

COUNTRY PROFILE



Jamaica



2018

Climate Change and Agriculture

Policies, strategies, and actions



Caribbean
Climate Smart Agriculture
FORUM

COUNTRY PROFILE

Jamaica

Climate Change and Agriculture

Policies, strategies, and actions



Table of contents

List of tables and figures	4
List of acronyms	5
Foreword	7
About this brief	7
Overview of Jamaica’s agriculture sector	8
Potential climate change impacts	9
>> Climate change vulnerability and impact analyses for agriculture	9
How is Jamaica’s agriculture sector responding to the climate change challenge?	11
>> Policies, strategies, and plans	11
>> International	11
>> Regional	11
>> National	11
>> Programs and projects	15
>> Public Institutions	17
>> Stakeholders	18
>> Coordination bodies	20
Lessons learned and opportunities	21
Annex 1: Participants in the elaboration of the inventory	23
References	24



List of tables and figures

Tables

1. List of vulnerability and impact assessments for agriculture	9
2. Summary of planning instruments and their relevance in supporting CSA	13
3. Summary of climate change and agriculture projects and programs	15
4. List of public institutions working on climate change	17
5. List of coordination bodies	20

Figures

1. Average agricultural greenhouse gas emissions by subsector, 1990–2014	8
2. Stakeholder map	18



List of acronyms

ACDI-VOCA	Agricultural Cooperative Development International and Volunteers in Overseas Cooperative Assistance
AFG	Adaptation Fund Grant
Co ₂ e	Carbon dioxide equivalent
CARDI	Caribbean Agricultural Research & Development Institute
CCAM	Caribbean Coastal Area Management Foundation
CCSAF	Caribbean Climate Smart Agriculture Forum
CDKN	Climate and Development Knowledge
CFC	Common Fund for Commodities
CSA	Climate Smart Agriculture
ECLAC	Economic Commission for Latin America and the Caribbean
EHF	Environmental Health Foundation
FAO	Food and Agriculture Organization of the United Nations
FD	Forestry Department
GEF	Global Environment Facility
IDB	Inter-American Development Bank
IICA	Inter-American Institute for Cooperation on Agriculture
INDC	Intended Nationally Determined Contribution
JCDT	Jamaica Conservation Development Trust
JDDB	Jamaica Dairy Development Board
MEGJC	Ministry of Economic Growth and Job Creation
MICAF	Ministry of Industry, Commerce, Agriculture and Fisheries
MWLECC	Ministry of Water, Land, Environment and Climate Change
NEPA	National Environment and Planning Agency
NIC	National Irrigation Commission
PIOJ	Planning Institute of Jamaica
RADA	Rural Agricultural Development Authority
UNDP	United Nations Development Program
UoG	University of Guelph
USAID	United States Agency for International Development
USFS	United States Forest Industry
UWI	University of West Indies
WRA	Water Resources Authority





Planting of high nutrient forages to establish of silvopatures/agroforestry systems for livestock.

Photo credit >> IICA Jamaica.

>> Foreword

This document was produced as part of the activities of the Caribbean Climate Smart Agriculture Forum. The stocktaking initiative stemmed from a recognition of the importance of understanding context, and the need for coordination among existing efforts to reduce duplication and ensure that lessons learned help to improve the efficacy of future action. Promoting articulation and coherence among the multiple public policy instruments that guide actions on climate change is critical, especially in small countries.

Given the urgency of addressing climate change in agriculture, IICA and its partners established the Caribbean Climate Smart Agriculture Forum (CCSAF) in 2015 as a platform through which agricultural sector stakeholders, as well as other relevant actors, can coordinate and share experiences and knowledge. The Forum, which involves 13 English speaking countries in the region, acts as a neutral space where all can discuss, learn, plan and promote policies, strategies and actions towards more productive, low emission, sustainable agricultural systems that are well adapted to the changing climate of the Caribbean.

To date, actors from the public and private sectors, civil society, farmers' groups and researchers working in the agricultural and other related sectors (health, planning, environment, etc.) have gathered together every two to three months since mid-2015 in IICA-organized fora to participate in regional webinars, followed by national discussions on priority topics related to climate change and agriculture. In addition, a series of training events, workshops and other activities are organized through the Forum.

