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## ADVANCING DISASTER RISK REDUCTION MEASURES AGAINST NATURAL DISASTERS, INCLUDING CLIMATE EXTREME EVENTS IN GRENADA, HAITI AND ST. LUCIA

October 2022

SDGs:



Countries:

Grenada, Haiti and Saint Lucia

Project Code:

TCP/SLC/3704

FAO Contribution:

USD 350 000

Duration:

1 April 2019 – 30 November 2021

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### Implementing Partners

Ministry of Economic Development, Planning, Tourism, ICT, Creative Economy, Agriculture and Lands, Fisheries & Cooperatives (Grenada); *Ministère de l'Agriculture, des Ressources Naturelles et du Développement Rural* (Haiti); Ministry of Agriculture, Fisheries, Food Security and Rural Development (Saint Lucia).

### Beneficiaries

Nutmeg and cocoa farmers in Grenada; Staff of the Ministry of Agriculture, Fisheries, Food Security and Rural Development in Saint Lucia; Vulnerable households in Haiti North-East department.

### Country Programming Framework (CPF) Outputs

#### *Grenada – CPF 2016 - 2019*

Country Priority 3: Climate Change resilience and disaster risk management;

Output 3.2: Climate Smart technologies and practices promoted for agricultural producers, fishers and foresters to strengthen resilience and their uptake facilitated with the support of FAO;

#### *Haiti – CPF 2013 - 2016*

Priority Area 3: Increased capacity for natural resource management and resilience to climate change;

Output 3.2: Improved capacities of local and national agricultural actors to adapt to climate change;

Priority Area 4: Strengthening capacity for risk management and natural disasters and food crises;

Output 4.1: Reduction of losses in the sector and increased resilience of vulnerable rural populations to natural disasters;

#### *Saint Lucia – CPF 2016 - 2019*

Priority area 2: Natural Resource Management, Disaster Mitigation and Resilience;

Output 2.1: Capacity of rural extension system strengthened to support resilience building to disaster at the farm level.



## BACKGROUND

Natural disasters are a significant threat to food and nutrition security in the Caribbean region. In the last years, Grenada, Haiti and Saint Lucia have experienced frequent and ever more disastrous climate extreme events, such as hurricanes, landslides, storms and droughts, and against which disaster risk reduction measures are needed.

The governments of the three islands requested FAO's support to advance disaster risk reduction management (DRM) practices to counter the negative aftermaths of natural disasters, especially in the agriculture sector, in particular in the crop, livestock and fisheries subsectors. The project was organized to reduce food insecurity, strengthen the response capacity of the governments, and ensure the resilience of local populations in the face of climate change-induced hazardous events. The project team set out to address the three country-specific DRM priorities. In Grenada, based on previous studies, there was the need for an agriculture risk insurance product for nutmeg and cocoa farms. In Saint Lucia, the Ministry of Agriculture, Fisheries, Food Security and Rural Development was seeking a trained team to leverage remote sensing data and participatory geographical information systems (GIS). Finally, in Haiti the need for early warning radio messages was the more pertinent priority to be addressed by the project.

## IMPACT

The project contributed to mitigating the potential damage and losses from natural disasters that negatively impact food security in the three Caribbean Small Island States. In Grenada, it supported the development of an adapted insurance system for nutmeg and cocoa trees damage. The project improved the response capacity of governmental staff in Saint Lucia, and increased the early warning scope in Haiti to forewarn the exposed population to hurricane and storm risks.

## ACHIEVEMENT OF RESULTS

The project contributed to advancing disaster risk reduction measures against natural disasters, including climate extreme events in Grenada, Haiti and Saint Lucia. In this regard, all the outputs and activities were achieved. In Grenada, an innovative agriculture risk insurance design was presented to the Ministry and relevant nutmeg and cocoa farming associations. The product design included wind risk modelling to inform the valuation of damages in defined insurance areas.

