

QUESTIONNAIRE

Dear Respondent,

I am _Benjamin NDAYISHIMIYE a student at the UNILAK conducting an academic study entitled **“Effects of Climate Variability on Household Income Stability among Smallholder Farmers in Rutsiro District, Rwanda.”**

The purpose of this study is purely academic and all information provided will be treated with **strict confidentiality**. Your participation is voluntary, and you are free to withdraw at any time.

I kindly request you to spare a few minutes to answer this questionnaire honestly. Your cooperation will be highly appreciated.

SECTION A: GENERAL INFORMATION

Gender:

☐ Male ☐ Female

Age (Years): _____

Sector:

☐ Ruhango ☐ Murunda

Main farming activity:

☐ Crop farming ☐ Livestock farming ☐ Mixed farming

Years of farming experience:

☐ Less than 5 years

☐ 5–10 years

☐ 11–20 years

☐ Above 20 years

Main source of household income:

☐ Farming only

☐ Farming and non-farm activities

SECTION B: CLIMATE VARIABILITY ELEMENTS

(Independent Variables)

Please indicate your level of agreement with the following statements using the scale: **SA = Strongly Agree (5), A = Agree (4), N = Neutral (3), D = Disagree (2), SD = Strongly Disagree (1)**

Statements	5	4	3	2	1
Rainfall Variability is the most climate issue we face than others	☐	☐	☐	☐	☐
Drought Occurrence is the most climate issue we face than others	☐	☐	☐	☐	☐
Floods is the most climate issue we face than others	☐	☐	☐	☐	☐
Landslides is the most climate issue we face than others	☐	☐	☐	☐	☐
Temperature Changes is the most climate issue we face than others	☐	☐	☐	☐	☐
Extreme weather events are the most climate issue we face than others	☐	☐	☐	☐	☐

B1: Rainfall Variability

Please indicate your level of agreement with the following statements using the scale: **SA = Strongly Agree (5), A = Agree (4), N = Neutral (3), D = Disagree (2), SD = Strongly Disagree (1)**

Statements	5	4	3	2	1
Rainfall patterns have become unpredictable in recent years.	☐	☐	☐	☐	☐
Delayed rainfall affects timely planting of crops.	☐	☐	☐	☐	☐
Irregular rainfall reduces crop yields on my farm.	☐	☐	☐	☐	☐
Excess rainfall sometimes destroys crops.	☐	☐	☐	☐	☐
Rainfall variability has increased farming risks.	☐	☐	☐	☐	☐

B2: Drought Occurrence

Please indicate your level of agreement with the following statements using the scale: **SA = Strongly Agree (5), A = Agree (4), N = Neutral (3), D = Disagree (2), SD = Strongly Disagree (1)**

Statements	5	4	3	2	1
Drought occurs more frequently than before.	☐	☐	☐	☐	☐
Drought reduces soil moisture for crops.	☐	☐	☐	☐	☐
Crop failure due to drought affects my household income.	☐	☐	☐	☐	☐
Drought leads to food shortages in my household.	☐	☐	☐	☐	☐
Drought has increased my farming expenses.	☐	☐	☐	☐	☐

B3: Floods and Landslides

Please indicate your level of agreement with the following statements using the scale: **SA = Strongly Agree (5), A = Agree (4), N = Neutral (3), D = Disagree (2), SD = Strongly Disagree (1)**

Landslides

Statements	5	4	3	2	1
Landslides frequently occur in my area	☐	☐	☐	☐	☐
Landslides destroy crops and farmland	☐	☐	☐	☐	☐
Landslides reduce soil fertility	☐	☐	☐	☐	☐
Landslides reduce the size of cultivable land	☐	☐	☐	☐	☐
Landslides affect household income stability	☐	☐	☐	☐	☐

Floods

Statements	5	4	3	2	1
Floods frequently affect my farm	☐	☐	☐	☐	☐
Floods destroy crops and farm inputs	☐	☐	☐	☐	☐
Floods cause soil erosion	☐	☐	☐	☐	☐
Floods reduce crop production	☐	☐	☐	☐	☐
Flood events reduce household income	☐	☐	☐	☐	☐

