season	<i>I=yes 0=no</i> If yes, please take a picture or copy of the problem tree analysis

F. Recent shocks to household welfare

Negative shocks are defined as sudden adverse events (NOT ANTICIPATED) that lead to a loss of household income, a reduction in consumption, a loss of productive assets, and/or serious concern about household welfare. Anticipated shocks such as death after a long illness, crop failure following a long dry spell or drought, etc will not be considered as shock in this study.

Has this household experienced ANY major shock since 2021

GO THROUGH THE ENTIRE LIST (F2)	Did you experience a shock this year? 1-yes 0-no F1.1	The year shock occurred. F1.2	Note down the three most significant shocks you experienced for each year. F2	Degree of coverage F3	Duration of shocks in weeks F4	Effect of the shock F5	Estimated total value of loss. (Not for 11-14) F6	What did you do in response to this shock to try to regain your former welfare level? F7			
1- Lower yields due to drought or flood 2-Crop disease or crop pests 3-Livestock dies or were stolen 4-Large fall in sale prices for crops 5-Household buisness failure 6-Loss of salaried employment 7-Non-payment of salary 8-End of regular assistance, aid, or remittances		2020	1								
			2								
			3								
		2021	1								
			2								
			3								
		2022	1								
			2								
			3								
		2023	1								
			2								
			3								

from outside HH										
9-Large rise in price of food										
11-Death of HH head										
12-Death of working members of the HH										
13-Illness or accident of household member										
14-Death of other family member										
16-Dwelling damaged, destroyed										
17-Theft										
18-Other (specify)										

F3: 1=Own HH only 2=Some other HHs too 3=All HHs in community

F5: 1=Reduction in income 2=Reduction in assets 3=Both 4=Nothing

F7: 0=Nothing

8=Removed children from school to work

1=Spent cash savings

9=Sent children to live with relatives

2=Sold assests (tools etc)

10=Went elsewhere to find work for more than one

month

3=Sold farmland

11=Borrowed money (relatives, bank, local money

lender)

4=Sold animals

12=Received help (government, NGO, etc)

5=Sold more crops *13=Reduced food consumption (smaller proportions,
fewer meals per day)* *6=Worked more (incl. other HH members, ganyu)*
14=Diversify food consumption (Wild foods, meal sharing, no meat or fish)
7=Started a new buisness

CODE 1			CODE 2		
1. Plant drought tolerant crops	9. Change from crop to livestock	15. Saving in cash	1. Plant drought tolerant varieties	7. Change from crop to livestock	13. Stop sending children to school
2. Plant crops adapted to water-logging	10. Minimum tillage	16. Saving in kind (e.g. Jewellery)	2. Replanting	8. Change from livestock to crop	14. More on-farm casual work
3. Plant drought tolerant varieties	11. Soil and stone bunds	17. Food preservation	3. Selling livestock	9. Eat less	15. More off-farm casual work
4. Early planting	12. Increase seed rate	18. None	4. Selling land	10. Reduce meals	16. None
5. Crop diversification	13. More on-farm casual work	19. Other (specify).....	5. Rent out land	11. Out-migration	17. Other (specify).....
6. Intercropping	14. More off-farm casual work		6. Selling other assets (specify).....	12. Borrowing	
7. Rotation					
8. Tree planting					

H: To identify how knowledge transfer affects inner transformation on agricultural sustainability.

Consider all the FFS interventions that you have been involved in, to what extent do you consider that FFS integrated the following.

No	Leverage Points for Inner Transformation (refer to Woiwode et. al., (2021))	Rank					
		1	2	3	4	5	6
1	Nurturing mindfulness and self reflection during trainings and practical sessions during the season						

2	Embracing diversity, building trust and clarifying common vision for establishing FFS						
3	Contributing to social intergation and cohension and enriching life during meetings, trainings and discussions						
4	Practcing conflict facilitation and developing peace building skills between memebtrs of the FFS						
5	Reconnecting to nature during problem identification and selection of enterprises and their potential benefits to smallholder agriculture						
6	Creating opportunities for other members of the farming community to learn for FFS establishments						
7	Developig agricultural based economies including savings group, storage facilities, entrepreneursh sessions during the FFS season						
8	Promoting a balanced social structure including local leadership and gender						
9	Preserving natural rsources including soils, water and forests						
15	If things continue on their present course, we will soon experience a major						

Codes

- 1. Fully integrated
- 2. Well integrated
- 3. Somewhat integrated
- 4. Poorly integrated
- 5. Not at all integrated

I. Reviewing the current agricultural technology. (Expecting possible multiple answers)

No	Different types of agricultural technologies	Codes				
		1	2	3	4	5
1	Conservation agriculture					
2	Agroforestry					
3	Climate smart agriculture					
4	Intercropping					
5	Utilisation of improve varieties					
6	Crop rotation					
7	Soil fertilisation					
8	Mixed farming					
9	Mixed farming					
10	Early planting					

Codes

- | |
|--|
| <ol style="list-style-type: none"> 1. Heard 2. Seen 3. Practiced 4. Adopted 5. Don't know |
|--|

J. Technology Adoption

No	Can adoption of agricultural technology by someone affecting other	Rank				
		1	2	3	4	5
1	Lead farmer					
2	Family relatives					
3	Friends					
4	Opinion leaders					
5	Colleague group member					

- | |
|--|
| Codes |
| <ol style="list-style-type: none"> 1. Highly affected 2. Well affected 3. Somewhat affected 4. Poorly affected 5. Not at all affected |

K. Do you know any technologies that can be used for better growth of crops on sustainable basis?
 (Yes) (No) If yes kindly give examples

How do you received information from your leaders at highest level and how do they welcome your ideas

- a) Top down approach
- b) Bottom up approach.
- c) Others specify.

