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 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 O Yes O No If you answered yes, please of | | |
|--|---------------------------|-----------------------|
| General Questions About Your Land | | |
| 1. How many total acres of land do you own, lease, and Own acres Leaseacre | = | |
| Please indicate the location of the land you own, lea Municipality/USVI: Estate, Island) | | nage: (PR: Barrio, |
| 3. Please indicate the type of ownership, lease, or othe O Individual O Joint O Family O Corporate | | |
| 4. Do you live on or within a mile of your farm/forest la | and? O Yes O No | |
| 5. In what year did you first acquire ownership or lease | or first otherwise manage | e your land? |
| 6. Because there are many different types of land use a approximately what percentage or area of your total la | | • |
| Land Use Type | % of your total land are | ea or number of acres |
| Crop land | | |
| - areas where crops, including orchards (fruit/nut | % | acres |
| trees), are produced or have been produced in the | | |
| past | | |
| Pasture | | |
| - areas used for livestock or livestock forage or | % | acres |
| covered in grasses | | |
| Forest or wooded land | | |
| - areas with trees that are not mowed, including | 0, | |
| where trees have established naturally or by | % | acres |
| planting and what is locally referred to as 'bush' in | | |
| USVI or matorral in PR | | |
| Developed or Built Up - for example, residential, commercial, paved areas | % | acres |
| - 101 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 5 years*?

| | Not at all affected | Slightly affected | Somewhat affected | Moderately affected | Extremely affected | Not applicable |
|-----------------------------|------------------------|----------------------|----------------------|------------------------|-----------------------|-------------------|
| Drought | $\circ \bigcirc$ | $\circ \bigcirc$ | 00 | 00 | $\circ \bigcirc$ | $\circ \bigcirc$ |
| Earthquake | \circ | \circ | \circ | \circ | \circ | \circ |
| Fire | \circ | \circ | 0 | 0 | \circ | \circ |
| Flood | \circ | 00 | 0 | 0 | 00 | 00 |
| Hurricane or tropical storm | °O | °O | 00 | 00 | °O | O |
| Pest or disease | $\circ \bigcirc$ | 00 | 00 | 00 | 00 | 00 |
| Other (please specify) | $\circ \bigcirc$ | °O | 00 | 00 | $\circ \bigcirc$ | O |

^{9.} If you owned or managed your land in 2017, was your farm or forest damaged at all by the effects of hurricanes Irma and/or Maria?

Yes NoIf yes, please answer Q10-14; If no, please skip to Q16

| 10. | To what extent, if any, were the following aspects of your land/operations damaged by the effect |
|-----|--|
| 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) | $\circ\bigcirc$ | $\circ\bigcirc$ | \circ | $\circ \bigcirc$ | \circ | $\circ \bigcirc$ |
| Livestock | \circ | \circ | O | \circ | \circ | $\circ \bigcirc$ |
| Forest | ° | °O | O | \circ | \circ | $\circ \bigcirc$ |
| Farm assets and infrastructure (buildings, fences, irrigation sys., etc.) | \circ | \circ | $\circ \bigcirc$ | $\circ \bigcirc$ | $\circ \circ$ | $\circ\bigcirc$ |
| Residential assets and infrastructure (house, personal vehicle, etc.) | °O | °O | $\circ\bigcirc$ | $\circ \bigcirc$ | $\circ \bigcirc$ | °() |

| 11. How long after the 2017 hurricanes 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? |
| If yes, what was the total amount of this financial assistance in \$? |
| 13. Did you have crop, farm, or other related insurance for your farm/forest prior to the 2017 hurricane(s)? |
| If yes, did you make any claim(s) for hurricane related damages? Yes No If yes, please indicate the percent of total damages that were covered by your paid claim(s):% |

| | | _ | _ |
|---------------|--|------------------------|--|
| | - | | ○ No |
| | | | |
| | | | |
| the effects o | of the 201 | 7 hurricar | ne(s) on voui |
| | 1 110 201 | 7 114111641 | 10(0) 011 y 041 |
| YES | NO | Don't Know | Not Applicable |
| O | ° | ° | 00 |
| ·O | 00 | 00 | 00 |
| ·O | 00 | 00 | 00 |
| 00 | °O | 00 | °O |
| 00 | $\circ \bigcirc$ | $\circ \bigcirc$ | °0 |
| I 00 | 00 | 00 | °O |
| 0 | 00 | 00 | 00 |
| | 00 | 00 | $\circ \bigcirc$ |
| | the effects of the control of the co | the effects of the 201 | the effects of the 2017 hurricar YES NO Condition |

