Meeting of the Board
25 – 28 March 2026
Songdo, Incheon, Republic of Korea
Provisional agenda item 10

GCF/B.44/02/Add.15
4 March 2026

Consideration of funding proposals – Addendum XV

Funding proposal package for FP299

Summary

This addendum contains the following seven parts:

a) A funding proposal titled "ADAPT Jamaica: Enhancing climate change resilience of vulnerable smallholders in Central Jamaica";
b) No-objection letter issued by the national designated authority(ies) or focal point(s);
c) Environmental and social report(s) disclosure;
d) Secretariat's assessment;
e) Independent Technical Advisory Panel's assessment;
f) Response from the accredited entity to the independent Technical Advisory Panel's assessment; and
g) Gender documentation.

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Funding Proposal

Project/Programme title:	**ADAPT Jamaica: Enhancing climate change resilience of vulnerable smallholders in Central Jamaica**
Country(ies):	Jamaica
Accredited Entity:	Food and Agriculture Organisation of the United Nations (FAO)
Date of first submission:	16 April 2025
Date of current submission	02 February 2026
Version number	[V.5]

GREEN CLIMATE FUND

Contents

Note to Accredited Entities on the use of the funding proposal template

- Accredited Entities should provide summary information in the proposal with cross-reference to annexes such as feasibility studies, gender action plan, term sheet, etc.
- Accredited Entities should ensure that annexes provided are consistent with the details provided in the funding proposal. Updates to the funding proposal and/or annexes must be reflected in all relevant documents.
- The total number of pages for the funding proposal (excluding annexes) **should not exceed 60**. Proposals exceeding the prescribed length will not be assessed within the usual service standard time.
- The recommended font is Arial, size 11.
- Under the GCF Information Disclosure Policy, project and programme funding proposals will be disclosed on the GCF website, simultaneous with the submission to the Board, subject to the redaction of any information that may not be disclosed pursuant to the IDP. Accredited Entities are asked to fill out information on disclosure in section G.4.

Please submit the completed proposal to:

fundingproposal@gcfund.org

Please use the following name convention for the file name:

"FP-[Accredited Entity Short Name]-[Country/Region]-[YYYY/MM/DD]"

A. PROJECT/PROGRAMME SUMMARY

A.1. Project or programme	Project	**A.2. Public or private sector**	Public
A.3. Request for Proposals (RFP)	Not applicable		

A.4. Result area(s)		**GCF contribution**	**Co-financers' contribution[1]**
	Mitigation total	**0 %**	**0 %**
	☐ Energy generation and access	0 %	0 %
	☐ Low-emission transport	0 %	0 %
	☐ Buildings, cities, industries and appliances	0 %	0 %
	☐ Forestry and land use	0 %	0 %
	Adaptation total	**100 %**	**100 %**
	☒ Most vulnerable people and communities	50 %	100 %
	☒ Health and well-being, and food and water security	20 %	0 %
	☒ Infrastructure and built environment	10 %	0 %
	☒ Ecosystems and ecosystem services	20 %	0 %

A.5. Expected mitigation outcome *(Core indicator 1: GHG emissions reduced, avoided or removed / sequestered)*	N/A	**A.6. Expected adaptation outcome** *(Core indicator 2: direct and indirect beneficiaries reached)*	736,090 total beneficiaries (334,421 women) (25.92% of total population)	
			315,226 direct beneficiaries	420,864 indirect beneficiaries
			11.10% of total population	14.82% of total population
A.7. Total financing (GCF + co-finance[2])	$49,999,381	**A.9. Project size**	Small (Upto USD 50 million)	
A.8. Total GCF funding requested	$40,554,313 USD			

[1] Co-fin
ancer's contribution means the financial resources required, whether Public Finance or Private Finance, in addition to the GCF contribution (i.e. GCF financial resources requested by the Accredited Entity) to implement the project or programme described in the funding proposal.
[2] Refer to the Policy of Co-financing of the GCF.

A.10. Financial instrument(s) requested for the GCF funding	☒ Grant $40,554,313 ☐ Loan Enter number ☐ Guarantee Enter number	☐ Equity Enter number ☐ Results-based payment Enter number	
A.11. Implementation period	6 years	**A.12. Total lifespan**	20 years (including implementation period)
A.13. Expected date of AE internal approval	Click or tap to enter a date.	**A.14. ESS category**	B
A.15. Has this FP been submitted as a CN before?	Yes ☒ No ☐	**A.16. Has Readiness or PPF support been used to prepare this FP?**	Yes ☒ No ☐
A.17. Is this FP included in the entity work programme?	Yes ☒ No ☐	**A.18. Is this FP included in the country programme?**	Yes ☒ No ☐
A.19. Complementarity and coherence	*Does the project/programme complement other climate finance funding (e.g. GEF, AF, CIF, etc.)? If yes, please elaborate in section B.1.* Yes ☒ No ☐		
A.20. Executing Entity information	The Food and Agriculture Organization of the United Nations' Representation in Jamaica (FAOJM), and the Government of Jamaica acting through the Jamaica Social Investment Fund (JSIF) and The Ministry of Agriculture, Fisheries and Mining will be Executing Entities. . FAOJM and JSIF as Executing Entities will execute GCF proceeds The Ministry of Agriculture, Fisheries and Mining (MOAFM) and the Development Bank of Jamaica (DBJ) will be Executing Entities executing their own co-financing.		

A.21. Executive summary (max. 750 words, approximately 1.5 pages)

Climate change problem

1. Jamaica faces future climate trends marked by increases in the intensity and frequency of climate extremes including hurricanes, escalating rainfall variability, and increased droughts and floods; combined with fragile ecosystems and sensitive coastal zones, the result is that Jamaica has a relatively high vulnerability to climate change. The projected climate impacts on island agroecosystem services could accentuate a myriad of social and ecological risks.
2. Temperature increases are likely to be accompanied by increased solar radiation in Jamaica, especially evident in the cooler 'winter' months from September to February. Changes in rainfall patterns will lead to drier seasonal conditions between March and August, but wetter conditions between September and December, with increased rainfall for the typically rainiest month of October. Overall long-term projections associated with the PRECIS regional climate model show that the Caribbean is expected to be significantly drier by the century's end, especially during its primary rainy season from May to November.[3] Under a two °C target, a further extension of warm spells can be expected by up to 70 days, leading to a shift to a pre-dominantly drier region (5%–15% less than present-day) and a more significant occurrence of droughts.[4] Combined increases in maximum temperatures, accompanied by decreases in precipitation, are likely to increase agricultural droughts, especially in rainfed dominated agricultural systems.

[3] Taylor et al. 2013
[4] Taylor et al. 2018

3. While droughts and rainfall variability are recognised as dominant natural hazards limiting agricultural productivity across the island, hurricanes and tropical storms in particular have caused significant damage to the agriculture sector. Studies show that hurricanes in Jamaica are becoming stronger, with recent storms causing significant damage to infrastructure and coastal communities.[5] Jamaica has experienced unprecedented consecutive climate disasters in 2024-2025. **Hurricane Beryl** (Category 4) in July 2024 caused agricultural losses estimated at over JMD 4.7 billion (USD 30 million), impacting 48,852 farmers..[6] Subsequently, Jamaica endured a tropical storm, six weeks of sustained rainfall, followed by drought conditions. On October 28, 2025, **Hurricane Melissa**, the first Category 5 hurricane to make a direct hit on Jamaica in recorded history, made landfall near New Hope in Westmoreland with sustained winds of 185 mph. Melissa struck Jamaica's agricultural heartland, damages estimated at US $6-7 billion (28-32% of GDP), with approximately 116,000 structures sustaining severe or catastrophic damage, concentrated in St. Elizabeth, Westmoreland, and Manchester.[7]
4. The Sixth Assessment Report of the IPCC concludes that **tropical cyclones will intensify with global warming**, including increased rain rates (high confidence), higher proportions of intense cyclones (high confidence) and increased peak wind speeds (high confidence). Projections from the Columbia HAZard Model show an **increase in the frequency of most cyclone types for Jamaica**.[8]

Jamaica background and project needs

5. The **agricultural sector** is **highly sensitive to climate variability**, and **smallholder farmers are particularly exposed** as the vast majority **rely on rain-fed agriculture**; the target parishes have the least diverse water resources, making them particularly vulnerable. The agricultural sector contributes 7% of Jamaica's GDP, and supports 18% of its population.[9] This vulnerability is exacerbated by the **increasing severity of extreme weather events** such as **Hurricane Beryl** and **Hurricane Melissa**.
6. Small scale farmers cultivate mainly root crops, pulses and vegetables and cultivate land typically in the rugged interior of the country. In Jamaica, more than three quarters of small farmers cultivate on hillsides and are dependent on rainfall for irrigation. Production is generally done in open field mixed farming systems and is very labour intensive, which generally translates to an increase in the cost of production. Unsustainable farming activities on slopes in upper watershed regions have been recognised as the main cause of land degradation. Smallholder systems are therefore disproportionately exposed to landslides and soil erosion as they tend to occupy less suitable arable land (Refer to Annex 2 for detailed characterisation of smallholder farmers). With the fallout in the traditional agricultural export sector in recent years, some of these lands are now being targeted for the production of non-traditional crops like mangoes, vegetables and other produce under the government's current Agro Parks programme.
7. Drought and rainfall variability are key limiting factors for agricultural productivity and food security in Jamaica. The agricultural sector is in fact considered as one of the most climate sensitive industries in Jamaica given its reliance on favourable conditions for optimal production and normalcy.[10] On average, one-fifth of the overall damage due to major hydrometeorological events is experienced by the agricultural sector.[11] The major hazards with direct repercussions for agricultural production are droughts, hurricanes and tropical storms (often associated with floods, landslides, and strong winds).[12] Small farmers suffer significant losses related to lower yield from drought conditions especially, as their crop production is highly dependent on rainfall.[13] The occurrence of droughts has increased since the 2000s and there has been an increased frequency of seasonal drought events (short-term) compared to perennial drought periods.[14] In 2019, several thousand farmers lost crops directly due to drought as well as fires exacerbated by drought conditions. Agricultural output also suffers from a very high percentage of food loss and waste (estimated between 30–40% on average), owing to challenges with pest and disease management, declining produce quality, less-than-optimal harvesting, transportation, and post-harvest management to include temperature-controlled storage.[15]
8. The island is projected to experience a geographical shift in the ecological niche of most crops to higher altitudes as mean temperature increases, resulting in fewer available areas for open field cultivation by 2050[16][17] . Food crop production in Jamaica is already being negatively affected by a mix of factors including climate change, low application of climate-resilient best practices, and high post-harvest food loss resulting in reduced yields and decreased incomes. Crucially, unsustainable farming practices exacerbate land degradation and increase pressure on forest margins, raising the risk of deforestation. These negative outcomes are linked to increased variability in rainfall, particularly in the traditional growing seasons, longer periods of drought, increases in temperatures and more frequent extreme weather events. The problem is exacerbated by an overdependence on rainfall for cropping systems, inadequate marketing and post-harvest infrastructure, environmental degradation, and increased incidence of pests and diseases infestation. Pests, weeds and disease occurrence and distribution are projected to increase

[5] https://wesr-cca.unepgrid.ch/cca/jamaica/goal-country-analysis#:~:text=Jamaica%20is%20already%20being%20affected,the%20levels%20of%20damage%20possible.
[6] Rapid Impact Assessment Report of Hurricane Beryl, 2024
[7] https://opm.gov.jm/statement-to-parliament-on-the-aftermath-of-hurricane-melissa/
[8] Lee, C., Tippett, M. K., Sobel, A. H., & Camargo, S. J. (2018). An Environmentally Forced Tropical Cyclone Hazard Model. Journal of Advances in Modeling Earth Systems, 10(1), 223–241. https://doi.org/10.1002/2017MS001186
[9] Donovan Campbell, Shaneica Lester; Building Resilience in Jamaica's Farming Communities: *Insights From a Climate-Smart Intervention*. *Case Studies in the Environment* 23 January 2023; 7 (1): 1233811. doi: https://doi.org/10.1525/cse.2023.1233811
[10] Government of Jamaica. (2015). Climate Change Policy Framework for Jamaica.
[11] FAO, (2013). Climate change and agriculture in Jamaica: Agricultural sector support analysis. Rome, Italy: FAO.
[12] CSGM. (2017). State of the Jamaican Climate 2015: Information for Resilience Building (Full Report). Kingston, Jamaica: Planning Institute of Jamaica.
[13] Bedasse, J. (2017). *Assessment of the vulnerability of Jamaica's agricultural sector to the adverse consequences of severe weather events.* Kingston, Inter-American Institute for the Cooperation on Agriculture (IICA).
[14] Jamaica's Adaptation Communication, 2022
[15] FAO, European Union and CIRAD. 2022. Food Systems Profile - Jamaica. Catalysing the sustainable and inclusive transformation of food systems. Rome, Brussels and Montpellier, France. https://doi.org/10.4060/cc0073en
[16] Rhiney K (2015) Geographies of vulnerability in a changing climate: lessons from the Caribbean. *Geography Compass*, 9(3):97–114.
[17] Eitzinger A, Laderach P, Gordon J, Benedikter A, et al. (2013). Crop suitability and climate change in Jamaica: impacts on farmers and the supply chain to the hotel industry. *Caribbean Geography*, 18(1): 20–38.

with global warming, amplified by climate-change-induced extreme events with negative consequences for food production, food security and livelihoods. Farmers face greater difficulty in planning for production due to the increased risk of crop failure as droughts reduce seed germination, cause changes in the growing season, reduce yield, increases in evapotranspiration and water demand, increase incidences of pest and disease infestations, and of wildfires.[18] Smallholder farmers operate within value chains that are not efficient and are characterised by poor coordination, information flow and cooperation between the links, resulting in delivery delays and produce quality decline.

9. As **rainfall patterns become more erratic** and **drought periods extend**, **crop failures and yield reductions** will become increasingly common. **Post-harvest losses** will likely worsen as **temperature increases** stress the **post-harvest storage and handling** systems that are already **inadequate**. The **existing climate information infrastructure** in Jamaica continues to face significant challenges due to a lack of available public funding. The **aging network of weather stations** is likely to be expanded or modernised at a **significantly slow pace**, as tropical cyclones like **Hurricane Beryl** and **Hurricane Melissa** continue to cause **significant damages** (with the latter causing damages estimated at around 32% of 2024 GDP).[19] The geographic coverage is inadequate to service smallholder farmers in the remotest areas. Key agencies like Rural Agricultural Development Authority (RADA) and Meteorological Service of Jamaica (MSJ) continue to face **significant capacity gaps** in terms of both **knowledge** and number of **skilled personnel**, which will constrain effective climate information service delivery. Smallholder farmers therefore continue to **lack timely actionable agricultural guidance**.
10. In addition, farmers face **stringent collateral requirements and high interest rates** as financial institutions are **risk averse to agricultural lending** for climate-resilient agriculture (CRA) and food loss and waste (FLW) reduction practices and technologies for smallholder farmers, who often operate informally and lack either the **collateral, land tenure, or financial literacy** to understand lending terms and conditions. Therefore, **the agricultural sector represents a small percentage of the loan portfolio** of deposit-taking institutions, focusing on agribusinesses and larger, commercially-oriented registered farmers.
11. The proposed project not only addresses systemic vulnerabilities to climate change but also provides immediate opportunities to increase the resilience following the **devastating consecutive impacts of Hurricanes Beryl and Melissa**. Hurricane Melissa's **unprecedented** Category 5 direct strike exposed critical vulnerabilities across Jamaica's agricultural parishes, creating an **urgent imperative** to ensure recovery investments incorporate enhanced hurricane-resistant investments rather than perpetuating vulnerability.

The proposed project

12. In response to mounting climate vulnerabilities and severely constrained access to finance in Jamaica's agricultural sector for smallholders, the **ADAPT Jamaica project aims to transform production systems across six central parishes (Trelawny, Saint Ann, Saint Elizabeth, Clarendon, Saint Catherine and Manchester) by implementing an integrated approach to climate resilience**. These parishes face the most severe challenges due to compounded climate hazards, high sensitivity, and low adaptive capacity. They have a predominantly rural population engaged in agriculture, with high levels of poverty and food insecurity. The parishes either have a reliance on rain-fed agriculture or have poor irrigation systems which exacerbate vulnerabilities. They have a high susceptibility to droughts, reduced rainfall, heat stress and hurricanes. Smallholder farming dominates with key crops including yams, cassava, coffee, vegetables and citrus farming. Some of the higher-altitude parishes such as Manchester have high levels of land tenure insecurity, deforestation and poor soil management practices, resulting in soil erosion. Through improving the knowledge and awareness of, and access to CRA and FLW practices and technologies through **farmer field schools** and **improved climate information services** and **agricultural early warning systems**, as well as supporting increased access to finance through a potential **dedicated credit line** for **investment-ready CRA / FLW practices and technologies**, the project will help smallholders shift from unsustainable land use practices and vulnerable crops to more **resilient production systems**. By simultaneously addressing knowledge and information, economic and financial, and technical capacity barriers while focusing on women and youth inclusion, the project will catalyse a **paradigm shift toward climate-resilient agriculture** that will sustain rural livelihoods and alleviate poverty.
13. The project design not only addresses systemic vulnerabilities to climate change but also provides an opportunity to increase the resilience following the devastating impacts of **Hurricanes Beryl and Melissa** to the agricultural sector and the country as a whole, ensuring that recovery efforts contribute to long-term climate resilience. This commitment directly supports the GCF-2 Strategic Plan (2024-2027) with a view to its strategic direction to enhance resilience of 570 to 900 million people. Specifically, this project is geared towards contributing to the following USP2 targets: T3 CIEWS, T4 Food and T9 Adaptation projects. The project achieves this through an integrated risk management approach that proactively incorporates climate-resilient practices and financial solutions alongside core components of social protection, ensuring resilience is built for the most vulnerable groups**.** This paradigm shift will be achieved through four outcomes:
    - **Outcome 1:** Enhanced knowledge and demonstration of climate-resilient agricultural practices and technologies
    - **Outcome 2:** Adoption of CRA and FLW reduction interventions
    - **Outcome 3:** Enhanced resilience of agricultural production systems to climate change through improved climate information services and early warning systems
    - **Outcome 4:** Improved enabling environment for climate-resilient agriculture

[18] UNCTAD (2014), The Economics of Climate Change in the Caribbean – Summary Report 2011 https://unctad.org/system/files/non-official-document/cimem7_2014_C1_ClimateChange_Caribbean_Summary_en.pdf

[19] https://opm.gov.jm/statement-to-parliament-on-the-aftermath-of-hurricane-melissa/

B. PROJECT/PROGRAMME INFORMATION

B.1. Climate context (max. 1000 words, approximately 2 pages)

Socio-economic context

14. Jamaica is estimated to have reached over 2.83 million people in 2023, of which 50.4% are women.[20] Approximately 56% of the population lives in urban areas as of 2021, which is significantly lower than the 83% average urban residency for Latin American and Caribbean (LAC) countries.[21] **Poverty remains a prevalent issue in Jamaica**, estimated to be 11.8% in 2024.[22] According to the 2018 JSLC, poverty is predominantly rural in Jamaica, with nearly half of the country's poor population resided in four parishes: St. Andrew, St. Catherine, Clarendon, and Kingston. The larger populations in St. Andrew and St. Catherine notably contributed to their higher shares in national poverty. Additionally, northern parishes like St. Ann and Trelawny recorded the highest poverty rates, with 20.9% and 20.3% respectively.
15. In terms of food poverty, latest available data from a survey conducted by the Caribbean Community (CARICOM) and World Food Programme (WFP)[23] in April 2024 show that 64% of respondents were deemed to be food insecure (33% severely food insecure, 31% moderately food insecure).[24] Respondents believe **food poverty is exacerbated by natural hazards** (chiefly drought and heatwaves according to respondents), as well as a high cost of living. Food poverty is disproportionately higher among female-headed households, particularly in rural areas, with the greatest increase in food poverty rates seen in rural areas.[25]
16. The direct beneficiaries of ADAPT Jamaica are vulnerable smallholder farmers who constitute nearly 80% of all agricultural holdings and manage less than 15% of arable land. The average size of agricultural holdings declined from 2.2 hectares in 1996 to 1.4 hectares in 2007, reflecting the limited scale and resource base of smallholder operations.[26] Small scale farmers cultivate mainly root crops, pulses and vegetables and cultivate land typically in the rugged interior of the country. In Jamaica, more than three quarters of small farmers cultivate on hillsides and are dependent on rainfall for irrigation. Production is generally done in open field mixed farming systems and is very labour intensive, which generally translates to an increase in the cost of production. Unsustainable farming activities on slopes in upper watershed regions have been recognised as the main cause of land degradation. Smallholder systems are therefore disproportionately exposed to landslides and soil erosion as they tend to occupy less suitable arable land.
17. ADAPT Jamaica's project locations have been strategically selected based on the Climate Risk and Vulnerability Assessment (CRVA). Project interventions will primarily target districts within six parishes: Clarendon, Manchester, St. Elizabeth, St. Ann, St. Catherine, and Trelawny. Special emphasis will be placed on the very high priority districts in southern St. Elizabeth, Manchester, and Clarendon, which represent Jamaica's agricultural heartland but face severe climate challenges. The targeted areas in the six parishes face the most severe challenges due to compounded climate hazards, high sensitivity, and low adaptive capacity.

Agricultural sector context

18. The agricultural sector represents a critical component of Jamaica's national development strategy, contributing just over 8% of Jamaica's Gross Domestic Product (GDP) in 2020 and serving as a significant source of employment, foreign exchange earnings and rural livelihoods.[27] The sector employs approximately 258,000 registered farmers (33 % of which are women) that represent an estimated 15% of Jamaica's labour force, and supports over 200,000 farm households.[28] [29] This sector is therefore highly important in terms of national food security and poverty alleviation. Jamaica's agriculture focuses on both **traditional export crops and domestic crops**. Traditional exports include sugarcane, coffee, citrus, cocoa, and pimento, which significantly contribute to foreign exchange and rural employment. In 2022, agricultural products and processed foods accounted for over USD 420 million (JMD 66.1 billion) in export earnings, approximately 22% of total exports valued at USD 1.9 billion in the same year (JMD 291.2 billion).[30]
19. The central six parishes comprising the project implementation area for the ADAPT Jamaica project, account for approximately 70% of Jamaica's domestic food production, through the efforts of some 143,170 registered smallholder farmers.[31] According to data from the last agricultural census, the area includes approximately 199,223 hectares of farmland and some of Jamaica's most important agricultural production areas. This area is therefore highly important in terms of national food security and poverty alleviation. Production is generally done in open field mixed farming systems. In the higher elevated central interior, agricultural production generally takes place on steep slopes with significant areas of environmental degradation and is largely rainfall dependent. Food crop production in the area is already being negatively affected by a mix of factors including climate change, low application of climate-resilient best practices, and high post-harvest food loss resulting in reduced yields and decreased incomes. Pests, weeds and disease occurrence and distribution are projected to increase with global warming,

[20] World Bank. (2024a). Population, total—Jamaica. World Bank Open Data. https://data.worldbank.org
[21] FAO. (2023). Jamaica Demographics. FAOSTAT. https://www.fao.org/faostat/en/#country/109
[22] Measured as Jamaicans living below the Upper Middle Income Class Poverty Line (less than USD 6.85 per day (2017 PPP)).
[23] 833 respondents, 78% female and 22% male.
[24] Using the Food Insecurity Experience Scale (FIES) methodology.
[25] CARICOM & WFP, 2024
[26] Agriculture Task Force, 2009
[27] STATIN, 2020
[28] ABIS, 2024
[29] RADA, 2021
[30] STATIN, 2024d
[31] ABIS database

amplified by climate-change induced extreme events, affecting the yield and quality of fresh harvest produce. These negative outcomes are linked to increased variability in rainfall, particularly in the traditional growing seasons, longer periods of drought, increases in temperatures and more frequent extreme weather events. The problem is exacerbated by an overdependence on rainfall for the watering of crops, inadequate marketing and post-harvest infrastructure, environmental degradation, and increased incidence of pests and diseases infestation.

20. ADAPT Jamaica assessed and identified the following crops in terms of their importance in the local market, scale of production, market competitiveness, nutritional value, importance to sustaining smallholder livelihoods, and whether or not the crop is a government priority: **sweet potato, yam, cassava, Irish potato, onion, mango, watermelon and tomato.** The crops identified are amenable to mixed cropping systems including agroforestry systems that allow for a diverse income stream and increased resilience to both economic and ecological shocks.
21. Jamaica's domestic agricultural production follows a **multi-crop system, often on small hillside holdings with low-input farming techniques**. **Small-scale farmers, each occupying between 0.15 and 2 hectares of land, constitute 77% of agricultural holdings, managing less than 15% of arable land**.[32] The sector's productivity is further hampered by **infrastructure gaps, particularly in irrigation and water management**, affecting **key agricultural parishes like Manchester, Clarendon, and St. Elizabeth.** Irrigation remains limited at **only 7.3% of the country's cultivated lands**.[33] Consequently, **agricultural production is predominantly dependent on rainfall**.
22. In response to climate challenges and the need for increased productivity, **protected agriculture has gained prominence**. This technology enhances yields, improves insect and disease control, and ensures higher crop quality and consistency. Protected agriculture has proven resilient to extreme weather events such as hurricanes and droughts, contributing to significant increases in vegetable production. However, despite its benefits, protected agriculture has faced setbacks due to recent hurricanes and storms, which have caused substantial damage to greenhouse structures and crops. **Devastating impacts** came from **Hurricane Beryl** in 2024, which, according to MOAFM, damaged or **destroyed a total of 236 greenhouses** (totalling over 688,000 sq ft), with estimated damages costing in **excess of JMD 856 million (USD 5.5 million)**.[34] As of the submission of this latest version of the Funding Proposal, the estimated impacts to the agricultural sector of **Hurricane Melissa** are not fully quantified yet, but is likely to be far higher as the overall devastation is orders of magnitude larger than Beryl. Some reports include loss of 67% of egg production capacity (mostly from impacts in Clarendon and St. Catherine), complete loss of vegetables, fruit crops and root crops in St. Elizabeth and Manchester, and near complete losses in the apiculture subsector in the central parishes.

Climate change problem

23. **Temperature increases** are likely to be accompanied by increased solar radiation in Jamaica, especially evident in the cooler 'winter' months from September to February. **Changes in rainfall patterns** will lead to drier seasonal conditions between March and August, but wetter conditions between September and December, with increased rainfall for the typically rainiest month of October. Overall long-term projections associated with the PRECIS regional climate model show that the Caribbean is expected to be **significantly drier** by the century's end, especially during its primary rainy season from May to November.[35] Under a two °C target, a further **extension of warm spells** can be expected by up to 70 days, leading to a shift to a predominantly drier region (5%–15% less than present-day) and a **more significant occurrence of droughts**.[36] Combined increases in maximum temperatures, accompanied by decreases in precipitation, are likely to **increase agricultural droughts**, especially in rainfed dominated agricultural systems.
24. Food crop production in Jamaica is already being negatively affected by a mix of factors including climate change, low application of climate-resilient best practices, and high post-harvest food loss resulting in reduced yields and decreased incomes. These negative outcomes are linked to increased variability in rainfall, particularly in the traditional growing seasons, longer periods of drought, increases in temperatures and more frequent extreme weather events. The problem is exacerbated by an overdependence on rainfall for cropping systems, inadequate marketing and post-harvest infrastructure, environmental degradation, and increased incidence of pests and diseases infestation.
25. The **agricultural sector is in fact considered as one of the most climate sensitive industries in Jamaica** given its reliance on favourable conditions for optimal production and normalcy.[37] On average, **one-fifth of the overall damage** due to major hydrometeorological events is experienced by the agricultural sector.[38] The major hazards with direct repercussions for agricultural production are drought, hurricane and tropical storm (often associated with floods, landslides, and strong winds).[39] Small farmers suffer significant losses related to lower yield from drought conditions especially, as their crop production is highly dependent on rainfall.[40]

Historical climate trends

26. **Temperature:** Monthly climatological analysis of mean temperatures shows a **steady progression of warming** across the three 30-year periods. While the warming is evident across all months, it is less acute than the changes observed in minimum temperatures. Mean temperature anomalies exhibit a pattern of colder-than-usual conditions from 1940 to 1960, followed by

[32] Agriculture Task Force, 2009
[33] World Bank Group, 2024
[34] MOAFM, 2024
[35] Taylor et al. 2013
[36] Taylor et al. 2018
[37] GOJ, 2015
[38] FAO, 2013
[39] CSGM, 2015
[40] Bedasse, 2018

a distinct trend toward warmer-than-historical conditions beginning in the mid-1970s and continuing through the end of the century. This pattern aligns with global observations of accelerated warming in the latter part of the 20th century.

