

Gender-responsive Farm-household Typologies, Innovation adoptions, Impacts of Legume-based Technological Interventions on Small Holder Production and Livelihood Performance in Lentil-Chickpea Zones of North-Shewa Amhara region, Highlands of Ethiopia

Survey Questionnaire

INTRODUCTION

Start with greetings in the local language.

Please read out aloud the following for the respondents

We are from the International Center for Agricultural Researches in the Dry Areas (ICARDA), and Debre Birhan Agricultural Research Center working on a project that aims at understanding, assessing adoptions of legumes-based innovations and their impacts on small holder production and livelihoods in lentil-chickpea zones of North-Shewa Amhara region, Highlands of Ethiopia. We have randomly selected respondents in a cluster of four villages in **Moretna Jiru** to talk to them on some important issues related to agricultural production and livelihoods. You are one of these randomly selected households and we would be very grateful if you could sit with us and have a discussion. The information generated in this study will be kept in a secure place and will be used only for the purposes of this research.

Thank you for your willingness to participate in this study. Just to emphasize, any answers you provide will be kept confidential, and there is no way anyone will be able to identify you by what you have said in this interview. You have the right to terminate this interview at any time, and you have the right to refuse to answer any question you might not want to respond. Please let me know if you have any question before we start the discussion.

Respondent's question (s) (**WRITE KEY WORDS ONLY**)

Note:

- Some questions may have more than one answer. Use comma to separate multiple responses when applicable.

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A. RESPONDENT IDENTIFICATION

A1	Date of Survey (DD/MM/YYYY) : / /
A2	Enumerator Name :
A3	Supervisor's Name:	.....
A4	District name:	.....
A5	Kebele name:	.....
A6	Village name:	.....
A7	Household house coordinates:	Longitude Latitude:
A8	What is your nearest market?	.....
A9	Distance from your house to the nearest market:	..... (km)
A10	Distance from your house to the nearest paved road:	.....(km)
A11	Distance from your house to the nearest water bodies (lake/pond/river):	.....(km)

B. RESPONDENT'S CHARACTERISTICS

B1	Name of the respondent:
B2	Sex of the respondent	..... (code: 1 = Male 0 = Female)
B3	Sex of the HH head:	..... (code: 1 = Male 0 = Female)
B4	Mobile number of the respondent:	.....
B5	Age of the respondent:	..... (years old)
B6	Position of the respondent to the household:	..... <i>Code: 1= HH head 2 = Spouse 3 = Male HH member 4 = Female HH members 5 = Other non-family member</i>
B7	Education level of the respondent:	Formal (Years of schooling) Informal (Number of years)
B8	Social responsibility of the respondent in the community:	..... <i>Code: 1= Participate in the administrative unit of the locality 2= Participate in community leadership 3= No participation</i>
B9	Current occupation of the respondent:	..... <i>Code: 1= Farming 2= Non-farm 3= Both</i>

		Respondent ID: _____
B10	If answer to Q-B9 is 1 or 3, what is your farming experience?	..... (years)
B11	If answer to Q-B9 is 2 or 3, what is your non-farm activities experience	..... (years)

Household Membership Status with Different Association

B12. Is the household member of a farmer association/group?..... (code: 1= Yes, 0= No)

B12.1. If yes to Q-B12, who in the household is a member of this group?

Code: 1= adult man (>45 yrs), 2= adult woman (>45 yrs), 3= young man (18-45 yrs), 4= young women (18-45 yrs)

B12.2. If yes to Q-B12., please list the names of farmer associations/groups.....

.....

B12.3. Can both men and women have equal opportunity and ability to become a member of this association/group?

Code: 1= yes, 0= no

B12.4. If no to Q-B12.3, please explain why?.....

B13. Is the household member of a credit association/group?..... (Code: 1= Yes, 0= No)

B13.1 If yes to Q-B13. who in the household is a member of this group?.....

