

Farm and Forest Readiness and Resilience in the Caribbean

A Researcher Administered Questionnaire

**By USDA Forest Service
International Institute of Tropical Forestry
and Caribbean Climate Hub**

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Introduction and Instructions

Thank you for agreeing to participate in this study. Your responses will provide important information for the design and implementation of programs and policies that support farm and forest hurricane and other hazard risk reduction and resilience in Puerto Rico and U.S. Virgin Islands.

The individual who makes most of the decisions about the land and/or operations that we are discussing today should answer this questionnaire. A member of the research team will read the questions and response options to you and note your responses. The estimated time for completion of the questionnaire is about 35 minutes. Your participation is completely voluntary and you may stop, postpone, or withdraw your responses at any time for any reason.

The information that you share with us today is confidential. With your permission, we will record our conversation to help guarantee the accuracy of the information. This recording is strictly for research purposes and will not be used or accessible beyond the members of the research team.

Your answers and opinions will not be associated with or attributable to your name or other personally identifiable information in reports, publications, or any other information generated from this work. Your responses to this questionnaire will be combined with those of other farmers and forest owners across Puerto Rico and U.S. Virgin Islands to better understand farm and forest characteristics, practices, preferences, and needs, particularly as they relate to hurricanes and tropical storms.

I will read you the questions and provide possible responses. You can tell me what response you wish to select and I will record it. Let's begin.

Farm and Forest Readiness and Resilience in the Caribbean Questionnaire

*Do you own, lease, or otherwise actively manage farm or forestland in PR/USVI?

Yes No ... If you answered yes, please complete this questionnaire.

General Questions About Your Land

1. How many total acres of land do you own, lease, and/or otherwise manage in PR/USVI?

Own _____ acres Lease _____ acres Otherwise manage _____ acres

2. Please indicate the location of the land you own, lease, and/or otherwise manage: (PR: Barrio, Municipality/USVI: Estate, Island) _____

3. Please indicate the type of ownership, lease, or other arrangement that best describes your land:

Individual Joint Family Corporate Other (please specify _____)

4. Do you live on your farm/forest land? Yes No

... If you answered no, about how far from your farm/forest land do you live? _____ miles

5. In what year did you first acquire ownership or lease or first otherwise actively manage your land?

6. Because there are many different types of land use and land cover in PR/USVI, please indicate approximately what percentage or area of your total land is described as follows:

Land Use Type	% of your total land area or number of acres	
Crop land - areas where crops, including orchards (fruit/nut trees), are produced or have been produced in the past	_____ %	_____ acres
Pasture - areas used for livestock or livestock forage or covered in grasses	_____ %	_____ acres
Forest or wooded land - areas with trees that are not mowed, including where trees have established naturally or by planting and what is locally referred to as 'bush' in USVI or <i>matorral</i> in PR	_____ %	_____ acres
Developed or Built Up - for example, residential, commercial, paved areas	_____ %	_____ acres
Beach - sandy or rocky areas above the high-water mark	_____ %	_____ acres
Water - for example, river, stream, lake, pond	_____ %	_____ acres
Other (please specify) _____	_____ %	_____ acres

7. Please indicate the main crops, livestock, and forest products, if any, produced on your land.

CROPS		LIVESTOCK		FOREST	
Principal agricultural crops (up to 5)	Percent of total land dedicated to this crop	Principal livestock (up to 5 types/species)	Number of head of this type of livestock	Principal forest products (timber, nontimber)	Percent of total land dedicated to this product

Questions About Hurricanes and Other Factors that Affect Your Land

8. To what extent, if any, has your farm or forest been adversely affected by the following events **in the past 10 years?**

	Not at all affected	Slightly affected	Somewhat affected	Moderately affected	Extremely affected	Not applicable
Drought	<input type="radio"/> <input type="radio"/>					
Earthquake	<input type="radio"/> <input type="radio"/>					
Fire	<input type="radio"/> <input type="radio"/>					
Flood	<input type="radio"/> <input type="radio"/>					
Pest or disease	<input type="radio"/> <input type="radio"/>					
Hurricane or tropical storm	<input type="radio"/> <input type="radio"/>					
Other (please specify _____)	<input type="radio"/> <input type="radio"/>					

We are interested in learning more about hurricanes and their effects on agriculture and forestry in particular, so if you indicated that your farm or forest was slightly – extremely affected by hurricane/tropical storm in the past 10 years in Q8 above, please answer Q9-16. If you answered not at all affected by hurricane/storm or not applicable, please skip to Q17.