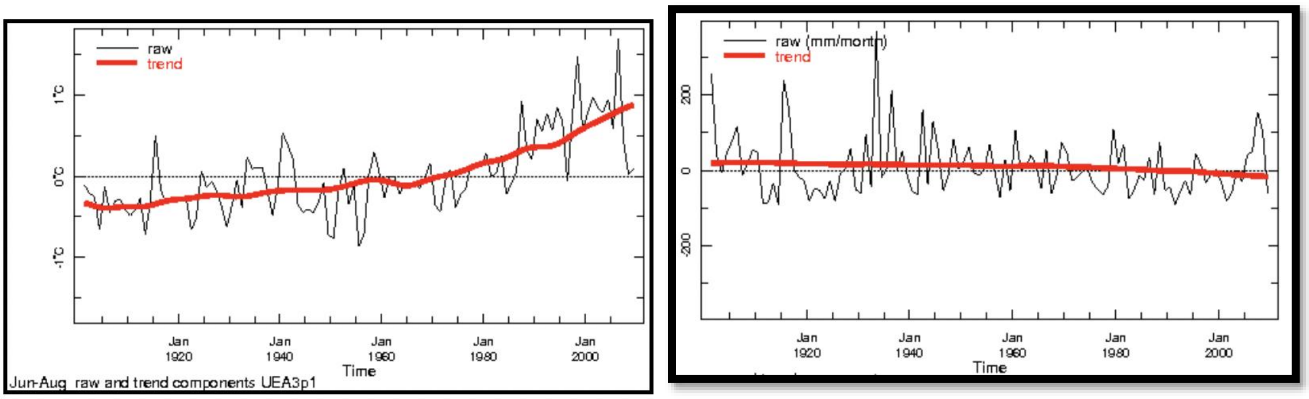


Figure 1 [Left] Timeseries showing the trend on temperature in Jamaica since 1900 for the June-July-August season. This trend explains 52% of variance in the time series. Trend is significant at 1%. [Right] Timeseries showing the trend on precipitation in Jamaica since 1900 for the June-July-August season. This trend explains 2% of variance in the time series. Trend is significant at 5%.

27. **Precipitation:** Precipitation patterns show strong interannual variability dominated by mechanisms such as the El Niño-Southern Oscillation (ENSO) and the Caribbean Low-Level Jet (CLLJ), with less clear directional trends attributable to climate change. The monthly climatology comparison across the three 30-year periods reveals **subtle but important changes in precipitation** patterns. The monthly accumulated records do not show as much variation between periods as temperature. However, a **notable change appears in the timing of the mid-summer dry spell** known as the "Canícula" or "Veranillo," with data suggesting an earlier onset in recent decades. This shift has **significant implications for agricultural planning** and water resource management.

28. **Tropical cyclones:** As a country located within the Atlantic Hurricane Belt, Jamaica experiences tropical cyclones as important geophysical events. Most tropical cyclones in Jamaica occur during the North Atlantic hurricane season spanning June 1 to November 30, which coincides with the country's rainfall season.[41] Historical data from 1950 to 2015 shows that the majority of tropical cyclones approach from the south of the island, with the most common path of hurricanes affecting Jamaica is from the southeast to the northwest, making the **south coast more susceptible to the effects of wind, rain, and storm surges**. Analysis of the number of hurricanes passing within 50 km of the island indicates that the central and northern regions experience marginally fewer storm centres than the south, with the southeastern portion of the island and the southernmost tip having the highest impact count and probability of influence. The majority of storms impacting Jamaica are of Categories 3 and 4 strength.[42]
29. There have been a total of 29 tropical cyclones and named hurricanes affecting Jamaica from 1903 to 2017. These events have impacted 1,709,705 people and have resulted in 608 deaths. **Tropical cyclones are responsible for the majority of damage caused by floods**. The agricultural sector is a critical component of the Jamaican economy that has been particularly vulnerable to the effects of these extreme weather events, with the most recent impacts felt in the wake of **Hurricane Beryl** in 2024 and **Hurricane Melissa** in 2025. The total estimated damage associated with the impacts of Beryl amounted to **JMD 32.2 billion (**USD 206.8 million), 1.1% of the 2023 GDP.[43] The agricultural sector sustained substantial damage as a result of Hurricane Beryl, with assessments indicating that the sector incurred losses totalling **JMD 4.73 billion (USD 30 million) and impacting 48,852 farmers**. Preliminary estimates of the overall damages of **Hurricane Melissa** is of up to **USD 7 billion, or nearly 32% of the 2024 GDP**.[44]

[41] CSGM, 2021
[42] CSGM, 2021
[43] PIOJ, 2024
[44] https://jis.gov.jm/damage-from-hurricane-melissa-estimated-at-up-to-us7-billion/

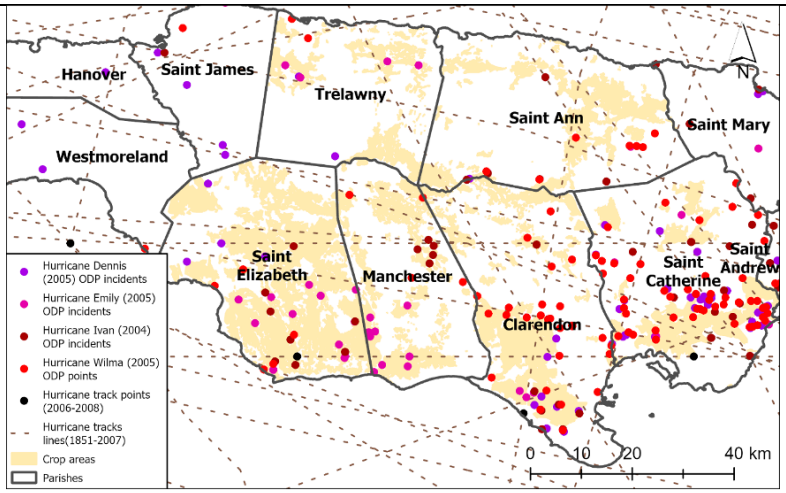


Figure 2 Superposition of the points related to reported damages of past hurricanes together with the position of the agricultural areas. Source: hydrological study, GRIDDIT, 2025.

Floods and landslides: Floods in Jamaica exhibit a strong correlation with rainfall patterns, mirroring the country's bimodal rainfall distribution. A notable peak in flood occurrences is observed between April and June (27%), while a more significant peak occurs from September to November (39%).[45] This statistical relationship between monthly flood distribution and mean rainfall suggests that any alteration in rainfall patterns will likely lead to changes in the frequency of severe floods.[46] **Short-duration rainfall events, lasting one or two days, are the primary drivers of severe flooding**, constituting 67% of such occurrences.[47] Geographically, flood hazard ratings are highest in floodplains of major rivers and around major towns and cities. Jamaica also experiences **frequent landslides**, posing a significant hazard across the island. The 100-year flood hazard map below illustrate that significant agricultural areas of St Elizabeth, Clarendon, Saint Catherine located in lowland areas and river valleys are highly vulnerable to flooding events. Areas in northern Manchester, northwestern Clarendon, and portions of northern and southern St Elizabeth with sloped or steep, elevated terrain and high rainfall are landslide-prone.

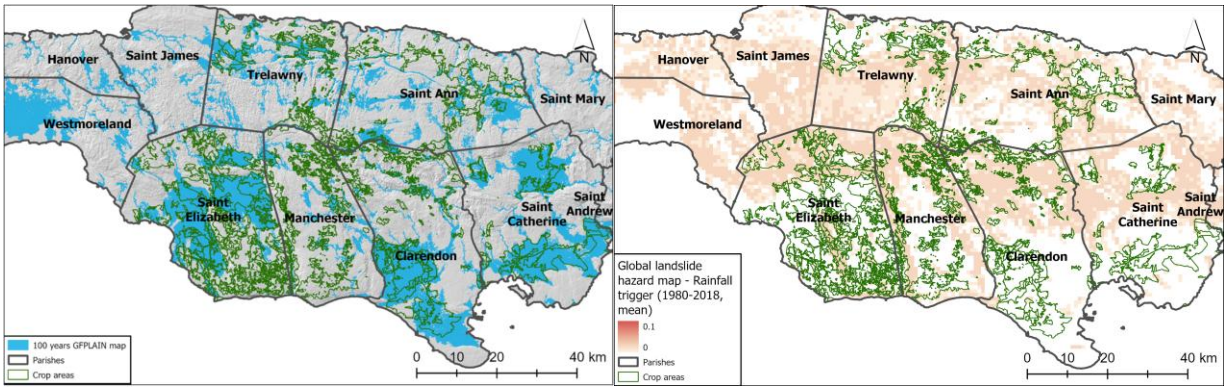


Figure 3 [Left] Map of the 100-year flood hazard maps for Jamaica at 30 meters resolution for all the rivers with a contributing area higher than 10 km^2. Source: hydrological study, GRIDDIT, 2025. [Right] Agricultural areas and landslide hazard map - Rainfall trigger (1980-2018, mean). Source: hydrological study, GRIDDIT, 2025.

30. **Drought:** Historical trends show that the early 1980s witnessed drought conditions in coastal and interior zones, while the western zones remained relatively unaffected. Furthermore, the early to mid-1970s saw significant drying trends in the interior, western, and coastal zones. Analysis suggests that the **interior and coastal zones are more susceptible to short-term droughts** compared to the western and eastern zones. Coastal areas also exhibit a significantly higher propensity for year-long drought occurrences than interior areas.[48] More recently, Jamaica experienced one of the worst droughts on record beginning in 2014, with devastating effects on rural livelihoods and the national economy. Agricultural production declined by approximately 30% in 2014 compared to 2013, with farmers in the most affected areas reporting production losses of up to 57%. Combined with brush fires, this drought resulted in economic losses estimated at JMD 1 billion.[49]
31. Spatial analysis incorporating evapotranspiration through the Standardised Precipitation Evapotranspiration Index reveals negative values across the entire country. This indicates that despite increased precipitation in northern parishes during 2009-2018, the widespread rise in temperatures dominated the water balance. The resulting SPEI values ranged from -0.535 to 0,

[45] CSGM, 2021
[46] CSGM, 2021
[47] CSGM, 2021
[48] CSGM, 2021
[49] NOAA, 2016

suggesting **a shift from near-normal conditions toward moderate drought conditions**. This is particularly notable for the southern target parishes of Saint Elizabeth, Manchester and Clarendon as well as the central parts of Trelawny and Saint Ann.

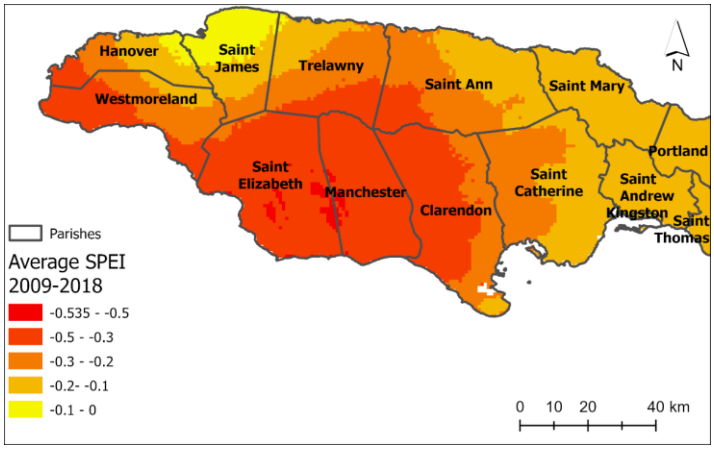


Figure 4 Spatial distribution of the averaged values of SPEI for the period 2009-2018 (baseline 1980-2018).

Future projections

32. **Temperature:** Mean annual temperatures across Jamaica are projected to increase steadily through the mid to late 21st century, with relatively modest differences between SSP245 and SSP585 scenarios until 2070. The western parishes emerge as consistent hotspots, with Westmoreland and Saint Elizabeth experiencing the most significant warming trends, where **temperatures are expected to exceed 30°C and potentially reach 31°C by 2070**. The central mountainous regions of Manchester and Saint Ann demonstrate relative thermal moderation due to their elevation, maintaining comparatively lower mean temperatures throughout the projected period, but nonetheless show a clear warming trajectory relative to the 1970-2000 baseline. The highest magnitude of change in annual mean temperature is of 1.87°C and the minimum increase in mean annual temperature is expected to be at 1.68°C, against the 1970-2000 baseline.

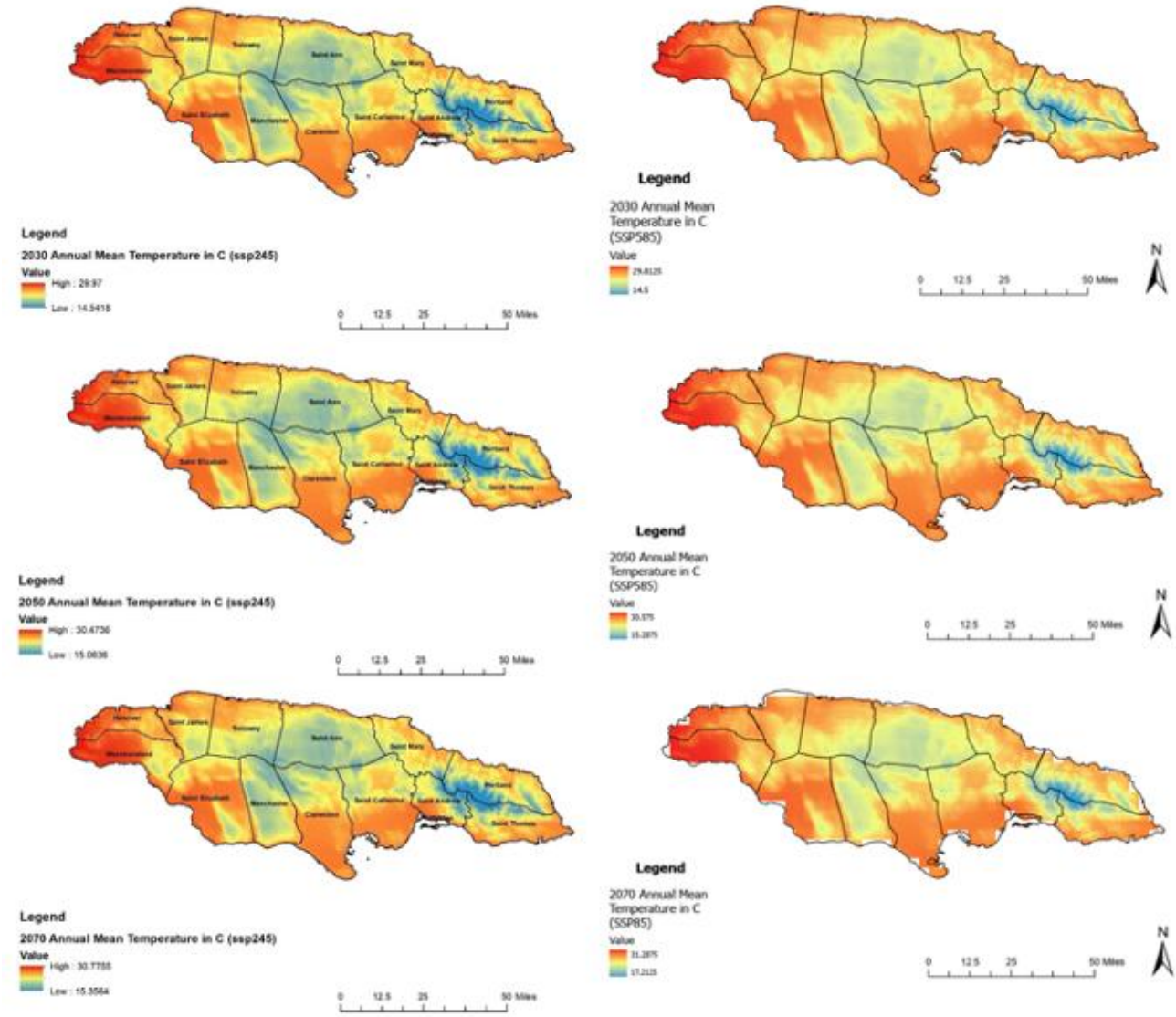


Figure 5 Maps of absolute changes in annual mean temperatures (°C). Left column is SSP245, right column is SSP585. Top row is for the 2030 period, middle row is the 2050 period, bottom row is the 2070 period.

33. **Precipitation:** Annual precipitation projections for Jamaica through 2050 show spatial heterogeneity. Trelawny and Saint Ann Parishes exhibit projected increases up to 34mm in coastal zones, while their southern mountainous watersheds face decreases. Saint Elizabeth and Manchester are projected to experience the most significant decreases (up to 52mm), affecting rainfed agricultural zones and high-poverty communities. Clarendon and Saint Catherine show moderate changes, with the latter's northern region projected for mild precipitation increases in mixed irrigation/rainfed agricultural areas. Despite these modest changes in both temperature and precipitation, even a relatively small change in e.g., magnitude and seasonality has the potential to significantly reduce agricultural productivity and increase the risk of crop failure (Rhiney et al., 2016).[50] [51]

[50] Rhiney et al., 2016
[51] Ortiz Bobea et al., 2021

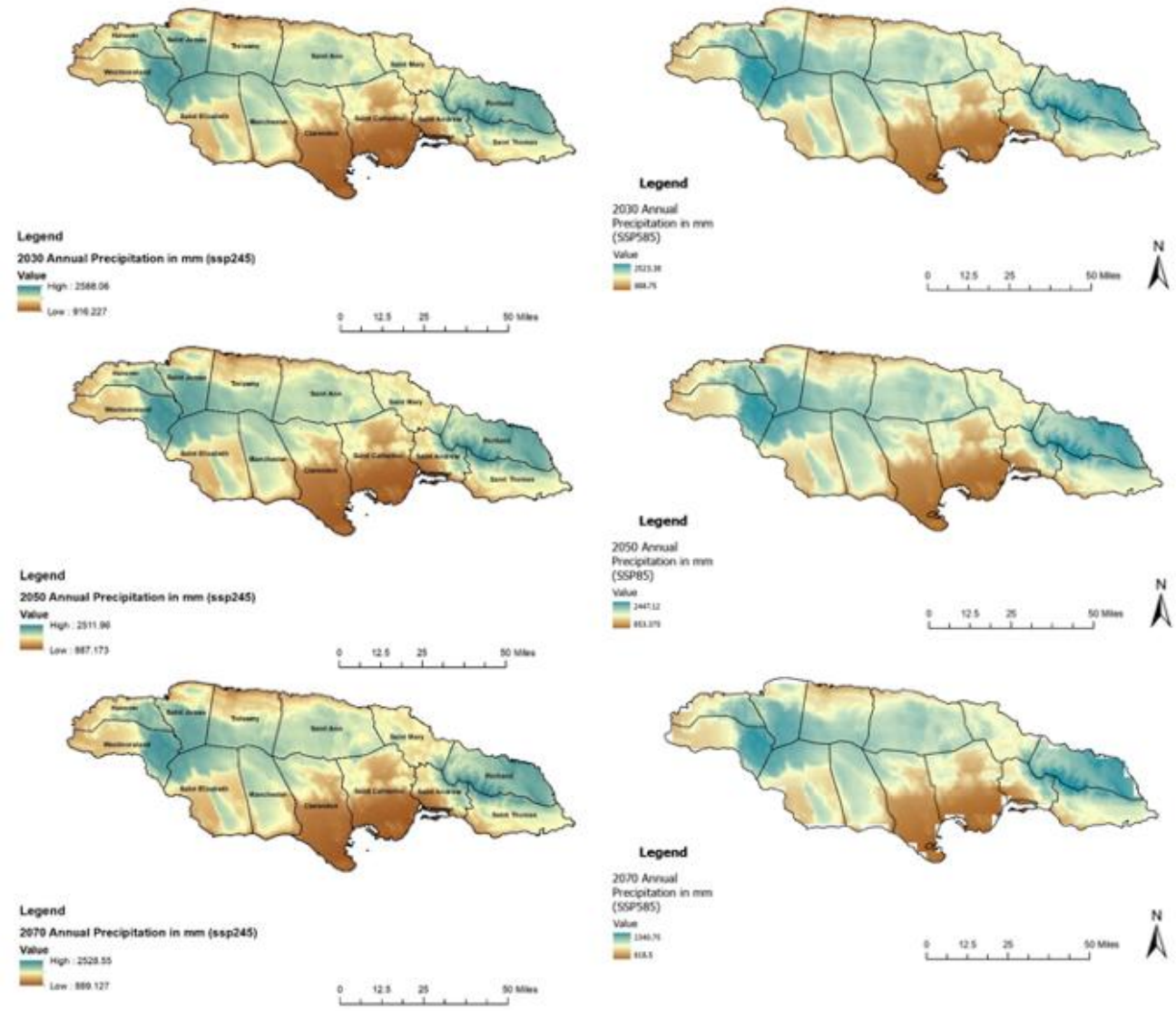


Figure 6 Maps of absolute changes in annual mean precipitation (mm). Left column is SSP245, right column is SSP585. Top row is for the 2030 period, middle row is the 2050 period, bottom row is the 2070 period.

34. **Tropical cyclones:** Despite the uncertainties associated with cyclone projections, the Sixth Assessment Report of the IPCC concludes that **tropical cyclones will intensify with global warming**, including increased rain rates (high confidence), higher proportions of intense cyclones (high confidence) and increased peak wind speeds (high confidence). Projections from the Columbia HAZard Model show an **increase in the frequency of most cyclone types for Jamaica**.[52] The figure below shows that the most significant increases in frequency are to be expected for category 5 cyclones, which have highest wind speed and damage capacity, under the SSP245 scenario.[53]

35. **Hydrology and water stress:** Future projections indicate a general deterioration in water stress conditions due to increasing mean temperatures and consequent rises in potential evapotranspiration. The median values for **increased irrigation water requirements** vary between 7% and 12% across different Parishes, with similar patterns observed across all crop types. The agro-hydrological analysis reveals significant spatial variation in water stress patterns across Jamaica. The northern and central parts of the island demonstrate higher hydrological suitability for crop cultivation, while **the southern regions of the southern parishes (particularly Saint Elizabeth) exhibit heightened vulnerability to water stress for rainfed crops**. Future projections from the agro-hydrological model, which considers the vertical water balance of crop areas, indicate that **this north-south disparity is expected to widen**.
36. The CRVA analysis highlights the evolving climate suitability of key crops in Jamaica, with some gaining potential under future conditions. However, increased suitability does not equate to climate resilience. Below is a summary of the findings of the CRVA analysis, described in the Feasibility Study Annex 2, in which details of recommended climate-resilient interventions

[52] Lee et al., 2018
[53] Note the very large error bars, particularly for Category 4 and 5 hurricanes, bearing in mind the aforementioned challenges with forecasting tropical cyclones.

per crop are described. These findings reinforce the need for targeted climate adaptation strategies to enhance agricultural resilience across the value chain.

- **Sweet potato** will likely lose some suitability in the coming years, particularly in areas that currently display moderate suitability. Rising temperatures may exacerbate pest and disease pressures, such as the West Indian sweet potato weevil and nematodes, potentially leading to yield losses and quality reductions.
- **Yam** production is highly sensitive to shifting rainfall patterns, as it is primarily rain-fed. Changes in precipitation and increasing temperature could reduce soil moisture availability, impacting both yield and quality. Rising temperatures may also accelerate the life cycle of nematodes, heightening the risk of crop damage.
- **Cassava** is a promising crop in the context of climate change, capable of producing food under unfavourable conditions when most other major crops cannot. Growing local interest is driven by its ability to withstand dry conditions and moderate heat stress. However, pest and disease expansion in a warming climate may still pose challenges.
- **Irish potato** will likely lose suitability in the coming decades, with projections indicating a significant decline in suitable areas island-wide. Rising temperatures are expected to increase heat stress, negatively impacting tuber formation, reducing yield, and heightening susceptibility to diseases, ultimately shortening storage life and decreasing market viability.
- **Onion** production will depend more on irrigation compared to crops such as sweet potato and groundnut under projected climate conditions. Increased temperatures, erratic rainfall patterns, and extreme weather events could reduce yields, increase pest problems, and heighten the risk of crop failure, particularly in drought-prone regions.
- **Mango** will gain suitability in the coming years, performing well in relatively dry regions and integrating well into agroforestry systems. However, Jamaica's underdeveloped mango value chain and climate variability may introduce production challenges, requiring strategic interventions for resilience and market growth.
- **Watermelon and cucurbits** (pumpkin, squash, cantaloupe, etc.) will see increased suitability in most project parishes up to the 2070s. However, these crops rely on consistent moisture and are vulnerable to seasonal rainfall shifts. Water scarcity during critical growth stages could lead to reduced yields, smaller fruit sizes, and lower sugar content.
- **Tomato** production is expected to decline in some regions due to rising temperatures, which can disrupt pollination, hinder fruit set, and reduce overall yield and quality. While higher-elevated areas in central Jamaica may gain suitability, some western coastal regions are projected to lose optimal conditions for cultivation

Impacts and vulnerabilities on agriculture

37. Drought and rainfall variability are key limiting factors for agricultural productivity and food security in Jamaica. For example, in 2014, Jamaica experienced its most severe drought in forty years, causing annual agricultural production to fall by 30% (USAID, 2021). Agricultural output also suffers from a **very high percentage of food loss and waste** (estimated between 30–40% on average), owing to challenges with pest and disease management, less-than-optimal harvesting, transportation, and post-harvest management to include temperature-controlled storage.
38. Studies have shown that cropping systems in Jamaica are already being impacted by shifts in climatological conditions. Jamaican farmers have noticed changes in weather patterns in recent decades yet display mixed responses in terms of adaptation strategies. In contrast, farmers in southwestern Jamaica have demonstrated adaptive capacity, displaying good knowledge of seasonal drought and climate variability and awareness of and concern with the interaction of drought and their cropping schedules (Gamble et al. 2010). Farmers in St. Elizabeth often rely on local knowledge to monitor early warning signals for episodic environmental events, especially regarding temperature and rainfall changes. In accordance with farmer perceptions of worsening drought conditions, satellite estimates of rainfall suggest that severe (high magnitude/long-duration) **drought events are becoming more frequent in the parish**. The study showed that the early growing season (which is aligns with the smaller early rainy season for the island) is drying faster than the primary growing season in September-October. Beyond climate conditions the study showed that **local food production in the region have been hampered by a mix of socioeconomic factors** including increases in production costs and enhanced competition from food imports. Increased rainfall variability will pose a huge challenge for rainfed agricultural systems and increasing temperatures will increase crop water stress due to higher rates of evapotranspiration (Curtis et al., 2014).
39. For Jamaica, a decline in agricultural output due to impact of hydro-meteorological events (including drought) has been a hallmark of the sector over the past two decades with **production decline being aligned with years of major hydrometeorological events**. Local knowledge of these climate patterns is essential in the agricultural business to determine the optimal time for planting and harvesting different crops. Farmers face greater difficulty in planning for production due to the increased risk of crop failure as droughts reduce seed germination, cause changes in the growing season, reduce yield, increases in evapotranspiration and water demand, increase incidences of pest and disease infestations, and of wildfires (UNCTAD, 2014). In addition, during extended periods of drought, there are higher mortality rates among livestock, decreased livestock yields, and greater competition for water.