Code: 1= Adult man, 2= adult woman, 3= young man, 4= young women

B13.2. If yes to Q-B13, please list the names of credit associations/groups.....

.....

B13.3. Can both men and women have equal opportunity and ability to become a member of this association/group?

Code: 1=yes, 0= no

B13.4. If no to Q-B13.3, please explain why?.....

B14. Is the household a member of any other association/group? (code: 1= Yes, 0= No)

B14.1 if yes to Q-B15, who in the household is a member of this group?

Code: 1= Adult man, 2= Adult woman, 3= Young man, 4= Young women

B14.2 If yes to Q-B15, please list the names of associations/groups.....

.....

B14.3 Can both men and women have equal opportunity and ability to become a member of this association/group?

Code: 1=yes, 0= no

B14.4. If no to Q-B15.3, please explain why?.....

C. HOUSEHOLD ROSTER

[illegible]

D. LAND, CROPS AND LIVESTOCK ASSETS

(1). Land Size and Ownership of HH

D1. What is the size of your total land holding in hectare?

D2. Do you have access to livestock grazing land? (code: 0= No; 1=Yes) If no, skip to D3

D2.1. If yes, what type of grazing system is your livestock production based on?

Code: 1 = Communal; 2 = Private; 3 = both Communal & Private

D2.2. If your livestock operation is based on private land, what is the approximate size? (in hectare)

D2.3. If your livestock operation is based on communal land, what is the approximate size? (in hectare)

D3. Do you have access to cropping land? (code: 0 = No; 1=Yes)

D4. If yes, how many hectare of crop land does your household have? (Hectare)

(2). *Land Use and Tenure System* (Identify the different field of land by number and the name of their location)

D5. Field Name	D6. Field ID	D7. Primary use of the land (Code a)	D8. Size of this land in hectare	D9. Tenure system (Code b)	D10. Is this land certified? (1= Yes 0 = No)	D11. If the land is owned, who owns the land? (Code c)
	1					
	2					
	3					
	4					
	5					
	6					
	7					
	8					
Code a) Land use: 1 = crop activity 2 = livestock farming 3 = Forest land 4 = Homestead 5 = Others (specify)						
Code b) Tenure system: 1 = Own land 2 = Rented in land 3 = Rented out 4 = Share cropped in 5 = Share cropped out 6 = Free gift from others						
Code c) If owned, name on certificate: 1 = HH head 2=Spouse 3=Head & spouse 4=Son(s) 5=Daughter(s) 6=Head & son(s)/daughter(s) 7=Spouse & son(s)/daughter(s) 8=Son(s) & daughter(s) 9=All HH members) 10=Other(s)						

E. HOUSEHOLD ASSETS AND AGRICULTURAL EQUIPMENT

Name of Asset	E.1. Total Number owned	E.2 No. of items that were purchased (last 12 months)	E.3 Who has access and/or control over the asset? (Code a)	
			E3.1 Access ¹	E3.2 Control ²
Domestic				
1. Mobile phone				
2. Solar panel				
3. Water tanks				
4. Radio				
5. Grain mill(diesel)				
6. Grain mill (electric)				
Transport				
7. Bicycle				
Farm				
8. Number of Ox-plough				
9. Set of tillage equipment				
10. Hoes				
11. Spades/shovel				
12. Sprayer pump				
13. Water pump (diesel)				
14. Water pump (hand/foot)				
15. Wheel barrow				
16. Power tiller				
17. Cattle handling yards/Crush				
18. Small stock handling yards/crushes				
19. Stock drinking trough				
20. Dipping equipment				
21. Drenching gun				
22. Foot clippers				
23. Sheep hair clippers				
24. Dehorning equipment				
25. Modern Bee hives				
26. Transitional bee hives				
27. Traditional bee hives				
28. Others (specify)				
Code a) Who has access and/or control over the asset:: 1 = HH head 2=Spouse 3=Head & spouse 4=Son(s) 5=Daughter(s) 6=Head & son(s)/daughter(s) 7=Spouse & son(s)/daughter(s) 8=Son(s) & daughter(s) 9=All HH members				