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? O I/My staff did O Private Consultant O Agriculture/Forest Extensionist/Advisor Federal Govt. Agent/Staff Other (please specify) |
| 20. Have you taken actions to implement your management plan? O Yes O No O Don't know |
| 21. Have you been involved in other land use/conservation planning efforts that involve or address you land (e.g., watershed planning; conservation district planning; industry association/network planning)? Or Yes Or Or 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 these emergency, contingency, or continuing operations types of plans? One has all familiar One slightly familiar One Moderately familiar One very Familiar |
| 23. Do you have a written emergency/contingency/continuing operations plan? O Yes O No O 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? O I/My staff did O Private Consultant O Agriculture/Forest Extensionist/Advisor Federal Govt. Agent/Staff Other (please specify) |
| 25. Have you taken actions to implement this plan? O Yes O No O 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)? Or Yes Ono Don't know |
| 27. Does your farm/forest currently have Catastrophic Risk Protection or other crop/non-crop/farm/forest insurance? O Yes O No O 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 | е | | | | |
| Note: Conservation financial assistance programs (a.k.a. cost-sh landowners with money to help them establish, manage, and pi Examples include EQIP, CSP, and ACEP administered by NRCS ar | rotect | their fa | ırm or | forest. | |
| 28. How familiar are you with these types of financial assistance prog O Not at all familiar O Slightly familiar O Moderately familiar | • |) Very | Famili | ar | |
| 28. Are you currently enrolled in a conservation financial assistance prints in such a program in the past 5 years? Yes No Don | _ | | ve you | ı been e | nrolled |
| 30. If conservation financial incentives were available that included sadaptation practices on your farm or forest, <u>and</u> these required you to | | | | - | n and |
| contingency plan in place to participate, how interested would you be Not at all interestedSlightly interestedModeratel 31. Please indicate your level of agreement with the following states: | e in par y intere | ticipati | ng? | ery inte | erested |
| ○ Not at all interested | e in par y intere | ticipati | ng? | | Strongly pares |
| ○ Not at all interested | e in par y intere ments: | ested | ng? | /ery inte | |
| O Not at all interested O Slightly interested O Moderately 31. Please indicate your level of agreement with the following staters I need financial assistance or incentives to manage my land to | Strongly and Strongly ments: | Somewhat Disagree | Neutral Sau | Somewhat Agree using Agree | Strongly Agree |
| O Not at all interested O Slightly interested O Moderately 31. Please indicate your level of agreement with the following states. I need financial assistance or incentives to manage my land to reach my management objectives. Programs that provide financial assistance/incentives for my land | Strongly and Strongly on Stron | Somewhat Somewhat Disagree | Neutral Sau | Somewhat Agree | Strongly Agree |

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 | Neither agree or disagree | Moderately Interested | Very Interested |
|---|--------------------------|------------------------|------------------------------|--------------------------|--------------------|
| Workshops about hurricane preparedness and other hazard planning, mitigation, and adaptation | $\circ \bigcirc$ | \circ | O | 00 | 00 |
| Pamphlets/Reports on hurricane preparedness and other hazard planning, mitigation, and adaptation | $\circ \bigcirc$ | \circ | \circ | O | \circ |
| Advice from Extension Services/Ag. and Forest Advisors | $\circ \bigcirc$ | \circ | \circ | \circ | $\circ\bigcirc$ |
| Advice from fellow farmers and forest owners | $\circ \bigcirc$ | $\circ \bigcirc$ | 00 | \circ | \circ |
| Technical assistance from Extension agents | $\circ \bigcirc$ | $\circ\bigcirc$ | $\circ \bigcirc$ | \circ | $\circ \bigcirc$ |
| Technical assistance from Federal government agents | \circ | 00 | 00 | \circ | $\circ \bigcirc$ |
| Technical assistance from Local government agents | $\circ \bigcirc$ | O | 00 | $\circ \bigcirc$ | 00 |
| Federal conservation funding or financial incentives | \circ | \circ | \circ | \circ | \circ |
| Non-federal conservation funding or financial incentives | \circ | \circ | O | \circ | \circ |
| Crop/Farm insurance | $\circ \bigcirc$ | °O | O | O | 00 |
| Other (Please specify: | \circ | 00 | 00 | 00 | O |