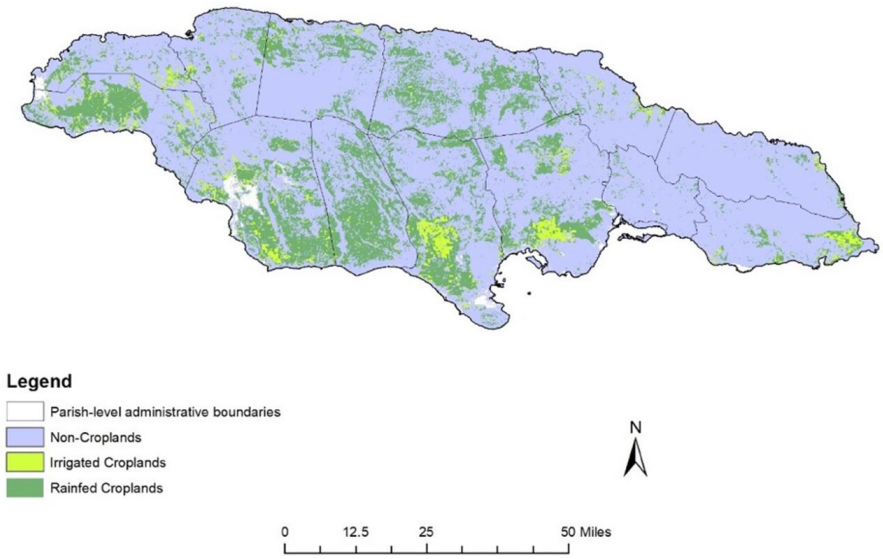


Figure 7: Map delineating irrigated and rainfed croplands based on Landsat data. Source: Pons, 2025.

40. **Smallholders will be disproportionately impacted by increases in temperature and greater rainfall variability owing to the sensitive nature of their cropping systems and underlying socio-economic conditions**. Approximately 65% of farmers surveyed in one study reported that droughts are getting longer and more frequent than in the past (Campbell et al. 2011). Smallholder cropping systems may be entirely dependent upon the amount and timing of annual rainfall, as the majority are open field and rainfed. In fact, most farming systems lack irrigation. Despite having one of the largest amounts of agricultural land areas in the region, less than 10% of the land is irrigated in Jamaica (Trotman et al. 2009). This lack of irrigation infrastructure, along with difficulties procuring water during extended drought periods – linked to limited state capacity and restrictive costs – exacerbates the challenges created by drying conditions (Campbell et al. 2011). One implication with these predicted changes to temperature and rainfall is that some crops may lose suitability increasing the risk of crop failure and food insecurity, whilst others will gain suitability. Smallholder farmers will therefore need to adapt to new realities, which may include switching to more adapted crops and varieties. Some existing adaptation strategies used in Jamaica include favouring drought- tolerant crops (e.g., scallion, beetroot, sweet potato, and cassava), mulching, or using drip irrigation (Rhiney et al., 2015; Campbell et al. 2011).
41. Results from several **crop-climate suitability studies indicate that there will be a general decline** in the agro-ecological conditions required to cultivate some crop species that are now commonly grown in Jamaica by 2050. The island is projected to experience a geographical shift in the ecological niche of most crops to higher altitudes as mean temperature increases, resulting in fewer available areas for open field cultivation by 2050 (Rhiney et al., 2015; Eitzinger et al., 2013). Increasing temperatures will also negatively impact livestock productivity. For instance, heat affects the ability of animals to thermoregulate in pastures without water and shade, and in broilers (chicken) without cooling aids. Studies have reported heat stress-induced decreases in poultry egg production and quality, and broiler productivity, as well as adverse impacts on goat production (Lalo et al., 2018). Projections that examined thermal heat stress conditions for small ruminants and livestock determined that, at the 1.5 degrees Celsius increased temperature scenario, broilers and ruminants will experience severe heat stress for most months of the year in comparison to the present day, where in winter months there is reduced stress.
42. **Hurricanes and tropical storms have caused significant damage to the agriculture sector**. The areas most affected by the passage of hurricanes have been concentrated in the eastern and southern sections of the island, as these are where most hurricanes make landfall. Multiple hurricanes in 2004 (Charley and Ivan) and 2005 (Dennis, Wilma, and Emily), as well as tropical storms Gustav in 2008 and Nicole in 2010, and Hurricane Sandy in 2012, for example, resulted in an estimated USD 143,395,996 in damage and crop losses (Rhiney et al., 2018). The second most severe hurricane to make landfall in Jamaica was Hurricane Beryl in 2024, a Category 4 storm, causing agricultural losses estimated at over JMD 4.7 billion (USD 30 million).[54] **Flooding can lead to crop losses** through inundation of farms, waterlogging, soil nutrient loss and transportation disruptions both uplands and in the plains. Additionally, flooding delays land preparation, planting and harvesting, and leads to loss of income, increased wastage of crops, and reduced food security. Data from MOAFM reported that flood rains in October and November 2020, resulted in over USD 16.8 million in losses of agricultural assets, including livestock, crops, and agricultural infrastructure. **Hurricane Melissa** in 2025, which made landfall in the breadbasket of Saint Elizabeth much like Beryl, led to destruction of crops and significant flooding and landslides, leaving dozens of communities cut off and isolated.[55]
43. Changes in climate will also **increase the risk of impacts from pests and diseases**. Pests, weeds and disease occurrence and distribution are projected to increase with global warming, amplified by climate-change induced extreme events with negative consequences for food production, food security and livelihoods. The sector has been impacted by several major crop epidemics and pest outbreaks in recent years, possibly attributed to climate-induced triggers, including the Beet

[54] Rapid Impact Assessment Report of Hurricane Beryl, 2024
[55] https://www.worldweatherattribution.org/climate-change-enhanced-intensity-of-hurricane-melissa-testing-limits-of-adaptation-in-jamaica-and-eastern-cuba/

Armyworm (scallion and onion) and coffee leaf rust (coffee), broad mite (Irish potatoes), and a range of fungal disease (sweet yam) that have reduced yields and led to pre-harvest food loss. Managing pest and disease outbreaks require greater use of control measures thus increasing the cost of production, increasing management burden, with implications for food safety as well as the risk of biodiversity loss and ecosystem impacts.

44. ADAPT Jamaica will deploy a range of CRA and FLW-interventions to overcome the climate risks and impacts in the target area. A summary of how the interventions overcome climate risks and impacts is provided below in Table 1. Further details of the adaption benefits these interventions bring is described in the Project Description under Output 1.2 (Table 4) and also in Annex 2 Feasibility Study.

Table 1: Key climate change hazards, associated impacts and adaptation interventions

Hazard	Climate risk	Evidence of impacts	Adaptation interventions
Temperature	▪ The highest magnitude of change in annual mean temperature is of 1.87°C and the minimum increase in mean annual temperature is expected to be at 1.68°C, against the 1970-2000 baseline. ▪ An **overall increase in mean annual temperature** is expected for the entire country with some high increases expected to occur in some areas with the project geographic location. ▪ Under a two °C target, a further extension of warm spells can be expected by up to 70 days, leading to a shift to a pre-dominantly drier region (5%–15% less than present-day) and a more significant occurrence of droughts (Taylor et al. 2018).	▪ Combined increases in maximum temperatures, accompanied by decreases in precipitation, are likely to increase agricultural droughts, especially in rainfed dominated agricultural systems. ▪ Future projections indicate a general deterioration in water stress conditions due to increasing mean temperatures and consequent rises in potential evapotranspiration. The median values for **increased irrigation water requirements** vary between 7% and 12% across different Parishes, with similar patterns observed across all crop types. ▪ Increased temperature could increase the presence of pests and fungal and bacterial diseases that could damage planting material ▪ Increased temperatures will increase soil moisture loss and increase heat stress ▪ Warmer temperatures will increase the risk of crop pests and diseases, including impact from nematodes ▪ Higher temperatures will likely increase post-harvest losses under existing conditions ▪ Increased risk of spoilage and root rot under warmer climate	▪ Dry storage facilities ▪ Temperature-controlled storage facilities ▪ (Solar powered) irrigation systems ▪ Water conservation and management infrastructure (other than irrigation systems) ▪ Greenhouse farming systems to withstand category 4-5 hurricanes ▪ Climate-resilient shade houses ▪ Mulching / composting ▪ Climate-resilient crop varieties (drought and/or flood resilient) ▪ Integrated Pest Management (IPM) ▪ Post-harvest passive evaporative cooling system ▪ Solar-powered drying facilities
Precipitation	▪ Under both SSP245 and SSP585 scenarios, there is a **gradual decline in precipitation** amounts across most regions through 2070. ▪ The southern parishes, already experiencing relatively low rainfall, show further reductions in precipitation.	▪ This progressive drying trend, combined with the projected temperature increases, raises significant concerns for water security, agricultural productivity, and ecosystem stability ▪ Cocoa farmers in Jamaica highlight that 84.7% of farmers indicated experiencing changes in the traditional rainy season's timing and 78% of the study participants reported observing changes in rainfall patterns over the last 20 years (Rhiney et al., 2017). ▪ Intensification of heavy rainfall events will increase the risk of soil loss and landslides. ▪ Shifting and increasingly variable rainfall patterns could impact crop yield and quality	▪ Water conservation and management infrastructure (other than irrigation systems) ▪ Drainage systems ▪ Mulching / composting ▪ Climate-resilient crop varieties (drought and/or flood resilient) ▪ Soil / Land use (sustainable) management, conservation and restoration practices ▪ Integrated Nutrient Management (INM) and soil amendments

Hurricanes and tropical storms	▪ **Frequency of high-intensity cyclones (Category 4 and 5) is likely to rise**, the total number of tropical cyclones may remain stable or even decrease due to changes in large-scale atmospheric circulation patterns (Knutson et al. (2020)) ▪ **Tropical cyclones will intensify with global warming**, including increased rain rates (high confidence), higher proportions of intense cyclones (high confidence) and increased peak wind speeds (high confidence) (IPCC Sixth Assessment Report).	▪ Physical damage to crops, soil erosion, destruction of farming infrastructure, and disruption of supply chains. ▪ Tropical cyclones are responsible for the majority of damage caused by floods. ▪ Hurricane Ivan (2004): USD 120 million agricultural losses. Major crops like bananas, coffee, and yams suffered extensive damage. ▪ Hurricane Beryl (2024): USD 207 million impacting 50,000 farmers and 23,000 ha of farmland ▪ Hurricane Melissa (2025): estimated USD 7 billion in damages ▪ Extreme weather events like hurricanes and floods could further impact road and storage infrastructure.	▪ Hurricane-resistant Automatic Weather Stations ▪ Dry storage facilities ▪ Greenhouse farming systems to withstand category 4-5 hurricanes ▪ Climate-resilient shade houses ▪ Soil / Land use (sustainable) management, conservation and restoration practices ▪ Temperature-controlled storage facilities
Floods and landslides	▪ Short-duration rainfall events, lasting one or two days, are the primary drivers of severe flooding, constituting 67% of such occurrences (CSGM, 2021). ▪ Portland and St. Thomas are particularly **susceptible to landslides** during periods of heavy rainfall (Avalon-Cullen et al., 2023)	▪ Recorded economic losses from landslides in Portland and Saint Thomas include road blockages and damages, village and town isolation, damage to forests, and damming of rivers costing millions of dollars (Miller et al., 2009; Bhalai, 2010). ▪ Impacts from floods may make some roads impassable limiting access to markets ▪ Yield losses or harvest delays linked to the impact from extreme climate events may affect crop quality, appearance and yield and in turn impact farmer income	
Drought	▪ Standardised Precipitation Evapotranspiration (SPEI) values for 2009-2018 show a shift from near-normal conditions **toward moderate drought conditions**.	▪ As a sector using 75% of local water supply, agriculture in Jamaica is severely undermined by droughts, leading to crop losses and reduced production (CARIBSAVE, 2009; CSGM, 2021). ▪ Reported critical impacts of droughts on agriculture include soil degradation and loss of fertility (CARIBSAVE, 2009), food shortages from reduced production and an increase in the price of produce (CSGM, 2021). ▪ Notable declines in agricultural production in 2013 and 2014 have been directly linked to the occurrence of severe droughts (CSGM, 2021). ▪ Small farmers suffer significant losses related to lower yield from drought conditions especially, as their crop production is highly dependent on rainfall (Bedasse, 2018).	▪ (Solar powered) irrigation systems ▪ Water conservation and management infrastructure (other than irrigation systems) ▪ Solar-powered hydroponic systems ▪ Composting/vermicomposting sheds and provision of equipment for mulching (mulchers/shredders) ▪ Mulching / composting ▪ Climate-resilient crop varieties (drought and/or flood resilient) ▪ Soil / Land use (sustainable) management, conservation and restoration practices ▪ Integrated Nutrient Management (INM) and soil amendments ▪ Family orchards ▪ Agroforestry ▪ Post-harvest passive evaporative cooling system

45. **Project site selection:** the project sites were prioritised using a combined climate risk and vulnerability index (CRVA) encompassing: (i) crop suitability loss to represent potential climate hazards threatening crop production; (ii) poverty incidence among agriculture-dependent rural communities; and (iii) rural areas with high rates of food poverty where individuals or households do not have the ability to afford a nutritionally adequate diet. By combining these three indices, the CRVA can holistically assess the vulnerability of Central Jamaica's agricultural and rural communities. The integration process consists of overlaying the indices by superimposing the maps of climate hazards, food poverty, and poverty levels to identify priority areas where risks are compounded. The resulting integrated index was then standardised from 0 to 100 to create a final index resulting in very high priority (75-100), high priority (50-75), medium priority (25-50) and low priority categories (0-25).

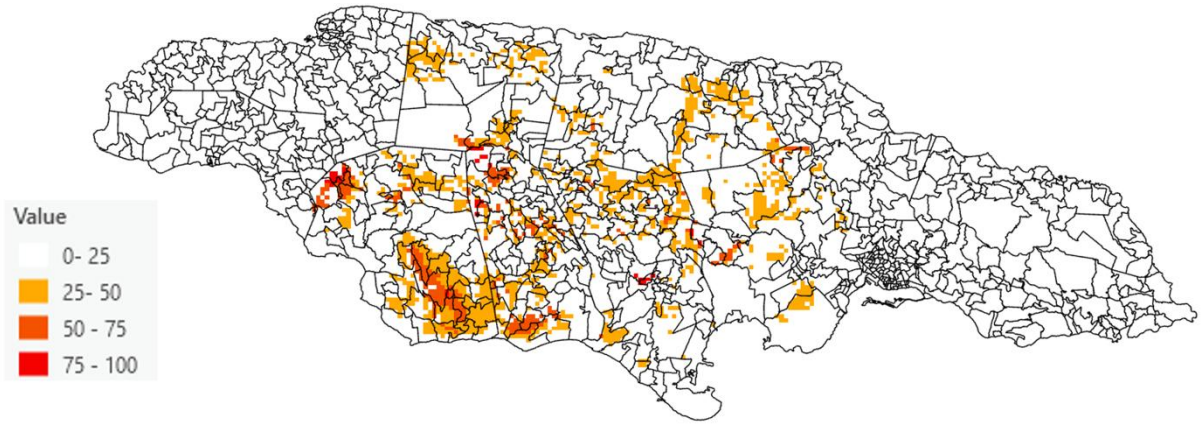


Figure 8 Map of Jamaica showing the CRVA index with priority categories: very high priority (red), high priority (dark orange), medium priority (orange), low priority (white).

46. Very high priority areas face the most severe challenges due to compounded climate hazards, high sensitivity, and low adaptive capacity. They are predominantly located in southern and central Jamaica, including parts of St. Elizabeth, Manchester, and Clarendon. The *very high priority* areas include Jamaica's breadbasket in St. Elizabeth in the south-central region. This parish has a predominantly rural population engaged in agriculture, with high levels of poverty and food insecurity. Dominated by smallholder farming, with key crops including yams, cassava, and vegetables. However, recurring droughts and poor irrigation systems exacerbate vulnerabilities. It remains an area with high susceptibility to droughts, reduced rainfall, and heat stress. Farmers face declining crop suitability, especially for traditional staples.
47. The next area with very high priority districts includes Manchester, which is centrally located, characterised by high-altitude plateaus. It still holds a significant rural population with high rates of poverty and dependence on small-scale farming. It is mostly known for coffee, yam, and citrus farming. Land tenure insecurity and poor soil management practices are common in this parish. Vulnerability to rainfall variability and soil erosion due to deforestation is a condition of many of the districts in Manchester.
48. Finally, another parish with very high priority for intervention is Clarendon. Located in the south-central region bordering St. Catherine and Manchester. Like the previous parishes, it holds high rural poverty, with a large population of smallholder farmers and agricultural labourers. Although it does not show many areas under very high priority, it has many districts under the medium priority category. Water scarcity and reliance on rain-fed agriculture are major challenges in Clarendon but this parish has also been prone to extreme weather events like hurricanes and droughts. A full description of the project sites and the list of districts per parish under each category can be found in Annex 2 Feasibility Study. While project resources are strategically concentrated on the six central parishes prioritized by the Climate Risk and Vulnerability Assessment (CRVA) due to their compounded climate and socioeconomic vulnerabilities, the project maintains a **national scope** for its public good investments. Specifically, **Component 3 activities**, focused on strengthening the agrometeorological network, enhancing forecasting capabilities, and delivering Early Warning Systems (EWS), are designed to **serve all fourteen parishes of Jamaica**, ensuring that the entire national agricultural sector benefits from improved climate preparedness and actionable risk intelligence. Component 4 is also national in scope aiming at establishing the enabling environment for long-term scale-up of Climate Resilient Agriculture and Food Loss and Waste reduction interventions thorough policies, incentives, and access to finance. The systems and tools delivered by the project will support all fourteen parishes in Jamaica beyond the implementation period.
49. Bauxite reclamation areas (or sites) present a unique opportunity to transform previously mined lands into productive agricultural zones while also addressing climate resilience. Jamaica has had approximately 10,541 hectares of mined-out bauxite lands, of which 7,725 have been reclaimed for productive use.[56] They represent a valuable resource in a country where agricultural land is limited. The Jamaica Bauxite Institute (JBI) is the agency responsible for agricultural reclamation. Farmer associations in these areas ("**clusters**") employ greenhouses, given the challenges with post-mining soil conditions. The project's targeting of greenhouse clusters in bauxite reclamation areas is strategically aligned with Jamaica's agricultural development priorities and represents an efficient approach to building climate resilience. These clusters represent existing investments by JBI and farmer groups, with established organisational structures and demonstrated farmer commitment. The presence of functioning farmer associations and basic infrastructure makes these sites ideal for introducing and scaling up climate-resilient technologies. The project builds upon these existing institutional arrangements and farmer networks, increasing the likelihood of successful adoption and long-term sustainability. Farming clusters in the districts prioritised by the CRVA will be selected for interventions. Owing to JSIF co-financing for the project, ADAPT Jamaica will prioritise interventions in clusters that fall within the high and very high priority districts identified by the CRVA, with particular focus on established farming clusters that demonstrate existing organisational structures and farmer commitment. These include clusters operated by community councils and benevolent societies such as the Blackstonedge Benevolent Society and Water Valley Community Council Benevolent Society in St. Ann (with sites in Tobolski, Kensington, Friendship, and Armadale), Mocho Community Council Benevolent Society in Clarendon (with sites in Belmont, Foga, Dawkins, and Settlement District), JBI South

[56] https://our.today/jamaicas-bauxite-mining-sector-experiences-37-drop-in-royalty-collection/

Plateau/South Manchester Community Council in Lancaster, Redberry, Ewarton Community Council and Riverhead in St. Catherine.

50. **Agro Parks** represent Jamaica's flagship initiative for modernising agricultural production through centralised infrastructure and support services. These parks were established by the Government of Jamaica to promote agricultural clustering, efficient resource use, and market linkages, making them ideal platforms for demonstrating and scaling collective climate-resilient technologies. The parks' established management structures through the Agro-Investment Corporation (AIC) provide an institutional framework for implementing collective climate adaptation measures. Moreover, Agro Parks typically have higher concentrations of commercial farmers with some investment capacity, allowing for more sophisticated and larger-scale climate-resilient technologies to be demonstrated and potentially replicated. During the project preparation phase, a shortlist of relevant Agro Parks has been identified with the highest priority for climate-resilient investment needs: **Spring Plain, Amity Hall,** and **Ebony Park**. During implementation, the project will work in close consultation with AIC to select either Spring Plain or Amity Hall for the implementation of collective climate-resilient irrigation solutions, while Ebony Park has been chosen as the site where a multipurpose cold chain facility will be installed. The project takes a forward-looking approach to ensure climate resilience is integrated into the planning of future agricultural production zones, and will also develop a comprehensive operational manual for climate-resilient planning of new agricultural production zones, ensuring that climate adaptation measures are systematically incorporated into the design phase of future Agro Parks.

Related projects/interventions

51. This project builds on and complements existing initiatives aimed at enhancing climate resilience, fostering adaptation, and improving rural livelihoods in Jamaica.
52. One key project ADAPT Jamaica will build continuity and synergies with is the **Second Rural Economic Development Initiative (REDI II),** funded by the World Bank and implemented by the Jamaica Social Investment Fund (JSIF), who acts as Executing Entity for this project. REDI II seeks to enhance access to markets and promote climate-resilient approaches for beneficiaries in the agriculture and tourism sectors. REDI II focuses on strengthening value chains and developing tourism clusters by linking producers, service providers, and buyers to improve economies of scale for small agricultural and tourism enterprises. The project also facilitates climate-resilient agricultural investments, builds the capacity of public entities, and improves rural infrastructure to enhance market integration and access. The project also facilitates climate-resilient agricultural investments, builds the capacity of public entities, and improves rural infrastructure to enhance market integration and access. Importantly, REDI II sub-projects include the strengthening of farmer clusters as well as specialised clusters in bauxite reclamation areas, developed in collaboration with the Jamaica Bauxite Institute (JBI). Building directly on REDI II's dual focus on agriculture and tourism, ADAPT Jamaica will strengthen value chain linkages specifically targeting the tourism market, which provides consistent year-round demand for project commodities like tomatoes and sweet potato. The project will assist farmer organizations in brokering formal private purchase agreements with hotels, restaurants, and supermarkets, ensuring that increased climate resilience translates into improved access to high-value markets. ADAPT Jamaica will leverage these investments and the technical expertise of JBI to further enhance climate resilience in these unique agricultural zones, ensuring sustainable utilisation of reclaimed lands while addressing their specific climate vulnerabilities. **ADAPT Jamaica will specifically complement REDI II's climate resilience objectives by addressing key vulnerabilities exposed during Hurricane Beryl and Melissa.** According to JSIF's post-Beryl rapid impact assessment, approximately 90% of greenhouses in southern parishes were damaged (JSIF, 2024).
53. Annex 2 Feasibility Study provides an overview of other relevant projects with which synergies could be built or projects whose lessons learned, in the case of concluded projects, could inform ADAPT's activities. A summary is provided below:

Table 2: Related and past projects

Project characteristics	Objective and results	Potential synergies
Title: Jamaica: Social Protection for Increased Resilience and Opportunity (SPIRO) **Budget:** USD 20 million (loan) **Implementation period:** 2023–2030 **Donor:** World Bank **Agency:** Ministry of Labour and Social Security	**Objective:** To strengthen Jamaica's social protection systems to enhance resilience to climate and socio-economic shocks, improve labour market opportunities, and bolster social safety nets for vulnerable populations. **Results:** The project is expected to improve the adaptability of social protection frameworks, integrating resilience-building measures that address both climate and socio-economic vulnerabilities. It will increase access to economic opportunities for at-risk groups, strengthened household-level resilience, and enhanced national systems for labour market integration and emergency response.	SPIRO's emphasis on strengthening social protection aligns with ADAPT's efforts to bolster financial and institutional support for climate-resilient agricultural practices. The project's focus on improving economic opportunities for vulnerable populations resonates with ADAPT's work in developing investment-ready CRA packages and specialised credit lines. Additionally, SPIRO's integration of resilience measures into social safety nets offers a valuable framework for ADAPT's efforts to develop risk-sharing mechanisms, such as crop insurance and disaster preparedness.
Title: GAIA **Budget:** USD 152.5 million (equity) **Implementation period:** 2023-? **Donor:** GCF	**Objective:** To establish a blended finance platform for climate adaptation and mitigation in 19 vulnerable countries, prioritizing Least Developed Countries (LDCs) and Small Island	Project GAIA's focus on providing long-term loans to scale climate investments (in 19 of the most vulnerable countries, which includes Jamaica) aligns with ADAPT's efforts to develop investment-ready packages for climate-resilient agriculture.

Agency: MUFG Bank, Ltd	Developing States (SIDS), with 70% of funds allocated to adaptation projects. **Results:** GAIA provides long-term loans to scale climate investments, ensuring access to finance for adaptation initiatives in vulnerable communities. The platform addresses systemic challenges in climate finance, enabling the development of high-impact projects tailored to country needs.	ADAPT Jamaica will seek potential synergies and collaboration with respect to activities under Output 3.2.
Title: Improving Phytosanitary, Food Safety and Market Access Opportunities along the Hot Pepper Value-Chain **Budget:** USD 1.07 million (grant) **Implementation period:** 2022–2025 **Donor:** FAO **Agency:** FAO	**Objective:** To train farmers, input suppliers, and nursery operators in pest surveillance, reducing pest prevalence and strengthening prevention / control measures. **Results:** Ensuring a consistent supply of high-quality clean seeds that meet international standards, which supports the development of export-oriented value chains for hot peppers.	ADAPT could integrate pest management and food safety measures from this project into its climate-resilient practices for agriculture. The focus on export-oriented value chains complements Activity 1.3.3, boosting market access for smallholder farmers.
Title: Essex Valley Agricultural Development Project **Budget:** USD 35.50 million (grant) **Implementation period:** 2018–Ongoing **Donor:** FCDO (formerly DFID), administered by CDB **Agency:** NIC	**Objective:** To enhance production and productivity of farmers in Essex Valley in a socially inclusive, gender-equitable, and climate-sensitive manner. **Results:** The project contributed to improved irrigation systems, enhanced agricultural production and marketing facilities, energy efficiency / renewable energy integration, complemented by technical assistance and land management measures.	This project, which improved irrigation systems and enhanced agricultural productivity, shares synergies with Activity 1.1.2 on designing resilient farm interventions. The gender-equitable practices and energy-efficient solutions can also inform Activity 1.3.4, which involves training farmers in financial literacy and business planning.
Title: Southern Plains Agricultural Development Project **Budget:** USD 21.9 million (grant) **Implementation period:** 2018–Ongoing **Donor:** FCDO (formerly DFID), administered by CDB **Agency:** NIC	**Objective:** To support the expansion and improvement of irrigation and farm access roads, strengthen commercial market linkages for small-scale farmers, install flood control systems, and construct packing houses and Global GAP-compliant structures. **Results:** The project has made 795 hectares of land in Parnassus (Clarendon), Amity Hall, and Bridge Pen (St. Catherine) available for lease to both large- and small-scale commercially oriented farmers; and offered direct social and gender benefits by improving access to agricultural resources, technical expertise, organizational strengthening, and capacity building. Key infrastructure improvements include delivered under the project include enhanced irrigation, drainage, farm roads, and flood control systems, incorporating climate resilience measures. Additionally, the project supported the construction of packing houses and Global GAP-compliant structures incorporating renewable energy schemes.	With its emphasis on flood control systems, irrigation, and improved access to agricultural resources, this project aligns with Activity 1.1.2, enhancing climate-resilient infrastructure. Its success in strengthening rural market linkages complements Activity 1.3.3, supporting farmers in accessing finance and markets. Lessons learned from this project will inform ADAPT Jamaica's interventions related to irrigation and rainwater harvesting, as NIC will be a key advisory institution in the project.
Title: Jamaica Disaster Vulnerability Reduction Project (JDVRP) **Budget: U**SD 30 million (loan) **Implementation period:** 2016–2024 **Donor:** World Bank **Agency:** Jamaica Social Investment Fund	**Objective:** The objective of the Jamaica Disaster Vulnerability Reduction Project is to enhance the country's resilience to disaster and climate risks by improving hazard data collection and analysis, reducing physical vulnerabilities through infrastructure investments, and strengthening disaster preparedness and response systems. The project focuses on technical assistance, structural risk reduction measures, contingent	This project aligns closely with ADAPT Jamaica's objectives by providing foundational tools and infrastructure that can be directly integrated into its climate-resilient agricultural initiatives. The National Disaster Risk Information Platform and Coastal Risk Atlas offer critical data that can inform ADAPT's agrometeorological forecasting and early warning systems, enhancing farmers' preparedness for extreme weather events. The

	emergency response, and project administration to mitigate the impacts of adverse natural events and ensure rapid recovery. **Results:** The project contributed to the construction of critical infrastructure such as fire stations and urban drainage networks, retrofitting of key public facilities, and establishment of coastal revetments to mitigate risks in vulnerable areas. It has developed advanced tools like a National Disaster Risk Information Platform, a Coastal Risk Atlas, and spatial planning systems to enhance risk management capabilities. The project has also equipped emergency response teams with modern vehicles and rescue equipment, enhancing their ability to respond effectively to natural hazards.	retrofitting of drainage systems and coastal revetments aligns with ADAPT's efforts to safeguard agricultural land and infrastructure in flood-prone and coastal areas. Overall, this project can provide key lessons learned for all activities relating to increasing resilience as part of post-Hurricane Beryl and Melissa efforts.
Title: Improving Climate Data and Information Management (PPCR-Jamaica) **Budget:** USD 6.8 million (grant) **Implementation period:** 2015-2021 **Donor:** World Bank **Agency:** PIOJ	**Objective**: To improve the quality and use of climate-related data for effective planning and action at local and national levels. **Results**: The project upgraded hydrometeorological systems, developed downscaled climate scenarios, and conducted vulnerability assessments. It produced climate-resilient planning tools and implemented national campaigns to increase climate change awareness and behaviour change.	PPCR-Jamaica's enhancement of hydrometeorological systems and downscaled climate scenarios aligns directly with ADAPT's climate information services and early warning systems-related activities under Component 2. Its vulnerability assessments can serve as a reference for ADAPT Jamaica's targeted interventions in hurricane preparedness and risk management.
Title: Caribbean Pilot Programme for Climate Resilience (PPCR) – Regional Track **Budget:** USD 10.3 million (grant) **Implementation period:** 2015–2020 **Donor:** IDB **Agency:** University of the West Indies – Mona Office for Research and Innovation	**Objective**: To strengthen regional capacity for climate adaptation through improved data collection, geospatial analysis, and applied initiatives in key sectors. **Results**: The program enhanced regional climate monitoring networks, developed downscaled climate models, and implemented adaptation initiatives in health, fisheries, agriculture, and water sectors. It also supported the integration of climate risks into development planning.	The regional PPCR's development of climate models and data-sharing networks aligns closely with ADAPT Jamaica's activities related to agrometeorological networks and forecasting capabilities. Its initiatives in agriculture and water sectors can provide a framework for ADAPT Jamaica's model farms and scaling-up interventions in climate-resilient agriculture. Furthermore, its emphasis on integrating climate risks into planning aligns with ADAPT Jamaica's work in creating an enabling environment for CRA solutions, including policy revisions and market baselines.
Title: Enhancing the Resilience of the Agriculture Sector and Coastal Areas **Budget:** USD 9.97 million (grant) **Implementation period:** 2012–2023 **Donor:** Adaptation Fund **Agency:** Planning Institute of Jamaica	**Objective:** To protect livelihoods and food security in vulnerable communities by improving land and water management for the agriculture sector, strengthening coastal protection, and building institutional capacity to address climate change risks. **Results:** Component 2 (Improving Water and Land Management in the Agriculture Sector) and several activities under Component 3 (Building Institutional and Local Capacity) have been completed. Rescoping of Component 1 (Increasing Climate Resilience of the North Eastern Coastline) in 2018 necessitated approval of extensions, and while delays remain, shoreline protection works are ongoing in four additional locations.	This project, aimed at protecting livelihoods through improved land and water management, disaster risk reduction, and institutional capacity-building, provides valuable insights into integrating resilience measures into agricultural landscapes. It can inform activities under Outcome 1 by sharing lessons on demonstrating CRA interventions that incorporate disaster preparedness. Additionally, its focus on strengthening institutional capacity complements activities fostering collaboration and knowledge sharing on CRA initiatives under Output 3.1.
Title: Rural Water Supply Programme **Budget:** USD 30.00 million (loan) **Implementation period:** Not started yet **Donor:** CDB	**Objective:** To finance the rehabilitation and upgrade of water supply systems in rural communities, including renewable energy integration, feasibility studies, and the implementation of a social and gender-responsive communications plan. **Results:** The project will contribute to a	ADAPT Jamaica will seek to find synergies with this project on its activities related to efficient drip irrigation systems and rainwater harvesting.