9. Please indicate if your farm or forest land was affected by:

	Not at all affected	Slightly affected	Somewhat affected	Moderately affected	Extremely affected
Irma/Maria (2017)	<input type="radio"/>				
Fiona (2022)	<input type="radio"/>				
Ernesto (2024)	<input type="radio"/>				

10.a To what extent, if any, were the following aspects of your land/operations damaged by the effects and associated impacts of hurricanes Irma and/or Maria in 2017?

	Not at all damaged	<25% damaged	25-50% damaged	50-75% damaged	>75% damaged	Not applicable
Crop(s)	<input type="radio"/>					
Livestock	<input type="radio"/>					
Forest	<input type="radio"/>					
Farm assets and infrastructure (buildings, fences, irrigation sys., etc.)	<input type="radio"/>					
Residential assets and infrastructure (house, personal vehicle, etc.)	<input type="radio"/>					

10.b To what extent, if any, were the following aspects of your land/operations damaged by the effects and associated impacts of hurricane Fiona in 2022?

	Not at all damaged	<25% damaged	25-50% damaged	50-75% damaged	>75% damaged	Not applicable
Crop(s)	<input type="radio"/>					
Livestock	<input type="radio"/>					
Forest	<input type="radio"/>					
Farm assets and infrastructure (buildings, fences, irrigation sys., etc.)	<input type="radio"/>					
Residential assets and infrastructure (house, personal vehicle, etc.)	<input type="radio"/>					

10.c To what extent, if any, were the following aspects of your land/operations damaged by the effects and associated impacts of hurricane Ernesto in 2024?

	Not at all damaged	<25% damaged	25-50% damaged	50-75% damaged	>75% damaged	Not applicable
Crop(s)	<input type="radio"/>					
Livestock	<input type="radio"/>					
Forest	<input type="radio"/>					
Farm assets and infrastructure (buildings, fences, irrigation sys., etc.)	<input type="radio"/>					
Residential assets and infrastructure (house, personal vehicle, etc.)	<input type="radio"/>					

11.a How long after hurricanes Irma/Maria did it take to return to or exceed your pre-hurricane production/income levels?

- I/we have not yet fully recovered < 3 months 3-6 months 6-12 months
 1-2 years 2-3 years > 3 years

11.b How long after hurricane Fiona did it take to return to or exceed your pre-hurricane production/income levels?

- I/we have not yet fully recovered < 3 months 3-6 months 6-12 months
 1-2 years 2-3 years > 3 years

11.c How long after hurricane Ernesto did it take to return to or exceed your pre-hurricane production/income levels?

- I/we have not yet fully recovered < 3 months 3-6 months 6-12 months
 1-2 years 2-3 years > 3 years

12. Did you receive any financial assistance for your farm/forest recovery? Y/N; If yes, from whom? If yes, what was the total amount of this financial assistance?

	Financial assistance (Y/N)	If yes, from whom?	If yes, total amount? (<\$10,000; \$10,000-24,999; \$25,000-49,999; \$50,000-99,999; >\$100,000)
Irma/Maria (2017)			
Fiona (2022)			
Ernesto (2024)			

13. Did you have crop, farm, or other related insurance for your farm/forest prior to the 2017 hurricane(s)? Y/N; If yes, with whom? If yes, did you make any claim(s) for hurricane related damages? If yes, please indicate the percent of total damages that were covered by your paid claim(s).

	Crop/Farm Insurance prior to hurricane? (Y/N)	If yes, with whom?	If yes, did you make any claim(s) for hurricane related damages? (Y/N)	If yes, please indicate the percent of total damages that were covered by your paid claim(s).
Irma/Maria (2017)				
Fiona (2022)				
Ernesto (2024)				

14. Did you take out any loan(s) to aid in your farm/forest recovery? Y/N; If yes, from whom? If yes, what was the total amount in \$?