In the case of a hazardous event, with wind speed above the average index values, automatic payments would be sent out to insured nutmeg and cocoa farmers. It is expected that the hybrid index insurance product will be implemented under a public-private partnership between the relevant associations, the private insurance sector and the Government.

In Haiti, the project team focused on delivering radios for early warning for early action to vulnerable households in the North-East department of the island. Adequate risk warnings of incoming hurricanes and storms are necessary to protect agriculture livelihoods in Haiti. For this reason, in conjunction with the FAO Special Fund for Emergency and Rehabilitation Activities (SFERA), the project supported the procurement and distribution of radios as well as the elaboration and dissemination of effective early warning radio messages, therefore contributing to the population's stronger disaster preparedness.

In Saint Lucia, the project successfully elaborated unmanned aerial systems (UAS) operation manuals and trained dedicated ministerial staff in remote-sensing agricultural monitoring with current geospatial technologies.

### IMPLEMENTATION OF WORK PLAN AND BUDGET

The project faced a range of obstacles in the implementation phase. In 2019, Hurricane Doriane disrupted manifold endeavours in the Caribbean, including and not limited to activities of the current project. In this context, the project team prioritized urgently needed damage assessments and emergency responses. In addition, in Haiti, the continued escalation of civil unrest during the second half of the year also prevented the project team from consulting with governmental partners and conducting on-the-ground activities. Moreover, the public restrictions applied to counteract the spread of COVID-19 caused delays in the project implementation, particularly during the first nine months of the pandemic. The project was nevertheless able to carry out its activities via virtual workshops, meetings and training activities. For these reasons, the project was subject to reprogramming and its duration was extended. The extension was also accompanied by a budget reallocation to reorganize the work plan. The logframe below provides reporting information on the actual use of funds.

The flexibility in the design and implementation phases ensured the continued relevance of the project, alongside evolving country needs and priorities. At the request of the three governments, in consideration of the increased vulnerability due to meteorological hazards, the COVID-19 pandemic and changing institutional contexts, the project's outputs were revised to address the DRM priorities of each of the countries.

In Grenada, the project team focused on delivering an agriculture risk insurance product. In Saint Lucia, at the request of and in consultation with the ministerial partner, a remote sensing team was trained to carry out agricultural monitoring. Finally, in Haiti, early warning messages were elaborated and radios were delivered to the population exposed to hurricane and storm hazards.

### FOLLOW-UP FOR GOVERNMENT ATTENTION

It is recommended that the Government of Grenada consider continuing its support to the operationalization of the agriculture risk insurance product for nutmeg and cocoa trees, by facilitating the registration of farmers and the mapping of nutmeg and cocoa farms. This initiative will provide benefits beyond agriculture insurance, as access to updated farmers' registries and nutmeg and cocoa farm maps can enhance disaster preparedness, emergency response and overall production planning.

In addition, it is advised that the Government of Saint Lucia expand the capacities of the Agriculture Drone and GIS Mapping Team by exposing them to additional capacity-building activities, including those related to integrating geospatial mapping and analysis tools across the major Ministry's work streams. This can help enhance the multiplier effects of the capacity-building initiative.



## SUSTAINABILITY

### 1. Capacity development

In Grenada, the project team submitted to the Ministry in charge detailed guidelines for the roll-out of the insurance product. In Saint Lucia, the project contributed to the capacity-building support and institutionalization of a ministerial team able to leverage geospatial technologies in a participatory manner.

### 2. Gender equality

With the caveat that activities mainly took place at the institutional level, the project considered the equal needs and priorities of men and women stakeholders during training activities, consultations, and, in particular, the selection of beneficiaries in Haiti.

### 3. Technological sustainability

The project presented new DRM technical schemes and abilities, such as the design of an innovative agriculture risk insurance product in Grenada, and the application of geospatial technologies in Saint Lucia. By elaborating a policy and operations manuals, as well as training a dedicated ministerial team, which were well-versed in remote sensing agricultural monitoring, the technological sustainability of the project was ensured. The project responded to the interest and voiced priorities of its governmental partners, contributing to further institutionalizing its results.