¹ Access represents the right to use a resource/benefit²Control represents the right to make decision about the use of a resource/benefit

F. CROP PRODUCTION OF THE TWO LAST AGRICULTURAL SEASONS

(1). Cropping and Soil Characteristics in main rainy (meher) season (in 2018)

For the last summer cropping season (2018)

D5. Field Name <i>(copy from Part D)</i>	D6. Field ID <i>(copy from Part D)</i>	F1. Field area <i>(in hectare) (Unit:)</i>	F2. Main crop (Code a)	F3. Associated crop (Code a)	F4. Multi- cropping type (Code b)	F5. Slope of the field (Code c)	F6. Soil depth (Code d)	F7. Erosion severity (Code e)	F8. Soil and water conservation measure (Code f)		
									F8.1 1st measure	F8.2 2 nd measure	F8.3 3rd measure
	1										
	2										
	3										
	4										
	5										
	6										
	7										
	8										
Code a): 1= Teff, 2= Wheat, 3= Barley 4= Maize, 5= Millet, 6= Sorghum, 7= Lentil, 8= Faba bean, 9 = Field pea, 10= Chick pea, 11= Potato, 12= Haricot bean, 13= Fruit trees (specify.....), 14= vegetables (specify.....), 15= Fallowing, 16= Other (specify) Code b): 1= single crop, 2= inter crop, 3= Overlapping, 4= other (specify.....) Code c): 1= flat, 2= slight slope, 3= moderate slope, 4= steep slope Code d): 1= shallow, 2= medium, 3= deep Code e): 1= less erosion, 2=medium erosion, 3 = high erosion, 4= extremely eroded, other (specify.....) Code f): 1= tied ridges, 2= terraces, 3= terrace + grass strips, 4= grass strips, 5= mulching, 6= trenches, 7= half-moon/ micro-basin, 8= other (specify.....)											

(2). Input Used and Quantity of harvested crop in Meher season (in 2018)

D5. Field Name <i>(copy from Part D)</i>	D6. Field ID <i>(copy from Part D)</i>	F9. Amount of compost used (in Quintal) <i>(unit :)</i>	F10. Input sources for making compost (Code a)	F11. Amount of chemical fertilizers used <i>(unit :)</i>			F12. Do you used insecticides, fungicides or herbicides ? Code : Yes=1 No=0 If no, skip to F14	F12.1. Amount of insecticide used (Code C) (unit:)	F12.2. Cost of insecticides used <i>(unit : Birr)</i>	F13.1. Amount of herbicides used (Code C) <i>(unit :)</i>	F13.2. Cost of herbicide used <i>(unit : Birr)</i>	F14. Quantity of harvested crop (in Quintal) <i>(unit :)</i>
				F11.1 Urea (Code g)	F11.2 DAP (Code g)	F11.3 NPK (specify ratio a) (Code g)						
	1											
	2											
	3											
	4											
	5											
	6											
	7											
	8											
		Code a): 1= crop residues (specified crop), 2= tree leaves (specified tree), 3= animal dung, 4= Combination of these inputs, 5= Other (specify.....)										
		Ratio a): please specify.....N: ....P: ....K										

Code g): Chemical Fertilizer quantity unit:	KILOGRAMME = 1	QUINTAL= 2	CHINET = 3	DAWLA = 4	KUNNA = 5	SILICHA = 6
	AKMADA =7	BAGS = 8	TASSA =9	KUBAYA =10	BIRCHIKO =11	SINI=12
	SMALL MADABERIA = 14	ENKIB = 15	Missing =999			
Code h): Pesticides, fungicides or herbicides:	KILOGRAMME = 1	LITRES = 2	KUBAYA= 3	BIRCHIKO= 4	SINI= 5	
	BOTTLES = 6	SAHIN = 7	MANKORKORIA= 8	SMALL PLASTIC BAG= 9		
	MELEKIA =10	MESFERIA= 11	Missing = 999			