L: To review current technology uses by farmers currently, how FFS initiatives will impact smallholder farmers' awareness relevant for inner transformation, and its legitimacy in Malawi's food industry.

L1. Consider all the FFS interventions that you have been involved in, to what extent do you consider that FFS consider the following.

No	New Ecological Paradigm (NEP) Scale Description	Rank					
		1	2	3	4	5	6
1	We are approaching the limit of the number of people our agricultural fields can support						
2	We have the right to modify our homes, fields and our environment to suit our needs						
3	When humans interfere with nature it often produces disastrous consequences for our food production systems						

4	Human ingenuity will ensure that we do not make our environment unproductive for the current production systems						
5	We are severely abusing our agricultural production resources (soil, trees, water, air)						
6	Our environment has plenty of natural resources if we just learn how to develop them for increased production						
7	Plants and animals in our agricultural systems have as much right as humans to exist						
8	The balance of nature is strong enough to cope up with the land degradation, floods and drought						
9	Despite our special abilities to practice agriculture, humans are still subject to the laws of nature						
10	The so called ecological crisis facing our agricultural systems has been greatly exaggerated						
11	Our agricultural environment is like Noah's ark with very limited room and space						
12	Humans were meant to rule over the rest of nature for agricultural production						
13	The balance of nature is very delicate and easily upset						
14	Humans will eventually learn enough about how nature works to be able to control it						
15	If things continue on their present course, we will soon experience a major crisis in agricultural production						

16	Postive impact on the current agriculture technologies						
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Code 3
<ol style="list-style-type: none"> 1. Stronly diasgree 2. Diasgree 3. Neutral 4. Agree 5. Strongly agree 6. Don't know

L2. What components of agriculture technology you tried worked well and what failed?

Expecting multiple answers

L3. Have you benefited from joining FFS/group on your awareness of agriculture sustainability? Yes /No If yes how?

MI. Obstacles of Transformation

No	Barriers that prevent transformation among smallholder farmers	Rank				
		1	2	3	4	5
10	Cost					
2	Technicality					
3	Social factors					
4	Infrastructural conditions					

5	Illiteracy					
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Code
1. Strongly disagree
2. Disagree
3. Agree
4. Strongly agree
5. Don't know

M2. Do you believe FFS is an enabling factor that can encourage transformation among smallholder farmers? If yes how

N. To determine if there are gaps in the current extension services for inner transformation on sustainability.

N 1a. Did you have visits from extension staff last season (2021/22)? 1-Yes 0-No

.....

N 2b. If yes how many times?

.....

N 2c. What advice did you receive from the extension staff?

N 3. Would you explore new farming technology? (Yes) (No). If yes, why

N 4. How long would it take you to adopt a new technology (Adoption rate) in terms of days, months, or years, and why?

12.Donkey											
13.Others											

C. Result tables

How many household members are there in your house.

Household number	Frequency	Percentage
2	3	3.8
3	11	13.8
4	17	21.3
5	17	21.3
6	19	23.8
7	5	6.3
8	3	3.8
9	2	2.5
12	1	1.3
14	1	1.3
15	1	1.3
Total	80	100.0

Results show that respondents varied from 2 to 15 members of house. With highest number for 6 household members (n=19) followed by 5 (n=17) and 4 (n=17) household members.

Marital status of the respondent

Marital status	Frequency	Percentage
Divorced	6	7.5
Married	63	78.8
Separated	3	3.8
Widowed	8	10.0
Total	80	100.0

Findings of the question related to marital status showed that 63 respondents of the study were married, 8 were widows, 6 were divorced and 3 were separated.

Relationship of the respondent to household head

Household head relationship	Frequency	Percentage
Mother	1	1.3
Self	40	50.0
Spouse	39	48.8
Total	80	100.0

For the question “**Relationship of the respondent to household head**” it was reported that all 40 participants were self-reporting the required information, 39 were the spouse providing the information and 1 were the mother of the household.

Residence area of respondents

Residential area	Frequency	Percentage
Husband's village	57	71.3
Neutral Village	4	5.0
Wife's village	19	23.8
Total	80	100.0

For the question related to residence area 57 study participants reported to be living in husband's village and 19 were living in wife's village. Remaining 4 study participants were reported to be living in neutral village.

Whether the respondent is FFS member

FFS member	Frequency	Percentage
No	40	50.0
Yes	40	50
Total	80	100.0

For the question related to respondent being FFS member 40 study participants reported not being FFS member and 40 reported as a member of FFS. Though 40 participants were not members of FFS, but they belong to different farmer groups only 2 participants were not belonging to any farmer group (but rather follow farmers)

Village name of respondents

Village names	Frequency	Percentage
Bwemba	6	6.4
Chipafi dausi	4	5.0
Dzoole	8	10
Kafela	1	1.3
Kangulu	3	3.8
Kansulila	7	9.0
Kapondo	5	6.3
Kapondo.zakaria	1	1.3
Kawole	6	7.6
Kayesela mgunda	1	1.3
Kayeselan'gunda	1	1.3
Kayesera Village	1	1.3
Masinja	1	1.3
Mbalame	4	5.0
Mchemela	8	10
Mtipulula	1	1.3
Ndalama	7	8.8
Ngalazuka	1	1.3
Pioni	1	1.3
Sauzande	2	2.5
Tambala	11	14
Total	80	100.0

For the question related to which village study participants belonged to different villages including Tambala, Sauzande, Pioni and Mtipulula etc.

Traditional Authority (TA) of the study area.

Traditional authority	Frequency	Percent
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Dzoole	40	50
MKUKULA	40	50
Total	80	100.0

For the question related to traditional authority study participants reported that they belong to Dzoole (n=40) and Mkukula (n=40).