## DOCUMENTS AND OUTREACH PRODUCTS

- ❑ **FAO. 2021.** *Agriculture Insurance for Nutmeg and Cocoa Design Proposal.* 28 pp.
- ❑ **Ministry of Agriculture, Fisheries, Food Security and Rural Development, MarSIS Inc. & FAO. 2021.** *Saint Lucia Unmanned Aerial Systems for Agriculture Operations Manual and Policy.* 81 pp.



## ACHIEVEMENT OF RESULTS - LOGICAL FRAMEWORK

<b>Expected Impact</b>	<b>Damages and losses from natural disasters, especially storms and hurricanes, of small, medium and high intensity are reduced in Grenada, Haiti and St Lucia</b>		
<b>Outcome</b>	Through improved collaboration and coordination, the Ministry of Agriculture (MOA), Ministry of Environment (MOE), National Disaster Management Authorities and other relevant national stakeholders, at central and local levels, are better prepared for timely and effective preparedness and response actions to natural disasters that impact agriculture and food/nutrition security		
	<b>Indicator</b>	<ul style="list-style-type: none"> <li>– An agriculture risk insurance product is operationalized in Grenada.</li> <li>– Complementary risk management datasets (i.e. satellite data, drone mapping data and participatory GIS data) are integrated into DRM work streams of the Ministry of Agriculture in Saint Lucia.</li> <li>– Early actions against Hurricane and Storm Impacts are implemented to protect agriculture livelihoods in Haiti.</li> </ul>	
	<b>Baseline</b>	<ul style="list-style-type: none"> <li>– 0</li> <li>– 0</li> <li>– 0</li> </ul>	
	<b>End Target</b>	<ul style="list-style-type: none"> <li>– One insurance product operationalized in Grenada.</li> <li>– Complementary risk management datasets integrated into DRM work streams in Saint Lucia.</li> <li>– One early action adopted in Haiti.</li> </ul>	
	<b>Comments and follow-up action to be taken</b>	Based on major changes regarding the heightened vulnerability, institutional contexts, and DRM priorities of Grenada, Haiti and Saint Lucia, between the end of 2019 and beginning of 2020, the three governments requested modifications to the project's outputs to enable them to more effectively address the evolving country-specific DRM concerns. Given that the three countries each had their own DRM priority, the project revised its work plan to structure its outputs on a country basis, with each output addressing one country's DRM priority.	
<b>Output 1</b>	Grenada - Design of an agriculture insurance for nutmeg and cocoa with focus on hurricane wind damage		
	<b>Indicators</b>	<b>Target</b>	<b>Achieved</b>
	Agriculture risk insurance product design.	1	Yes
<b>Baseline</b>	0		
<b>Comments</b>	<p>The majority of the data utilized was based on the information generated as part of the FAO Technical Cooperation Programme (TCP) project TCP/SLC/3606, "Creating an enabling environment for agri-insurance provision in three Caribbean countries", which sought to create an enabling environment for the provision and establishment of agri-insurance schemes in Jamaica, Grenada and Saint Vincent and the Grenadines. In Grenada, the above-mentioned project identified an opportunity to develop an agricultural insurance programme for the nutmeg and cocoa sectors. On 17 December 2019, the Ministry of Agriculture and Land (MAL) formally requested FAO to continue its technical assistance in the implementation of the insurance programme work plan throughout 2020. The current project provided a platform on which the completion of the insurance programme work plan could be ensured.</p>		
<b>Activity 1.1</b>	<b>Gathering and analyzing relevant data/information at country level</b>		
	<b>Achieved</b>	Yes	
	<b>Comments</b>	Please refer to the Comments section above, concerning the source and context of the data and information gathered and analysed.	