	Loan for farm/forest recovery? (Y/N)	If yes, from whom?	If yes, total amount? (<\$10,000; \$10,000-24,999; \$25,000-49,999; \$50,000-99,999; >\$100,000)
Irma/Maria (2017)			
Fiona (2022)			
Ernesto (2024)			

15. Did you receive technical assistance for your farm/forest recovery following the hurricane(s)? Y/N; If yes, from whom? If yes, what type(s) of assistance did you receive?

	Technical assistance (Y/N)	If yes, from whom?	If yes, what type(s) of assistance did you receive?
Irma/Maria (2017)			
Fiona (2022)			
Ernesto (2024)			

16. Did you do any of the following in response to the effects of hurricanes or tropical storms on your land or operations in the past 10 years?

	YES	NO	Don't Know	Not Applicable
Make changes in crop varieties, species, mixtures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Make changes in livestock species, stocking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Make changes in land/water conservation practices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Make changes in forest management practices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Make changes in infrastructure/equipment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sell/gift/relinquish some/all of your land	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Purchase/lease more land	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify) _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If you made changes to your farm or forest management in response to hurricanes or tropical storms and would like to provide details of those changes, please do so here:

Questions About Land Management Planning

Note: Some farmers and forest owners have a written management or stewardship plan to help guide their practices and meet their goals for the land.

17. How familiar are you with land management or stewardship plans?

Not at all familiar Slightly familiar Moderately familiar Very familiar

18. Do you have a written management or stewardship plan? Yes No Don't know
(If yes, please answer Q19-20, If no or don't know skip to Q21)

19. Who wrote your management plan?

I/My staff did Private Consultant Agriculture/Forest Extensionist/Advisor

○ Federal Govt. Agent/Staff Other (please specify _____)

20. Have you taken actions to implement your management plan? Yes No Don't know

21. Have you been involved in other land use/conservation planning efforts that involve or address your land (e.g., watershed planning; conservation district planning; industry association/network planning)?
 Yes No Don't know

Note: Some farmers and forest owners have an emergency, contingency, or continuing operations plan to help prepare and guide them in case of a major disruption, disaster, or emergency.

22. How familiar are you with emergency, contingency, or continuing operations plans?

Not at all familiar Slightly familiar Moderately familiar Very familiar

23. Do you have a written emergency/contingency/continuing operations plan?

Yes No Don't know (If yes, please answer Q24-25, If no or don't know skip to Q26)

24. Who wrote your emergency/contingency/continuing operations plan?

○ I/My staff did Private Consultant Agriculture/Forest Extensionist/Advisor
○ Federal Govt. Agent/Staff Other (please specify _____)

25. Have you taken actions to implement this plan? Yes No Don't know

26. Have you been involved in other emergency planning efforts that involve or address your land (e.g., municipal emergency planning, industry association/network contingency planning)?

Yes No Don't know

27. Does your farm/forest currently have Catastrophic Risk Protection or other crop/non-crop/farm/forest insurance? Yes No Don't know

If yes, what percent of your total crop/livestock/production value is insured?

○ < 25% 25-50% 50-75% 75-100%

Land Management and Conservation Financing and Assistance

Note: Conservation financial assistance programs (a.k.a. cost-share programs) provide landowners with money to help them establish, manage, and protect their farm or forest. Examples include Environmental Quality Incentives Program (EQIP), Conservation Stewardship Program (CSP), and Agricultural Conservation Easement Program (ACEP) administered by USDA Natural Resources Conservation Service (NRCS) and Conservation Reserve Program (CRP) administered by USDA Farm Service Agency (FSA).

28. How familiar are you with these types of financial assistance programs?

Not at all familiar Slightly familiar Moderately familiar Very familiar

29. Are you currently enrolled in a conservation financial assistance program, or have you been enrolled in such a program in the past 10 years? Yes No Don't know

30. If conservation financial incentives were available that included support for hazard mitigation and adaptation practices on your farm or forest, and these required you to have an emergency, contingency, or continuing operations plan in place to participate, how interested would you be in participating?