>> About this brief

This national baseline inventory outlines the institutional framework for addressing climate change in Jamaica's agriculture sector. After a brief description of the agriculture sector and potential climate change impacts, the inventory summarizes the main public policy instruments that exist at the national level that are relevant for addressing climate change within the agriculture sector. In addition, it includes an inventory of the programs and projects currently under way or recently executed, institutions and coordination mechanisms through which the agriculture-focused organizations interact with other sectors, and stakeholders that promote a low carbon, climate resilient agriculture sector within the country. Lessons learned and opportunities to develop climate smart agricultural interventions aligned with the country's identified priorities and targets are found at the end.

This document was developed through a participatory approach, including literature and policy reviews and in-person knowledge sharing, together with a wide variety of stakeholders who have contributed information throughout the process (See Annex 1). The event was facilitated by IICA staff and the information was collected using a standardized questionnaire, followed by an open discussion facilitated by guiding questions. This effort was then complemented by additional inquiries and a final validation workshop held in late 2017.

The information is intended to provide a starting point for those seeking to act or invest in addressing climate change issues and impacts in agriculture, as well as to help stakeholders identify areas in which greater coordination and collaboration can be achieved. The information presented is not exhaustive; it is intended to serve as a dynamic baseline that stakeholders can periodically update by adding information and insights based on the evolving experiences and context in-country.



Overview of Jamaica's agriculture sector

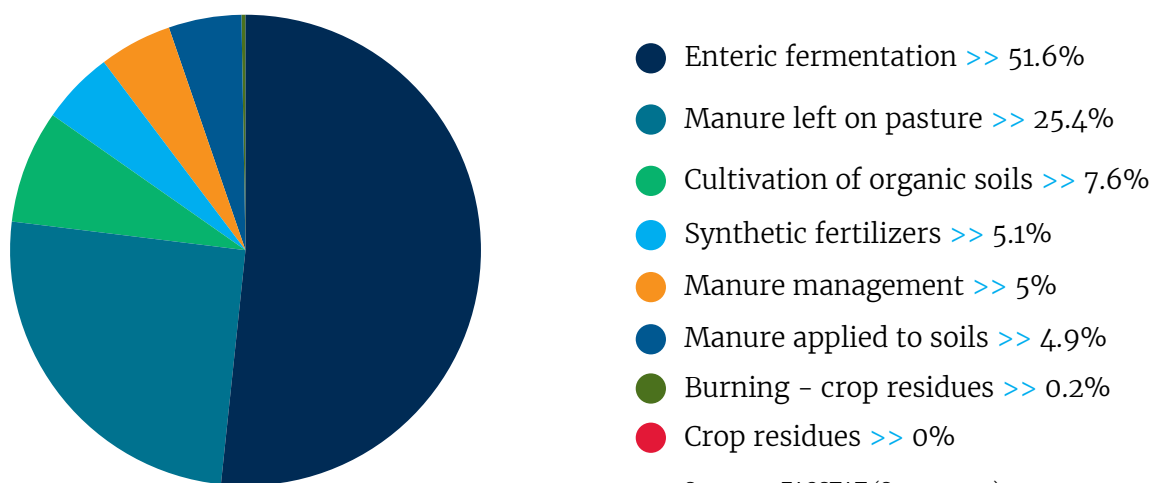


The agriculture sector was responsible for 7.3% of Jamaica's total GDP in 2016, a slight increase from 6.6% in 2015 (Planning Institute of Jamaica 2016). This increase is attributed to an increase in government support for agricultural marketing, irrigation and extension services, and an increased demand from the tourism industry for domestic produce (Planning Institute of Jamaica 2016). There was also increased demand for coffee, pimiento, citrus and cocoa in 2016 compared to 2015 (Planning Institute of Jamaica 2016). In June of 2017, 202,100 people were employed in the Agricultural, Hunting, Forestry and Fishing industries; 153,600 of which were male and 48,500 which were female. This accounted for 16.6% of the total employed labour force (Statistical Institute of Jamaica 2017).

The leading commodities produced in Jamaica include sugar, banana, coffee, cocoa, citrus, pimento, yam, vegetables, poultry, milk, crustaceans and molluscs (CARDI 2011). Food exports increased from USD 224 million in 2011 to USD 274 million in 2012, while the Jamaican Government has made efforts to reduce food imports through government programs to increase the local production of onions, potatoes, yams, honey, hot peppers, ginger, turmeric, pineapple, small ruminants and aquaculture (JAMPRO 2018).