Activity 1.2	Conducting a participatory consultative process and wind risk modelling to inform the design of the insurance product	
	Achieved	Yes
Comments	<p>The project undertook an additional series of extensive consultations with various stakeholders, including the Grenada Co-operative Nutmeg Association (GNCA), the Grenada Cocoa Association (GCA), and the Ministry of Agriculture, Forestry and Fisheries. These consultations further informed improvements to the design of the insurance product, and the agreement that the insurance product would be implemented under a public-private partnership between the relevant associations, the private insurance sector and the Government of Grenada.</p> <p>Wind risk modelling was also undertaken by a service provider (Willis Tower Watson), to support the final product design and provide information allowing reinsurers to price various options. Below are the activities and results of the wind risk modelling:</p> <ul style="list-style-type: none"> <li>– Identification of storm events for stochastic modelling and definition of the number of simulated modelled years and events impacting Grenada;</li> <li>– Generation of modelled wind speed data for the 15 designated insurance areas within Grenada;</li> <li>– “Modelled wind speed” defined as the maximum one-minute sustained wind speed at 10 m above ground level, as determined by simulation;</li> <li>– Provision of data for each insurance area for each simulated event, including: i) mean of modelled wind speed for pixels within the insurance area; and ii) maximum modelled wind speed recorded by any pixel within each insurance area.</li> <li>– Detailed criteria for selecting and, as appropriate, averaging pixel wind speeds within each insurance area;</li> <li>– Taking into account the topography and surface friction of Grenada in each insurance area;</li> <li>– Outlining the methodology and process to validate generated wind fields, with focus on recent events and comparing them with known damage and ground station observations.</li> </ul>	
Activity 1.3	Design of an agriculture insurance product	
	Achieved	Yes
Comments	<p>The main, flagship product consisted of the index-indemnity hybrid insurance product for nutmeg and cocoa, which was designed based on the results of Activity 1.2. Indemnity insurance is the most widespread global product in agricultural insurance. However, it requires the field assessment of losses, which can be challenging where there are small-scale farmers and where damage is systemic (i.e. affecting large numbers of farmers simultaneously), as well as when losses are infrequent but severe.</p> <p>Index insurance has many advantages, as it eliminates field loss measurement and immediate payouts can be made, but it carries challenges of accurate matching of actual tree losses with payouts quantified by an index of modelled wind speeds. There is limited data available to develop a “vulnerability profile” (predicted percentage of trees lost against different wind speeds), which would be used to design the payout scale within an index product. Developing a vulnerability profile based on expert opinion is one option. The difficulties anticipated in developing such a profile is one reason why a “hybrid product”, and not a purely index product, was proposed.</p> <p>The hybrid index-indemnity product developed by the project proposed an initial and immediate partial payout through an index insurance element defined in the policy. A final payment would be made later based on field assessments of actual loss of nutmeg and cocoa trees. It is important to emphasize that the final, total claim is based on actual percentage damage (lost trees as a percentage of the total number of trees, as measured in the field). The index component is intended to allow an interim partial payment that could be triggered rapidly, but the overall final amount paid would be on an indemnity basis, in which the ratio between damaged measured and insured sum per farmer would have been established in advance in the policy.</p>	