Agency: Rural Water Supply Limited (RWSL)	feasibility study, final designs and bid document for community catchment and wayside tanks and rainwater harvesting systems in schools and institutions in the target communities; implementation of a social and gender-responsive communications plan; and institutional strengthening of RWSL.	

54. ADAPT Jamaica distinguishes itself through its integrated and holistic approach to building climate resilience. Where previous projects demonstrated that standalone interventions in either technology transfer, extension services, or market access fail to create lasting resilience, ADAPT Jamaica combines these elements into a cohesive framework. The project builds upon well-established entry points: such as farmer clusters, bauxite reclamation areas, Agro Parks; utilising existing solutions and institutional frameworks, rather than reinventing implementation structures, ensuring efficiency while avoiding duplication of efforts.
55. ADAPT Jamaica also seeks to create lasting change by forging strategic public-private partnerships and developing sustainable business models for climate services, catalysing private sector engagement through business incubation, agricultural enterprise networking platforms, standardised climate finance taxonomies, and specialised credit products. By establishing formal service provision arrangements between public and private sectors and developing investment-ready packages for climate-resilient agriculture, the project creates market-driven mechanisms that will sustain adaptation efforts beyond the project lifetime. This focus on business models, financial innovation, and enabling environment transformation represents a significant departure from business-as-usual approaches that have historically focused on direct support to farmers without addressing systemic market barriers to climate resilience.

B.2 (a). Theory of change narrative and diagram (max. 1500 words, approximately 3 pages plus diagram)

Barrier analysis

56. Several barriers prevent smallholder farmers and organizations, agricultural value chain actors, government stakeholders and financial institutions from adopting or investing in climate-resilient agriculture practices and food, loss and waste reduction technologies that are less vulnerable to climate impacts in Jamaica. ADAPT Jamaica has been designed to address and overcome these interconnected barriers using cross-sectoral approaches spanning CRA, FLW-reduction, climate-proofing infrastructure, early warning systems and locally tailored financial mechanisms. Table 3 outlines the identified barriers and the project's approach to address them.

Technological barriers

57. **Barrier 1: Limited access to and adoption of climate resilient agriculture and food loss and waste reduction technologies and infrastructure.** This barrier is particularly acute among smallholder farmers who constitute the majority of agricultural producers in the target parishes, where the technological gap creates a systemic weakness in adapting to climate change impacts. The characteristics of the population in the target regions, with low per capita income and limited access to resources, severely restrict farmers' ability to invest in and adopt modern agricultural technologies that could enhance their resilience to climate impacts. This includes access to irrigation technologies, climate-resilient varieties, water storage facilities, hurricane-resistant greenhouses, soil conservation and management technologies, renewable energy solutions and adequate storage facilities.
58. **Barrier 2: Inadequate early warning systems and climate information services for agricultural resilience.** The current technological infrastructure for collecting, processing, and disseminating climate information is inadequate to meet the needs of the agricultural sector in terms of providing timely and actionable information to smallholder farmers in remote areas. This includes insufficient geographic coverage of weather stations and recording stations. While there are long-term rainfall records for some areas, data for other essential parameters like temperature, humidity, and wind is sparse, and not consistently collected across multiple locations. MSJ provides weather and climate information, however, the available data often fails to reach farmers in a timely and usable format that could inform agricultural decision-making. The current communication channels for climate information are inadequate for reaching the diverse farming population. Even when climate information is available, it is not packaged and disseminated in a way that is easily understood by farmers. Farmers demonstrate limited capacity to interpret and apply available climate information to their agricultural practices.

Market and financial barriers

59. **Barrier 3: Limited market integration and weak value chain participation of smallholder farmers.** Despite agricultural potential, smallholder farmers struggle to move beyond subsistence farming and effectively engage with formal markets. Smallholder farmers lack access to reliable market information, including pricing, demand, and quality requirements, limiting their ability to negotiate fair prices and vulnerable to exploitation. While RADA's Agricultural Business Information System (ABIS) aims to address this gap, its reach and effectiveness remain limited, particularly among more remote farming communities. Limitations in post-harvest infrastructure, technology, and access to training mean many farmers cannot consistently provide buyers with the quantity and quality of products they require. Inadequate storage, packaging, and pre-processing facilities also contribute to post-harvest losses and reduce the marketability of their produce. Farmer organisations and cooperatives are few and have limited capacity to achieve economies of scale, invest in shared infrastructure, and develop the collective marketing arrangements necessary for effective market participation. The situation is particularly challenging for women farmers, who face additional social and cultural barriers to participation.
60. **Barrier 4: Limited access to finance and insurance for climate-resilient agriculture and food loss reduction investments.** Smallholder farmers face a cyclical challenge where their inability to access adequate financing, due to high interest rates and stringent collateral requirements, prevents them from investing in essential climate-resilient infrastructure and technologies. The agricultural sector only represents 2.38% of the total loan portfolio of deposit-taking institutions, highlighting a severe financing gap that hampers the adoption of climate-resilient practices and technologies. Financial institutions' **perception of agricultural lending as high-risk** fundamentally constrains the supply of credit to the sector. Commercial banks and other deposit-taking institutions demonstrate persistent **reluctance to lend to smallholder farmers**, particularly for climate resilience investments that often involve **unfamiliar technologies** and longer payback periods. This risk aversion is reflected in their lending policies, which typically impose stringent collateral requirements and **high interest rates**, some as high as 30%, that effectively exclude most smallholder farmers. The agricultural insurance market in Jamaica remains underdeveloped, creating a significant gap in risk transfer mechanisms for farmers. On the supply side, insurance providers have historically been reluctant to enter the agricultural insurance market due to the inherent complexities of assessing and pricing agricultural risks, particularly for smallholders who often lack detailed production records and formal risk management practices. The increasing severity of climate-related extreme weather events in Jamaica further complicate risk assessment and premium calculations. On the demand side, smallholder farmers demonstrate low insurance uptake due to several factors: limited understanding of insurance products and their benefits, unaffordable premiums, and a lack of trust in insurance mechanisms.

Knowledge and information barriers

61. **Barrier 5: Limited knowledge and awareness of climate-resilient agricultural practices and food loss reduction measures and technologies.** The limited understanding of appropriate adaptive practices and technologies among smallholder farmers creates a significant obstacle to technology adoption, even in cases where access might be possible. Farmers' limited knowledge of proper implementation and potential benefits compounds their hesitancy to invest in new technologies. Traditional agricultural knowledge, while valuable, is becoming increasingly unreliable due to changing climate patterns, yet farmers lack access to updated information on climate-resilient alternatives, such as water management, soil conservation, and climate-adapted crop varieties. Extension services through RADA struggle to effectively disseminate knowledge about climate-resilient practices due to the high farmer-to-extension officer ratio (as high as 1 to 2,500 in certain areas), severely limiting the reach and frequency of technical support.

Capacity barriers

62. **Barrier 6: Limited institutional capacity for climate information services and agricultural extension.** The agricultural sector in Jamaica faces significant constraints due to insufficient institutional capacity within key agencies responsible for climate information services and agricultural extension in the Rural Agricultural Development Authority (RADA) and the Meteorological Service of Jamaica (MSJ), where limited human resources, technical capabilities, and infrastructural constraints hamper the effective delivery of climate-resilient agricultural support services. RADA's extension services face severe capacity constraints that limit their effectiveness in promoting climate-resilient agriculture. While there is growing recognition of the need for specialised climate information products for agriculture, the MSJ lacks the necessary systems and trained personnel to regularly produce and disseminate such information. There is a lack of inter-agency collaboration and coordination for data sharing and service delivery. The absence of formal data-sharing agreements and well-defined roles among agencies, leads to fragmented efforts and duplication of services.

Sociocultural barriers

63. **Barrier 7: Deeply-rooted gender norms, youth absence and ageing farming population limit equal participation in climate-resilient agriculture.** Women farmers in Jamaica face barriers that limit their equal participation in and benefit from climate-resilient agriculture. Despite their significant contribution to the agricultural sector as farmers, labourers, and value chain actors, gender-specific constraints prevent women from fully engaging in and benefiting from climate adaptation initiatives and agricultural support services. Access to and control over productive resources presents a fundamental barrier for women farmers. Land ownership data reveals that only 30% of women farmers own land, severely limiting their ability to make long-term investments in climate-resilient practices or access credit that typically requires land as collateral. The average plot size cultivated by women farmers is significantly smaller at 1.4 hectares compared to 2.6 hectares for male farmers, according to RADA. This disparity in land access directly impacts women's capacity to implement climate adaptation measures and achieve economies of scale in production. This also translates to disproportionate challenges in accessing agricultural finance, as financial institutions require land titles or other collateral that women typically lack.

Table 3: Summary of barriers and ADAPT's approach to address them

	Adaptation barriers	Project's approach to address the barrier
Technical barriers	Barrier 1: Limited access to and adoption of climate resilient agriculture and food loss and waste reduction technologies and infrastructure	**Output 1.1:** Model farms established to serve as farmer field schools to increase knowledge and capacity on CRA FLW-reduction interventions **Output 2.1:** CRA and FLW-reduction interventions are scaled up **Output 4.1**: Policies, partnerships, and incentives for CRA and FLW developed
	Barrier 2: Inadequate early warning systems for agricultural resilience	**Output 3.1**: Strengthened agrometeorological observation network and forecasting capabilities to support early warning systems
Market and financial barriers	Barrier 3: Limited market integration and weak value chain participation of smallholder farmers	**Output 2.1:** CRA and FLW-reduction interventions are scaled up **Output 3.1**: Strengthened agrometeorological observation network and forecasting capabilities to support early warning systems
	Barrier 4: Limited access to finance for climate-resilient agriculture and food loss reduction investments	**Output 2.1:** CRA and FLW-reduction interventions are scaled up **Output 4.1**: Policies, partnerships, and incentives for CRA and FLW developed **Output 4.2:** Access to finance and markets increased to support upscaling CRA and FLW practices and technologies
Knowledge and	Barrier 5: Limited knowledge and awareness of climate-resilient agricultural practices and food loss reduction measures and technologies and technologies	**Output 1.1:** Model farms established to serve as farmer field schools to increase knowledge and capacity on CRA FLW-reduction interventions

		Output 1.2. Knowledge on CRA and FLW-reduction interventions accessible to key value chain actors and implementation capacity increased **Output 2.1:** CRA and FLW-reduction interventions are scaled up **Output 4.1**: Policies, partnerships, and incentives for CRA and FLW developed **Output 4.2:** Access to finance and markets increased to support upscaling CRA and FLW practices and technologies
Capacity barriers	Barrier 6: Limited institutional capacity for climate information services and agricultural extension	**Output 3.1**: Strengthened agrometeorological observation network and forecasting capabilities to support early warning systems **Output 3.2**: CIS relevant to agriculture developed and delivered to farmers and other market actors
Sociocultural barriers	Barrier 7: Deeply rooted gender norms and disparities limit equal participation in climate-resilient agriculture	**Output 1.1:** Model farms established to serve as farmer field schools to increase knowledge and capacity on CRA FLW-reduction interventions **Output 4.2:** Access to finance and markets increased to support upscaling CRA and FLW practices and technologies

Theory of change

64. ADAPT Jamaica is designed to achieve four outcomes by reducing the vulnerability of farmers to climate change through the enhanced knowledge and demonstration of climate-resilient agriculture (CRA) and food loss and waste (FLW) reduction practices and technologies (Outcome 1), the adoption of CRA and FLW-reduction interventions (Outcome 2), enhancement of agricultural production systems to climatic events such as hurricanes by improving climate information services and early warning systems (Outcome 3), strengthening governance and institutional capacities to support CRA and FLW-reduction, and catalysing finance by enabling improved access of smallholder farmers to financing mechanisms and markets (Outcome 4).
65. The Theory of Change (ToC) statement, as presented below is: **IF** climate-resilient agricultural and food loss and waste reduction best practices technologies and innovations are implemented by farmers with an integrated value-chain approach in central Jamaica; **THEN** food security will be improved and smallholder livelihoods will be more climate resilient; **BECAUSE** farmers will have reduced vulnerability to climate change; agricultural production systems will be enhanced through improved climate information services and early warning systems; and the enabling environment will be improved for climate-resilient agriculture.
66. The Theory of Change shows how the proposed package of interventions overcomes barriers to adaptation and resilience and leads to concrete outputs and outcomes towards the goal of promoting a paradigm shift in Jamaica's agricultural sector. The project design not only addresses systemic vulnerabilities to climate change but also provides an opportunity to increase the resilience following the devastating impacts of Hurricane Beryl and Melissa to the agricultural sector, ensuring that recovery efforts contribute to long-term resilience. This paradigm shift will be achieved through four outcomes:
    - **Outcome 1:** Enhanced knowledge and demonstration of climate-resilient agricultural practices and technologies
    - **Outcome 2:** Adoption of CRA and FLW reduction interventions
    - **Outcome 3**: Enhanced resilience of agricultural production systems to climate change through improved climate information services and early warning systems
    - **Outcome 4:** Improved enabling environment for climate-resilient agriculture
67. The project will result in two co-benefits (economic, social):
    - Co-benefit 1. Improved job creation in the agricultural sector.
    - Co-benefit 2. Improved inclusion of women and youth in the agriculture sector
68. There are several assumptions underpinning the development of the ADAPT Jamaica Theory of Change. These include:
    - No adverse external events (public health emergencies, natural disasters) disrupt timely implementation of key project elements
    - Market forces in the agribusiness value chains remain stable during project implementation
    - Improved coordination, access to finance and information on increasing climate variability and climate resilient approaches will help to convince family farms to adopt and scale up climate-resilient agricultural measures and value chains
    - Local communities, especially women and youth are motivated to actively participate in implementing climate-resilient agricultural measures and value chains
    - Ministry of Agriculture Fisheries & Mining, RADA, and other national and local authorities embrace the transformation for improved coordination among their programmes, other sectors, and vulnerable communities

- Elections and potential change of government will not affect priorities for projects to address agriculture and climate change

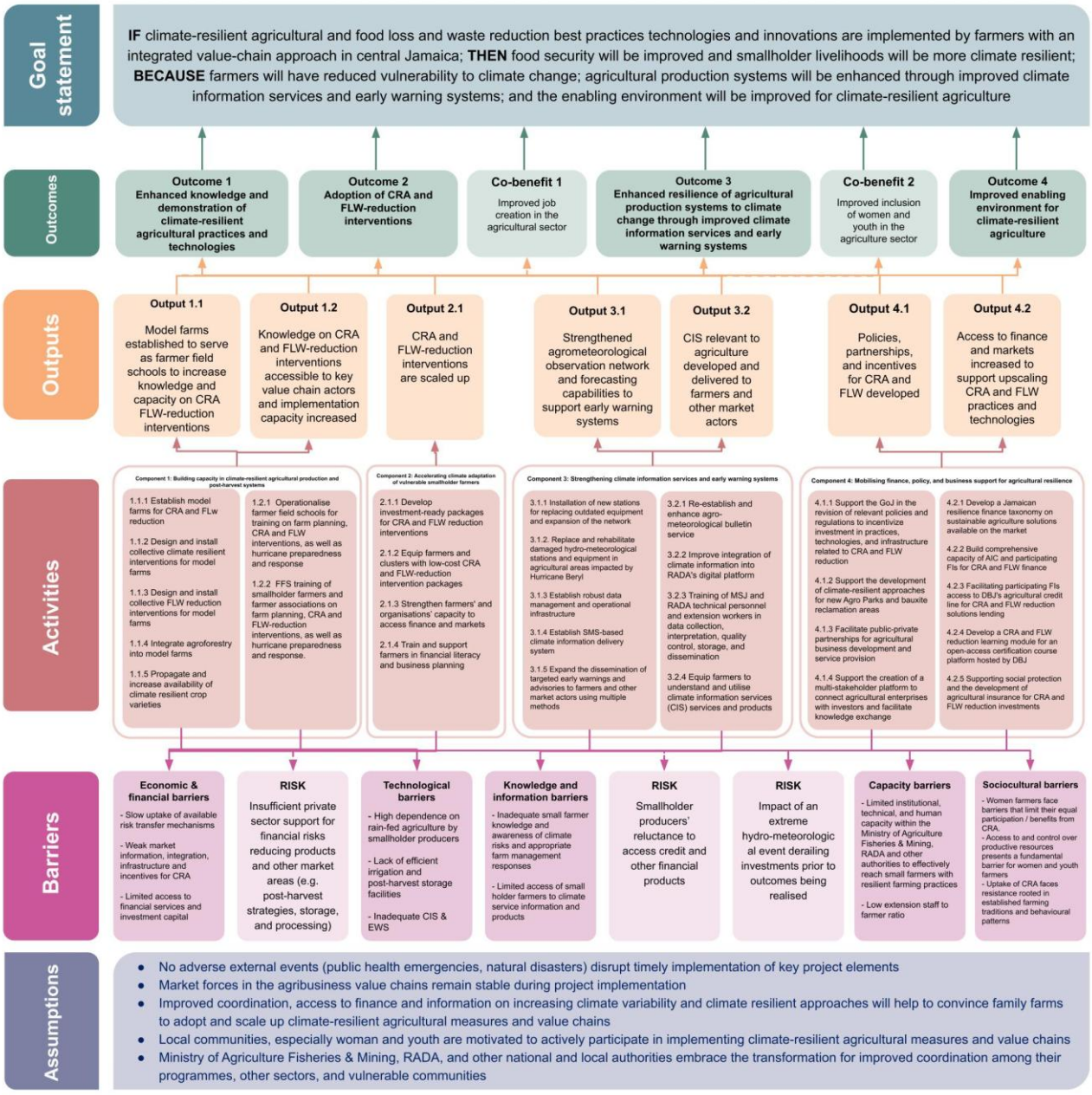


Figure 9 Theory of change

B.2 (b). Outcome mapping to GCF results areas and co-benefit categorization

Outcome number	GCF Mitigation Results Area (MRA 1-4)				GCF Adaptation Results Area (ARA 1-4)			
	MRA 1 Energy generation and access	**MRA 2** Low-emission transport	**MRA 3** Building, cities, industries, appliances	**MRA 4** Forestry and land use	**ARA 1** Most vulnerable people and communities	**ARA 2** Health, well-being, food and water security	**ARA 3** Infrastructure and built environment	**ARA 4** Ecosystems and ecosystem services

Outcome 1	☐	☐	☐	☐	☒	☐	☐	☐
Outcome 2	☐	☐	☐	☐	☒	☒	☐	☒
Outcome 3	☐	☐	☐	☐	☒	☐	☒	☐
Outcome 4	☐	☐	☐	☐	☒	☐	☐	☐

Co-benefit number	Co-benefit					
	Environmental	Social	Economic	Gender	Adaptation	Mitigation
Co-benefit 1	☐	☐	☒	☐	☐	☐
Co-benefit 2	☐	☒	☐	☒	☐	☐

B.3. Project/programme description (max. 2500 words, approximately 5 pages)

Project objective

69. ADAPT Jamaica is structured around four complementary components that create a holistic intervention framework for building climate resilience in Jamaica's agricultural sector. The project structure not only addresses systemic vulnerabilities but also provides an opportunity to increase the resilience following the devastating impacts of Hurricanes Beryl and Melissa to the agricultural sector, ensuring that recovery efforts contribute to long-term resilience.
    - **Component 1** focuses on transformative change at the farm level through practical demonstrations, knowledge transfer, and upscaling the uptake of CRA and FLW practices and technologies. By establishing model farms as learning centres, building capacity through farmer field schools, and providing targeted support for implementing CRA and FLW reduction technologies, this component creates a clear pathway from demonstration to widespread adoption.
    - **Component 2** builds on the demonstration and capacity building of the previous component to adoption of low-cost CRA and FLW reduction packages for the most vulnerable smallholder farmers.
    - **Component 3** strengthens the critical information infrastructure needed to support climate-informed agricultural decision-making. This component modernises, expands, and assists with the recovery from Hurricanes Beryl and Melissa of Jamaica's agrometeorological network, while simultaneously developing tailored information products and multi-channel dissemination systems that ensure climate information reaches farmers in an actionable and timely manner.
    - **Component 4** ensures the sustainability and scalability of CRA and FLW practices and technologies by creating a supportive ecosystem for investment in climate resilience. Through a combination of policy interventions, establishing a dedicated credit line for climate-resilient agriculture, and public-private partnerships, this component establishes the institutional frameworks and market conditions necessary for continued investment in climate-resilient agriculture.

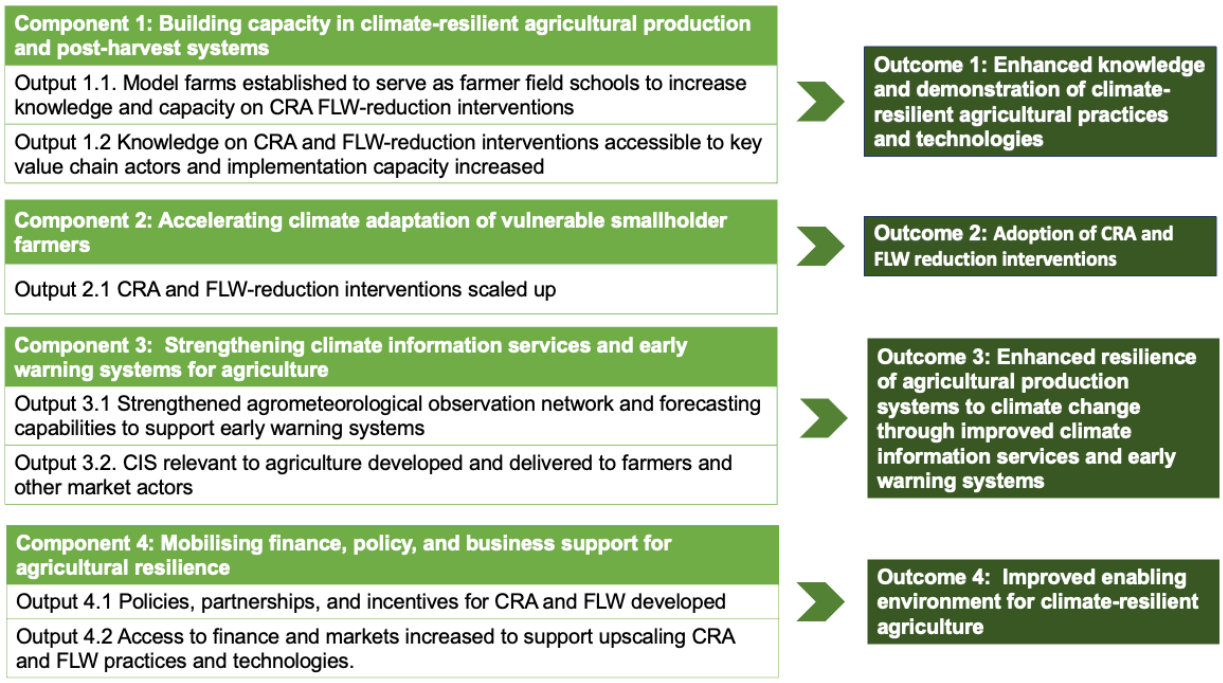


Figure 10 Summary of ADAPT Jamaica's Components, Outputs and Outcomes

70. The principal beneficiaries of this project are smallholder farmers and their households in the six target parishes of Jamaica who are vulnerable to climate change impacts, although all farmers in Jamaica will benefit from certain activities under Components 2 and 3. Direct beneficiaries are identified as participants in project activities (on average 3 members per household) and household members who receive direct support, while indirect beneficiaries are defined as household members who do not receive direct support, and other farmers residing in the project areas who will receive benefits from improvements from enhanced climate information systems, or to whom knowledge can be transferred by project participants. Smallholder farmers are defined as follows:
    - Working on land parcels of at least 0.5 acres (0.2 hectares), and no greater than 2 acres (0.8 hectares);
    - Dependent on low input, rain-fed agriculture;
    - Low asset ownership.
71. Participation in the project will be voluntary, based on self-nomination. To avoid double-counting and ensure equitable distribution of benefits, participation will generally be limited to one member per household. The project employs a cascading Farmer Field School approach where:
    - Model farmers are selected to establish model farms that serve as learning centres
    - These model farmers are trained as FFS facilitators
    - Model farms are established, and FFS groups are formed around each model farm
    - Model farmers provide ongoing mentoring and support to FFS participants for four years up to the project completion (Year 3 to Year 6)
72. Key eligibility criteria to apply as a model farmer include:
    - Registration with RADA up to date
    - Active engagement in farming as primary livelihood
    - Access to agricultural land (owned, rented or leased with proof of written agreement) of at least 2 acres
    - Experience with at least two of the identified climate-resilient agricultural practices or technologies
    - Willingness to implement additional climate-resilient agricultural practices or technologies
    - Commitment to participate in project trainings and knowledge sharing activities up to project completion (Year 6)
73. The project will provide targeted support through enhanced climate information services and early warning systems (EWS) to farmers across all of Jamaica. For the EWS interventions, direct beneficiaries include all registered farmers who receive climate information and early warnings through RADA's digital platform, SMS notifications and RADA's mobile app, or other dissemination channels such as radio, WhatsApp, or local community-based information superspreaders. Indirect beneficiaries include household members.

