Household Interview Schedule on

Improved Bread Wheat Seed Adoption, Seed Recycling and Impacts on the Technical Efficiency of Smallholder Farmers': The Case of East Gojam Zone, Amhara National Regional State, Ethiopia.

Consent

My name is {___}. I'm here to collect a research data by interviewing you and other members of the community in your village. This interview schedule is designed with the chief intention of investigating the major determinants of smallholder farmers TE in bread wheat production and its nexus with seed recycling. It is also aimed at understanding the economic efficiency impacts produced as a result of improved bread wheat seed use and seed recycling along with capturing the major sources of inefficiencies in bread wheat production in the study area. There is no direct benefit/compensation in participating to this research. Your response to these questions would remain anonymous. Taking part in this study is voluntary. If you choose not to take part, you are free to disengage and there will be no consequences. May I Continue to the Interview?

1 = {Yes} *2 = {No}*

"Thank you for your kind co-operation"

Part I. General Information

District Name	Kebele/PA Name	HH Head Name	HHH ID	Enumerator Name	Enumerator Signature	Interview Date

Part II. Respondents Socio – Personal and Demographic Conditions

2.1. Sex, age and educational status

HHH Sex 1 = [male] 2 = [female]	Marital status 1 = [Single] 2 = [Married] 3= [Divorced] 4 = [Widowed]	HHH Age in years	Farm Experience in year	Educational status 0 = [Illiterate] 1 = [Literate]	If literate, maximum grade level attained in years

2.2. Family size of the household by age group and sex

Family members	Age	Sex 1 = [male] 2 = [female]	Educational status 0 = [Illiterate] 1 = [Literate]	If literate, maximum grade level attained in years	Permanently sick/disabled family members		
					Male	Female	Total
1.							
2.							
3.							
4.							
5.							
6.							
7.							

8.							
9.							
10.							
Total							

NB: No need to list down name of the family members and feel free to add extra columns if the family size exceeds 10

Part III. Resource Ownership and Economic Characteristics

3.1. Livestock, land and house ownership

Livestock owned	Number of livestock	Land ownership 0 = [no] 1 = [yes]	If yes, Sources of land [Code]	Amount of land [Timad/hectare]	Land use [Code]	Land size for different use [Timad/hectare]	House type [Code]	House use [Code]	Number of houses
Calves									
Bulls									
Oxen									
Heifer									
Cows									
Sheep									
Goats									
Donkey									
Mule									
Horse									
Poultry									
Total									

Codes

Land source code	Land use code	House type code	House use code
01 = [Owned from the government]	01 = [Cultivated/crop land]	01 = [Thatched roof]	01 = [For human]
02 = [Inheritance]	02 = [Grazing land]	02 = [Corrugated iron roof]	02 = [Animals]
03 =[Rented]	03 = [Forest land]	03 = [both]	03 = [Both]
04 = [Shared land]	04 = [Homestead land]		04 = [Store]
05 = [Accessed new land]	05 = [Fallow land]		05 = [Multipurpose]
06 = [Others, specify]	06 = [Others, specify]		06 = [Others]
07= [Combination, specify]			

3.2. Would you please tell us the sources and amount of average annual income you obtain from different sources during the 2011/2013 E.C production time?

Sl.No.	Income sources	Average annual income (Birrs)
1.	Crop and crop products sale	
2.	Livestock and livestock products sale	
3.	Forest and forest products sale (Fuel wood,	

	charcoal, etc)	
4.	Off – farm activities (agricultural works on others farm)	
5.	Non – farm activities (petty trading, artisanship like carpentry, handicraft, pot making, blacksmith works, etc)	
6.	Remittances	
7.	Credit	
8.	Aid/donation	
9.	Others	
9.1.		
9.2.		
9.3		
	Total	

3.3. Would you please tell us the sources and amount of average annual development expenditure?

Sl.No	Sources of Development expenditure	Average Annual expenditure (Birr)
1.	Expenditure for seed	
	1 = [local seed]	
	2 = [Improved seed] 01 = [Certified]	
	02 = [Non – certified]	
2.	Fertilizer purchasing	
	Urea	
	Dap	
	Others	
	Total	
3.	Chemical (pesticide, herbicide, ...) purchased	
4.	Farm implements purchasing	
5.	Livestock purchasing	
6.	Others, please list them	
6.1.		
6.2.		
	Total	