B4: Temperature Changes

Please indicate your level of agreement with the following statements using the scale: **SA = Strongly Agree (5), A = Agree (4), N = Neutral (3), D = Disagree (2), SD = Strongly Disagree (1)**

Statements	5	4	3	2	1
Temperatures have increased in recent years.	☐	☐	☐	☐	☐
High temperatures affect crop growth.	☐	☐	☐	☐	☐
Temperature changes increase pests and diseases.	☐	☐	☐	☐	☐
Crop productivity has declined due to heat stress.	☐	☐	☐	☐	☐
Temperature changes affect farm income stability.	☐	☐	☐	☐	☐

B5: Frequency extreme weather

Please indicate your level of agreement with the following statements using the scale: **SA = Strongly Agree (5), A = Agree (4), N = Neutral (3), D = Disagree (2), SD = Strongly Disagree (1)**

Statements	5	4	3	2	1
Extreme weather events have increased in recent years	☐	☐	☐	☐	☐
Extreme weather affects agricultural productivity	☐	☐	☐	☐	☐
Extreme weather increases farming risks	☐	☐	☐	☐	☐
Extreme weather affects household income stability	☐	☐	☐	☐	☐
Extreme weather increases household vulnerability.	☐	☐	☐	☐	☐

SECTION C: HOUSEHOLD INCOME STABILITY

(Dependent Variable)

Instruction: Indicate your level of agreement using the same scale.

Please indicate your level of agreement with the following statements using the scale: **SA = Strongly Agree (5), A = Agree (4), N = Neutral (3), D = Disagree (2), SD = Strongly Disagree (1)**

Statements	5	4	3	2	1
My household income is sufficient to meet basic needs	☐	☐	☐	☐	☐
My household income fluctuates significantly between seasons	☐	☐	☐	☐	☐
Income from farming allows for investment in farm inputs	☐	☐	☐	☐	☐
Income is affected by unexpected shocks (e.g., crop failure, floods)	☐	☐	☐	☐	☐
I can save part of my household income regularly	☐	☐	☐	☐	☐

OPTIONAL OPEN-ENDED QUESTION

What are strategies do you use to cope with climate-related income challenges?

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APPENDIX II: INTERVIEW GUIDE

Title: Interview Guide on Climate Variability and Household Income Stability

SECTION A: CLIMATE VARIABILITY PATTERNS

1. What major climate changes have you observed in this area over the past 10–15 years?
(Probe: rainfall patterns, droughts, floods, temperature changes)
2. How has rainfall behavior changed in terms of timing, amount, and predictability?

3. How frequent are droughts, floods, or landslides in this area?
4. Which climate events cause the most damage to farming activities? Why?

SECTION B: EFFECTS OF CLIMATE VARIABILITY ON AGRICULTURAL PRODUCTION

How do climate variations affect crop yields and livestock production?

Have farmers changed the types of crops they grow due to climate conditions? Please explain.

What climate-related challenges most affect soil fertility and land productivity?

SECTION C: EFFECTS ON HOUSEHOLD INCOME STABILITY

1. How has climate variability affected household income levels over time?
2. Are farmers able to earn income consistently throughout the year? Why or why not?
3. How do climate shocks (droughts, floods) affect farmers' ability to meet basic household needs?
4. Which groups of farmers are most vulnerable to income instability?

(Probe: women-headed households, land-poor farmers, elderly)

SECTION D: COPING AND ADAPTATION STRATEGIES

1. What strategies do farmers use to cope with income losses caused by climate variability?
2. How effective are strategies such as crop diversification, soil conservation, irrigation, or use of improved seeds?
3. Do farmers engage in non-farm income activities? How does this help income stability?
4. What role do cooperatives, extension services, or government programs play in supporting adaptation?

SECTION E: INSTITUTIONAL AND POLICY SUPPORT

1. What climate-related programs or policies are being implemented in this area?
2. How effective are government and NGO interventions in supporting farmers against climate risks?
3. What challenges limit farmers from adopting climate-smart practices?

SECTION G: RECOMMENDATIONS AND CONCLUSION

1. What additional measures could help improve household income stability under climate variability?
2. What recommendations would you give to policymakers and development partners?
3. Is there anything else you would like to add regarding climate variability and farmers' livelihoods?