Not at all interested Slightly interested Moderately interested Very interested

31. Please indicate your level of agreement with the following statements:

	Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree
I need financial assistance or incentives to manage my land to reach my management objectives	<input type="radio"/>				
Programs that provide financial assistance/incentives for my land management are easy to access	<input type="radio"/>				
I am interested in learning more about financial assistance and incentives to help me with my land management	<input type="radio"/>				
Financial assistance and incentives for farm/forest management and conservation limit my flexibility to make decisions about my land and operations	<input type="radio"/>				

32. Please indicate your level of interest in the following types of assistance for reducing the risks associated with hurricanes, tropical storms, and other natural disturbance (e.g., flooding, earthquakes).

TYPES OF ASSISTANCE	Not at all interested	Slightly interested	Neutral	Moderately interested	Very interested
Workshops about hurricane preparedness and other hazard planning, mitigation, and adaptation	<input type="radio"/>				
Pamphlets/Reports on hurricane preparedness and other hazard planning, mitigation, and adaptation	<input type="radio"/>				
Technical assistance/advice from Extension Services/Ag. and Forest Advisors	<input type="radio"/>				
Advice from fellow farmers and forest owners	<input type="radio"/>				
Technical assistance from Federal government agents	<input type="radio"/>				
Technical assistance from Local government agents	<input type="radio"/>				
Federal conservation funding or financial incentives	<input type="radio"/>				
Non-federal conservation funding or financial incentives	<input type="radio"/>				
Crop/Farm insurance	<input type="radio"/>				
Other (Please specify: _____)	<input type="radio"/>				

33. Please indicate how much, if at all, the following factors or phenomena have influenced your decisions about your farm or forest **in the past 10 years**.

AFFECT ON YOUR DECISIONS	None	Very little	Moderate	Very much	Do not know	Not applicable
Access to/availability of capital	○○	○○	○○	○○	○○	○○
Access to supplies and materials (e.g., fuel, feed, seed, machinery)	○○	○○	○○	○○	○○	○○
Air pollution	○○	○○	○○	○○	○○	○○
Changes in agricultural markets (e.g., demands, opportunities)	○○	○○	○○	○○	○○	○○
Coastal flooding/storm surge	○○	○○	○○	○○	○○	○○
Crop insurance coverage/availability	○○	○○	○○	○○	○○	○○
Desire to contribute to environmental protection/conservation	○○	○○	○○	○○	○○	○○
Drought or lack of water	○○	○○	○○	○○	○○	○○
Development of nearby lands	○○	○○	○○	○○	○○	○○
Earthquakes	○○	○○	○○	○○	○○	○○
Extreme heat events	○○	○○	○○	○○	○○	○○
Flooding from rainfall	○○	○○	○○	○○	○○	○○
Government regulation	○○	○○	○○	○○	○○	○○
Hurricanes/tropical storms	○○	○○	○○	○○	○○	○○
Invasive/unwanted plants, insects, disease	○○	○○	○○	○○	○○	○○
Labor/workforce access/availability	○○	○○	○○	○○	○○	○○
Landslides	○○	○○	○○	○○	○○	○○
Passing land on to future generations	○○	○○	○○	○○	○○	○○
Property taxes	○○	○○	○○	○○	○○	○○
Saltwater intrusion	○○	○○	○○	○○	○○	○○
Sea level rise	○○	○○	○○	○○	○○	○○
Soil loss/erosion	○○	○○	○○	○○	○○	○○
Water pollution	○○	○○	○○	○○	○○	○○
Wildfire	○○	○○	○○	○○	○○	○○
Other (please specify _____)	○○	○○	○○	○○	○○	○○