(3). Input Used and Quantity of Harvest in short cropping season (in 2017) For the last winter crop season (2017)

D5. Field Name (copy from Part D)	D6. Field ID (copy from Part D)	F15. Main crop (Code a)	F16. Associate d crop (Code a)	F17. Multi- croppin g type (Code b)	F18. Amount of compos t used (in Quintal) (unit :)	F19. Input sources for making compos t (Code c)	F20. Amount of chemical fertilizers used (Unit :)			F21. Do you used insecticides , fungicides or herbicides ? Code : Yes=1 No=0 If no, skip to F23	F21.1. Amount of insecticide used (Code C) (unit :)	F21.2. Cost of insecticid e used (unit : Birr)	F22.1. Amount of herbicide s used (Code C) (unit :)	F22.2. Cost of herbicid e used (unit : Birr)	F23. Quantity of harveste d crop (in Quintal) (unit :)
							F20.1 Urea (Code g)	F20.2 DAP (Code g)	F20.3 NPK (ratio a) (Code g)						
	1														
	2														
	3														
	4														
	5														
	6														
	7														
	8														
		Code a): 1= Teff, 2= Wheat, 3= Barley 4= Maize, 5= Millet, 6= Sorghum, 7= Lentil, 8= Faba bean, 9= Field pea, 10= Chick pea, 11= Potato, 12= Haricot bean, 13= Fruit trees (specify.....), 14= vegetables (specify.....), 15= Fallowing, 16= Other (specify													
		Code b): 1= single crop, 2= inter crop, 3= Overlapping, 4= other (specify.....)													
		Code c): 1=crop residues (specified crop), 2= tree leaves (specified tree), 3= animal dung, 4=Combination of these inputs, 5= Other (specify.....)													
		Ratio a): please specify.....N: ....P: ....K													

(Code g): Chemical Fertilizer quantity unit: KILOGRAMME = 1 QUINTAL= 2 CHINET = 3 DAWLA = 4 KUNNA = 5 SILICHA = 6															
AKMADA =7 BAGS = 8 TASSA =9 KUBAYA =10 BIRCHIKO =11 SINI=12 BIG MADABERIA =13															
SMALL MADABERIA = 14 ENKIB = 15 Missing =999															
(Code h): Pesticides, fungicides or herbicides: KILOGRAMME = 1 LITRES = 2 KUBAYA= 3 BIRCHIKO= 4 SINI= 5															
BOTTLES = 6 SAHIN = 7 MANKORKORIA= 8 SMALL PLASTIC BAG= 9															
MELEKIA =10 MESFERIA= 11 Missing = 999															

G. CEREAL-LEGUME ASSOCIATION

G1. Did you practice cereal-legume association? (Code: Yes = 1 No = 0)

G1.1. If yes, since how many years?.....

G1.2. If cereal-legume association have been practiced for a number of years (e.g. < 7-8 years), what are the main reasons?

Reason 1 /.....

Reason 2 /.....

Reason 3 /.....

G2. What is the main cereal-legume association type you practice every year?

Please combine codes of associated crops using the list below:

Code a): 1= Teff, 2= Wheat, 3= Barley 4= Maize, 5= Millet, 6= Sorghum, 7= Lentil, 8= Faba bean,
9 = Field pea, 10= Chick pea, 11= Potato, 12= Haricot bean, 13= Fruit trees (specify.....), 14= Vegetables
(specify.....), 15= Fallowing, 16= Other (specify

G3. What is the effect of cereal-legume association on crop yield you perceive?

Code: 1= Yield decrease 2= No effect on yield 3= Increased yield

G4. Crop rotation within the cereal-legume association?

Code: 1= Same cereal-legume association over the years 2= Changing the legume used for association

3= Changing the cereal associated with legume 4= Other (specify.....)