74. **Value chains:** Food crop production in the area is already being negatively affected by a mix of factors including climate change, low application of climate-resilient best practices, and high and pre-and post-production food loss resulting in reduced yields and decreased incomes. These negative outcomes are linked to increased variability in rainfall, particularly in the traditional growing seasons, longer periods of drought, increases in temperatures and more frequent extreme weather events. The problem is exacerbated by an overdependence on rainfall for the watering of crops, inadequate marketing and post-harvest infrastructure, environmental degradation, and increased incidence of pests and diseases infestation. The identification of crops best adapted to current and future climate conditions is therefore a vital step in building Jamaica's resilience to climate change impacts. A total of twelve (12) crops were identified for prioritisation under the ADAPT Jamaica project. These are:
    - **Root vegetables**: sweet potato, yam, cassava, Irish potato
    - **Alliums**: onion, scallion
    - **Fruit**: mango
    - **Cucurbits**: pumpkin, watermelon, cucumber
    - **Nightshades**: hot pepper, tomato
75. These crops meet ADAPT Jamaica's criteria outlined in the screening phase of the project (see Annex 2 Feasibility Study) in terms of their importance in the local market, scale of production, market competitiveness, nutritional value, importance to sustaining smallholder livelihoods, and whether or not the crop is a government priority. The crops identified are amenable to mixed cropping systems including agroforestry systems that allow for a diverse income stream and increased resilience to both economic and ecological shocks. Small ruminants such as goats and sheep, as well as poultry, pigs and beekeeping provide an alternative income stream due to the high demand for these meats on the local market. There are also value-added opportunities such as goat milk and goat cheese, and honey products which could open doors to both local and international markets. The strategic selection of these complementary value chains is intended to uplift the livelihoods of smallholder farmers, enhance their economic resilience, and foster sustainable development within their communities.

Component 1. Building climate-resilient agricultural production and post-harvest systems
Outcome 1. Enhanced knowledge and demonstration of climate-resilient agricultural practices and technologies

76. Component 1 focuses on transforming agricultural practices and post-harvest management through a systematic approach to building climate resilience at the farm level. The project will establish a network of model farms serving as farmer field schools to demonstrate, validate, and promote climate-resilient agriculture and food loss and waste reduction interventions and technologies. These demonstration sites will showcase proven solutions including water management systems, protected agriculture, efficient solar-powered cold and dry storage facilities, and climate-adapted crop varieties. The model farm structures to be established under this component, particularly the greenhouse farming systems to be implemented in the clusters, are engineered to withstand high-category hurricane conditions through enhanced structural specifications, improved

foundation and anchoring systems, and hurricane-resistant design features. These installations will serve the dual purpose of demonstrating climate-resilient technologies while also supporting the rehabilitation of Jamaica's agricultural infrastructure, following the devastation of Hurricane Beryl in 2024 and Melissa in 2025.

77. Through this component, the project will also integrate agroforestry practices and enhance sustainable land management, lowering the pressure on forest ecosystems. These measures also support Jamaica in aligning with eligibility criteria for global financing mechanisms like the Tropical Forests Forever Facility (TFFF) and international regulations like the EU Deforestation Regulation (EUDR) on deforestation-free commodities (which requires that specific commodities and their derivatives sold in the EU are deforestation-free). Thereby the component also contributes to unlocking better access to premium markets and future green finance.
78. The component will facilitate knowledge transfer and capacity building through hands-on training and peer learning, ensuring that model farmers can effectively implement and maintain climate-resilient practices so they may transfer knowledge to their peers. Demonstration sites will be representative for both individual farm-level interventions as well as collective infrastructure for water management and post-harvest handling in Agro Parks and Production Zones, and farmer clusters in bauxite reclamation sites. The component also seeks to strengthen farmer organisations and market linkages to ensure that improved climate resilience translates into enhanced economic outcomes.

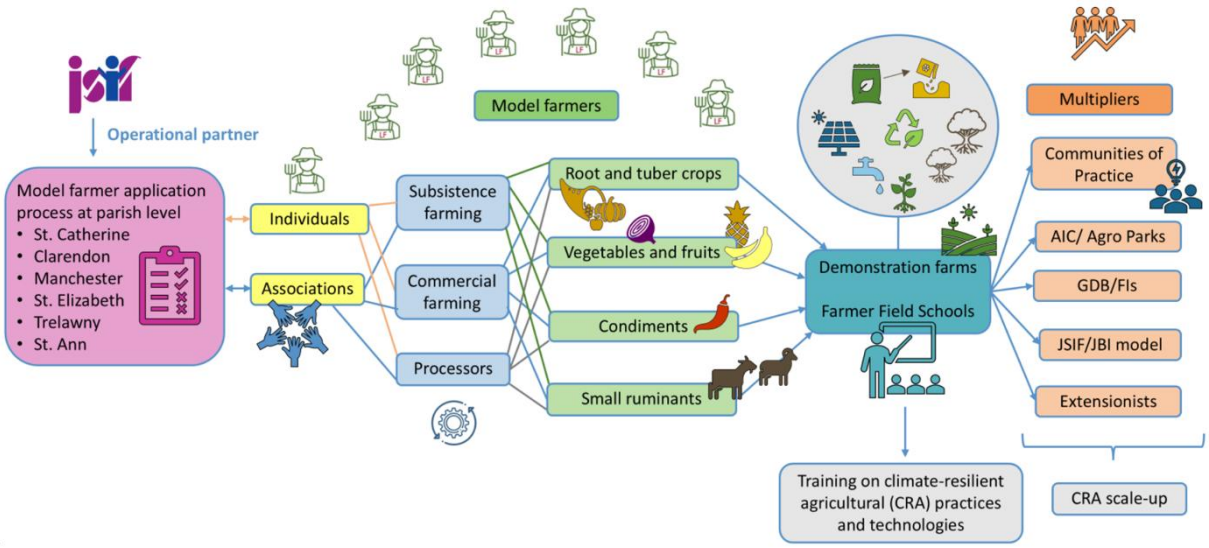


Figure 11: Execution model of Component 1

79. This component will be implemented by FAOJM together with JSIF as Executing Entities, working in close collaboration with the Forestry Department (as a beneficiary institution) for agroforestry interventions, the Agro-Investment Corporation (AIC) as a coordination and facilitation partner for demonstration sites in Agro Parks (AIC is not an implementing partner but provides access to Agro Park sites and farmer networks**)** for demonstration sites in Agro Parks, and JBI for demonstration sites in bauxite reclamation area farmer clusters.

Output 1.1 Model farms established to serve as Farmer Field Schools to increase knowledge and capacity on CRA FLW-reduction interventions

80. This output will establish a network of model farms that serve as farmer field schools (FFS) to demonstrate climate-resilient agriculture and food loss and waste reduction interventions. Following the impacts of Hurricane Beryl and Hurricane Melissa, which exposed critical vulnerabilities in existing agricultural infrastructure, model farm structures established under this output will be designed and constructed to withstand high-category hurricane conditions. Greenhouse farming systems will incorporate structural reinforcement designed for sustained high-intensity wind loads, enhanced anchoring foundations, hurricane-resistant glazing or cladding materials, and frame designs that address specific failure modes observed during recent storms. These hurricane-resistant specifications will provide practical evidence that climate-resilient agricultural production is achievable even in Jamaica's high-hazard environment. The model farms will showcase how proper engineering and construction standards can protect agricultural investments, maintain production capacity during extreme weather events, and support rapid recovery in hurricane aftermath. The strategic inclusion of FLW reduction is driven by significant quantified post-harvest losses, averaging 20% across all crops nationally and reaching up to 50% for high-value commodities like leafy vegetables and legumes. These interventions focus primarily on reducing pre-consumer Food Loss through climate-smart storage, handling, and processing technologies. Through a gender-sensitive selection process targeting both individual smallholders and farmer associations, model farms will be established across the target parishes which will serve as demonstration sites equipped with appropriate climate-resilient technologies and practices tailored to different farming contexts, from individual smallholder farms to collective infrastructure in Agro Parks and farmer clusters in bauxite reclamation sites.
81. Individual and collective model farms will be established with the utilisation of the Supplier-Delivered Beneficiary Grants modality, in accordance with FAO Manual Section 703 (MS703). In this modality Beneficiaries receive goods or assets within

a menu of technically cleared options from a pre-selected list of Supplier, as defined in the Beneficiary Grant Agreement, with part of the cost paid by FAO. Supplier-Delivered Beneficiary Grants projects must involve a contribution from the Beneficiary towards the agreed-upon purchase. It is expected that the majority of the cost will be paid by FAO, whereas Supplier-Delivered Beneficiary Grants must involve a contribution from the Beneficiary, be it financial or in-kind. The operationalisation of the modality for the project will take place during the inception period and ensure alignment with GCF policies and guidelines. The modality improves effectiveness, efficiency and speed by reducing administrative burdens, supporting localisation, and strengthening the beneficiary ownership and autonomy, acknowledging that beneficiaries are best placed to identify and manage their own needs in a timely manner. The key requirement is that a competitive selection of beneficiaries is carried out, which will allow to set high standards of commitment, innovation, and participation in trainings for model farmers. More details are provided in Annex 2.

82. The model farms will showcase both individual and collective interventions. Individual interventions include small rainwater harvesting systems, soil-based and soilless cultivation systems, and efficient drip irrigation systems powered by solar energy. Collective interventions focus on shared infrastructure for climate resilience, including water harvesting and irrigation systems designed for farmer clusters, and energy-efficient temperature-controlled storage and basic processing facilities. All solutions will be designed with emphasis on low-maintenance, hurricane-resilient systems that match farmer capacity and land size. These model farms, acting as practical demonstration sites, will also function as local climate finance hubs (Sub-activity 1.2.2.3), facilitating effective "matchmaking" between investment-ready farmers (Output 2.1) and participating financial institutions (Output 4.2). By showcasing proven technical and commercial viability, the farms will help identify and craft bankable CRA and FLW reduction investments for both private sector and public funding partners**.**

79. The output will integrate agroforestry systems into model farms to demonstrate multiple adaptation benefits including windbreaks, soil stabilisation, and water retention. The integration of agroforestry systems will specifically incorporate multi-purpose tree species to enhance nutrient recycling and nitrogen fixation, while promoting the cultivation of Non-Timber Forest Products (NTFPs) as a strategic co-benefit (Sub-activity 1.1.4.4). Furthermore, the system designs will actively foster natural habitats for essential pollinators (such as through beekeeping, as planned) and support biological control agents, thereby strengthening integrated pest and disease management. Dedicated nurseries will be established to support the integration of climate-resilient tree species. Additionally, the output will support research partnerships to conduct field trials of climate-resilient varieties for priority crops, focusing on heat and drought tolerance.

Activity	**Description**	**Key adaptation interventions**	**Target beneficiaries and sites**
Activity 1.1.1: Establish model farms to demonstrate interventions on CRA, FLW-reduction, and hurricane preparedness and response	The activity will establish a network of model farms to demonstrate CRA and FLW practices, technologies, and interventions to improve hurricane preparedness and response. Under the activity, a gender-sensitive diagnosis and baseline will be developed and an application process will be launched to identify farmers and integrate gender-sensitive considerations within the farm model t. Demonstration farms will be selected based on specific criteria, considering the needs and characteristics of different farmer groups. The selection process will ensure that at least 40% of selected model farmers are women and that at least 15% of model farmers are youth. Needs assessments will be conducted to identify required investments and design interventions. Solutions will be designed to match farmer capacity and land size, with an emphasis on low-maintenance, climate-resilient systems designed to withstand severe weather conditions. Model farms will be implemented through on-granting following the Supplier-Delivered Beneficiary Grants modality (FAO MS703). Demonstration sites will serve as farmer field schools and model farmers will be trained under Output 1.2.	▪ CRA technologies ▪ FLW-reduction innovations ▪ Water harvesting solutions - storage in tanks, flexible bladders or small ponds ▪ Soil-based and soilless cultivation systems – efficient irrigation and hydroponics systems powered by solar energy ▪ Low-cost agrometeorological tools and instruments	▪ Smallholder farmers ▪ Farmer clusters in Bauxite reclamation sites ▪ Smallholders leasing land in Agro Parks
Activity 1.1.2: Design and install collective climate-resilient interventions for model farms	The activity will establish collective climate-resilient model farms. A selection exercise will assess the technical feasibility of collective water harvesting and storage, irrigation, and protected agriculture for demonstration farms in Agro Parks and bauxite reclamation sites with the utilisation of the AGRI-Tool and integration gender considerations into the assessment. Tried and tested water harvesting and protected agriculture systems designed to withstand Category 5 hurricanes will be installed in selected farmer clusters in bauxite reclamation sites. Collective climate-resilient irrigation solutions will be installed in an Agro Park, either Spring Plain or Amity Hall, to be prioritised during project implementation. AIC will facilitate site access, provide coordination with Agro Park farmers, and support site selection processes, but procurement, installation, and technical oversight will be managed by the project Executing Entities (FAOJM/JSIF)**.** AIC's role is one of coordination and facilitation rather than implementation. Considering the post-Melissa impact, irrigation structures, water harvesting and protected agriculture are increasingly needed. All installations will serve as demonstration sites	▪ Water harvesting and storage ▪ Irrigation ▪ Protected agriculture to withstand Category 5 hurricanes	▪ Farmer clusters in Bauxite reclamation sites ▪ Smallholders leasing land in Agro Parks

	showcasing how enhanced engineering standards and hurricane-resistant construction techniques can protect agricultural investments and maintain production capacity even in Jamaica's increasingly severe hurricane environment. **For more information regarding the World Bank-funded JSIF REDI II project which will contribute co-financing to this activity, see Annex 2: Feasibility Study.**		
Activity 1.1.3: Design and install collective FLW-reduction solutions and protected agriculture interventions for model farms	This activity will install energy-efficient temperature-controlled storage technologies and basic processing units for collective use, all designed to hurricane-resistant specifications that ensure functionality and structural integrity during and after high-category storm events. The site selection process will use gender-responsive criteria and will evaluate storage and basic processing needs for model farms, considering the total number of associated farms, crop types, technical feasibility, and beneficiary capacity. Interventions will include cold and dry storage and basic processing units, solar-powered cooling systems and essential post-harvest handling equipment. The interventions will focus on farmer clusters (including in bauxite reclamation areas) and will include the installation of a multipurpose cold chain facility will be installed at Ebony Park Agro Park. These interventions will be integrated with Component 4 to harness digital solutions, such as the Agricultural Enterprise Networking Platform (Activity 4.1.4.1). Combined with a MRV system for lending solutions (Activity 4.2.1.4), this infrastructure provides the basis for commodity tracking and food-loss-adjusted pricing in high valued products. MS 703 Supplier-delivered grant modality will be used for collective FLW-reduction and protected agriculture interventions for associations	▪ Energy-efficient temperature-controlled storage technologies (cold and dry) ▪ Basic processing units for collective use ▪ Solar powered cooling systems ▪ Essential post-harvest handling equipment	▪ Smallholder farmers ▪ Farmer clusters in Bauxite reclamation sites ▪ Smallholders leasing land in Agro Parks ▪ Farmer associations
Activity 1.1.4 Integrate agroforestry into model farms for resilient land management	The activity will support the integration of agroforestry systems. Existing plots with established agroforesters with support of the Forestry Department will be selected as agroforestry demonstration sites, and technical guidelines for agroforestry integration will be developed for model farms. The development of nurseries and their management protocols will further support the integration of agroforestry systems in demonstration farms of activities 1.1.1 to 1.1.3. and will provide employment and management opportunities for women considering SEAH prevention. Lastly, a monitoring tool will be designed to evaluate the effectiveness of agroforestry in mixed production systems for increasing climate resilience.	▪ Agroforestry	▪ Agro Parks ▪ Bauxite reclamation sites ▪ Smallholder farms ▪ Demonstration farms / farmer field schools
Activity 1.1.5 Evaluate, identify and propagate varieties with improved performance to abiotic factors associated with climate change	The activity will identify, conduct trials, propagate and enhance the availability to smallholders of varieties with improved performance against abiotic stressors, including supporting tissue culture labs, Research partnerships will be established to conduct selection and set up field trials focusing on up to three priority crops (cassava, sweet potato, yam, hot pepper). Field trials of promising varieties across different agroecological zones will take place in selected demonstration sites to test their resilience to abiotic factors. Demonstration farms will also be utilised to propagate climate-resilient seeds and seedlings to be distributed to supported farmers. The project will provide technical and financial support to strengthen existing tissue culture laboratories to improve their capacity for rapid multiplication of climate-resilient planting materials. This support will include equipment upgrades, training of laboratory technicians, and operational costs to ensure sustainable production of high-quality planting materials. Following Hurricane Melissa's impacts, field trial priorities will consider fast-maturing varieties and species that enable rapid restoration of production capacity in severely affected areas, with particular attention to crops demonstrating resilience to multiple stressors including hurricane damage, lodging, waterlogging, flooding, soil bacterial/fungal infections, saline soil conditions and extended drought periods.	▪ Climate-resilient crop varieties	▪ Demonstration plots at model farms

Output 1.2 Knowledge on CRA and FLW-reduction interventions accessible to key value chain actors and implementation capacity increased

83. This output will activate the farmer field schools on the model farms established in Output 1.1 for building capacity among smallholder farmers and farmer associations, including women and youth farmers, in climate-resilient agriculture and food

loss and waste reduction. Beginning with comprehensive training needs assessments, the output will develop practical training materials easily understandable for smallholders, covering production cycle planning, the various CRA and FLW-reduction interventions and technologies, and hurricane preparedness and response. These materials will be tailored for both model farmers who will serve as trainers and the vulnerable farmers who will be trainees and will include specific capacity building activities tailored to women farmers and SEAH prevention protocols and awareness raising tailored to all trained farmers A summary of the key interventions for three types of model farm are provided below while a more in-depth description of the adaptation benefits can be found in Annex 2 Feasibility Study. The sample model farms are found in the Appendix of Annex 2.

Table 4: Model farm 1: Low-cost small-scale farm for CRA. Designed to enhance productivity and resilience with minimal investment. Using primarily locally-available resources and family labour (not budgeted).

Intervention	Climate hazards addressed	Adaptation benefits
(Solar powered) irrigation systems	▪ Heat stress ▪ Extended dry periods ▪ Seasonal drought ▪ Reduced water availability ▪ Irregular rainfall patterns	Efficient (solar-powered) irrigation systems ensure a consistent water supply, complementing the greenhouse environment by preventing excessive moisture loss and reducing reliance on external water sources.
Water conservation and management infrastructure (other than irrigation systems)	▪ Hurricane / tropical storm damage ▪ Extreme rainfall / flooding ▪ Heat stress ▪ Extended dry periods ▪ Seasonal drought ▪ Reduced water availability ▪ Irregular rainfall patterns ▪ Soil degradation / salinization ▪ Loss of biodiversity / ecosystem services	Water conservation and management infrastructure ensures efficient water use and availability throughout the growing season, reducing vulnerability to droughts and enhancing productivity.
Mulching / composting	▪ Extreme rainfall / flooding ▪ Heat stress ▪ Increased pest / disease pressure ▪ Extended dry periods ▪ Seasonal drought ▪ Reduced water availability ▪ Irregular rainfall patterns ▪ Soil degradation / salinization	Mulching and composting improve soil structure and fertility while maintaining moisture levels, which complements both irrigation and IPM by reducing soil erosion, nutrient leaching, and the risk of pest infestations related to poor soil health.
Integrated Pest Management (IPM)	▪ Hurricane / tropical storm damage ▪ Extreme rainfall / flooding ▪ Heat stress ▪ Increased pest / disease pressure ▪ Changes in growing season ▪ Extended dry periods ▪ Seasonal drought ▪ Reduced water availability ▪ Irregular rainfall patterns ▪ Soil degradation / salinization ▪ Loss of biodiversity / ecosystem services	Integrated Pest Management (IPM) and Integrated Nutrient Management work synergistically in a controlled environment. The greenhouse reduces pest pressure from external sources. Simultaneously, nutrient management strategies ensure plant health, reducing the risk of disease outbreaks and the need for synthetic inputs.
Integrated Nutrient Management (INM) and soil amendments	▪ Hurricane / tropical storm damage ▪ Extreme rainfall / flooding ▪ Heat stress ▪ Increased pest / disease pressure ▪ Changes in growing season ▪ Extended dry periods ▪ Seasonal drought ▪ Reduced water availability ▪ Irregular rainfall patterns ▪ Soil degradation / salinization Loss of biodiversity / ecosystem services	Integrated nutrient management and soil amendments optimise soil health and productivity by combining organic and mineral inputs, enhancing nutrient availability while reducing environmental impact.
Intercropping	▪ Heat stress ▪ Changes in growing season ▪ Extended dry periods ▪ Seasonal drought ▪ Reduced water availability ▪ Irregular rainfall patterns ▪ Soil degradation / salinization ▪ Loss of biodiversity / ecosystem services	Intercropping maximises land use efficiency by growing complementary crops together, reducing pest pressure, improving soil fertility, and diversifying income sources.

Table 5: Model farm 2: Low-cost mixed system small scale farm. This model integrates crops, livestock, and trees to enhance biodiversity, improve soil health, and provide diversified income streams.

Intervention	Climate hazards addressed	Adaptation benefits
Integrated systems (small ruminants, chicken, beekeeping)	▪ Hurricane / tropical storm damage ▪ Extreme rainfall / flooding ▪ Heat stress ▪ Changes in growing season ▪ Extended dry periods ▪ Seasonal drought	Integrated systems (small ruminants and chickens) diversify income sources while recycling nutrients within the system. Livestock manure can be used to enhance soil fertility, reducing the need for synthetic fertilisers. Chickens provide pest control by feeding on

	▪ Reduced water availability ▪ Irregular rainfall patterns ▪ Soil degradation / salinization ▪ Loss of biodiversity / ecosystem services	insects, complementing Integrated Pest Management (IPM) practices.
Climate-resilient shade houses	▪ Hurricane / tropical storm damage ▪ Extreme rainfall / flooding ▪ Heat stress ▪ Increased pest / disease pressure ▪ Extended dry periods ▪ Seasonal drought ▪ Reduced water availability ▪ Irregular rainfall patterns ▪ Soil degradation / salinization	Climate-resilient shade houses protects crops from extreme weather conditions (e.g., heatwaves, heavy rainfall).
Mulching / composting	▪ Extreme rainfall / flooding ▪ Heat stress ▪ Increased pest / disease pressure ▪ Extended dry periods ▪ Seasonal drought ▪ Reduced water availability ▪ Irregular rainfall patterns ▪ Soil degradation / salinization	Mulching and composting improve soil structure and fertility while maintaining moisture levels, which complements both irrigation and IPM by reducing soil erosion, nutrient leaching, and the risk of pest infestations related to poor soil health.
Integrated Nutrient Management (INM) and soil amendments	▪ Hurricane / tropical storm damage ▪ Extreme rainfall / flooding ▪ Heat stress ▪ Increased pest / disease pressure ▪ Changes in growing season ▪ Extended dry periods ▪ Seasonal drought ▪ Reduced water availability ▪ Irregular rainfall patterns ▪ Soil degradation / salinization ▪ Loss of biodiversity / ecosystem services	Integrated nutrient management and soil amendments optimise soil health and productivity by combining organic and mineral inputs, enhancing nutrient availability while reducing environmental impact.
Drainage systems	▪ Hurricane / tropical storm damage ▪ Extreme rainfall / flooding ▪ Extended dry periods ▪ Irregular rainfall patterns ▪ Soil degradation / salinization	Drainage systems prevent waterlogging and soil erosion.
(Solar powered) irrigation systems	▪ Heat stress ▪ Extended dry periods ▪ Seasonal drought ▪ Reduced water availability ▪ Irregular rainfall patterns	Efficient (solar-powered) irrigation systems (surface irrigation) provide a sustainable water supply, ensuring water availability while reducing reliance on external sources.
Intercropping and crop diversification	▪ Hurricane / tropical storm damage ▪ Extreme rainfall / flooding ▪ Heat stress ▪ Changes in growing season ▪ Increased pest / disease pressure ▪ Extended dry periods ▪ Seasonal drought ▪ Reduced water availability ▪ Irregular rainfall patterns ▪ Soil degradation / salinization ▪ Loss of biodiversity / ecosystem services	Intercropping and crop diversification optimise land use efficiency, reduce pest pressure, improve soil fertility, and increase income stability by spreading risk across multiple crops.

Table 6: Model farm 3: Greenhouse cluster - designed for vegetable production under protected conditions on bauxite reclamation areas, or regular non-bauxite reclamation area farmer clusters

Intervention	Climate hazards addressed	Adaptation benefits
Greenhouse farming systems to withstand category 4-5 hurricanes	▪ Hurricane / tropical storm damage ▪ Extreme rainfall / flooding ▪ Heat stress ▪ Changes in growing seasons	Provides protection against extreme weather events, enabling year-round production regardless of external conditions while significantly reducing crop losses during hurricane season. Design features include quick release for greenhouse plastic, reinforced frame systems, improved anchoring foundations, hurricane-resistant glazing or cladding materials, enhanced lateral bracing, and construction techniques proven in extreme wind conditions. These specifications address specific structural failure modes observed during recent Category 4-5 hurricane impacts, ensuring greenhouses maintain integrity during extreme weather events, protect crops and equipment from hurricane damage, enable year-round production regardless of external conditions, and significantly reduce crop losses during hurricane season.
Packaging shed	▪ Hurricane / tropical storm damage ▪ Extreme rainfall / flooding	Enables on-site post-harvest handling, improving produce quality, extending shelf life,

	▪ Heat stress ▪ Increased pest-disease pressure	and increasing market value through proper sorting, grading, and packaging facilities.
Water catchment pond	▪ Heat stress ▪ Extended dry periods ▪ Seasonal drought ▪ Reduced water availability ▪ Irregular rainfall patterns	Mined out pit to be used for irrigation
Solar-powered pump	▪ Heat stress ▪ Extended dry periods ▪ Seasonal drought ▪ Reduced water availability ▪ Irregular rainfall patterns	Ensures reliable irrigation with minimal operating costs, maintaining consistent water supply for crops.
Water tank	▪ Heat stress ▪ Extended dry periods ▪ Seasonal drought ▪ Reduced water availability ▪ Irregular rainfall patterns	Provides immediate water storage for daily operations, stabilises water pressure for irrigation systems, and serves as a critical backup during power outages or pump maintenance.
Cold room with thermal energy storage	▪ Hurricane / tropical storm damage ▪ Extreme rainfall / flooding ▪ Irregular rainfall patterns ▪ Heat stress ▪ Increased pest-disease pressure	Extends produce shelf life, reduces post-harvest losses, and enables market timing flexibility while improving product quality and increasing potential revenue through better price negotiation.
Solar plant	▪ Hurricane / tropical storm damage ▪ Extreme rainfall / flooding	Provides renewable energy for cold room, significantly reducing ongoing operational costs and carbon footprint while ensuring energy security in remote locations.

84. Through an intensive training of trainers (ToT) programme, model farmers will be equipped with both the technical knowledge and facilitation skills to effectively operate the farmer field schools. The FFSs will then deliver hands-on training through regular learning sessions and practical demonstrations. Training will cover climate-informed production planning, implementation of CRA and FLW-reduction interventions, and development of hurricane preparedness strategies (including management measures to reduce the impact of extreme rainfall, extreme heat and strong winds, and measures to protect farm assts and crops from hurricane and storm damage). Considering the post-Melissa impact, training modules that consider evaluating visible symptoms of salt stress in crops and recommending mitigation measures, as well as hurricane recovery actions and farm re-establishment actions that incorporate building back better principles will also be included. Study tours will be organised to facilitate knowledge exchange between different model farms, allowing farmers to observe and learn from a broad range of practices and technologies.
85. The output will also facilitate exchanges across the value chain by bringing together farmers, buyers, processors, and financial intermediaries during farm visits. The aim of these exchanges is to promote learning about farm planning, marketing, financial enterprise, and access to finance while showcasing CRA and FLW-reduction interventions to potential investors.
86. To ensure sustained implementation of improved practices, a mentoring system will be established where model farmers, supported by the project team, provide ongoing guidance to smallholder farmers in adapting their practices to changing weather patterns and market conditions.