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 five years*.

| decisions about your farm or forest <i>in the past five years</i> . | | | | | | |
|--|---------|-------------|----------|-----------|-------------|----------------|
| AFFECT ON YOUR DECISIONS | None | Very little | Moderate | Very much | Do not know | Not applicable |
| Access to/availability of capital | \circ | 00 | \circ | \circ | 00 | 00 |
| Access to supplies and materials (e.g., fuel, feed, seed, machinery) | O | 00 | O | O | 00 | \circ |
| Air pollution | \circ | 00 | \circ | \circ | \circ | \circ |
| Changes in agricultural markets (e.g., demands, opportunities) | \circ | 00 | \circ | \circ | \circ | \circ |
| Climate change/variability | \circ | \circ | \circ | \circ | O | \circ |
| Coastal flooding/storm surge | \circ | \circ | \circ | \circ | \circ | \circ |
| Crop insurance coverage/availability | 00 | 00 | 00 | 00 | \circ | 00 |
| Desire to contribute to environmental protection/conservation | \circ | \circ | \circ | \circ | \circ | \circ |
| Drought or lack of water | 00 | 00 | 00 | 00 | \circ | 00 |
| Development of nearby lands | \circ | \circ | \circ | \circ | \circ | \circ |
| Earthquakes | 00 | 00 | 00 | 00 | \circ | 00 |
| Flooding from rainfall | \circ | \circ | \circ | \circ | \circ | \circ |
| Government regulation | \circ | \circ | \circ | \circ | \circ | \circ |
| Hurricanes/tropical storms | \circ | 00 | 00 | \circ | 00 | \circ |
| Invasive/unwanted plants, insects, disease | \circ | 00 | 00 | \circ | 00 | \circ |
| Labor/workforce access/availability | 00 | 00 | 00 | 00 | 00 | 00 |
| Landslides | \circ | 00 | 00 | \circ | 00 | \circ |
| Passing land on to future generations | 00 | 00 | 00 | 00 | 00 | 00 |
| Property taxes | 00 | 00 | 00 | 00 | \circ | 00 |
| Saltwater intrusion | 00 | 00 | 00 | 00 | 00 | 00 |
| Sea level rise | 00 | 00 | 00 | 00 | 00 | 00 |
| Soil loss/erosion | \circ | 00 | 00 | \circ | 00 | 00 |
| Water pollution | \circ | 00 | 00 | \circ | 00 | 00 |
| Wildfire | 00 | 00 | 00 | 00 | 00 | 00 |
| Other (please specify) | 00 | 00 | 00 | 00 | 00 | 00 |