3.4. Would you please tell us the sources and amount of average annual expenditure for maintenance?

Sources of Maintenance Expenditure	Amount (in Birr)
1. Food	
2. Clothing	
3. Housing	
4. Medicine (Family and livestock)	
5. Other, please specify	
5.1.	
5.2.	
Total	

Part IV: Access to institutional Services

4.1. Access to Extension service, Credit, Irrigation, cooperative membership and market distance

Access to Extension 0 = [no] 1 = [yes]	If yes, frequency of contact in month	Who initiates the extension visit? 1 = Me 2 = EA	Access to credit 0 = [no] 1 = [yes]	If yes, amount of in Birr	Irrigation access 0 = [no] 1 = [yes]	If yes, rate its importance in wheat production (1=very low, 2= low, 3=moderate, 4= high, 5= very high)	Membership in seed multiplication and marketing cooperatives 0 = [no] 1 = [yes]	If yes, rate its importance in wheat production (1=very low, 2= low, 3=moderate, 4= high, 5= very high)	Market distance from homestead (Kilometers)

Part V. Crops grown, input use and price related information

5.1. General plot level crop production characteristics for 2011/12 E.C production season

Plot (Code)	Size (timad)	Crop grown (code)	Variety grown 1= Local 2= Improved	If improved, name of the variety	If improved, did you use certified seed 1= [no] 2=[yes]	If yes, source, amount and cost			Amount of production (kg)	Amount used for different purpose		
						Source	Amount (kg)	Cost (ETB)		Consumption	Commercial	Other

Codes for crops grown: 01 = [Wheat] 02 = [Teff] 03 = [Maize] 04 = [Barley] 05 = [Others] 06 = [Combination, specify]

Plot codes: Plot 1 = [01] Plot 2 = [02] Plot 3 = [03] Plot 4 = [04] Plot 5 = [05] Plot 6 = [06] Plot 7 = [07]

NB: Use common (farmers' own) units of measurement for their plot size, amount of production and other quantities

5.2. Plot level details of wheat production for 2011/2012 E.C production year.

5.2.1. Number of wheat plots, plot size, type of wheat grown, type of wheat variety grown, certified seed use, fertilizer and pesticide use

Wheat Plots (Code)	Size (timad)	Wheat type (code)	Variety grown 1=local 2= Improved	If 2, Name of the variety	If 2, is it CS? 0= [no] 1=[yes]	If 1, source	Did you use Urea fertilizer 0 =[no] 1=[yes]	If yes, Amount used (kg)	Cost (ETB)	Compost 0= no 1= yes	If 1, amount	Cost (ETB)	NPS 0=[no] 1=[yes]	If 1, amount	Cost (ETB)	Pesticide 0= no 1= yes	If 1, amount	Cost (ETB)

Codes for wheat type grown: 01 = [Durum wheat] 02 = [Bread Wheat]

Plot codes: Plot 1 = [01] Plot 2 = [02] Plot 3 = [03] Plot 4 = [04] Plot 5 = [05] Plot 6 = [06] Pot 7 = [07] Plot 8 = [08]

5.2.2. Other Information on wheat farming practices

Plot (code)	Ploughing frequency (number)	Amount of CWS/timad)	Sowing method 1=[broadcasting] 2=[row planting]	Row planting 0 = [no] 1 = [yes]	If yes, what is the spacing b/n		Amount of fertilizer/ha in kilograms			Fertilizer application method 1 = [split application] 2 = [one time application]	Sowing Date
					Seeds	Rows	NPS	Urea	Others		

Plot codes: Plot 1 = [01] Plot 2 = [02] Plot 3 = [03] Plot 4 = [04] Plot 5 = [05] Plot 6 = [06]

5.2.3. Other wheat production costs using CS

Plot (code)	Land size (Timad/hectare)	Rent for land	Labor		Wage	Oxen days	Rent for oxen/day	Lime (Kg)	Cost (ETB)	Machinery	Rent (ETB)	Other agro chemicals	Cost (ETB)	Other inputs	Cost (ETB)
			M	F											