In 2014, the agriculture sector emitted .62 Megatons (Mt) of CO_2e , contributing approximately 6.6% of Jamaica's total greenhouse gas (GHG) emissions of 9.39 Mt of CO_2e (World Resources Institute 2017). Since 2007, emissions from the sector remained fairly constant (FAOSTAT 2017). Emissions by agriculture sub-sector are shown in Figure 1.

Figure 1 >> Average agricultural greenhouse gas emissions by subsector, 1990–2014



Source >> FAOSTAT (Sep 25, 2017)



Potential climate change impacts



As is the case with many other island states, climate change and climate variability pose serious challenges to the achievement of the Sustainable Development Goals in Jamaica, due to the country’s high level of vulnerability. In the agriculture sector, the country’s small land mass, fragile ecosystems, high dependence on food imports combined with increasing occurrences of extreme climatic events challenge the country’s ability to adapt both to current climate variability and predicted long term climate change (Selvaraju et al. 2013). The major and most common climate hazards with direct repercussions for agricultural production include hurricanes, floods, landslides, droughts and heavy winds (Selvaraju et al. 2013). Land degradation also contributes considerably to the high level of vulnerability of agricultural production (Simpson et.al. 2012). Between 1994 and 2010, cumulative damage and losses in the agriculture sector due to major climate events were close to \$14.4 billion Jamaican dollars (Chen et al. 2012).

Predicted changes in climatic variables for Jamaica (modelled using ensembles of both Regional and General Circulation Models, under high emission scenarios) include temperature increases of 2.9 to 3.4 °C by 2080 (Simpson et al. 2012). Regarding precipitation, models show an overall decrease in annual rainfall between 10 % and 40%, and an increase in storm intensity, but not necessarily frequency (Simpson et.al. 2012). Observations over the past 30 years also show a trend towards increased intensity of hurricanes and tropical storms, attributed to increases in sea surface temperature (Chen et al. 2012).

>> Climate change vulnerability and impact analyses for agriculture

Table 1 provides more information regarding climate change impacts on Jamaica’s agriculture sector.

Table 1 >> List of vulnerability and impact assessments for agriculture

Title	Lead organization	Year published
The impact of future climate change on sweet potato production	CARIWIG	2016
Jamaica: Assessing the Impact of Climate Change on Cocoa and Tomato	CIAT	2015
Sensitivity of Crop Water Needs to 2071–95: Projected Temperature and Precipitation Changes in Jamaica	Scott Curtis, Douglas W. Gamble, Jeff Popke	2014
Assessment of the Vulnerability of Jamaica’s Agricultural Sector to the Adverse Consequences of Sever Weather Events*	IICA	2014
Climate Change and Agriculture in Jamaica Agriculture Sector Support Analysis	FAO	2013

*Working document that has not been formally published



Table 1 >> List of vulnerability and impact assessments for agriculture

Title	Lead organization	Year published
Climate Change Risk Profile for Jamaica	CARIBSAVE	2012
State of the Jamaican Climate 2012	UWI	2012
An Assessment Of The Economic Impact Of Climate Change On The Agriculture Sector In Jamaica	ECLAC	2011
Impact of climate change on Jamaican hotel industry supply chains and on farmer's livelihoods	CIAT	2011
USAID/USFS Climate Change Vulnerability Assessment and Adaptation Prioritization	USAID/USFS	2011
Quantification and Magnitude of Losses and Damages Resulting from the Impacts of Climate Change: Modelling the Transformational Impacts and Costs of Sea Level Rise in the Caribbean	CARIBSAVE, UNDP	2010
Climate Change, Drought, and Jamaican Agriculture: Local Knowledge and the Climate Record	Douglas Gamble, et al.	2010



Monitoring of sweet potato plots at the Bodles Research Station in Jamaica.

Photo credit >> IICA Jamaica.



How is Jamaica's agriculture sector responding to the climate change challenge?



The following section summarizes information gathered during a national workshop, additional consultations and a final validation session held during late 2017. The information is divided into five main sections: planning instruments, programs and projects, institutions, coordination bodies and stakeholders. Links to the full documents mentioned are included in the tables when available.

>> Policies, strategies, and plans

>> International

Jamaica has signed and ratified the Paris Climate Agreement (May 2017), and has ratified the United Nations Convention to Combat Desertification (1997) as well as the Convention on Biological Diversity (1995).