Activity 1.3	Design of an agriculture insurance product	
	Achieved	Yes
	Comments	<p>The project proposed for consideration two hybrid options to the Ministry of Agriculture and the Nutmeg and Cocoa Associations of Grenada:</p> <p>Option 1 - Simplified Hybrid Product: Thresholds for payouts are set and payouts are automatically activated to farmers in defined insurance areas (IAs), if modelled wind speeds are exceeded. An incremental payout scale is defined based on increased modelled wind speeds. An initial payout (e.g. up to 50% of insured values) would be triggered immediately by the modelled winds and paid to all insured farmers within the defined IAs. A second and final payout would be made following an agreed tree loss assessment procedure at the IA level to define the average percentage tree loss in the IA. A payout would be made to all insured farmers in that IA, calculated based on the IA percentage loss applied to the individual insured values. Such an approach would require that there be an objective methodology to assess average percentage damage in the defined IA, after a natural disaster.</p> <p>Option 2 - Hybrid Product: A more sophisticated development of the first option would consist of farmer holdings being mapped, so that modelled wind speeds could more accurately reflect the likely damage caused to trees in specific IA locations. In addition, actual field loss assessments would take place for each farm estate. As with the simplified product, an initial payout (e.g. up to 50% of insured values) would be triggered immediately by modelled winds at IA level and paid to insured farmers. Loss adjustment would subsequently be carried out to assess percentage loss of trees at individual farmer level. Field assessments would inevitably take time and be necessary before the final payment.</p> <p>The second option is more complex in terms of the farmer database required and field procedures, but would have the advantage of compensating more accurately individual farmer losses.</p>
Activity 1.4	Validation of the insurance product and dissemination of guidelines for operationalization	
	Achieved	Yes
	Comments	<p>The above-mentioned insurance products were presented for review and confirmation to Grenada's Ministry of Agriculture, GCNA and GCA. Emphasis was given to the various roll-out options, which could begin with an index-only policy and be followed by a simplified hybrid product and hybrid product, as more of the required information is made available. The project team submitted to the Ministry of Agriculture, GCNA and GCA the complete insurance product design, as well as detailed guidelines to support the operationalization and launch of the insurance product.</p>

<b>Output 2</b>	Saint Lucia - Capacity building and institutionalization support on the use of satellite data, Unmanned Aerial Systems (drones) and participatory GIS techniques to generate complementary high quality and high temporality datasets and inform DRM measures against natural disasters including climate extreme events		
	Indicators	Target	Achieved
	Official establishment of a Ministry of Agriculture's drone team.	1	Yes
<b>Baseline</b>	0		
<b>Comments</b>	All activities of Output 2 were achieved, with significant indications of the successful institutionalization of the project results. In particular, the Ministry's drone team was established with clear terms of reference, as well as an updated work plan; and geospatial mapping and analysis work continues to be carried out beyond the project. This shows that with the proper approach, it is also possible for small Technical Cooperation Programme (TCP) projects to successfully institutionalize and promote the sustainability of their interventions.		
<b>Activity 2.1</b>	Conducting a participatory consultative process leading to a technical and institutional analysis of capacity building and institutionalization needs related to complementary risk management datasets		
	<b>Achieved</b>	Yes	
	<b>Comments</b>	<p>A series of meetings and mini-workshops was carried out with Saint Lucia's Ministry of Agriculture, Fisheries, Food Security and Rural Development (MoA) officers and staff, to identify their capacity-building and institutionalization needs related to gathering and utilizing complementary risk management datasets, in particular, those generated by using a combination of satellite data, drone maps and participatory GIS (community-derived) information.</p> <p>The information gathered from this consultative process was then used to develop the following: i) an outline for a UAS policy and operations manual; and ii) a detailed training curriculum.</p>	
<b>Activity 2.2</b>	Development of an Unmanned Aerial Systems (UAS) Policy and Operations Manual		
	<b>Achieved</b>	Yes	
	<b>Comments</b>	<p>Through a consultative process, a UAS policy and an operations manual were developed to facilitate safe, professional and efficient operations by Saint Lucia's MoA.</p> <p>The UAS policies and procedures contained in the operations manual are issued by the MoA and abide by all corresponding national policies and laws of Saint Lucia. This manual is intended as a supplement to other ministerial guidelines, national civil aviation and telecommunication regulations, UAS aircraft manufacturers' user manuals, as well as any associated UAS hardware and software component user manuals.</p> <p>The publication was comprised of five main parts. The first part provided an overview of UAS applications and components. The second reviewed the policy context for the use of drone technologies, and the third set out the Ministry's corresponding commercial UAS standard operating procedures and protocols. The fourth section outlined procedures for data handling and management of UAS data to support the production of information for agriculture monitoring and disaster-risk management planning scenarios. The last section (comprising the second volume of the manual) will provide methods for the development of agricultural site mapping and monitoring plans, and will include details on conducting aerial flight surveys, processing UAS data, and analysing mapping and monitoring data, including collaborative mapping and sharing information for agricultural monitoring and disaster risk applications.</p> <p>The focus of the document is to provide clear guidelines for the use of drone technology, including the request for flight support and the approval process, flight planning and safety checks, as well as data management and flight reporting procedures by the Ministry.</p> <p>Guidance from the relevant national entities was sought to ensure that this UAS policy and its operational guidelines comply with the current provisions of all national and international civil aviation authorities, including Saint Lucia Air and Sea Ports Authority, the Eastern Caribbean Civil Aviation Authority, Civil Aviation Authority (United Kingdom), United States Federal Aviation Administration, and Joint Authorities for Rulemaking on Unmanned Aerial Systems, at the time of publication.</p>	