G5. How is the association cereal-legume performed?

Code: 1= Legumes between cereal sowing pockets (interposed) 2= Both cereals and legumes within the same sowing pocket

3= Legumes between cereal lines, 4= Other (specify.....)

H. USE OF IMPROVED SEED

H1 Crop Type	H2. Are you usually Use improved seeds? (1= Yes 0= No)	H3. If improved seeds have used, what is your access mode to improved seeds? Code: 1=Buying from model farmers producing improved seeds in the sub-district 2=Buying with extension services 3=Donation from Government 4= Donation from fellow farmer 5= Donation from NGO/Project 6=Subsidy from Government 7= Subsidy from NGO/Project 8=Other (specified)		
		H3.1 1 st access mode	H3.2 2 nd access mode	H3.3 3 rd access mode
1 Teff				
2. Wheat				
3. Marley				
4 Maize				
5 Millet				
6. Sorghum				
7. Lentil				
8, Faba bean				
9. Field pea				
10. Chickpea				
11. Haricot bean				
12 Other crop (specify....)				

H4. If no Q H2, why for?

I. FUNCTIONAL FARM IMPLEMENT

L1 Implement Type	L2. Do you have this farm implement Code: 1=Yes 0=No	L3 - If Yes QL2. what is the number your hh owned at present
1 Full line implements for bullock traction (ploughing tillage, etc.)		
2 Ploughing implement only for bullock		
3 Full line implements for donkey traction (ploughing tillage, etc.)		
4 Ploughing implement only for donkey		
5 Wheelbarrow		
.6 Donkey cart		
7 Cattle cart		
8 Tractor		

J. CROP RESIDUE USE

J1. Residues type	J2. Do you use this crop residue? Code: 1=Yes 0=No	J3. If Yes for QM@, What do you use this crop residues for? (Uses of crop residues) Code: 1= Left on plots; 2=Burned ; 3=Collected as animal feeds ; 4= Collected for firewood; 5=Collected and composted
1 Teff		
2. Wheat		
3. Barley		
4 Maize		
5 Millet		
6. Sorghum		
7. Lentil		
.8. Faba bean		
9. Field pea		
.10. Chickpea		
11. Harricot bean		
12 Other crop (specify.....)		

K. LIVESTOCK: HERD STRUCTURES AND FLOWS

Indicate the number of animals owned by the household (Please fill in the respective owner)

	K1. Livestock Species		K2. Number owned by the HH at his/her location	K3. Number kept but not owned	K4. Number owned by household but kept elsewhere
1	Cows				
2	Heifers				
3	Oxen				
4	Bulls				
5	Calves				
6	Sheep	Ram			
		Ewe			
		Castrated			
		Young (6 months-1year)			
		Lamb (<6 months)			
7	Goats	Buck			
		Does			
		Castrated			
		Young (6 months-1year)			
		Kids (<6 months)			
8	Donkeys				
9	Horses				
10	Mules				
11	Poultry				
12	Bee colony				
13	Other (specify)				

L. FOOD SECURITY

L1. Can you tell if the farm has been able to cover its food needs from its own production the last 5 years?

Code: 1=Yes 0=No

L2. If no, what do you think are the causes?

Code: 1=Insufficient labour 2= Poor fields fertility 3= Inadequate management of fields fertility 4= Climate variability

L3. How many months, the farm own production were able to cover its food needs last year?

L4. Do you think this year crop production will entirely cover your food need of the year?

Code: 1= Yes 0= No

M. TRANSFERS

M1 Is the farm receiving remittance? Code: 1=Yes 0=No

M2. If yes, what is the usual amount received in Birr?

M3. Periodicity of remittance received: Code: 1= weekly, 2= Monthly, 3= annually

N. GENDER ROLES

What are the common roles of men and women in crop and livestock production?