>> Regional

The [Liliendaal Declaration on Climate Change](#) was proffered by the heads of State and Government of the Caribbean Community at the Thirtieth Meeting of the Conference in Liliendaal, Guyana in 2009. The declaration states that, “Adaptation and capacity building must be prioritized and a formal and well financed framework established within and outside of the Convention, including the multi-window insurance facility, to address the immediate and urgent, as well as long term, adaptation needs of vulnerable countries” (Liliendaal Declaration on Climate Change 2009:2). This sets the overarching framework for CARICOM countries under which climate change response initiatives should be undertaken in the region. In addition, CARICOM’s [Strategic Plan For The Caribbean Community 2015 – 2019: Repositioning CARICOM](#), establishes the building of environmental resilience as a strategic priority of the community. Within this framework, one of the stated strategic initiatives for members to pursue is to advance climate adaptation and mitigation (CARICOM 2007).

The Caribbean Community Secretariat also, through its organ, the Caribbean Community Climate Change Centre, established a detailed framework for action in the region to build resilience. This document titled [Climate Change in the Caribbean: Regional Framework for Achieving Development Resilient to Climate Change](#), together with its [implementation plan](#) sets out in Strategic Element 4 an intention to Promote actions to reduce the vulnerability of natural and human systems in CARICOM countries to the impacts of a changing climate (Caribbean Community Climate Change Centre 2009).





Bee rearing for honey and other products in the parish of St. Elizabeth Jamaica.

Photo credit >> IICA Jamaica.

>> National

The main climate change planning instrument at the national level is the Climate Change Policy Framework for Jamaica 2015–2030, created in response to the dramatic effects that climate change is already having, and is expected to have, in the coming years. The framework includes five main goals and objectives related to climate change, many of which incorporate agriculture. They include: 1– mainstreaming climate change considerations at all levels of policy initiatives, 2 – supporting institutions in their research, data collection, adaptation and mitigation measures, and strategic decision making, 3– coordination of national level response to climate change impacts, 4– improved communication at all levels so that the general public is better informed of climate change, and 5– mobilizing climate financing.

Jamaica’s Nationally Determined Contribution (**NDC**) demonstrates the national commitment to enhance resilience to climate change, contribute to mitigation efforts, and address economic losses from climate change impacts. In the NDC, Jamaica recognizes the agriculture sector as one that is substantially affected by climate change impacts and pledges to implement programmes and projects with cross cutting impacts, specifically related to the water and agriculture sectors.

The country is currently undertaking an extensive national adaptation planning process under the umbrella of the country’s Climate Change Policy Framework. Twelve areas have been prioritized including agriculture, forestry, and water. The United States Agency for International Development (US–AID) is among the partners supporting the development of the agricultural strategy.

All development work in the country is guided by **Vision 2030**, Jamaica’s National Development Plan. One of the 15 national outcomes is hazard risk reduction and adaptation to climate change, under which a key action is for all sectors to develop sector–specific adaptation and mitigation action plans.

Table 2 summarizes additional planning documents that include goals under which climate–smart agriculture actions could be taken. The full text documents can be accessed by clicking on the name of the document.



Table 2 >> Summary of planning instruments and their relevance in supporting CSA

Name of the Document / Time period covered or date published	Specific goals that could be achieved through CSA interventions	Explicit mention of climate change targets (including adaptation (A), mitigation (M) or risk management (R))
NDC 2020-2030	>> Establishing Jamaica's commitment to achieving climate targets particularly in the agricultural sector	M-Reduction of GHG emissions A-Implementation of high priority programs and projects related to agricultural and water adaptations
<u>Climate Change Policy Framework for Jamaica</u> 2015-2030	>> Create a sustainable institutional mechanism to facilitate the development, coordination and implementation of policies, plans, programs and strategies to mitigate climate change >> Build capacity to implement climate change adaptation and mitigation activities	A-Utilize adaptation methods to ensure sustainable use and conservation of water resources as related to agriculture M-Integration of practices that enhance soil carbon in agriculture R-Methods to control increase of pests due to climate change R-Development of a risk management fund to reduce financial vulnerabilities to climate change
<u>Vision 2030 Jamaica National Development Plan</u> 2009-2030	>> Develop modern, efficient farming systems >> Increase the application of environmental best practices throughout the agriculture sector; promote environmental sustainability and strengthen hazard mitigation; and promote food security >> Place greater emphasis on hazard risk management activities and programmes for reducing existing and future vulnerability. >> Incorporate climate change scenarios in future economic and land use planning	R-Improve resilience to all forms of hazards. R-Improve emergency response capability. A-Develop measures to adapt to climate change. M-Contribute to the effort to reduce the global rate of climate change.
<u>Vision 2030 Agricultural Sector Plan</u> 2009-2030	>> Develop an environmentally sustainable sector	M-Develop renewable energy from bio-fuel resources in the sector M-Develop and expand the role of the agriculture sector in carbon trading systems. R-Develop comprehensive agricultural insurance system R-Strengthen on farm hazard mitigation measures R-Develop comprehensive hazard preparedness activities for the agriculture sector R-Strengthen disaster response and recovery mechanisms for the agriculture sector
<u>Ministry of Agriculture and Fisheries Business Plan</u> 2014-2017	>> Establish sustainable policy and planning frameworks to protect and develop suitable agricultural lands and fisheries resources >> Promote good agricultural practices that support sustainable development and impact environmental, climate, and topographical management aimed at enhancing adaptive capacity towards sustainable use of natural resources	N/A