Activity	Description
Activity 1.2.1: Operationalise farmer field schools for training on farm planning, CRA and FLW interventions, as well as hurricane preparedness and response	Under this activity, the project will identify area and crop-specific CRA and FLW gaps and challenges faced by model farmers, smallholder farmers, and farmer associations, integrating gender considerations to the analysis. It will develop and disseminate user-friendly training materials for model farmers (trainers) and vulnerable smallholder farmers (trainees), including SEAH awareness raising models. Model farmers will receive intensive ToT sessions to build their capacity as effective trainers. Model farmers will then facilitate hands-on learning sessions at their demonstration sites, following the developed curriculum which integrates a skill evaluation at the end of the sessions. FFS will operate on a regular schedule, combining practical demonstrations of climate-resilient practices with peer-to-peer learning opportunities.
Activity 1.2.2: FFS training of smallholder farmers and farmer associations on farm planning, CRA and FLW-reduction interventions, as well as hurricane preparedness and response	This activity concerns the implementation of hands-on training sessions in FFS covering all aspects of production planning. Sessions will be scheduled to accommodate both men's and women's availability, and include practical exercises using real farm scenarios and will focus on demonstrating CRA and FLW-reduction interventions, and hurricane preparedness and response, considering in particular the devastating impact of Hurricane Melissa. FFS will also be used to facilitate exchanges between farmers, buyers, service providers, and financial intermediaries during visits to the farms. Lastly, through mentoring, smallholder farmers will receive regular check-ins, troubleshooting sessions, guidance on adapting their farm plans, and a final evaluation to demonstrate increased knowledge

Component 2: Accelerating climate adaptation of vulnerable smallholder farmers
Outcome 2: Adoption of CRA and FLW reduction interventions

87. Through a graduated approach that moves from demonstration to widespread adoption, Component 2 will support the scaling up of successful interventions across the target parishes. This includes providing targeted support packages for vulnerable farmers by developing standardised investment-ready solutions and ongoing technical assistance.
88. Component 2 recognises that agricultural and food waste represent valuable resources that can be transformed into productive inputs and income-generating opportunities rather than disposal challenges. The component promotes a circular economy approach within smallholder farming systems, where crop residues, unmarketable produce, processing by-products, and agricultural waste are converted into organic soil amendments through composting and vermicomposting, or processed into

value-added products such as dried fruits, flours, animal feed, and organic fertilisers. This waste transformation approach delivers multiple benefits: reducing post-harvest losses and waste disposal costs, improving soil fertility through organic amendments, decreasing reliance on expensive synthetic fertilisers, creating supplementary income streams through sales of value-added products or excess compost, and reducing environmental impacts associated with agricultural waste. By integrating waste transformation into investment-ready packages and farmer training, Component 2 ensures that FLW reduction interventions contribute to both climate resilience and economic sustainability for smallholder farmers

Output 2.1 CRA and FLW-reduction interventions are scaled up

89. This output aims to facilitate the widespread adoption of climate-resilient agriculture and food loss and waste reduction interventions by developing standardised, investment-ready implementation packages, as well as strengthening farmers' capacity to access them. The output recognises agricultural and food waste as valuable resources that can be transformed into productive agricultural inputs and income-generating opportunities for smallholder farmers. Through practices such as composting, vermicomposting, and the integration of organic waste management, farmers will be supported in converting crop residues, unmarketable produce, and processing by-products into soil amendments, organic fertilisers, and value-added products that enhance soil fertility, reduce input costs, and create supplementary income streams
90. The investment-ready packages will be developed with clear technical specifications, operational requirements, and implementation guidelines, and will be designed as modular, scalable solutions that can be implemented incrementally as financing becomes available to enable farmers to build climate resilience progressively. Farmers demonstrating successful grant uptake will receive targeted support in financial literacy and business planning (Activity 2.1.4), enabling them to meet the criteria necessary to access the specialised credit line facilitated through DBJ (Output 4.2). This pathway ensures farmers build capacity and credibility, allowing them to engage with new financial and market partners as part of the project's long-term sustainability and exit strategy.
91. The output will provide targeted support through two parallel tracks. For the most vulnerable subsistence farmers, the project will provide low-cost sustainable intervention packages as grants, coupled with technical support to ensure proper implementation. This will also include assisting informal farmer groups in transitioning to registered associations. For more commercially oriented farmers, the output will strengthen their capacity to access finance and markets through comprehensive support in business planning, farm investment plans, financial literacy, and organisational development. Farmers demonstrating successful uptake of CRA and FLW reduction interventions under this output will receive targeted support for accessing the specialised credit line established through DBJ under Output 4.2, creating a clear pathway from grant-supported initial adoption to commercially financed scaling. This graduated approach of subsidised demonstration (Component 1) through grant-supported adoption (Output 2.1) to commercial financing readiness (Output 4.2) ensures sustainable access to finance beyond the project period, establishing a replicable model and developing sustainable financing mechanisms for climate adaptation.
92. To ensure sustainable uptake of interventions, the output will deliver practical "farming as a business" training, supporting farmers and associations in developing and implementing business plans. The output will also facilitate strategic linkages across value chains, helping farmer organisations establish formal agreements with input suppliers and buyers, including both public and private procurement opportunities, such that increased climate resilience also translates into improved market access and economic outcomes for participating farmers.
93. Following the devastating impact of Hurricane Melissa, this output will support the rehabilitation of essential agricultural infrastructure and equipment damaged by Hurricanes Melissa and Beryl, while also contributing to the recovery of affected livelihoods. A total of USD 3 million in livelihood recovery assistance will be delivered through a cash-transfer modality, implemented in accordance with FAO Manual Section 702, which governs the provision of cash transfers to individual beneficiaries for the purposes of responding to emergency needs, improving productive capacity, enhancing livelihoods, and strengthening resilience.
    Under this on-granting modality, beneficiaries will comprise two target groups:

    Vulnerable individuals who suffered loss of livelihoods
    This group will receive up to USD 1 million through a cash-for-work modality, providing short-term income support upon completion of clearly defined recovery tasks. These tasks will include clearing drainage systems, rehabilitating farm roads, and restoring farmland in Agro-Parks and demonstration sites.

    Women-led households that lost their backyard farming systems
    This group will receive a total of USD 2 million through a conditional cash transfers modality which will be disbursed in two tranches. First tranche will be released at beginning of trainings, while the second tranche will be released upon verification that recovery inputs have been purchased using the first tranche.

This cash-transfer approach provides immediate income support to households affected by Hurricane Melissa while simultaneously facilitating the rehabilitation of productive agricultural assets and the restoration of livelihoods. The modality is fully aligned with the objectives of the project and ensures delivery in accordance with FAO's technical, operational, and risk-management standards.

Table 7: Crop-specific climate-resilient interventions across the selected ADAPT Jamaica value chain

Crop	Input supply and land preparation	Production	Post-harvest handling and storage	Marketing
Sweet Potato	▪ Provision of improved planting materials ▪ Improved land management practices including contouring and installation of trenches/drains to facilitate greater run-off.	▪ Provision of improved sweet potato varieties ▪ Invest in wider uptake of water saving techniques and technologies including precision irrigation systems tailored to hillside farming conditions ▪ Enhance agronomic and climate advisory support to farmers ▪ Improved land management practices to reduce soil erosion and risk of landslides e.g. zero tillage, ridging and intercropping with complementary crops that can help stabilize slopes. ▪ Promotion of mixed cropping systems including agroforestry and other sustainable practices such as rotation	▪ Invest in climate smart storage facilities (e.g., solar powered, installation of fan systems for ventilation, dehumidifiers, ventilators etc.) ▪ Establish or rehabilitate dry storage facilities in targeted extension districts ▪ Improved climate-smart storage and processing facilities	▪ Improve market information system to enhance coordination between farmers and buyers ▪ Build public-private-producer partnerships and increase communication and collaboration between key value chain actors ▪ Opportunity for investing in value-added by-products such as sweet potato fries or chips that could increase and diversify income streams
Yam	▪ Provision of improved planting materials ▪ Improved land management practices including contouring and installation of trenches/drains to facilitate greater run-off.	▪ Invest in wider uptake of water saving techniques and technologies including precision irrigation systems tailored to hillside farming conditions ▪ Enhance agronomic and climate advisory support to farmers ▪ Improved land management practices to reduce soil erosion and risk of landslides e.g. zero tillage, ridging and intercropping with complementary crops that can help stabilise slopes.	▪ Invest in climate smart storage facilities (e.g., solar powered, installation of fan systems for ventilation, dehumidifiers, ventilators etc.) ▪ Establish or rehabilitate dry storage facilities in targeted extension districts ▪ Improved climate-smart storage and processing facilities	▪ Improve market information system to enhance coordination between farmers and buyers ▪ Build public-private-producer partnerships and increase communication and collaboration between key value chain actors ▪ Invest in the processing of value-added by-products such as yam flour or powder that could increase shelf life.
Cassava	▪ Provision of accurate, timely and tailored climate information services to guide sowing and land prep activities ▪ Practice minimum soil disturbance minimum tillage, introduction of leguminous crop cover etc. ▪ Provision of improved seeds and other planting materials ▪ Integration of new technologies for providing improved planting materials	▪ Invest in wider uptake of water saving techniques and technologies including precision irrigation systems ▪ Invest in on-farm technologies such as soil moisture sensors that will allow for the monitoring of soil water levels ▪ Enhance agronomic and climate advisory support to farmers ▪ Develop tailored water use and management advisories linked to weather informed agricultural advisories ▪ Improve tailored advisories and information about pest and disease management. ▪ Develop an integrated Pest Management System linked to the provision of tailored climate services ▪ Improved land management practices to reduce soil erosion e.g. zero tillage to	▪ Invest in smart storage facilities (e.g., installation of fan systems for ventilation, dehumidifiers, ventilators etc.) ▪ Establish or rehabilitate dry storage facilities in targeted extension districts ▪ Improved climate-smart storage and processing facilities ▪ Invest in renewable energies to reduce emissions and lower production costs ▪ Increase access to temperature and humidity sensor systems	▪ Improve market information system to enhance coordination between farmers and buyers ▪ Build public-private-producer partnerships and increase communication and collaboration between key value chain actors ▪ Invest in the processing of value-added by-products such as cassava flour or powder that could increase shelf life.

		ridging and intercropping with complementary crops.		
Irish Potato	▪ Provision of accurate, timely and tailored climate information services to guide sowing and land prep activities ▪ Practice minimum soil disturbance minimum tillage, introduction of leguminous crop cover etc. ▪ Provision of improved seeds and other planting materials, including sourcing/breeding improved potato varieties resistant to heat and disease ▪ Integration of new technologies such as tissue culture and nurseries that can provide improved planting materials ▪ Adjust planting times	▪ Invest in wider uptake of water saving techniques and technologies including precision irrigation systems ▪ Invest in soil moisture sensors that will allow for the monitoring of soil water levels ▪ Enhance agronomic and climate advisory support to farmers ▪ Develop tailored water use and management advisories linked to weather informed agricultural advisories ▪ Strengthen capacity of agricultural extension services to allow for timely and accurate dissemination of agronomic information and training ▪ Improve tailored advisories and information about pest and disease management. Development of early warning system. ▪ Develop an integrated Pest Management System linked to the provision of tailored climate services	▪ Invest in smart storage facilities (e.g., installation of fan systems for ventilation, dehumidifiers, ventilators etc.) ▪ Improved climate-smart storage and processing facilities ▪ Invest in renewable energies to reduce emissions and lower production costs ▪ Provision of improved packaging materials and other postharvest equipment and technologies ▪ Increase access to temperature and humidity sensor systems	▪ Improve market information system to enhance higher-value market opportunities for organic, climate-resilient agricultural production ▪ Build public-private-producer partnerships and increase communication and collaboration between key value chain actors
Onion	▪ Provision of accurate, timely and tailored climate information services to guide sowing and land prep activities ▪ Practice minimum soil disturbance minimum tillage, introduction of leguminous crop cover etc. ▪ Provision of improved seeds and other planting materials ▪ Integration of new technologies such as tissue culture and nurseries that can provide improved planting materials	▪ Invest in wider uptake of water saving techniques and technologies including precision irrigation systems ▪ Invest in soil moisture sensors/probes that will allow for the monitoring of soil water levels ▪ Enhance agronomic and climate advisory support to farmers ▪ Develop tailored water use and management advisories linked to weather informed agricultural advisories ▪ Strengthen capacity of agricultural extension services to allow for timely and accurate dissemination of agronomic information and training ▪ Improve tailored advisories and information about pest and disease management. Development of early warning system. ▪ Develop an integrated Pest Management System linked to the provision of tailored climate services ▪ Intercropping with onions can provide benefits such as weed suppression, efficient space utilization, and diversified yields. Some suitable companion crops for	▪ Invest in smart storage facilities (e.g., installation of fan systems for ventilation, dehumidifiers, ventilators etc.) ▪ Improved climate-smart storage and processing facilities ▪ Invest in renewable energies to reduce emissions and lower production costs ▪ Provision of improved packaging materials and other postharvest equipment and technologies ▪ Increase access to temperature and humidity sensor systems ▪ Adopting technologies like precision agriculture, drones, and mobile apps can enhance efficiency, increase yields and reduce food loss and waste.	▪ Improve market information system to enhance higher-value market opportunities for organic, climate-resilient agricultural production ▪ Build public-private-producer partnerships and increase communication and collaboration between key value chain actors

		intercropping with onions include leafy greens like lettuce, spinach, and cilantro, as well as carrots.		
Mango	▪ Provision of improved and disease resistant mango seedlings ▪ On farm technologies such as soil probes and monitors to test soil quality	▪ Invest in soil moisture sensors/probes that will allow for the monitoring of soil water levels ▪ Installation of climate smart irrigation systems ▪ Develop tailored water use and management advisories linked to weather informed agricultural advisories ▪ Improve tailored advisories and information about pest and disease management. Including the development of early warning systems. ▪ Promote agroforestry practices to help diversify farmer's income stream and promote IPM practices ▪	▪ Invest in smart storage facilities (e.g., installation of fan systems for ventilation, dehumidifiers, ventilators etc.) ▪ Improved climate-smart storage and processing facilities ▪ Invest in renewable energies to reduce emissions and lower production costs ▪ Provision of improved packaging materials and other postharvest equipment and technologies ▪ Increase access to temperature and humidity sensor systems	▪ Improve market information system to enhance higher-value market opportunities for organic, climate-resilient agricultural production ▪ Build public-private-producer partnerships and increase communication and collaboration between key value chain actors
Watermelon	▪ Provision of accurate, timely and tailored climate information services to guide sowing and land prep activities ▪ Practice minimum soil disturbance minimum tillage, introduction of leguminous crop cover etc. ▪ Provision of improved seeds and other planting materials ▪ Integration of new technologies such as tissue culture and nurseries that can provide improved planting materials	▪ Invest in wider uptake of water saving techniques and technologies including precision irrigation systems ▪ Invest in soil moisture sensors/probes that will allow for the monitoring of soil water levels ▪ Enhance agronomic and climate advisory support to farmers ▪ Develop tailored water use and management advisories linked to weather informed agricultural advisories ▪ Strengthen capacity of agricultural extension services to allow for timely and accurate dissemination of agronomic information and training ▪ Improve tailored advisories and information about pest and disease management. Development of early warning system. ▪ Develop an integrated Pest Management System linked to the provision of tailored climate services ▪ Intercropping with onions can provide benefits such as weed suppression, efficient space utilization, and diversified yields. Some suitable companion crops for intercropping with onions include leafy greens like lettuce, spinach, and cilantro, as well as carrots.	▪ Invest in smart storage facilities (e.g., installation of fan systems for ventilation, dehumidifiers, ventilators etc.) ▪ Improved climate-smart storage and processing facilities ▪ Invest in renewable energies to reduce emissions and lower production costs ▪ Provision of improved packaging materials and other postharvest equipment and technologies ▪ Increase access to temperature and humidity sensor systems ▪ Adopting technologies like precision agriculture, drones, and mobile apps can enhance efficiency, increase yields and reduce food loss and waste.	▪ Improve market information system to enhance higher-value market opportunities for organic, climate-resilient agricultural production ▪ Build public-private-producer partnerships and increase communication and collaboration between key value chain actors

Tomato	▪ Provision of accurate, timely and tailored climate information services to guide sowing and land prep activities ▪ Provision of improved seeds and other planting materials ▪ Integration of new technologies such as tissue culture and nurseries that can provide improved planting materials ▪ Adoption of improved and adapted tomato varieties	▪ Continued promotion of greenhouse and hydroponics technologies that are adapted to local conditions ▪ Invest in wider uptake of water saving techniques and technologies including precision irrigation systems ▪ Invest in soil moisture sensors/probes that will allow for the monitoring of soil water levels ▪ Enhance agronomic and climate advisory support to farmers ▪ Develop tailored water use and management advisories linked to weather informed agricultural advisories ▪ Strengthen capacity of agricultural extension services to allow for timely and accurate dissemination of agronomic information and training ▪ Improve tailored advisories and information about pest and disease management. Development of early warning system. ▪ Develop an integrated Pest Management System linked to the provision of tailored climate services	▪ Invest in smart storage facilities (e.g., installation of fan systems for ventilation, dehumidifiers, ventilators etc.) ▪ Improved climate-smart storage and processing facilities ▪ Invest in renewable energies to reduce emissions and lower production costs ▪ Provision of improved packaging materials and other postharvest equipment and technologies ▪ Increase access to temperature and humidity sensor systems ▪ Adopting technologies like precision agriculture, drones, and mobile apps can enhance efficiency, increase yields and reduce food loss and waste.	▪ Improve market information system to enhance higher-value market opportunities for organic, climate-resilient agricultural production ▪ Build public-private-producer partnerships and increase communication and collaboration between key value chain actors

94. To ensure sustainable uptake of interventions, the output will deliver practical "farming as a business" training, supporting farmers and associations in developing and implementing business plans. The output will also facilitate strategic linkages across value chains, helping farmer organisations establish formal agreements with input suppliers and buyers, including both public and private procurement opportunities, such that increased climate resilience also translates into improved market access and economic outcomes for participating farmers.

Activity	Description
Activity 2.1.1: Develop investment-ready packages for CRA and FLW-reduction interventions	The activity will **create standardised technical specifications** for proven CRA and FLW reduction innovations, develop modular, scalable packages, and create practical implementation guides. **Guides** for each technology package will include site preparation requirements, installation procedures, and maintenance protocols and will integrate gender-responsive considerations. Guides will support farmers in planning and executing investments once financing is secured. Packages will incorporate waste transformation and upcycling opportunities, including composting and vermicomposting systems that convert crop residues and unmarketable produce into valuable organic soil amendments, reducing both waste and fertiliser costs while improving soil health. Packages will also identify opportunities for value-added processing of agricultural by-products into marketable commodities, such as dried fruit from culled fresh produce, animal feed from vegetable waste, and organic fertiliser products from composted materials, creating supplementary income streams while reducing post-harvest losses. Packages will also incorporate flexibility for farmers to adjust crop mixes based on post-Hurricane Melissa recovery needs, including consideration of fast-maturing varieties, resilient cover crops for soil restoration, and species combinations that support rapid income recovery in severely affected areas. Packages will considerate women farmers' needs and constraints as detailed on the gender assessments conducted as part of the project. The packages developed under this activity will serve as the **technical foundation** for on-granting implementation under Activity 2.1.2.
Activity 2.1.2: Equip farmers and clusters with low-cost CRA and FLW-reduction intervention packages	This activity will scale up CRA and FLW-reduction intervention packages supporting vulnerable farmers. Beneficiaries will be selected from participants in Output 1.2 activities, using vulnerability criteria combined with demonstrated capacity and commitment. Selection criteria[57] will include factors such as climate and social vulnerability, including gender and youth targets, engagement in the FFS, as well as potential to maximise the outreach of the project. An application procedure will be required to ensure free, prior and informed consent. These low-cost sustainable technology packages are explicitly designed to transition the most vulnerable subsistence farmers toward commercial farming and increase their potential for eventually accessing Non-Grant Instruments (NGIs). Farmers demonstrating successful grant uptake will receive targeted support in financial literacy and business planning (Activity 2.1.4), enabling them to meet the

[57] See Annexes 7a and 7b.

	criteria necessary to access the specialized credit line facilitated through DBJ (Output 4.2). This pathway ensures farmers build capacity and credibility, allowing them to engage with new financial and market partners as part of the project's long-term sustainability and exit strategy. Low-cost sustainable technology packages developed under Sub-activity 1.3.2.1 will be rolled out to selected beneficiaries, with technical support from RADA, which will also deliver ongoing technical support to beneficiaries during package implementation, including troubleshooting assistance and performance monitoring. **Procurement** under this activity is specifically for **physical assets and initial inputs**. Capacity building and training are delivered through Output 1.2 The post-Melissa assessment identified severe crop damage in St. Elizabeth, St. Ann, Trelawny, and St. Andrew, highlighting the urgent need to provide inputs such as seeds, planting materials, fertilizers, greenhouse materials, and tools. The CRA and FLW intervention packages are well positioned to address these recovery needs while building resilience against future climate shocks.
Activity 2.1.3: Strengthen farmers' and organisations' capacity to access finance and markets	This activity is a **capacity building** intervention focused on organisational strengthening and market readiness preparation. The activity will support individual farmers, informal farmer groups, established farmer clusters, and registered farmer organisations in **improving their associative processes with the aim of formalising associations and identifying smallholder farmers and farmer associations** that demonstrate readiness for accessing financial products and market engagement. Market-ready individual farmers and registered farmer associations will receive additional support in developing comprehensive farm investment plans on CRA and FLW-reduction interventions that align with available financing options, thus increasing their bankability. Linkages between farmer-based organisations and other stakeholders will be supported to broker formal public and private sector agreements. These agreements may be for the supply of inputs with improved conditions or accessing markets via public or private procurement.
Activity 2.1.4: Train and support farmers in financial literacy and business planning	This is a **capacity building** activity that will create a hands-on curriculum focused on **essential business skills** for farmers, including record-keeping, cost tracking, profit calculation, and basic financial planning. Materials will be gender-responsive and will use real farm scenarios and incorporate climate resilience considerations in business planning. Training and support will be provided to individual farmers and associations in formulating and implementing business plans that match the investment requirements identified in activity 1.3.3. Skills evaluation will be conducted at the end of each training.
Activity 2.1.5: Support livelihood recovery and rehabilitation of essential agriculture infrastructure and equipment damaged by Hurricanes Beryl and Melissa	This activity will rehabilitate essential agricultural infrastructure and equipment damaged by Hurricanes Beryl and Melissa to restore production capacity and support livelihood recovery. It will involve livelihood recovery through cash transfers with special focus on two groups i) the most vulnerable and ii) women-led households. This activity will also install renewable-energy powered col/dry storage facilities, while restoring MOAFM's greenhouse and nursery production capacity through provision of equipment, inputs, materials, and installation services. The activity will support post Beryl and Melissa recovery through the rehabilitation of agricultural lands and seedling production in Agro Parks and demonstration sites. The on-granting modality to be used is i) cash-for-work directed to the most vulnerable community members whose incomes were affected, and ii) conditional cash-transfers directed to smallholder women farmers who lost their livelihoods in the storm. Cash-for-work and conditional cash-transfer support will be implemented in line with FAO's Manual Section 702, ensuring that assistance is delivered transparently, equitably, and in conjunction with rehabilitation of productive assets. A national agriculture infrastructure consultant and a national ESS consultant will ensure high-quality technical guidance and full compliance with environmental and social safeguards throughout implementation.

Component 3: Strengthening climate information services and early warning systems
Outcome 3: Enhanced resilience of agricultural production systems to climate change through improved climate information services and early warning systems

95. Component 3 focuses on strengthening Jamaica's climate information services and early warning systems to support climate-informed agricultural decision-making and improve resilience to extreme weather events such as hurricanes. The project will enhance the agrometeorological observation network by replacing damaged equipment, modernising outdated stations, and expanding coverage. The impacts of **Hurricane Beryl and Melissa** underscored both the critical importance of robust early warning systems and the urgent need to restore and modernise Jamaica's agrometeorological observation network. Both hurricanes caused significant damage to weather monitoring equipment across the affected parishes, disrupting the data collection infrastructure essential for agricultural advisories and hurricane tracking. Component 3 will prioritise the replacement of damaged equipment while also expanding and modernising the network to provide enhanced early warning capabilities for future extreme weather events. This component will ensure that Jamaica's agricultural sector benefits from reliable, timely, and actionable climate information even as hurricane intensity and frequency continue to increase.
96. The component will build on (and re-establish) the Met Service of Jamaica's specialised agricultural climate information products, ensuring they are comprehensible and tailored to farmers' needs. Through multiple dissemination channels including SMS alerts, the established mobile applications by RADA and MSJ, as well as through traditional radio and community-based networks, the project will ensure that climate information reaches even the most remote of farmers in a timely and actionable format. Special attention will be given to integrating traditional knowledge with modern forecasting.
97. Through Component 3, the project will also build institutional capacity by training technical personnel at MSJ and RADA in data collection, analysis, and dissemination. It will also strengthen both the technical infrastructure and service delivery aspects of climate information services to ensure reliability.

Output 3.1: Strengthened agrometeorological observation network and forecasting capabilities to support early warning systems

98. Following Hurricane Melissa's strike in October 2025, which caused significant damage to weather monitoring equipment across the western and central parishes which had not recovered from the impacts of Beryl, this output takes on critical urgency for both disaster recovery and future preparedness. The output includes the replacement of weather monitoring equipment damaged by both Hurricane Beryl (July 2024) and Hurricane Melissa, with all replacement installations designed to hurricane-resistant specifications. The consecutive damage to meteorological infrastructure from two major hurricanes

within 16 months demonstrates the need for enhanced protective measures and backup systems to ensure continuity of climate data collection during and after extreme weather events. Beyond recovery efforts, the project will install new Automatic Weather Stations and rainfall data loggers at strategic locations to replace manual stations and fill critical monitoring gaps. Site selection will be determined during implementation with input from MSJ and RADA, and will be chiefly guided by agricultural importance.

99. To ensure effective data management and utilisation, the output will establish an up to date and secure database at MSJ with advanced analysis capabilities and off-site data redundancy. Essential computing hardware will be provided to both MSJ and RADA to support operations, including equipment for GIS mapping and remote fieldwork. The output will also establish an SMS-based climate information delivery system through a telecommunication partnership that will be established.
100. A key focus will be strengthening agricultural monitoring and warning systems by developing clear protocols for agriculture-focused warnings that complement ODPEM's disaster alerts. This includes establishing community-based early warning dissemination networks that integrate local knowledge, and incorporating key information 'superspreaders' such as youth farmer influencers and model farmers. The output will ensure that warnings are gender-sensitive, culturally relevant and reach the last mile, supported by standard operating procedures for agricultural preparedness measures.

