Questionnaire on Climate Change Perception, Adaptation Strategies and Determinant Factors

This Questionnaire survey is prepared for the study on "**Farmer's Perception on Climate Change and Variability, its impacts on livestock production system, livestock related adaptation strategies and the determinant factors".** The researchers appreciate your cooperation to give your time for the success of this work. Please respond to the following information with great responsibility for good results.

Writing your name is not compulsory.

Thank you for your time

Questionnaire I: Farmers' perception

Part I. Questions on Household Demographic and socio-economic Characteristics

1. Name of the respondent_____

2. Gender and Age: Male_____ Female_____ Age of HH head_____

3. Marital status: Single_____ Married_____ Divorce/Widowed_____

4. Educational status a) Illiterate b) Informal (reading/writing) c) Primary/Secondary d) College/ University

5. Household size: Male_____ Female_____ Total_____

6.What is your means of livelihood? a) livestock rearing b) crop production c) crop-livestock production d) renting land e) petty trade f) others (specify)

7. Income of the household from farming and non-farming activities (Sept 1, 2010 – Aug 30, 2010 E.C) in ETB (Birr)

   a. Crop production _____
   b. Selling of livestock and livestock products _____
   c. Selling of fruits and vegetables _____
   d. Non-farm activities (remittance, petty trade, employment, pension, …) _____

8. Years of farming experience (Yrs) a) 1-5 b) 6-10 c) 11-15 d)>15 e) no

9. How much land do you hold in hectare? a) No land b) 0.25-0.50 c) 0.51-1.0 d) 1.1-1.5 e) 1.51-2.0 f) above 2.0

10. How many livestock do you own? List down in the table below.

Years(E.C)	Number of animals by type					
	Cattle	Sheep	Goats	Camel	Poultry	others
2006						
2007						
2008						
2009						

11. Frequency of contact with veterinary professionals and visit to veterinary clinics per year
a) no contact b) once c) twice d) 3 times e) 4 times f) >4 times

Part II. Perception of farmers on climate change and variability and its impacts on livestock production system

12. What is your perception on the current climate condition of your village comparing it with the last 10 years? a) there is climate variability b) it has totally changed c) there is no climate change (it is stagnant)

13. If your answer to Q12 is "the climate has changed/show variability", what are the local indicators of climate change/variability? Multiple choice is possible with ranking.

_____ (a) Increased uncertainty in climate

_____ (b) Extinction of indigenous animal and crops species

_____ (c) Decrease in ground and natural water availability

_____ (d) Decrease in rainfall amount and shifting in rain pattern

_____ (e) Temperature rise

_____ (f) Deforestation (deteriorated vegetation cover)

_____ (g) Bush encroachment and invasive species

_____ (h) Increased incidence of diseases.

_____ (i) Conflict for scares resources

_____ (j) Decreased self-grow grasses

14. If you believe there is climate change/variability (temperature and rainfall), what are its possible impact(s) on the livestock production: multiple answer with ranking possible

_____ (a) Decrease in pasture growth and self-growing grasses

_____ (b) Increased disease distribution and outbreaks

_____ (c) Increased thermal stresses on animals

_____ (d) Decreased feed intake of the animals

_____(e) Decline in livestock Production

_____ (f) Decrease animal conception rate and delivery reduced

_____ (g) Death of livestock due to shortage of fodder and water, and diseases

15. A case of livestock disease distribution and outbreaks, what was the frequency of disease outbreaks?

Disease frequency	Cattle	sheep	goats	camel	poultry	Type of disease outbreak observed (please specify)
Once a year						
Twice a year						
> 3 times a year						

Once per 2 years						
No idea						

16. What are the climate change and/or variability related impact that you experienced in the last 10 years?

Indicators	Yes	No
Drought		
Irregular rains and floods		
Shortage of animal feed		
Higher temperature		
High death of animals		
High animal disease outbreaks		
No climate related impacts observed		
Others(specify)		

17. Is there any change in the timing (duration) of the rain? a) Yes b) No

18. If your answer to Q17 is 'yes', how do you characterize it? a) Comes early and goes late b) Comes late and goes late c) Comes late and goes early d. Uncertain

19. Did you feel the impacts of climate change and/or variability in your livestock production and productivity in terms of feed shortage? a) Yes b) No