5.3. Information on CWS use, SRR, Frequency of seed recycling practices during the 2011/2012 production season

Did you replace Wheat Variety? 0= [no] 1=[yes]	Reasons to replace variety [Code]	Reasons to stick to old varieties [List all your reasons]	Experience in using CWS [years]	Did you replace your wheat seed 0= [no] 1=[yes]	SR frequency [code]	Reasons for SRR	Reasons for seed non – replacement (List all reasons)	Seed recycling 0 = [n0] 1 = [yes]	If yes, frequency of recycling [--- times]

Codes

Code for SRR	Code for new variety use	Codes for CS sources
01 = [Every production time]	01 = [Superior yield]	01 = [Self retained from previous production
02 = [Annually]	02 = [Disease resistance]	02 = Informal sources such as gift/borrowed from neighbors/relatives]
03 =[2 to 3 years]	03 = [Drought resistance]	03 = [Private seed sellers/market]
04 = [3 to 5 years]	04 = [Higher germination rate]	04 = [State owned seed agencies]
05 = [Above 5 years]	05 = [Bigger seed size]	05 = [Higher learning institutions]
06 = [Never replaced]	06 = [Grain quality/size/color, etc]	06 = [Research institutes]
	07 = [Stalk quality/size/straw quality]	07 = [NGOs]

08 = [Suitability for food/taste/baking time, etc]
09 = [Less production cost]
010 = [Marketability/better demand]
011 = [Others, please specify]

08 = [Seed producer cooperatives]
09 = [A combination of the above, list them]
10 = [Others, specify]

5.5. Wheat output and marketing related information in 2019 production season

Plot (Code)	Size (Timad/hectare)	Output (kg/Qt)	Production use			
			Consumed at home	Sold		Others
				Amount (kg/Qt)	Cost (ETB)	

Plot codes: Plot 1 = [01] Plot 2 = [02] Plot 3 = [03] Plot 4 = [04] Plot 5 = [05] Plot 6 = [06]

Questions for KII and FGD

Smallholder Farmers' Perception of CWS use, SRR and VRR

1. Would you please tell us your own subjective judgment as far as CWS use is concerned?

_____
_____
_____
_____
_____
_____
_____.

2. Would you please tell us your own subjective judgment as far as wheat seed replacement is concerned?

_____
_____
_____
_____
_____
_____
_____.

3. Would you please tell us your own subjective judgment as far as the benefits and dangers of wheat seed replacement is concerned?

_____
_____
_____
_____
_____
_____
_____.

4. Would you please provide your level of agreement based on your own subjective judgment about wheat seed replacement? (Where 1, 2, 3, 4 and 5 indicates strong disagreement, disagreement, undecided, agreement and strong agreement respectively)

Sl.No.	Perception Statements on SRR.	Agreement level				
		5	4	3	2	1
1.	Increases production and productivity (yield gains)					
2.	Improves food security and income					
3.	Helps to reduce pest and disease outbreak					
4.	Increases crop diversity					
5.	Others, please specify					
5.1.	_____ _____					
5.2.	_____ _____					
5.3.	_____ _____					

Questionnaire for Development Agents and Experts

1. How many farmers were under your service jurisdiction in the last production seasons? _____ Households.
   1.1. On average, how many visits did you pay for each household? _____ times.
2. Farmers of this study revealed that they plan to increase their wheat yield in the coming production season by doing the following activities. Do you think this is possible? Rate the level of the possibility of farmers' plan of increasing yield due to each reported practices on the following 5 – 1 point scale (where 5, 4, 3, 2 and 1 indicates highly possible, possible, intermediate, impossible and highly impossible respectively

Planned practices	Level of possibility				
	(5)	(4)	(3)	(2)	(1)
1. Replacing the certified seed being used					
2. Replacing the variety being used					
3. Applying more fertilizers					
4. Applying more agro–chemicals					
5. Applying row planting					
6. Other plans, please specify					
6.1. _____					
6.2. _____					

2. How do you evaluate the extent and level of CWS use under your jurisdiction?

Very Poor	Poor	Medium	Good	Very Good
1	**2**	**3**	**4**	**5**

2.1. What has contributed for your rating in the above questions?

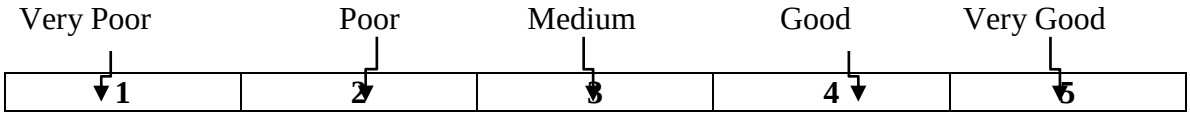
_____
_____
_____
_____
_____
_____
_____
_____
_____