34. Please indicate if you have made changes in the following activities on your land in the past 5 years.

| 34. Please indicate if you have made changes in the following act | | Jii you | I laria | | pust 5 | <i>y</i> ca. 3. |
|--|------------------|------------------|------------------|------------------|-------------|------------------|
| CHANGE IN ACTIVITY | Increase | Decrease | Substitution | No Change | Do not know | Not applicable |
| Crop species or varieties | 00 | 00 | 00 | 00 | 00 | 00 |
| Livestock types or species | 00 | 00 | 00 | $\circ \bigcirc$ | \circ | 00 |
| Timing of planting or land preparation | \circ | 00 | $\circ \bigcirc$ | \circ | \circ | \circ |
| Location of planting/production areas | $\circ \bigcirc$ | 00 | $\circ \bigcirc$ | \circ | \circ | 00 |
| Agrochemicals (e.g., pesticides, fertilizer) | $\circ \bigcirc$ | 00 | $\circ \bigcirc$ | \circ | 00 | 00 |
| Agroecological farming/practices | \circ | 00 | $\circ \bigcirc$ | \circ | 00 | 00 |
| Total land area in production | \circ | $\circ \bigcirc$ | $\circ \bigcirc$ | \circ | \circ | $\circ \bigcirc$ |
| Total land area in fallow | \circ | 00 | $\circ \bigcirc$ | \circ | \circ | \circ |
| Total land area in protection | \circ | 00 | $\circ \bigcirc$ | $\circ \bigcirc$ | \circ | 00 |
| Harvest timber for sale | \circ | \circ | \circ | \circ | \circ | \circ |
| Harvest timber for own use | \circ | $\circ \bigcirc$ | \circ | \circ | \circ | 00 |
| Harvest nontimber forest products (e.g., medicines, foods, decorations) for sale | O | O | O | O | O | $\circ\bigcirc$ |
| Harvest nontimber forest products for own use | 00 | 00 | 00 | 00 | 00 | 00 |
| Plant trees for food production | 00 | 00 | 00 | \circ | 00 | 00 |
| Plant trees for wood production | 00 | 00 | 00 | \circ | 00 | 00 |
| Manage fire hazard(s) | \circ | 00 | \circ | \circ | \circ | 00 |
| Irrigation | \circ | 00 | \circ | \circ | \circ | 00 |
| Drought mitigation measures | 00 | 00 | 00 | \circ | 00 | 00 |
| Water conservation measures | 00 | 00 | 00 | \circ | 00 | 00 |
| Soil conservation measures | 00 | 00 | 00 | 00 | 00 | 00 |
| Seed bank | 00 | 00 | 00 | 00 | 00 | 00 |
| Back-up/off-grid electrical power | \circ | \circ | \circ | \circ | \circ | \circ |
| Water storage | \circ | 00 | \circ | \circ | \circ | 00 |
| Farm/forest inventory/records | \circ | 00 | \circ | \circ | \circ | \circ |
| Crop/farm insurance | \circ | 00 | \circ | \circ | \circ | \circ |
| Staffing/personnel employed | \circ | 00 | \circ | \circ | \circ | \circ |
| Other (please specify) | \circ | \circ | \circ | \circ | \circ | $\circ\bigcirc$ |

| 35. Please indicate your level of agreement with the following statements. | | | | | | |
|--|----------------------|----------------------|----------|-------------------|---------------------|--|
| | Strongly Disagree | Somewhat Disagree | Neutral | Somewhat Agree | Completely Agree | |
| Average global temperatures are increasing | 00 | <u>୍</u> | <u> </u> | °() | $\circ \bigcirc$ | |
| The global climate is changing | 00 | $\circ\bigcirc$ | 00 | \circ | 00 | |
| Climate change poses risks to agriculture and forestry globally | 00 | $\circ\bigcirc$ | 00 | \circ | $\circ \bigcirc$ | |
| Climate change poses more risks than benefits to agriculture and forestry globally | \circ | \circ | 00 | O | $\circ \bigcirc$ | |
| Extreme climate events are related to changing climate | 00 | \circ | 00 | \circ | \circ | |
| 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. | | | | | | |
| 36. Age in years | | | | | | |
| 37. Gender | | | | | | |
| 38. Highest degree/level of education: ○ Less than 12 th grade | | | | | | |
| 39. Race (select one or more): ○ American Indian/Alaska Native | | | | | | |
| 40. Ethnicity ○ Hispanic or Latino O Not Hispanic of Latino | | | | | | |
| 41. On average, what percent of your household's annual income comes from your farm/forest?% | | | | | | |
| 42. (PR) Are you registered/identify as a <i>bona fide</i> farmer/farm operator? O Yes O No ODon't know | | | | | | |
| 43. 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 | | | | | | |
| 44. Do you have internet access on your farm/forest? ○ Yes ○ No | | | | | | |
| If yes, please indicate what type of internet connection you have on your farm/forest (check all that apply): Dial-up telephone line DSL enabled phone line Cable TV modem Wireless Connection (land-based or satellite) Fiber optic Don't know Other (please specify) | | | | | | |

| Do you have any additional comments or concerns that you would like to share? (please note here) |
|--|
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| |
| Thank you for participating in this questionnaire! If you would like a copy of the results, please note you name and address here: |
| |