N1. Activities List	N2. What are the common roles of men and women in crop and livestock production? <i>Code: 1= Predominantly men, 2= Predominantly women, 3= Both men and women, 4= children, 5= hired labour</i>
1. Ploughing	
2. Planting	
3. Irrigating	
4 Fertilizer application	
5. Weeding	
6. Harvesting	
7. Packaging	
8. Marketing	
9. Feeding animal	
10 Processing animal product (e.g. dairy processing)	
11. Packaging	
12. Marketing	
13. Other	

O. EXTENSION SERVICE**Information and knowledge support provided by the extension services (in the last 12 months).**

No	Issues	Crop production	Livestock	Marketing
O1	Did you or any of your family members have extension contact for crop, livestock production and/or others (marketing) (Code a), If No, Go to QR11			
O2	Who had extension contact? (code b)			
O3	Frequency of contact? (Code c)			
O4	Did you get any information support on buying inputs? (Code a)			
O5	Did you get any information support on selling outputs? (Code a)			
O6	Did you get any information support on improved seeds (crop), feeding (livestock)? (Code a)			
O7	Did you get any information support on the type of stock handling yards/crushes used? (Code a)			
O8	How useful was the information support you received? (Code d)			
O9	How relevant is the information support you received? (Code d)			
O10	How timely is the information support you received? (Code d)			
O11	If no, why? (key words)			
Code a) 1= Yes, 0= No				
Code b) Who had contact with DA: 1 = HH head 2=Spouse 3=Head & spouse 4=Son(s) 5=Daughter(s) 6=Head & son(s)/daughter(s) 7=Spouse & son(s)/daughter(s) 8=Son(s) & daughter(s) 9=All HH members)				
Code c) Frequency: 1=Daily 2=Weekly, 3=Fortnightly 4=Monthly 5= In every three month 6=Biannually 7=Once a year				
Code d) Usefulness, Relevance, Timeliness of the information: 1=Very Poor, 2= Poor, 3= Medium 4= Good, 5= Very good				

P. HOUSEHOLD INCOME

Please tell us about all the work that members of your household have done and how much income they earned from doing that work during the last 12 months.

	P1. Livelihood Activity	P2. Did anyone in your HH engage in this activity during the last 12 months? (1=yes 0=No)	P3. If Q-L1 is Yes, how many HH members are engaged in this activity?	P4. Total annual income earned while doing this work? (Birr per <u>annum</u>)
1	EMPLOYMENT			
	1a. Public works (food-for-work, cash-for-work)			
	1b. Agricultural laborer on others farm			
	1c. Daily laborer on other non-farm activities			
	1d. Domestic work for others			
	1e. Other employment (specify): _____			
2	TRADING (buying and selling)			
	2a. Trading in food crops (grains, pulses, vegetables) produced from your farm			
	2b. Trading in food crops (grains, pulses, vegetables) produced from other sources			
	2c. Trading in livestock or livestock products from your farm			
	2d. Trading in livestock or livestock products from other sources			
	2e. Trading in other commodities			
3	SALE OF NATURAL PRODUCTS			
	3a. Selling firewood or charcoal			
	3b. Selling grass or fodder (for livestock)			
	3c. Selling construction materials (sand, wooden poles, etc)			
	3d. Selling fruits, etc.			
4	CRAFTS / SMALL INDUSTRY			
	4a. Making baskets or mats			
	4b. Spinning or weaving cloth (cotton or wool)			
	4c. Making or repairing clothes (tailoring)			
	4d. Pottery			
	4e. Blacksmithing or metal-work			
5	SERVICES			
	5a. Barber or Hairdresser			
	5b. Traditional healer			
6	RENTS			
	6a. Land rent			
	6b. Renting out oxen for farming			
	6c. Renting out pack animals for transport (e.g. donkeys)			
	6d. Housing rent			
7	FOOD & DRINK PROCESSING AND SELLING			
	7a. Selling drink (both soft and alcoholic)			
	7b. Selling cooked food			
8	REMITTANCES			
9	OTHER (Specify.....)			