19.1. If your answer to Q19 is 'yes', how do you rate its impacts on the following parameters?

Parameters	**Very low**	**Low**	**Medium**	**High**	**Very high**
Weight loss					
Milk yield reduction					
Increased mortality					
Disease					
Weakness					

20. To what extent did CC affect your animal's production (in terms of productivity, disease incidence and mortality)? a) high b) moderate c) low d) no idea

21. If your answer to Q20 is "high", which 2 livestock species are highly affected? a) Cattle b) sheep c) goats d) camel e) poultry f) no idea

22. Does the productivity of livestock in your village increased or decreased in the last five years?

a) increased b) decreased c) No effect d) No idea

23. If your answer to Q22 is "decreased" what do you think the causes? Multiple choice with rank is possible here.

_____ (a) Poor feed resources development

_____ (b) Shortage of pasture (animal feed)

_____ (c) Poor health service delivery

_____ (d) Increased Livestock disease

_____ (e) Shortage of water

24. Major constraints to livestock feed resources and their availability (rank 1,2, 3,.....)

Constraints	**Rank**	**Remark**
Shortage of rainfall		
Shortage of grazing land		
Land degradation and low biomass yields		
Lack of high quality forage seeds (Feed shortage)		
Shortage of water		
Poor access to feed market and infrastructure		

25. How many livestock you have loss because of CC related shocks (Disease incidence, feed shortage, Drought, water shortage, Increase temperature) in the past 5 years?

No of dead animals during the past 5 years					
Cattle	Goat	sheep	camel	poultry	Total

26. Which livestock group had the highest composition in the last 5-10 years?

a) Cattle b) Sheep c) Goats d) camels e) Poultry

27. Which livestock group had the highest composition at present? a) Cattle b) Sheep c) Goats d) camels e) Poultry

28. What are the factors for change on livestock composition in your area? Multiple Choice is possible here. a) Climate change and variability b) livestock disease outbreaks c) deforestation, loss of range-lands and bush encroachment d) land use change

Questionnaire II: Determinant factors to farmers' choice of CC adaptation options
Part III. Adaptation practices

1. In response to climate change, have you taken any adaptation measures in order to reduce the impacts of climate change on your livestock production? a) Yes b) No

2. If your answer to Q1 is "Yes" What kind of adaptation mechanisms you exercise?

No	Adaptation practices	Response		Rank
		Yes	No	
1	Buying insurance			
2	Selling animals at the time of drought (feed shortage)			
3	Programmed de-stocking			
4	Shifting from cattle to small ruminant production			
5	Shifting from cattle to camel production			
6	Shifting from cattle to small ruminant and camel production			
7	Developing and Conserving variety of livestock forages			
8	Diversifying livestock composition			
9	Moving animals seasonally to areas where forage available			
10	Growing cactus for own and animal feed			
11	Natural water resources conservation and improvement			
12	Shifting to commercial farming practices (keeping more productive animals)			
13	Timely vaccination of animals and proper veterinary service			
14	Involved in non-farming activities (trade, labor work, etc.)			
15	Diversification of income (petty trade, labor, ect)			

3. How do you adapt to the impact of CC on livestock feed availability? Multiple choices with rank is possible here.

No	Adaptation practices	Response		Rank
		Yes	No	
1	Feed preservation as hay			
2	Use of improved forage production			
3	Purchase concentrates			
4	Forage purchase			
5	No measures taken			
6	Others (specify)			

4. How do you adapt to the impacts of CC related to natural water resources?

a) water harvesting b) water and soil conservation c) selective drinking of animals
d) reduce frequency of drinking e) digging holes f) Others

5. What are the major constraints that hinder your adaptation to the impact of climate change?

No	Determinant factors	Response		Rank
		Yes	No	
1	Poor market accessibility			
2	Lack of capital/economic capacity to adaptation			
3	Access to credit and veterinary extension services			
4	Lack of awareness about climate change			
5	Knowledge about climate change and adaptation strategies			
6	Accessibility of infrastructures (road, veterinary center, FTC)			
7	Farmers' income			
8	the size of the household			
9	education and gender of the head of the household			
10	agro-ecological settings			
11	government support			
12	farmers' experience			
13	engaging in non-farm activities			
14	Giving less emphasis to climate change problems			
15	Others (specify)			

6. Is there any locally accepted coping mechanisms? a) Yes b) No

7. If your answer for Q6 is 'yes', please explain?

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_____8.What do you think the right way to adapt (minimize) the impact of climate variability on your livestock production?

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Thank you *!*