34. Please indicate if you have made changes in the following activities on your land ***in the past 10 years.***

CHANGE IN ACTIVITY	Increas e	Decrease	Substitution	No Change	Do not know	Not applicable
Crop species or varieties	○○	○○	○○	○○	○○	○○
Livestock types or species	○○	○○	○○	○○	○○	○○
Timing of planting or land preparation	○○	○○	○○	○○	○○	○○
Location of planting/production areas	○○	○○	○○	○○	○○	○○
Agrochemicals (e.g., pesticides, fertilizer)	○○	○○	○○	○○	○○	○○
Agroecological farming/practices	○○	○○	○○	○○	○○	○○
Total land area in production	○○	○○	○○	○○	○○	○○
Total land area in fallow	○○	○○	○○	○○	○○	○○
Total land area in protection	○○	○○	○○	○○	○○	○○
Harvest timber for sale	○○	○○	○○	○○	○○	○○
Harvest timber for own use	○○	○○	○○	○○	○○	○○
Harvest nontimber forest products (e.g., medicines, foods, decorations) for sale	○○	○○	○○	○○	○○	○○
Harvest nontimber forest products for own use	○○	○○	○○	○○	○○	○○
Plant trees for food production	○○	○○	○○	○○	○○	○○
Plant trees for wood production	○○	○○	○○	○○	○○	○○
Manage fire hazard(s)	○○	○○	○○	○○	○○	○○
Irrigation	○○	○○	○○	○○	○○	○○
Drought mitigation measures	○○	○○	○○	○○	○○	○○
Water conservation measures	○○	○○	○○	○○	○○	○○
Soil conservation measures	○○	○○	○○	○○	○○	○○
Seed bank	○○	○○	○○	○○	○○	○○
Back-up/off-grid electrical power	○○	○○	○○	○○	○○	○○
Water storage	○○	○○	○○	○○	○○	○○
Farm/forest inventory/records	○○	○○	○○	○○	○○	○○
Crop/farm insurance	○○	○○	○○	○○	○○	○○
Staffing/personnel employed	○○	○○	○○	○○	○○	○○
Other (please specify_____)	○○	○○	○○	○○	○○	○○

If you indicated any changes in activities were made, could you please describe what prompted these changes? _____

Questions about you and your household

Note: This section asks question about you to help us understand farm and forest owners more broadly. As with the rest of the questionnaire, your answers are confidential and will not be used to identify you in any way.

35. Age in years _____

36. Sex: Male Female

37. Highest degree/level of education:

- Less than 12th grade High School/GED Some college Associate degree
 Bachelor's degree, Advanced degree

38. What is your race and/or ethnicity? Select all that apply and enter additional details in the spaces below.

American Indian or Alaska Native - Enter, for example, Navajo Nation, Blackfeet Tribe of the Blackfeet Indian Reservation of Montana, Native Village of Barrow Inupiat Traditional Government, Nome Eskimo Community, Aztec, Maya, etc.

Asian - Provide details below.

- Chinese Asian Indian Filipino Vietnamese Korean Japanese
Enter, for example, Pakistani, Hmong, Afghan, etc. _____

Black or African American - Provide details below.

- African American Jamaican Haitian Nigerian Ethiopian Somali
Enter, for example, Trinidadian and Tobagonian, Ghanaian, Congolese, etc. _____

Hispanic or Latino - Provide details below.

- Mexican Puerto Rican Salvadoran Cuban Dominican Guatemalan
Enter, for example, Colombian, Honduran, Spaniard, etc. _____

Middle Eastern or North African - Provide details below.

- Lebanese Iranian Egyptian Syrian Iraqi Israeli
Enter, for example, Moroccan, Yemeni, Kurdish, etc. _____

Native Hawaiian or Pacific Islander - Provide details below.

- Native Hawaiian Tongan Samoan Fijian Chamorro Marshallese
Enter, for example, Chuukese, Palauan, Tahitian, etc. _____

White - Provide details below.

- English German Irish Italian Polish Scottish
Enter, for example, French, Swedish, Norwegian, etc. _____

39. On average, what percent of your household's annual income comes from your farm/forest? _____ %

40. (PR) Are you registered/identify as a *bona fide* farmer/farm operator? Yes No Don't know

41. On average, how many days a year do you spend on your land?

<20 days 20-100 days 100-200 days 200-300 days >300 days

Do you have any additional comments or concerns that you would like to share? (please note here)

Thank you for participating in this questionnaire! If you would like a copy of the results, please note your name and address here: _____

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