Table 2 >> Summary of planning instruments and their relevance in supporting CSA

Name of the Document / Time period covered or date published	Specific goals that could be achieved through CSA interventions	Explicit mention of climate change targets (including adaptation (A), mitigation (M) or risk management (R))
<p><u>Food and Nutrition Security Policy</u> Approved in 2013</p>	<p>>> Ensure that a sufficient quantity of nutritious food of appropriate quality is available to all people in Jamaica, through increased domestic production and a sustainable level of imports. >> To improve food and nutrition security and increase resilience of the national community to natural and socio-economic shocks and climate change</p>	<p>R-Promote the creation of an Information System for Food and Nutrition Security (ISFNS) for food security development, as well as food crisis prevention and risk management and the construction of adequate risk profiles for the main crops A-Pursue climate resilient development that focuses on adaptation as well as mitigation strategies for the food and agriculture sector R-Integrate climate management considerations into the National Agricultural Disaster Risk Management Programme A-Reduce the impact of climate change on food production R-Develop comprehensive agricultural insurance and risk transfer schemes</p>
<p><u>The Second National Communication Of Jamaica To The United Nations Framework Convention On Climate Change*</u> 2011</p>	<p>>> Raise awareness of the potential impacts of climate change on the agriculture sector and food security >> Review approaches to integrated cropping and management systems under climate change >> Develop regional links to climate change finance and promote plant breeding programmes for common crops and livestock >> Support and fund increased water use efficiency across irrigated agriculture</p>	<p>N/A</p>
<p><u>Jamaica Water Sector Policy</u> 2004</p>	<p>>> Management, assessment and regulation of Jamaica's' water resources. >> Irrigation water to be provided in a cost effective and efficient manner with due regard to cost recovery</p>	<p>N/A</p>
<p><u>Draft Fisheries Policy Framework</u> Draft document submitted for approval</p>	<p>>> Ensure sustainable development of the fisheries industry >> Comply with international standards and best practices for fisheries development and management in keeping with Jamaica's commitments under various agreements and conventions.</p>	<p>N/A</p>

*The national communication is included here as it specifies recommendations for priority lines of action.



>> Programs and projects

Workshop participants compiled a list of the most significant projects and programs that include climate change interventions in the agriculture sector or from which the agriculture sector could benefit. Table 3 describes the general aspects of the projects and programmes.

Table 3 >> Summary of climate change and agriculture projects and programs

Project or program/ Implementation period	Main objective (s)	Budget (USD)	Source of financing	Implementing organization (s)
<u>Pilot Programme for Climate Resilience</u> 2015-2020	>> Generate information on approaches to address climate challenges, help mainstream climate change into development planning and processes and disseminate results across sectors.	20M	IDB	PIOJ CARDI
<u>Jamaica Rural Economy and Ecosystems Adapting to Climate change (Ja REEACH II)</u> 2015-2019	>> Increase climate change resilience of targeted livelihoods and ecosystems.	4M	USAID	ACDI-VOCA
<u>GOJ Adaptation Fund Programme</u> Until 2016	>> Increase the climate resilience of the Negril coastline. >> Enhance climate resilience of the agriculture sector by improving water and land management in selected communities. >> Improve institutional and local level capacity for sustainable management of natural resources and in disaster risk reduction in the targeted vulnerable areas.	3M	AFG	PIOJ MICAF RADA NIC
<u>Strengthening Jamaica's Agro-climate service</u>	>> Provide forecasts and early warnings, including seasonal projections of drought tailored to local farmers to guide pest management, seed varieties and other agricultural actions.		USAID	Meteorological Service RADA
<u>Caribbean Small Ruminant Diversification Project</u> 2012-2016	>> Improve the productivity and quality of meat (raw and processed) and the volume and value of the marketable off-take of small ruminants in the targeted countries, Jamaica and Trinidad & Tobago.	4M	CFC	CARDI
<u>Integrated Management of the Yallahs River and Hope River Watersheds</u> 2011-2015	>> Reduce pressure on natural resources in the Yallahs River and Hope River Watersheds of the Blue Mountains by increasing sustainable land management, resulting in improved management of Biological Diversity and enhanced flow of ecosystem services that sustain local livelihoods.	12.5M	GEF IDB	NEPA PIOJ FD WRA NIC RADA