Activity	Description
Activity 3.1.1: Installation of new stations for replacing outdated equipment and expansion of the network	This activity addresses the critical decline in Jamaica's weather monitoring network, which has seen a steady decrease in the number of weather stations since the early 2000s, and has been further compromised by recent hurricanes. This modernisation effort replaces manual stations with automated systems, improving data collection efficiency while also expanding coverage to areas currently relying on distant weather stations. The emphasis on agricultural areas with significant elevation changes recognises the limitations of the current 7 km representative radius for accurate weather monitoring in Jamaica's varied topography.
Activity 3.1.2: Replace and rehabilitate damaged hydro-meteorological stations and equipment in agricultural areas impacted by Hurricanes Beryl and Melissa	This activity responds to the urgent need to restore climate monitoring capabilities in agricultural areas following Hurricane Beryl and Melissa's impacts. The replacement of damaged equipment in the six target parishes is prioritised due to these parishes' significant contribution to national agricultural production and their vulnerability to climate impacts. The replacements will not only restore monitoring capabilities, but also upgrade the installations to meet WMO standards with enhanced protective features, ensuring greater resilience to future extreme weather events.
Activity 3.1.3: Establish robust data management and operational infrastructure	This activity addresses the current deficiencies in data management systems and infrastructure that hamper effective climate information services, creating the technological foundation needed for reliability. The establishment of a secure central database at MSJ with advanced analysis capabilities and off-site redundancy will ensure data security and continuity, preventing scenarios like the previous data loss from fire. This modernisation of data management infrastructure is critical for transforming raw climate data into actionable information for agricultural decision-making.
Activity 3.1.4: Establish SMS-based climate information delivery system	This activity addresses the need to strengthen and diversify climate information communication channels, particularly for farmers in remote areas without internet connectivity. Through strategic partnership with major telecommunication providers (Digicel or Flow), the establishment of a one-way SMS push notification service offers a reliable and accessible method for delivering critical climate information. This approach leverages the widespread use of mobile phones among farmers, ensuring that essential weather updates and alerts can reach them directly, regardless of their location or access to other communication channels.
Activity 3.1.5: Expand the dissemination of targeted early warnings and advisories to farmers and other market actors using multiple methods	By developing clear protocols that differentiate between disaster warnings and agriculture-specific advisories, while ensuring coordinated messaging across multiple channels, this activity creates a more effective and relevant warning system for farmers, integrating warning messages for new risk dimensions such as storm intensification (and considering how this influences the timeliness of asset protection measures). The integration of community-based networks and local knowledge through formalised roles for information 'superspreaders' ensures warnings reach the last mile in a gender-sensitive and culturally relevant manner.The activity strengthens agricultural stakeholders' response capacity by developing standard operating procedures that align agricultural preparedness measures with ODPEM's broader disaster response framework.

Output 3.2: CIS relevant to agriculture developed and delivered to farmers and other market actors

101. This output focuses on developing and delivering tailored climate information services that directly support agricultural decision-making. Through the re-establishment of agrometeorological bulletin services to be delivered by the MSJ, the output will provide farmers with actionable climate information relevant to their specific needs. The integration of such climate information into RADA's app will enhance accessibility.
102. Technical staff at MSJ and RADA will be trained in data collection, quality control, modelling, and the development of agricultural advisories, ensuring sustainable production of climate information products. Extension workers will be equipped to effectively interpret and communicate climate information to farmers. At the farm level, practical training will enable farmers to access, understand, and apply climate information in their decision-making processes, from seasonal planning to immediate response actions.

Activity	Description
Activity 3.2.1: Re-establish and enhance agro-meteorological bulletin service	This activity addresses the current gap in specialised agrometeorological information products for the agricultural sector. Through potential partnerships with, among others, the Climate Studies Group, UWI Mona and the Caribbean Institute for Meteorology & Hydrology, MSJ staff will be trained in comprehensive bulletin development, covering essential areas from climate data analysis to effective communication of agricultural advisories, particularly with respect to pre-hurricane preparedness and post-hurricane recovery. The establishment of a dedicated online platform for bulletin dissemination through a sub-domain on the MSJ's website, integrated with the RADA mobile app (via Activity 3.2.2), ensures wide accessibility.

	The implementation of a heat stress monitoring in the bulletin using the Temperature Humidity Index (THI) will add crucial information for both livestock and crop management.
Activity 3.2.2: Improve integration of climate information into RADA's digital platform	This activity strengthens the accessibility and utility of climate information by integrating it seamlessly into RADA's existing farmer app. Through the development of technical protocols for automated data transfer and standardised alert formats, the activity ensures reliable delivery of weather forecasts, agrometeorological bulletins, and early warnings through a platform already familiar to farmers. The enhancement of the app's climate information features (via Activity 3.2.1), including push notification capabilities and user-friendly visualisations, makes climate information more accessible and actionable. These features will also be integrated into ABIS to advance RADA's Agricultural Decision-Making Service (ADMS). Building technical capacity within RADA for platform maintenance will ensure sustainable operation of these enhanced features beyond the project timeframe.
Activity 3.2.3: Training of MSJ and RADA technical personnel and extension workers in data collection, interpretation, quality control, storage, and dissemination	This activity builds the lacking institutional capacity needed for sustainable climate information services. Through comprehensive training programmes, technical staff at MSJ and RADA will develop expertise in operating and maintaining the modernised weather monitoring network provider under Output 3.1. The development of formal data sharing frameworks between MSJ, RADA, and WRA addresses the current lack of standardisation and coordination in climate data management. Extension workers will be specifically trained in translating technical climate information into practical agricultural advisories, and on practical techniques in nowcasting data/information (e.g. from doppler radars) to enhance overall capacity for providing in-situ advisories to farmers, thus ensuring effective communication of climate information to farmers.
Activity 3.2.4: Equip farmers to understand and utilise climate information services (CIS) services and products	This activity ensures that enhanced climate information systems translate into improved on-farm decision-making, particularly for hurricane preparedness and response. Through the development of practical, user-friendly training materials and hands-on sessions, farmers' capacity in interpreting and applying various climate information products, from seasonal forecasts to heat stress indices, will be strengthened. The training will include practical application, teaching farmers how to use climate information for specific decisions such as planting timing, irrigation scheduling, and hurricane preparedness. By ensuring farmers can effectively access and utilise the online climate information (either via MSJ or the RADA app), the activity completes the chain from information generation to practical application at the farm level.

Component 4: Mobilising finance, policy, and business support for agricultural resilience
Outcome 4: Improved enabling environment for climate-resilient agriculture

103. Component 4 focuses on creating an enabling environment and sustainable financing mechanisms for scaling up climate-resilient agriculture and food loss reduction solutions in Jamaica. The component works through multiple complementary pathways to address current barriers to investment and adoption. At the policy level, it supports the Government of Jamaica in developing a comprehensive framework to incentivise private sector engagement in climate-resilient agriculture. Through targeted capacity building of key institutions like AIC and JSIF, it strengthens their ability to serve as technical partners for financial institutions to promote innovative agricultural services. The component places special emphasis on fostering entrepreneurship and public-private partnerships, establishing business incubators and acceleration programmes to develop a robust ecosystem of agricultural service providers. Working with agricultural financial institutions, the component will develop specialised financial products with adequate terms for smallholder farmers to adopt CRA and FLW reduction interventions.

Output 4.1: Policies, partnerships, and incentives for CRA and FLW developed

104. This output will strengthen the enabling environment for climate-resilient agriculture and food loss reduction through complementary interventions in policy development, institutional capacity building, and market development. By conducting comprehensive assessments of Jamaica's policy landscape, it will identify and address barriers to private sector investment in climate-resilient solutions while developing a policy framework to incentivise their adoption.
105. By strengthening the capacities of relevant institutions (e.g. AIC, RADA, JSIF), the output will support the integration of climate resilience considerations into agricultural development planning, with a focus on planned and future Agro Parks and bauxite reclamation areas. Through the development of standardised operational manuals and planning frameworks, it will ensure that climate resilience is systematically incorporated from the design phase in new agricultural production zones.

Through targeted business incubation and acceleration programmes, it supports young entrepreneurs in developing and scaling services that enable climate-resilient agriculture in Jamaica. By establishing formal service provision arrangements between public and private sectors, it creates sustainable mechanisms for delivering critical agricultural services to farmers. The output will also facilitate market linkages and investment flows through the creation of an agricultural enterprise networking platform. This multi-stakeholder platform will connect producers, service providers, and investors while documenting and sharing successful experiences with climate-resilient practices.

Activity	**Description**
Activity 4.1.1: Support the GoJ in the revision of relevant policies and regulations to incentivise investment in practices, technologies, and infrastructure related to CRA and FLW reduction	This activity will strengthen Jamaica's policy environment to accelerate private sector investment in climate-resilient agriculture and food loss and waste reduction solutions. Through comprehensive policy analysis and stakeholder engagement, the project will help identify and address key barriers to technology adoption while developing new incentive mechanisms for climate-resilient investments. The activity will also create standardised frameworks for evaluating the commercial viability of climate-resilient solutions, enabling both policymakers and private sector actors to make informed decisions about investments. Following the impacts of Hurricane Beryl and Hurricane Melissa, which exposed vulnerabilities in agricultural infrastructure, the activity will ensure that policy frameworks and incentive mechanisms explicitly promote hurricane-resistant design standards for future CRA and FLW investments, preventing repetition of infrastructure vulnerabilities in subsequent developments. These

	efforts will complement the financial sector interventions under Output 3.2 by ensuring supportive policies are in place for expanding climate-resilient agricultural lending.
Activity 4.1.2: Support the development of climate-resilient approaches for new Agro Parks and bauxite reclamation areas	This activity will support the development of climate-resilient approaches for new agricultural production zones in Jamaica, with a focus on Agro Parks and bauxite reclamation areas. Through detailed planning assessments and operational guidelines, it will ensure that climate resilience and food loss reduction considerations are integrated from the design phase. AIC, as the government entity responsible for Agro Park development and management, is the primary beneficiary of technical assistance under this activity, receiving capacity building support to integrate climate resilience frameworks into its institutional planning processes. The activity will produce practical planning manuals that address both physical infrastructure needs and operational arrangements, helping developers create production zones that are both climate-resilient and commercially viable. This work builds on successful approaches demonstrated through ADAPT Jamaica while strengthening the capacity of relevant institutions (e.g. AIC, RADA, JSIF) to serve as technical partners for financial institutions investing in these areas. The operational manuals will incorporate lessons learned from Hurricane Beryl and Hurricane Melissa regarding infrastructure failure modes, ensuring that climate-resilient planning frameworks for future Agro Parks and production zones integrate enhanced hurricane-resistant specifications, preventing repetition of vulnerabilities observed in conventional agricultural infrastructure during a Category 5 storm.
Activity 4.1.3: Facilitate public-private partnerships for agricultural business development and service provision	This activity will foster entrepreneurship and innovation in agricultural services through targeted business development support. It will establish incubators focused on youth and women entrepreneurs developing services that enable climate-resilient agriculture and food loss reduction. Through a dedicated acceleration programme, promising enterprises will receive support in scaling up their operations beyond initial Agro Parks and bauxite reclamation areas targeted by ADAPT Jamaica. The activity will also formalise arrangements between public entities and private service providers to improve delivery of critical agricultural services. This complements the demonstration activities under Component 1 by creating sustainable mechanisms for service provision while supporting enterprise development.
Activity 4.1.4: Support the creation of a multi-stakeholder platform to connect agricultural enterprises with investors and facilitate knowledge exchange and collaboration	Based on the assessment of the ALEX platform, this activity will establish/improve or upgrade a multi-stakeholder platform to strengthen market linkages and investment flows in climate-resilient agriculture. The platform will connect farmer associations, including women-led associations, agro-processors, agricultural service providers, and investors both through a digital platform and regular stakeholder meetings. It will help producer groups access needed services while enabling enterprises from the incubator and acceleration programmes to develop market relationships.

Output 4.2: Access to finance and markets increased to support upscaling CRA and FLW practices and technologies

106. This output will expand financing for climate-resilient agriculture and food loss reduction solutions in Jamaica through a systematic approach to market development. Aligned with the GCF Revised Accreditation Framework, which emphasises private sector mobilisation and sustainable financing mechanisms, this output establishes the institutional arrangements and financial products that will enable continued access to climate finance beyond the project implementation period. The output's approach of developing standardised taxonomies, building institutional capacity, and establishing a dedicated credit line through the Development Bank of Jamaica (DBJ), creates replicable mechanisms that can be scaled nationally, demonstrating how public climate finance can catalyse sustainable private sector lending for smallholder climate adaptation
107. By establishing a standardised taxonomy and assessment framework, it will create a common language for evaluating climate-resilient investments for all agricultural financial institutions. DBJ is central to this output providing USD 600,000 in cash co-financing as technical assistance, and a USD 1M credit line specifically for the project as crucial co-financing to scale CRA/FLW lending (Activity 4.2.3). This lending will be executed directly by DBJ, and will be in adherence to the identified intervention packages available in demonstration farms, low-cost CRA and FLW-reduction packages, and, in general, in the list of potential interventions described in Annex 24 “CRA and FLW fact sheets”. All interventions would be at environmental and social risk category B or lower and the credit line will be accessed only by DBJs approved financial institutions[58] who have undergone training under activity 4.2.2. This co-financing is part of the Blue Green Facility funded by Agence Française de Développement (AFD) and terms and conditions between DBJD and financial institutions will thus be bound by the lending agreement DBJ and AFD. Maximum rates and terms will be agreed between DBJ and the respective financial institutions (See Annex 2 Feasibility Study for further details on the rates and terms). The output will build financial sector capacity to participating FIs (to be determined during project implementation) by strengthening their ability to develop and deliver specialised products for climate-resilient agriculture while also monitoring their performance through digital MRV systems. To further maximize DBJ’s engagement and institutional commitment, DBJ will assume an enhanced role as the host and champion of the open-access learning module (Activity 4.2.4). Furthermore, the project will explore innovative financial mechanisms, such as integrating performance-based incentives linked directly to the digital MRV system (Activity 4.2.1.4), to reward quantifiable climate resilience and FLW reduction outcomes achieved by borrowing farmers. Through DBJ’s dedicated credit line for climate adaptation in agriculture, the project will facilitate increased access to lending while exploring potential opportunities and the feasibility to integrate agricultural insurance into those products.

Activity	**Description**
Activity 4.2.1: Develop a Jamaican resilience finance taxonomy on sustainable agriculture solutions available on the market	This activity will establish a standardised classification system for climate-resilient agriculture and food loss reduction investments in Jamaica, in close coordination with DBJ Working with technical experts, the project will develop clear criteria for evaluating climate-resilient agricultural investments, drawing from successful demonstrations in ADAPT Jamaica's model farms. The activity will also create practical assessment guidelines and digital workflow management systems to help financial institutions consistently evaluate and monitor

[58] Approved institutions are listed here: https://dbankjm.com/financing/dbjs-approved-financial-institutions/

	these investments, integrating specific needs of youth and women farmers. This foundational work enables the potential for expanded lending activities under 4.2.3 by providing a clear framework for investment decisions.
Activity 4.2.2: Build comprehensive capacity of AIC and participating FIs for CRA and FLW finance	This activity will strengthen the institutional capacity of financial institutions to develop and deliver climate-resilient agricultural finance products. This activity will support AIC's transition to becoming a microfinance institution serving Jamaica's agricultural sector, with AIC participating as a capacity building beneficiary receiving technical assistance, training, and systems development support. Through technical assistance, the activity will help these institutions develop specialised products for climate-resilient investments using the taxonomy developed under 4.2.1, supported by appropriate systems and procedures.
Activity 4.2.3: Facilitating participating FIs access to DBJ's agricultural credit line for CRA and FLW reduction solutions lending	This activity will facilitate increased lending for climate-resilient agriculture and food loss reduction solutions through DBJ's existing agricultural credit line, establishing sustainable financing mechanisms that continue beyond the project period and that integrate gender considerations and targets to its design. The 1M USD credit line serves as a catalytic demonstration facility that enables participating financial institutions to pilot and refine CRA/FLW lending products with reduced risk, building institutional capacity and market confidence that supports continued lending from their own balance sheets after project completion. By documenting successful lending experiences, repayment performance, and climate resilience outcomes through the digital MRV system (Activity 4.2.1), the activity generates evidence that de-risks agricultural climate finance for commercial lenders, creating conditions for sustainable market development. The dedicated credit line, combined with the taxonomy (Activity 4.2.1) and institutional capacity building (Activity 4.2.2), establishes a replicable financing model that can be scaled nationally through DBJ's broader apex lending operations. For this activity to come in effect DBJ will sign an agreement for a Blue Green Facility with AFD. FAO will sign a co-financing agreement with DBJ, which will specify that DBJ will use its own resources for i) technical assistance as described in sub-activities 4.2.1.2, 4.2.1.3, 4.2.2.2, and 4.2.3.1, and ii) a dedicated credit line on CRA and FLW reduction investments to be made available to approved FIs who have undergone capacity building under the ADAPT Jamaica project. The agreement will specify that no GCF proceeds will be used for the credit line. DBJ will sign Financing Agreements with participating Fis, which will specify the terms and conditions including: (i) Final beneficiaries' selection criteria, (ii) Eligible loans and (iii) Terms and conditions of loans.
Activity 4.2.4: Develop a CRA and FLW reduction learning module for an open-access certification course platform	This activity will develop specialised learning modules on climate-resilient agricultural finance for an open-access digital e-learning platform to be potentially operated by DBJ. The training materials will focus on key aspects including climate finance taxonomies, risk identification and management, and CRA/FLW solutions, with special emphasis on supporting vulnerable groups like smallholder farmers, women, and youth. By building broader financial sector awareness and capacity, this activity complements the institution-specific training delivered under 4.2.2 while creating a sustainable mechanism for knowledge transfer beyond the project timeline.
Activity 4.2.5: Supporting social protection and the development of agricultural insurance for CRA and FLW reduction investments	This activity will explore opportunities to integrate insurance coverage into climate-resilient agricultural lending products. Through a detailed feasibility assessment, it will examine current gaps in agricultural insurance availability in Jamaica, particularly for technologies like protected agriculture. Where relevant, the activity will consider mechanisms such as the Caribbean Catastrophe Risk Insurance Facility (CCRIF) and the Livelihood Protection Policy (LPP), which provide fast payouts to low-income and vulnerable groups to support rapid recovery from climate shocks, targeting groups traditionally excluded from formal insurance markets (e.g. small farmers). The project will analyse existing governmental programs and identify potential social protection mechanisms that could be offered to the most vulnerable farmers to increase their climate resilience. If feasible, the activity will develop standardised frameworks for incorporating insurance coverage into the financial products developed under 4.2.2, creating operational guidelines that financial institutions can use when working with insurance providers. This complements other financing interventions by addressing a critical risk management gap.

B.4. Implementation arrangements (max. 1500 words, approximately 3 pages plus diagrams)

Organisational structures and implementation arrangements

108. The following governance mechanisms for project execution, coordination and oversight have been agreed in close consultation with the Government of Jamaica through the Ministry of Water, Environment and Climate Change (MWECC), and the Ministry of Agriculture Fisheries and Mining (MOAFM).

Accredited Entity

109. FAO will serve as the Accredited Entity (AE) for Adapt Jamaica, namely through a Project Task Force, which will be set up specifically for this project. As such, FAO will be responsible for the overall management of the project, including: (i) all aspects of project appraisal; (ii) administrative, financial and technical oversight and supervision throughout project implementation; (iii) ensuring funds are effectively managed to deliver results and achieve objectives; (iv) ensuring the quality of project monitoring, as well as the timeliness and quality of reporting to the GCF; and (v) project evaluation and closure. FAO will ensure these responsibilities in accordance with the detailed provisions outlined in the Accreditation Master Agreement (AMA) between FAO and GCF.
110. FAO's role as AE will be attributed to the relevant offices and divisions in FAO Headquarters located in Rome, Italy (HQ), Sub-regional office for the Caribbean, located in Bridgetown, Barbados, and the FAO Representation in Jamaica (FAOJM).
111. To fulfil the AE functions, FAO will set up a dedicated Project Task Force (PTF) in line with FAO project cycle guidelines. The PTF will be composed by the Budget Holder (BH) in the country office, the Lead Technical Officer (LTO) in the subregional office, Funding Liaison Officer (FLO), HQ Technical Officer and other officers located in Headquarters, as appropriate.
112. The PTF will remain independent from the Executing Entity functions also performed by FAO (see Project execution section below). In line with the GCF policy on fees adopted through GCF Board Decision B.19/09, the above-mentioned segregation of responsibilities within FAO will ensure that the Organization can independently and effectively perform the AE functions listed in the GCF General principles and indicative list of eligible costs covered under GCF fees and project management costs.

Project co-financing

113. The following entities will provide co-financing: the Jamaica Social Investment Fund (JSIF), in the form of cash (grant) for (USD 5,346,900) and in-kind (USD 301,900), the Ministry of Agriculture, Fisheries and Mining (MOAFM) in the form of cash (grant) for (USD 639,034) and in-kind (USD 1,432,608), as well as through the Development Bank of Jamaica (DBJ) in the form of loan for USD 1,000,000 and cash (grant) for USD 600,000. FAOJM is co-financing USD 124,626 in form of in-kind for PMC. The co-financiers are responsible for reporting to the AE in accordance with the detailed provisions outlined in the GCF policies as well as AMA, Funded Activity Agreement (FAA) between FAO and GCF and the Project Agreement (Subsidiary Agreement) signed between FAO and the Government of Jamaica. National institutions JSIF, MOAFM, and DBJ will be responsible for executing and managing their own co-financing.

Executing Entities

114. The project will be executed by FAOJM and JSIF to deliver the project activities funded by GCF proceeds. Additionally, DBJ, JSIF, and MOAFM will be responsible for executing their activities with their own co-financing. Neither DBJ nor MOAFM will execute GCF proceeds. As depicted in figure 12, FAO will sign a Subsidiary Agreement with the Government of Jamaica, acting through the Ministry of Finance and Public Services and the Ministry of Agriculture, Fisheries and Mining, in accordance with the laws and internal procedures of the Government of Jamaica. Said agreement will refer to cofinancing provisions for JSIF and MOAFM and will detail the respective roles and responsibilities of the MOAFM and JSIF in the implementation of the Project in accordance with the requirements of the AMA and FAA. Additionally, FAO will sign a Subsidiary Agreement with the DBJ which will set out the roles and responsibilities of DBJ in the implementation of the Project in accordance with the requirements of the AMA and FAA .

Output	Activity	Sub-activity	Financing Source	Executing Entity
Output 1.1	Activity 1.1.1	1.1.1.1	GCF	FAO
		1.1.1.2	GCF	FAO
		1.1.1.3	GCF	FAO
	Activity 1.1.2	1.1.2.1	GCF	JSIF
		1.1.2.2	JSIF	JSIF
		1.1.2.3	GCF	FAO
		1.1.2.4	MOAFM	MOAFM
	Activity 1.1.3	1.1.3.1	GCF	FAO
		1.1.3.2	GCF	FAO
		1.1.3.3	GCF	FAO
	Activity 1.1.4	1.1.4.1	GCF	FAO
		1.1.4.2	GCF	FAO
		1.1.4.3	GCF	FAO
		1.1.4.4	GCF	FAO
		1.1.4.5	GCF	FAO
	Activity 1.1.5	1.1.5.1	GCF	FAO
		1.1.5.2	GCF	FAO
		1.1.5.3	GCF	FAO
		1.1.5.4	GCF	FAO
Output 1.2	Activity 1.2.1	1.2.1.1	GCF	FAO
		1.2.1.2	GCF	FAO
		1.2.1.3	GCF	FAO
		1.2.1.4	GCF	FAO
		1.2.1.5	GCF	FAO
	Activity 1.2.2	1.2.2.1	GCF	FAO
		1.2.2.2	GCF	FAO
		1.2.2.3	GCF	FAO
		1.2.2.4	GCF	FAO
Output 2.1	Activity 2.1.1	2.1.1.1	GCF	FAO
		2.1.1.2	GCF	FAO
		2.1.1.3	GCF	FAO
Output 2.1	Activity 2.1.2	2.1.2.1	GCF	JSIF
		2.1.2.2	GCF	JSIF
		2.1.2.3	GCF	JSIF
	Activity 2.1.3	2.1.3.1	GCF	JSIF
		2.1.3.2	GCF	JSIF
		2.1.3.3	GCF	JSIF
		2.1.3.4	GCF	JSIF
	Activity 2.1.4	2.1.4.1	JSIF	JSIF
		2.1.4.2	JSIF	JSIF
	Activity 2.1.5	2.1.5.1.	GCF	JSIF
		2.1.5.2	GCF	JSIF

		2.1.5.3	GCF	FAO
Output 3.1	Activity 3.1.1	3.1.1.1	GCF	FAO
		3.1.1.2	GCF	FAO
		3.1.1.3	GCF	FAO
	Activity 3.1.2	3.1.2.1	GCF	FAO
	Activity 3.1.3	3.1.3.1	GCF	FAO
		3.1.3.2	GCF	FAO
	Activity 3.1.4	3.1.4.1	GCF	FAO
	Activity 3.1.5	3.1.5.1	GCF	FAO
		3.1.5.2	GCF	FAO
		3.1.5.3	GCF	FAO
		3.1.5.4	GCF	FAO
		3.1.5.5	GCF	FAO
Output 3.2	Activity 3.2.1	3.2.1.1	GCF	FAO
		3.2.1.2	GCF	FAO
		3.2.1.3	GCF	FAO
	Activity 3.2.2	3.2.2.1	GCF	FAO
		3.2.2.2	GCF	FAO
		3.2.2.3	GCF	FAO
	Activity 3.2.3	3.2.3.1	GCF	FAO
		3.2.3.2	GCF	FAO
		3.2.3.3	GCF	FAO
		3.2.3.4	GCF	FAO
	Activity 3.2.4	3.2.4.1	GCF	FAO
		3.2.4.2	GCF	FAO
Output 4.1	Activity 4.1.1	4.1.1.1	GCF	FAO
		4.1.1.2	GCF	FAO
		4.1.1.3	GCF	FAO
	Activity 4.1.2	4.1.2.1	GCF	FAO
		4.1.2.2	GCF	FAO
		4.1.2.3	GCF	FAO
		4.1.2.4	MOAFM	MOAFM
	Activity 4.1.3	4.1.3.1	GCF	FAO
		4.1.3.2	GCF	FAO
		4.1.3.3	GCF	FAO
	Activity 4.1.4	4.1.4.1	GCF	FAO
		4.1.4.2	GCF	FAO
Output 4.2	Activity 4.2.1	4.2.1.1	GCF	FAO
		4.2.1.2	DBJ	DBJ
		4.2.1.3	DBJ	DBJ
		4.2.1.4	GCF	FAO
		4.2.1.5	GCF	FAO
		4.2.1.6	GCF	FAO
	Activity 4.2.2	4.2.2.1	GCF	FAO
		4.2.2.2	DBJ	DBJ
	Activity 4.2.3	4.2.3.1	DBJ	DBJ
		4.2.3.2	GCF	FAO
		4.2.3.3	GCF	FAO
	Activity 4.2.4	4.2.4.1	GCF	FAO
		4.2.4.2	GCF	FAO
	Activity 4.2.5	4.2.5.1	GCF	FAO
		4.2.5.2	GCF	FAO
		4.2.5.3	GCF	FAO

115. The JSIF will serve as Executing Entity. As a GCF Direct Access Entity with extensive experience implementing community-based climate resilience initiatives across Jamaica, JSIF brings valuable expertise in managing development projects, and is an eminent institution in Jamaica with established systems for fiduciary management, environmental and social safeguards, and community engagement. There will be a clear separation of duties between FAO, in its role as AE, and FAOJM in its role as EE to ensure accountability of the respective obligations.The Ministry of Agriculture, Mining and Fisheries (MOAFM) as well as the Development Bank of Jamaica will be Executing entities, executing only their own co-financing.