3. How many modern wheat varieties were introduced in your mandate area? _____

3.1. Would you give a list of them and for how many years they were used on average?

Sl.No	Name of the variety	Year (s) in use	Sl.No.	Name of the variety	Year (s) in use
1.			11.		
2.			12.		
3.			13.		
4.			14.		
5.			15.		
6.			16.		
7.			17.		
8.			18.		
9.			19.		
10.			20.		

3.2. How do you evaluate wheat SRR under your jurisdiction?



3.3. Give reasons for your rating in the question above

_____
_____
_____
_____
_____
_____
_____

4. Please enumerate the major barriers affecting farmer's use of CWS? (Feel free to write more than the lines given)

_____
_____
_____

_____
_____
_____
_____
_____

5. Please enumerate the major barriers affecting farmer's seed replacement rate? (Feel free to write more than the lines given)

_____
_____
_____
_____
_____
_____
_____
_____

6. Please enumerate the major barriers affecting farmer's rate of varietal replacement? (Feel free to write more than the lines given)

_____
_____
_____
_____
_____
_____
_____
_____

FGD w and KII with the farmers

1. Would you please rate the contribution of the following reasons to use CBWS for wheat production?

Reasons	Rating				
	Significantly high (5)	High (4)	Medium (3)	Low (2)	Significantly low (1)
Seed purity from foreign materials					
Free from seed borne diseases and resistance to yellow rust and stem rust					
Better yield advantage					
High germination rate					
Early maturity/short growing season/drought resistance					
Lower seed rates					
Grain size					
Grain color					
Threshibility					
Food quality (bread and injera taste, cooking time, etc)					
Stalk size, straw quality and straw yield					

Reduces production costs					
Better market demand					
Prices are affordable					
Others, please mention as many reasons as you can					

2. Would you please rate the major reasons contributing to the non – use of CS for wheat production?

Reasons	Rating				
	Significantly high (5)	High (4)	Medium (3)	Low (2)	Significantly low (1)
Lack of access to CBWS (Unavailability)					
Expensiveness/high cost					
My own saved seed is better					
Others, please mention as many reasons as you can					

5.2.5. Would you please rate the major factors affecting the use of fertilizer in wheat production?

Reasons	Rating				
	Significantly high (5)	High (4)	Medium (3)	Low (2)	Significantly low (1)
Lack of access (Unavailability)					
Unreliable/untimely/late supply					
Lack of capital to purchase					
Incompatible/unsuitable fertilizer					
Expensiveness/high cost					
Others, please specify					

5.5.1. Respondent's view about wheat marketing.

View on current market price (code)	Who decides the market price for wheat? (code)	Is there enough demand for wheat? (code)	Mention and prioritize your answer on wheat demand	For whom do you sale your wheat product? (code)

Codes

Codes for view on price	Code for market decision	Code for wheat demand
1 = [very low]	01 = [the buyer]	0 = [no]
2 = [low]	02 = [farmer/seller]	1 = [yes]
3 = [fair]	03 =[both of them]	
4 = [high]	04 = [the government]	
5 = [very high]	05 = [other]	

5.4. **Labour and machinery use related information**

5.4.1. Please indicate the average amount of labour used and costs pertinent to labour use for various wheat production operations in the last production season.

Sl.No.	Wheat production activities/operations	Number of labour employed			Costs paid for hired labor (ETB)	Labor related problems affecting CWS use (Code)	Costs incurred if machineries were rented (ETB)
		Family	Hired	Debbo & other arrangement			
1.	Land preparation and tillage						
2.	Wheat sowing						
3.	Fertilizer application						
4.	Weeding						
5.	Pesticide and other chemical						

	application						
6.	Harvesting						
7.	Threshing						
8.	transporting						
9.	Other activities						
10.	Total						

Codes for labour related Problems

01 = [High wage rate] 02 = [Lack of labour during peak production seasons] 03 = [Lack of skill]

04 = [High machinery cost] 05 = [lack of farm implements] 06 = [Others, specify]: ____.