Table 3 >> Summary of climate change and agriculture projects and programs

Project or program/ Implementation period	Main objective (s)	Budget (USD)	Source of financing	Implementing organization (s)
Promotion of climate resilient agricultural production systems 2013-2017	>> Training and piloting techniques for more resilient livestock production systems (silvopastoral)	5K	IICA	IICA JDDB
Strengthening Agricultural Education and Research 2014	>> Initiation of creative partnerships and knowledge sharing by various stakeholders in education and research including dairy, fisheries, peanut farmers, biodiesel in farming operations, ginger farming, potatoes and plant breeding	Varies		MICAF UWI UoG FAO CARDI Cornell University
Assessing the consequences of climate change on cocoa and tomato production in Trinidad and Tobago and Jamaica 2013-2014	>> Using innovative technology, the project worked with farmers to establish a set of protocols to screen cocoa and tomatoes for resilience to drought and heat stress. Researchers created crop-climate models for both crops to help visualize the various ways that climate change could impact current crop production		CDKN	UWI
Climate Change Project-Cedar Valley, St. Thomas 2011-2014	>> To identify, develop and support community based adaptive capacity and strategies to combat the impacts of climate change and build resilience with focus on water availability, sustainable livelihoods and agriculture; to develop and implement disaster risk reduction (DRR) strategies for the community; to improve the management of land and natural resources within the community and surrounding environment		USAID	EHF
Coping with Climate Change	>> Capacity building and climate change adaption programs in rural areas in Jamaica to equip them with tools to help promote agricultural activity and bolster farming areas in the face of climate change effects	50,000	UNDP GEF	Glengoffe Development Committee JCDT CCAM UWI



>> Institutions

>> Public Institutions

Table 4 describes the national public institutions that focus on topics related to climate change in the coordination of projects or initiatives that directly or indirectly relate to the agriculture sector.

Table 4 >> List of public institutions working on climate change

Institution	Specific units or coordinating agencies	Roles or topics covered
Jamaica Agricultural Society	Agricultural Production and Policy	» Research and development, agri-business, support to farmers
Meteorological Service of Jamaica	Climate Services Unit	» Monitor the weather, provide weather and climate related data
Ministry of Economic Growth and Job Creation	Climate Change Division, National Irrigation Commission Limited	» All aspects of climate change, agricultural irrigation services
Ministry of Industry, Commerce, Agriculture and Fisheries	Banana Industry Board, Coffee Industry Board, among others	» Extension and research, policy, project management, implementation
National Environment and Planning Agency	Various units	» Environmental conservation and protection
Planning Institute of Jamaica	Sustainable Development Division	» All issues relating to sustainable development
Rural Agricultural Development Authority	Agriculture Disaster Risk Management Division	» Climate change mitigation and adaptation



>> Stakeholders

The following figure describes the main stakeholders that actively participate in the implementation or development of climate change and agriculture interventions.

Figure 2 >> Stakeholders map





	ORGANIZATION	STRENGTH
FARMER GROUPS 	Jamaica Goat and Sheep Farmers Association	Coordination of producers
	Jamaica Greenhouse Growers Association	Coordination of producers
	Jamaica Organic Agriculture Movement	Coordination of producers.
	Jamaica Pig Farmers Association	Coordination of producers.
RESEARCH AND ACADEMIA 	CARDI	Research, regional mandate.
	Caribbean Community Climate Change Centre	Climate impacts, regional projects.
	College of Agriculture Science and Education	Climate impacts, regional projects.
	Northern Caribbean University	Climate impacts, regional projects.
	Scientific Research Council	Climate impacts, regional projects.
	UWI Physics Department	Climate change forecasting, impacts modelling.
COOPERATION AGENCY 	ACDI-VOCA	Project management.
	FAO	Funding, subject matter specialist.
	IABD	Financing.
	IICA	Technical support, project development, regional network.
	Jamaica Social Development Fund	Climate change adaptation, financing.
	JAREACH	Climate change adaptation .
	UNDP	Climate change adaptation, project management, funding.