Activity 2.3	Establishment and capacity building of the Ministry of Agriculture Drone and Participatory GIS Team on the use of satellite data, Unmanned Aerial Systems (drones) and participatory GIS techniques	
	Achieved	<p style="text-align: center;">Yes</p> <p>Following the development of the UAS policy and operations manual, the Ministry officially established the MoA drone and participatory GIS team, based on terms of reference prepared by the project in consultation with MoA senior management. The terms of reference included the proposed technical profiles of the various team members, as well as their different responsibilities, with a strong focus on ensuring safe and lawful agriculture mapping operations.</p> <p>A highly comprehensive, multipart training programme was then implemented, with a focus on building technical capacities and ensuring that the new skills and knowledge could be institutionalized and applied to the various work streams of the Ministry.</p> <p>The FAO training package ‘Drones for Agriculture: Participatory Mapping and Geospatial Analysis’ was designed accordingly to support agricultural and disaster risk management applications within the Caribbean Small Island Developing States.</p> <p>The participatory UAS drone geospatial training package comprised several course modules that incrementally build on and strengthen the acquired knowledge and skills of participants throughout the course. Participants were first provided with an overview of UAS, applications for environmental management, including recreational UAS flight skills, safety and emergency procedures, before being actively guided on commercial UAS policies and the application of standard operational procedures.</p> <p>The UAS teams, which are subgroups of the MoA drone team, were then trained to undertake automated UAS flight surveys and use the drone photogrammetry and mapping software, which included an understanding of participatory approaches, geospatial analysis, data handling and management. Afterwards, participants were guided to identify suitable large-scale demonstration sites for agricultural monitoring within each country. The drone team members collaboratively planned, conducted and processed baseline aerial drone mapping data. They learned how to assess the results in terms of data quality, viewing web-mapping products, sharing and analysing data using analytic dashboards to create and summarize agricultural monitoring information, thereby demonstrating the applicability of the participatory-UAS approach for several national agriculture disaster risk management scenarios.</p> <p>Certain UAS mapping strategies were also developed by the MoA trainees over the course of the project and included plans for field surveys and participatory mapping exercises, as well as an outline of preliminary requirements for implementation. The curriculum developed and used in this activity is summarized below:</p> <p><u>Module 1:</u> UAS agricultural applications &amp; commercial UAS operating procedures:</p> <ol style="list-style-type: none"> <li>1. Overview of UAS applications.</li> <li>2. Policy, regulations and commercial operations.</li> <li>3. UAS components and operations.</li> <li>4. Flight procedures.</li> <li>5. Standard operational procedures and data protocols.</li> </ol> <p><u>Module 2:</u> UAS Mapping and Agricultural Monitoring Techniques:</p> <ol style="list-style-type: none"> <li>1. Agricultural mapping and monitoring techniques.</li> <li>2. Flight surveys and photogrammetry mapping software.</li> <li>3. Conduction of drone mapping and monitoring surveys.</li> <li>4. Data processing, management and sharing.</li> </ol> <p><u>Module 3:</u> Geospatial analysis, participatory mapping &amp; creation of information:</p> <ol style="list-style-type: none"> <li>1. Introduction to geographic information systems (GIS) for agriculture</li> <li>2. Data display and coordinate systems.</li> <li>3. Data accuracy and quality.</li> <li>4. Data conversion and creation tools.</li> <li>5. The participatory GIS approach.</li> <li>6. Introduction to spatial analysis.</li> <li>7. Creating and sharing information.</li> </ol> <p>In addition, a series of practical skills-based coursework, together with a variety of field and computer-based exercises, was applied to reinforce knowledge and skills to actively guide participants in the creation and sharing of agricultural maps, spatial analysis of monitoring data, and the development of summary reports and information products.</p>
	Comments	