Figure 2 >> Stakeholders map

	ORGANIZATION	STRENGTH
NGO/CIVIL SOCIETY 	Caribbean Coastal Area Management Foundation	Education and advocacy.
	Environmental Foundation of Jamaica	Education and advocacy.
	Jamaica Agricultural Society	Support to farmers.
	Jamaica Environmental Trust	Environmental education and advocacy.





Collecting animal dung for composting.

Photo credit >> IICA Jamaica.

>> Coordination bodies

At the national level, there are also coordination bodies in which multiple institutions and organizations collaborate and integrate efforts that contribute to the development of climate change related activities. Table 5 summarizes information about those articulation mechanisms.

Table 5 >> List of coordination bodies

Name	Main participants	Topics covered
Water Users Associations	NIC, RADA, farmers	Irrigation, agricultural production
Climate Services Working Group	Jamaica Meteorological Office RADA, CARDI, ACDI-VOCA Ministry of Agriculture	Development of climate and weather related information products and training
Thematic Working Groups of Vision 2030 - Hazard Risk Reduction, Climate Change Adaptation, Environment and Planning.	Jamaica Meteorological Office NEPA	Database on climate change for Jamaica, monitoring of climate across the island
Local Forest Management Committees	Farmers community members	Management of forests and watersheds
RADA Committees	RADA technical officers, national first responders, IICA	Emergency preparedness, climate change adaptation
Climate Change Focal Point Network	27 Representatives from Ministries, Departments and Agencies	To implement provisions under the national climate change policy in a coordinated manner across sectors
Early Warning System for Coffee Leaf Rust	IICA, Coffee Industry Board, UWI	Forecast and monitor changes in the weather to improve the farmers capability to manage coffee leaf rust
Caribbean Climate Smart Agricultural Forum	Stakeholders from agriculture and related sectors from Jamaica and 12 other Caribbean nations	Technologies, practices, policies and funding for CSA in the Caribbean, regional and national information sharing



Lessons learned and opportunities



After compilation of the information presented above, workshop participants discussed and exchanged ideas around five guiding questions. The questions were designed to provide a better understanding of which initiatives were the most successful thus far, and what areas presented opportunities for continued improvement.

What initiatives have been the most successful so far and why?

>> Projects that include all relevant stakeholders (farmers, extension officers etc.) from the conception of the project and throughout implementation have the highest success rates. Stakeholders are more willing to participate in projects where they are assured of receiving tangible benefit.

>> There have been collaborative efforts to develop and implement policies across Ministries and stakeholder groups, although inadequate funding for implementation often impedes execution. There are times when programmes or projects are initiated but cannot be sustained due to inadequate financial support.

>> Meteorology services have improved as a result of the establishment of more weather stations, improvement in drought forecasting tools and dissemination of timely information to stakeholders (farmers, extension officers, planners) in the agriculture sector.

>> Public awareness programmes implemented by government agencies, NGOs and development agencies in thematic areas such as water conservation/harvesting, energy conservation/alternate use of energy and good land husbandry practices.

>> The application of the Farmer Field School Methodology for climate change adaptation strategies has allowed farmers to learn and discover solutions as a result of their interaction with each other. The discovery/learning sessions were synchronised with the phenology of the crop as well as routine farm practices.

In what areas can greater coordination and synergies be achieved?

>> With regards to project implementation, there is a need to continue initiatives past the closing of the project and to provide long-term funding opportunities to ensure lasting effects.

>> There is a need for project implementing agencies to make better use of already available baseline information in the development and execution of projects.

>> Fostering greater coordination of project activities between the Ministry of Agriculture and stakeholders such as NGOs who are implementing agricultural projects with climate change components, would enhance efficacy.



>> A mechanism could be developed to allow for better synergies and inclusion of implementing agencies in projects.

What's missing in the current efforts and what are the major gaps?