<b>Output 3</b>	Haiti - Early Action Support to Protect Agriculture Livelihoods Against Hurricane and Storm Impacts		
	Indicators	Target	Achieved
	Risk management messages developed.	1	Yes
<b>Baseline</b>	0		
<b>Comments</b>	<p>By programmatically synergizing with two SFERA projects, one on early warning and early action and the other on the COVID-19 response, the current project contributed to stronger disaster preparedness and response measures in Haiti. The contribution included the broader dissemination of risk messages and facilitated access to critical risk management information by some of the most vulnerable households in the country. The project helped promote multiplier effects by supporting the preparation and dissemination of radio messages and the distribution of radio sets.</p> <p>As background, SFERA enables FAO to take rapid and effective action in response to food and agricultural threats and emergencies. It has three components: a working capital component, a revolving fund feature and a programme dimension.</p>		
<b>Activity 3.1</b>	National training on Agricultural Post-Disaster Needs Analysis and monitoring of Sendai framework and SDG indicator		
	Achieved	Yes	
	Comments	In collaboration with two SFERA-funded projects on early warning and early action and the COVID-19 response, the project's focus on Haiti contributed to the preparation and dissemination of messages by four radio stations in the towns of Ouanaminthe and Fort Liberté, bordering the Dominican Republic (North-East department).	
<b>Activity 3.2</b>	Promotion of the government endorsement and institutionalization of the FAO Damage and Loss methodology in the three project countries		
	Achieved	Yes	
	Comments	The project supported the procurement of multiband solar and dynamo-powered radio sets and their distribution to vulnerable households, which were also covered by the two SFERA-funded projects.	
<b>Output 4</b>	Enhanced capacities of Ministry of Agriculture's staff and of other national stakeholders to conduct Agricultural Post-Disaster Needs Analysis through the use of the corporate FAO's Damage & Loss methodology also adopted for the monitoring of Sendai and SDG framework		
	Indicators	Target	Achieved
	Number of stakeholders and institutions trained on agriculture PDNA and FAO's methodology on D&L.	60	No
<b>Baseline</b>	0		
<b>Comments</b>	As mentioned above, based on major changes regarding the heightened vulnerability, institutional contexts, and DRM priorities of Grenada, Haiti and Saint Lucia, the three governments requested modifications to the project's outputs to enable them to more effectively address the evolving country-specific DRM concerns. Thus, the work plan was revised, and Output 4 was removed.		
<b>Activity 4.1</b>	National training on Agricultural Post-Disaster Needs Analysis and monitoring of Sendai framework and SDG indicator		
	Achieved	No	
	Comments	This activity was not carried out, for reasons explained above.	
<b>Activity 4.2</b>	Promotion of the government endorsement and institutionalization of the FAO Damage and Loss methodology in the three project countries		
	Achieved	No	
	Comments	As above.	

**Partnerships and Outreach**

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