>> Increased funding opportunities, especially for capital assets such as solar panels, wind turbines and water harvesting equipment and material.

>> Greater coordination between actors including the public sector, private sector, NGOs. If activities are properly coordinated, duplication can be avoided and greater synergies can be achieved resulting in greater impact on the farmers.

>> Lack of certain key policies

>> Circulation or sharing of information at all levels

What types of information needs are a priority?

>> Climate/weather data/forecasting

>> Funding information

>> Land use data

>> Information on how to properly use available weather data

>> Data on carbon footprint

>> More research on climate tolerant species

What concrete steps can be taken to move forward more effectively?

>> Mobilization of executive support to get consensus and buy-in at all levels.

>> Training/ technical support.

>> Review of policies with attendant action plans.

>> Update the development strategy for the agriculture sector.

>> Sharing and exchange between technicians across countries and regions to facilitate knowledge transfer.

>> Further sensitization of stakeholders to promote national and regional integration actions.



Annex 1: Participants in the elaboration of the inventory

Ainsworth Riley	IICA Jamaica
Chrislane Williams	FAO
Dean Avril	Bodles Research Station
Dwight McKie	Bodles Research Station
Ewan Dixon	RADA
Rasheeda Hall	CARDI
Roxine Rookwood	Bodles Research Station
Seymour Webster	CASE
Shelly-Ann Bryan	Bodles Research Station
Tiffany Edge-Ross	Coffee Industry Board (CIB)
Daniela Medina	Inter-American Institute for Cooperation on Agriculture
Kelly Witkowski	Inter-American Institute for Cooperation on Agriculture
Erin Raser	Inter-American Institute for Cooperation on Agriculture



References



CARDI (Caribbean Agricultural Research and Development Institute). 2011. Jamaica Country Profile. (Online, website). Consulted 25 Jan. 2018.

Available at: <http://www.cardi.org/country-offices/jamaica/>

Caribbean Community Climate Change Centre. 2009. Climate Change and the Caribbean: A Regional Framework for Achieving Development Resilient to Climate Change (2009–2015). Belmopan, Belize, Caribbean Community Climate Change Centre. 42

CARICOM. 2007. Strategic plan for the Caribbean Community 2015–2019: Repositioning CARICOM. Turkeyen, Guyana, CARICOM Secretariat. 75 p.

Chen, A; Taylor, M; Stephenson, T; Brown, P; Campbell, J; Stephenson, K; Walters, R; McLean, N. 2012. State of Jamaica Climate: information for resilience building. Kingston, s.e. 179 p.

FAOSTAT (Food and Agriculture Organization of the United Nations Statistical Database). 2017. (Online, website). Consulted 27 Sept. 2017.

Available at: <http://www.fao.org/faostat/en/#country/220>

JAMPRO. 2018. Sector Profile. (Online, website). Consulted 24 Jan. 2018.

Available at: <http://www.jamaicatradeandinvest.org/investment/sectors/agriculture/sector-profile> =

Liliendaal Declaration on Climate Change. 2009. Georgetown, Guyana, 30th Meeting of the Conference of Heads of Government of the Caribbean Community. 3

Planning Institute of Jamaica. 2016. Economic and Social Survey Jamaica. :8

Selvaraju, R; Trapido, P; Santos, N; Polo, M; Hayman, A. 2013. Climate Change and Agriculture in Jamaica. Agricultural Sector support analysis. Rome, FAO. 1–108 p.

Simpson, MC; Clarke, JF; Scott, DJ; New, M; Karmalkar, A; Day, OJ; Taylor, M; Gossling, S; Wilson, M; Chadee, D; Fields, N; Stager, H; Waithe, R; Stewart, A; Georges, J; Sim, R; Hutchinson, N; Ruttly, M; Matthews, L; Charles, S. 2012. CARIBSAVE Climate Change Risk Profile for Jamaica. Barbados, West Indies, s.e. s.p.

Statistical Institute of Jamaica. 2017. Labour Force by Industry Group. (Online, website). Consulted 24 jan. 2018.

Available at: <http://statinja.gov.jm/LabourForce/NewLFS.aspx>

WRI (World Resources Institute, United States of America). 2017. CAIT emissions data Climate Watch (online).

Washington, DC, United States of America. Consulted on 13 Nov. 2017.

Available at <https://www.climatewatchdata.org>







Caribbean
Climate Smart Agriculture
FORUM