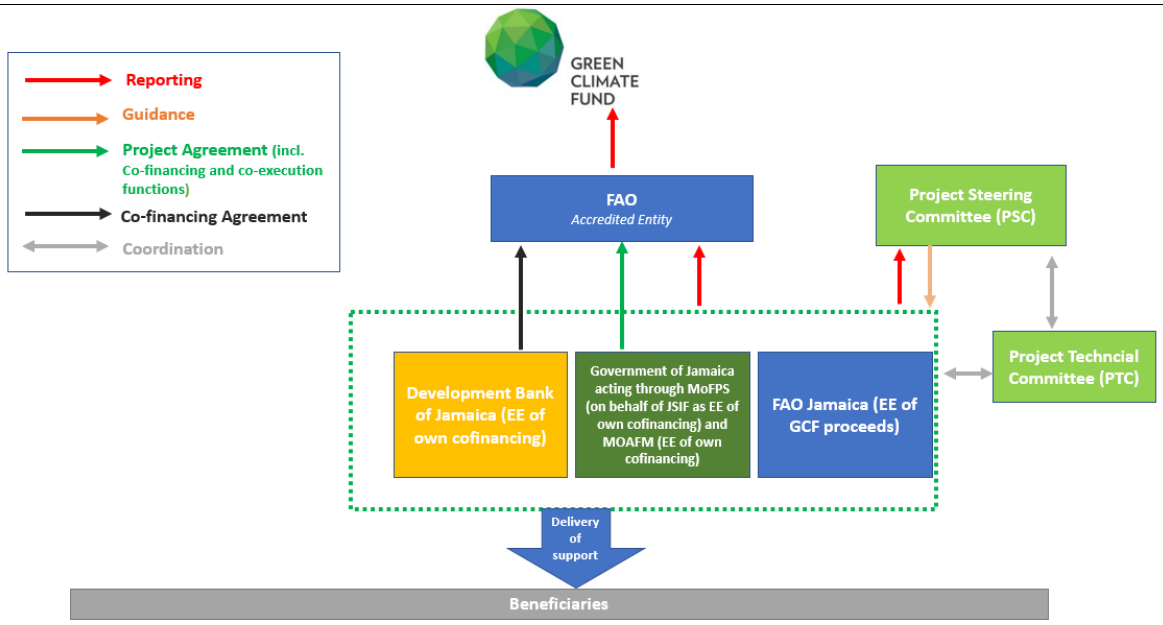


Figure 12 Implementation arrangements

Flow of funds structure

116. Flow of funds and legal arrangements. In line with the project implementation arrangements outlined above, GCF proceeds received by FAO in its capacity as Accredited Entity will flow to the Executing Entities, namely FAOJM and JSIF, for the execution of project activities (as per figure 13). FAOJM will provide on-granting through the Beneficiary Grants modality as per FAO Manual Section 703 (MS703), and through Cash Transfers as per FAO Manual Section 702 (MS702). The project will follow the Supplier-Delivered Beneficiary Grants mechanism which allows for the provision of an in-kind award from FAO to a Beneficiary, via a pre-identified Supplier, with utilization governed by a Beneficiary Grant Agreement. MS702 describes the cash transfers modalities to beneficiaries for the express purpose of: i) responding to emergency needs; ii) improving food security; iii) improving productive capacity; iv) enhancing access to national Social Protection programmes; v) enhancing livelihoods; and/or vi) strengthening resilience. Cash transfers to intended beneficiaries are guided by the Cash Transfer Manual, which stipulates conditions that apply before cash disbursement The provisions regarding JSIF's responsibilities as co-financer, together with all financial details, will be included in the Subsidiary Agreement, which will serve as subsidiary agreement, signed between FAO and the Government of Jamaica (with JSIF as the designated entity to execute funds).

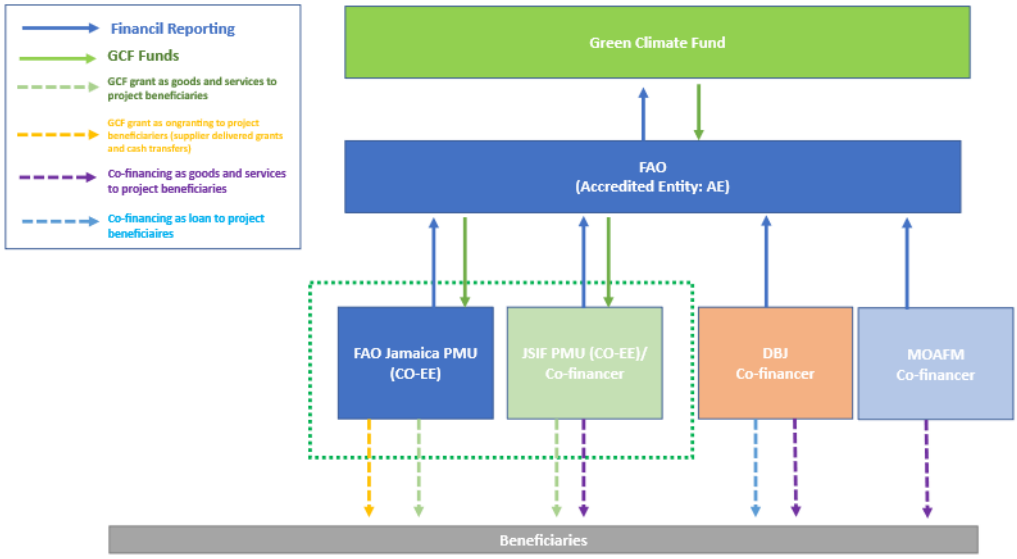


Figure 13 Flow of funds

Governance structure

117. A **Project Steering Committee (PSC)** will be established as the highest level of project governance to guide overall project implementation and ensure inter-institutional coordination. The PSC will be chaired by the Ministry of Water, Environment and Climate Change (MWECC), the National Designated Authority to the GCF, and include the participation of the Ministry of Agriculture, Fisheries and Mining, the Jamaica Social Investment Fund, the Planning Institute of Jamaica, and FAOJM. The PSC composition will ensure women's representation and gender expertise through: (i) inclusion of designated Gender Focal Points from the MWECC and MOAFM as standing PSC members, and (ii) a minimum target of 40% women's representation among PSC members. The Gender Equity and Social Inclusion (GESI) specialist from the PMU will participate in PSC meetings as a technical advisor to ensure gender considerations are integrated into all strategic decisions and oversight functions**.** FAO will have the final decision making authority at the PSC The Project Management Unit (PMU) will act as secretariat of the Project Steering Committee. The mandate of the Steering Committee will include:
    - Provide overall guidance and strategic direction to the project
    - Ensure project alignment with national policies and strategies
    - Address project issues raised by the Project Management Unit
    - Monitor project risks and the effectiveness of mitigation measures
    - Review gender-disaggregated results and provide strategic guidance on achieving gender equity targets
    - Review project progress and provide direction to ensure deliverables are produced satisfactorily
    - Review and approve annual work plans and provide necessary strategic guidance
    - Appraise annual project implementation reports, and requests for budget revisions and extensions
    - Make recommendations for subsequent work plans to build on achievements and address shortcomings
    - Ensure co-financing support is provided in a timely manner
    - Ratify the Technical Committee to provide technical oversight and advice on project activities
    - Convene at least twice per year once the project is active

118. The PSC will be supported by the **Project Technical Committee (PTC)**, which will review and, where needed, advise on the technical delivery of the project. The PTC will be chaired by the Ministry of Agriculture, Fisheries and Mining, and include FAOJM and JSIF as its core members. Other members of the PTC will include RADA, the Forestry Department, MSJ, DBJ, JBI, and AIC. The PTC will: (i) technically oversee activities in their area of expertise; (ii) ensure a fluid two-way exchange of information and knowledge between their agency and the project; (iii) facilitate coordination and links between the project activities and the work plan of their agency; and (iv) facilitate the provision of co-financing.
119. A **Project Management Unit (PMU)** will be established for the responsibility of day-to-day project implementation. The PMU is the technical-administrative unit of the project, with key personnel in each of the executing entities (EEs). As such FAOJM and JSIF will hire their own personnel. Each part of the PMU will be hosted in the respective executing entity office and meet on a weekly basis in the JSIF compound. Administrative and programmatic support will be provided by FAOJM and SLC in Barbados. The PMU will manage and coordinate project activities following the guidance and decisions of the PSC. Key functions of the PMU will include overall project management, coordination, implementation and monitoring through effective execution of annual work plans and budgets (AWPBs). The PMU will follow FAO's and JSIF's operating procedures and will execute activities according to AWPBs approved by the PSC.
120. Technical oversight and overall coordination of the PMU will be led by the FAO agricultural climate change technical officer. The PMU will include the following personnel:
    - In FAO (i) Operations and Finance assistant, (ii) Procurement assistant, (iii) Communications and knowledge management specialist, (iv) Administrative assistant.
    - In JSIF (i) Project coordinator, (ii) Administrative and Finance assistant, (iii) Procurement assistant.

    The following positions will support the PMUs of both EEs and will be hired by FAO: (i) Environmental and Social Safeguards specialist, (ii) Gender Equity and Social Inclusion specialist, (iii) Monitoring and Evaluation specialist.
121. The FAOJM PMU will operate under FAO rules and procedures and will coordinate closely with implementing partners through regular technical meetings and joint planning sessions. The responsibilities of the PMU include:
    - Discuss, monitor, and promote best possible synchronisation of implementation between the Executing Entities and implementing partners
    - Be responsible for day-to-day project management and regular monitoring of project results and risks
    - Prepare Annual Work Plans and Budgets for review and approval
    - Ensure that budgets and work plans are on track and monitor project progress
    - Identify and resolve bottlenecks and implementation challenges relevant on project level
    - Monitor adherence to environmental, social and fiduciary safeguards;
    - Monitor implementation of the Project's Environmental and Social Management Plan (ESMP) and Gender Action Plan (GAP), and steer review of these plans if needed
    - Identify issues required to be brought to the attention of the steering committee and/or political decision makers
    - Provide for information exchange and synergies between project components
    - Draft terms of reference and support recruitment of specialists
    - Monitor indicators to assess results at outcome, output and activity levels
    - Draft technical and financial reports as needed
    - Prepare budget revisions and extensions if needed
    - Develop communication and knowledge-sharing materials as needed to ensure visibility of the project
    - Perform secretariat duties for the PSC and Technical Committee.

- Monitor implementation of the Gender Action Plan and ensure gender-responsive budgeting across project components
- Provide technical support and capacity building to implementing partners on gender-responsive implementation approaches
- Coordinate with designated Gender Focal Points from MWECC, MOAFM, RADA, and other partner institutions to ensure systematic gender integration

B.5. Justification for GCF funding request (max. 1000 words, approximately 2 pages)

122. Jamaica faces significant and urgent challenges in adapting its agricultural sector to climate change, particularly in building resilience to increasingly devastating extreme weather events, such as tropical storms, the most recent being Hurricane Melissa. As highlighted in the previous sections, as a small island developing state, Jamaica is highly vulnerable to climate impacts, with its agricultural sector being especially at risk. There is a clear and **critical need to increase the resilience** in the agricultural sector with climate-resilient infrastructure and practices, and target smallholder farmers as the group with the least adaptive capacity.
123. Jamaica's ability to invest in crucial climate adaptation measures is severely constrained by **fiscal limitations and competing development priorities**. While the country has made progress in fiscal management, it must maintain prudent measures to ensure macroeconomic stability. The government's capacity to fund climate adaptation is further constrained by:
    - **High debt servicing costs** that limit fiscal space for new investments;
    - The need to maintain essential public services and social protection programs;
    - Significant expenditure required for basic infrastructure maintenance and development;
    - The substantial costs of **recovery and reconstruction following Hurricanes Beryl and Melissa**
124. The estimated cost of implementing climate adaptation actions in Jamaica's agricultural sector far exceeds available public resources. According to Jamaica's NDC, the country requires substantial financial support to implement its adaptation commitments effectively. The total upfront **investment needed for its sixteen NDC commitments was estimated at USD 920M** in 2021 (World Bank, 2021).
125. The **private sector shows very limited appetite for agricultural lending**, particularly to smallholder farmers. Smallholder farmers, who constitute the majority of agricultural producers in the six central target parishes of Jamaica, face multiple barriers to accessing finance for climate-resilient investments: high interest rates, stringent collateral requirements, and limited financial products tailored to agricultural needs. These effectively exclude most smallholders from commercial lending. This situation is acute for women farmers, who face additional gender-specific constraints in accessing resources and support services.
126. GCF funding is therefore critical to overcome these barriers and catalyse a paradigm shift toward climate-resilient agriculture in Jamaica. GCF financing will **leverage investments by the government of Jamaica and the private sector** in CRA and FLW-reduction technologies, helping farmers make a shift towards climate change adaptation. Demonstration farms, technical assistance, and financial support will enable adoption of these interventions both within the target six parishes and further afield across the country. The GCF's support will help create the necessary enabling environment and provide proof of concept for climate-resilient agriculture, ultimately **mobilising additional private investment** in the sector, including the 1M USD loan from DBJ provided as co-financing in the project. This aligns with Jamaica's climate adaptation priorities while also addressing the urgent need for recovery following **Hurricanes Beryl and Melissa**.
127. Grant funding will also allow RADA and MSJ to strengthen the country's climate information services and early warning systems to support climate-informed agricultural decision-making and improve resilience to extreme weather events such as hurricanes. The project will enhance the agrometeorological observation network by replacing damaged equipment, modernising outdated stations, and expanding coverage to the agriculture sector. GCF financing will also leverage additional investments through capacity building of key institutions like AIC and JSIF, **strengthening their ability to serve as technical partners for financial institutions to promote innovative agricultural services**. There is a unique opportunity to align GCF funding with the potential parallel financing that DBJ may bring by increasing its capacity to expand agricultural lending. As an imminent AE, DBJ will count with all the support structure created by the project when they develop their own. In addition, GCF funds will support AIC in fulfilling its mandate of becoming a MFI, which will increase access to finance in agriculture.
128. ADAPT Jamaica has been designed to be catalytic by demonstrating CRA and FLW-reduction practices at scale, leveraging the experience and resources of JSIF (a GCF DAE) as the eminent development institution in Jamaica, promoting enhanced coordination between RADA and MSJ for CIS and EWS services, strengthening policy for the mainstreaming of CRA and FLW reduction solutions for the agricultural sector, and capacity-building for minimise the impacts of climate change and disasters on Jamaican farmers. With a focus on value-chain development and climate-proofing post-harvest production, ADAPT Jamaica will also strengthen farmers' capacity to access finance and markets through comprehensive support in business planning, farm investment plans, financial literacy, and organisational development.

B.6. Exit strategy (max. 500 words, approximately 1 page)

129. The sustainability of ADAPT Jamaica's interventions is ensured through multiple reinforcing mechanisms. Government ownership will be secured through the integration of project approaches and lessons into national policies and programmes, particularly within RADA and MSJ's regular operations. Physical infrastructure (irrigation systems, greenhouses, AWS networks) will be maintained, where relevant, through partnerships between government entities (JSIF, RADA, MSJ, AIC) and individuals, associations or MSMEs to assume clear responsibilities and allocation of maintenance budgets at project completion. Climate-resilient practices demonstrated on model farms will continue through the trained network of model farmers who will serve as ongoing knowledge resources in their communities. The financial mechanisms promoted under Component 4, including access to a credit line for climate-resilient agriculture, will be institutionalised within private financial institutions, creating sustainable financing channels beyond the project period (Output 4.2). Project deliverables will provide opportunities for farmers in vulnerable parishes beyond the six target parishes, such as St. Mary, Portland and St. Thomas to access, for example, the dedicated credit line for climate adaptation in agriculture or the farmer marketplace. Digital platforms developed for climate information services will be maintained through public-private partnerships established during implementation, with clear service agreements and revenue models to support ongoing operations. The multi-stakeholder platform connecting agricultural enterprises with investors will transition to a self-sustaining governance model supported by the various value chain participants (Output 4.1). This will also ensure a wider national reach.
130. The exit strategy of ADAPT Jamaica is ensured through long term sustainable interventions, including: (i) continued operations and maintenance; (ii) mainstreaming CRA and FLW-reduction into policies and plans; (iii) unlocking private investment; and (iv) embedding CIS and EWA into existing country operations.

Continued operations and maintenance

131. The project will facilitate knowledge transfer and capacity building through hands-on training and peer learning, ensuring that model farmers can effectively implement and maintain climate-resilient practices over the long term, and transfer knowledge to peers. The project will develop practical training materials easily understandable for smallholders that will be accessible on a lasting basis. To ensure sustained implementation of improved practices, a mentoring system will be established where model farmers, supported by the project team, provide ongoing guidance to smallholder farmers in adapting their practices to changing weather patterns and market conditions. The investment-ready packages will be developed with clear technical specifications, operational requirements, and implementation guidelines, and will be designed as modular, scalable solutions that can be implemented incrementally as financing becomes available to enable farmers to build climate resilience progressively.

Mainstreaming CRA and FLW-reduction in Jamaica's policies and plans

132. As outlined in Annex 2 Feasibility Study, Jamaica has a wide-ranging policy landscape to support its agricultural sector and resilience-building efforts encompassing sectoral and cross-sectoral instruments. ADAPT Jamaica will mainstream and scale-up new CRA and FLW-reduction measures and technologies employed by RADA, supporting government initiatives such as Jamaica's Vision 2030. This includes rolling out these interventions through government budgeting and project co-financing. The existing bauxite reclamation sites and Agro Parks will also be used as demonstration sites under Component 1. The scale-up of climate-resilient and high-value crops in the target areas will further help to magnify government efforts in agriculture and reach its targets and objectives. By aligning with the above-mentioned policies and plans, other funding can be targeted to further complement the work done through ADAPT Jamaica.
133. Through a graduated approach that moves from demonstration of to widespread adoption, Component 1 will support the scaling up of successful CRA and FLW-reduction interventions across the target parishes. Selected demonstration farms will be operationalised to become farmer field schools, establishing communities of practice for the long-term maintenance of interventions. Targeted outreach will be conducted for individual smallholders through RADA's farmer registration and extension network, existing farmer associations, Agro Parks, and farmer clusters in Bauxite reclamation sites.
134. At the policy level, it supports the Government of Jamaica in developing a comprehensive framework that incentivise private sector engagement in climate-resilient agriculture. By conducting comprehensive assessments of Jamaica's policy landscape, the project will identify and address barriers to private sector investment in climate-resilient solutions while developing a policy framework to incentivise their adoption. Through targeted capacity building of key institutions like AIC and JSIF, it strengthens their ability to serve as technical partners for financial institutions to promote innovative agricultural services. Component 4 places special emphasis on fostering entrepreneurship and public-private partnerships, establishing business incubators and acceleration programmes to develop a robust ecosystem of agricultural service providers. Working with agricultural financial institutions, the component will develop specialised financial products with adequate terms for smallholder farmers to adopt CRA and FLW reduction interventions.
135. Working through key institutions like AIC and JSIF, Output 3.1 will support the integration of climate resilience considerations into agricultural development planning, with a focus on planned and future Agro Parks and bauxite reclamation areas. Through the development of standardised operational manuals and planning frameworks, it will ensure that climate resilience is systematically incorporated from the design phase of new agricultural production zones.

Unlocking private investment

136. The project will ensure sustainability by strengthening value chains to generate improved incomes that are more resilient to climate shocks. Further, it will develop the institutional capacity of AIC and DBJ to provide financial mechanisms that enable improved access to finance for CRA and FLW-reduction investments. Establishing PPPs through value chain approaches will meet producer and consumer need while securing market access under the efficiency of private sector engagement and public sector agricultural frameworks.
137. Through targeted business incubation and acceleration programmes, the project supports young entrepreneurs in developing and scaling services that enable climate-resilient agriculture in Jamaica. By establishing formal service provision arrangements

between public and private sectors, it creates sustainable mechanisms for delivering critical agricultural services to farmers. ADAPT Jamaica will also facilitate market linkages and investment flows through the creation of an agricultural enterprise networking platform. This multi-stakeholder platform will connect producers, service providers, and investors while documenting and sharing successful experiences with climate-resilient practices.

138. The project will foster entrepreneurship and public-private partnerships, and establish business incubators and acceleration programmes to develop a robust ecosystem of agricultural service providers. Working with agricultural financial institutions, the project will develop specialised financial products with favourable terms for smallholder farmers to adopt CRA and FLW reduction interventions. ADAPT Jamaica will build financial sector capacity to participating FIs (to be determined during project implementation) by strengthening their ability to develop and deliver specialised products for climate-resilient agriculture. Through DBJ's existing agricultural credit line, the project will facilitate increased lending while also exploring potential opportunities and the feasibility to integrate agricultural insurance into those products.
139. ADAPT Jamaica's model will harness market incentives, CRA and FLW-reduction technologies, CIS and EWS operating systems, policy frameworks and private investment to achieve its goal to reduce farmer vulnerability to climate change. Replication and scale-up will be achieved as part of the exit strategy through the project's capacity building activities of direct beneficiaries and private and public sector partners, as well through business planning, farm investment plans, financial literacy, and organisational development.

Embedding CIS and EWA into existing country operations

140. Component 2 will build on (and re-establish) the Met Service of Jamaica's specialised agricultural climate information products, ensuring they are comprehensible and tailored to farmers' needs. All activities under Component 2 are designed to be in line with MSJ and RADA's needs and institutionalised as an integral part of modernising their operations.
141. The integration of such climate information into RADA's app will enhance accessibility. The project will also build institutional capacity by training technical personnel at MSJ and RADA in data collection, analysis, and dissemination. It will strengthen both the technical infrastructure and service delivery aspects of climate information services to ensure reliability. A key focus will be strengthening agricultural monitoring and warning systems by developing clear protocols for agriculture-focused warnings that complement ODPEM's disaster alerts. By embedding these improvements into MSJ and RADA's existing operations and training their staff for onward operations and maintenance, the **long-term ownership of these investments is secured**. Beyond the specific capacity built within the six target parishes, the project ensures long-term national replication and scale-up through institutionalizing key interventions. The comprehensive modernization of the Climate Information Services (CIS) and EWS network (Component 3) is explicitly designed to deliver improved agricultural climate information across all fourteen parishes of Jamaica, embedding climate resilience into government operations.

C. FINANCING INFORMATION

C.1. Total financing

(a) Requested GCF funding (i + ii + iii + iv + v + vi + vii)	Total amount	Currency
	40.55	million USD ($)

GCF financial instrument	Amount	Tenor	Grace period	Pricing
(i) Senior loans	Enter amount	Enter years	Enter years	Enter %
(ii) Subordinated loans	Enter amount	Enter years	Enter years	Enter %
(iii) Equity	Enter amount			Enter % equity return
(iv) Guarantees	Enter amount	Enter years		
(v) Reimbursable grants	Enter amount			
(vi) Grants	40.55			
(vii) Results-based payments	Enter amount			

(b) Co-financing information	Total amount	Currency
	9.45	million USD ($)

Name of institution	Financial instrument	Amount	Currency	Tenor & grace	Pricing	Seniority
JSIF	Grant	5.35	million USD ($)	n/a	n/a	Options
JSIF	In-kind	0.30	million USD ($)	n/a		
MOAFM	In kind	1.43	million USD ($)	n/a	Enter%	Options
MOAFM	Grant	0.64	million USD ($)	n/a		
DBJ	Grant	0.60	million USD ($)	n/a	Enter%	Options
DBJ[59]	Loan	1.00	million USD ($)	n/a		
FAO	In-kind	0.12	million USD ($)	n/a		

(c) Total financing (c) = (a)+(b)	Amount	Currency
	49.99	million USD ($)

(d) Other financing arrangements and contributions (max. 250 words, approximately 0.5 page)	N/A

C.2. Financing by component

Component	Output	Indicative cost	GCF financing	Co-financing

[59] DBJ's co-financing includes a USD 1 million credit line accessible to approved financial institutions.

		Options	**Amount** Options	**Financial Instrument**	**Amount** Options	**Financial Instrument**	**Name of Institutions**
Component 1	Output 1.1	16,746,430	9,938,980	Grants	4,996,900 1,171,516 639,034	Grants In kind Grants	JSIF, MOAFM MOAFM
	Output 1.2	732,000	732,000	Grants			
Component 2	Output 2.1	18,780,400	18,430,400	Grants	350,000	Grants	JSIF
Component 3	Output 3.1	3,446,620	3,446,620	Grants			
	Output 3.2	973,710	973,710	Grants			
Component 4	Output 4.1	1,242,242	1,010,250	Grants	231,992	In kind	MOAFM
	Output 4.2	3,204,224	1,604,224	Grants	1,000,000 600,000	Loan Grant	DBJ
M&E		1,272,000	1,272,000	Grants			
PMC		2,385,126	1,929,500	Grants	301,900 29,100 124,626	In kind	JSIF, MOAFM FAO
Contingency		1,216,629	1,216,629	Grants			
Indicative total cost (USD)		49,999,381	40,554,313		9,445,068		

C.3 Capacity building and technology development/transfer (max. 250 words, approximately 0.5 page)

C.3.1 Does GCF funding finance capacity building activities?	Yes ☒ No ☐
C.3.2. Does GCF funding finance technology development/transfer?	Yes ☒ No ☐

Capacity building (CB) and technology transfer (TT) are the lynchpins of ADAPT Jamaica, and built into all outputs, as illustrated in the table below.

Output	**Total amount of GCF funding**	**CB and / or TT**	**Description**
Output 1.1: Model farms established to serve as farmer field schools to increase knowledge and capacity on CRA FLW-reduction interventions	2,101,500 USD	CB and TT	This output establishes model farms as learning centres that demonstrate climate-resilient agriculture and food loss and waste reduction interventions. Activities include implementing individual and collective water management systems, protected agriculture structures designed to withstand Category 5 hurricanes, energy-efficient storage technologies, and integration of agroforestry systems. The technology transfer component is substantial, providing smallholder farmers with access to advanced climate-resilient farming technologies and practices. Capacity building occurs through hands-on demonstrations at these model farms, where farmers can observe and learn about hurricane-resilient agricultural systems.
Output 1.2: Knowledge on CRA and FLW-reduction interventions accessible to key value chain actors and implementation capacity increased	380,000 USD	CB	This output focuses entirely on building farmers' capacity through farmer field schools. Activities include conducting training needs assessments, developing training materials on production cycle planning, and delivering hands-on training on CRA, FLW-reduction, and hurricane preparedness. Model farmers receive intensive training of trainers (ToT) sessions to build their capacity as effective trainers, who then facilitate hands-on learning sessions at demonstration sites.
Output 2.1: CRA and FLW-reduction interventions are scaled up	13,131,000 USD	CB and TT	This output develops standardised, investment-ready implementation packages for CRA and FLW technologies and equips vulnerable farmers with low-cost sustainable intervention packages. It strengthens farmers' capacity to access finance and markets through business planning, financial literacy training, and organisational development. The technology transfer provides tailored technology packages to selected beneficiaries with technical support, while the capacity building focuses on strengthening farmers' organisational capacity, developing farm investment plans, and facilitating linkages across value chains. Additionally, this output will rehabilitate essential agricultural production infrastructure and equipment damaged by Hurricanes Melissa and Beryl to restore production capacity and support livelihood recovery.

Output 3.1: Strengthened agrometeorological observation network and forecasting capabilities to support early warning systems	1,658,964 USD	TT	This output modernises Jamaica's agrometeorological observation network through installation of new Automatic Weather Stations and rainfall data loggers, replacing both outdated equipment and equipment damaged by Hurricane Beryl and Hurricane Melissa. It establishes robust data management infrastructure with a central database at MSJ, and provides computing hardware to both MSJ and RADA. The output also implements an SMS-based climate information delivery system through telecommunication partnerships and expands the dissemination of targeted early warnings to farmers.
Output 3.2: CIS relevant to agriculture developed and delivered	157,000 USD	CB	This output focuses on building institutional and farmer capacity to utilise climate information services. Activities include re-establishing agro-meteorological bulletin services, improving integration of climate information into RADA's digital platform, and training MSJ and RADA technical personnel in data collection, interpretation, and dissemination. The output also trains farmers to understand and utilise climate information through tailored materials and hands-on sessions, ensuring they can effectively apply climate information for farm-level decision making.
Output 4.1: Policies, partnerships, and incentives for CRA and FLW developed	181,000 USD	CB	This output strengthens the enabling environment through policy development, institutional capacity building, and market development. It supports the Government of Jamaica in revising policies to incentivise CRA and FLW investments, develops climate-resilient approaches for new Agro Parks and bauxite reclamation areas, and facilitates public-private partnerships for agricultural service provision. The output builds capacity of institutions like AIC and JSIF to serve as technical partners for financial institutions while supporting young entrepreneurs through business incubation programs.
Output 4.2: Access to finance and markets increased to support upscaling CRA and FLW practices and technologies.	260,000 USD	CB	This output expands financing for CRA and FLW solutions by developing a standardised taxonomy for climate-resilient investments through DBJ. It builds capacity of participating financial institutions to develop specialised products for climate-resilient agriculture, facilitates access to DBJ's agricultural credit line, and develops CRA and FLW learning modules for an open-access certification course.

D. EXPECTED PERFORMANCE AGAINST INVESTMENT CRITERIA

D.1. Impact potential (max. 500 words, approximately 1 page)

142. The target scenario foresees a paradigm shift to promote the development of an enabling environment in terms of practice, policy, and finance to support the mainstreaming of CRA and FLW reduction practices and technologies for the agricultural sector of Jamaica. Therefore, it is expected that the project will contribute to the following GCF Adaptation Results Areas (ARAs) and IRMF indicators:

- **ARA 1: Most vulnerable people and communities**
  - *i. Core indicator 2: Direct and indirect beneficiaries reached*
  - *ii. Supplementary indicator 2.1: Beneficiaries (female/male) adopting improved and/or new climate resilient livelihood options (number of individuals)*
- **ARA 2 Health, well-being, food, and water security**
  - *i. Core indicator 2: Direct and indirect beneficiaries reached*
  - *ii. Supplementary indicator 2.2: Beneficiaries (female/male) with improved food security (number of individuals)*
- **ARA 3: Infrastructure and built environment**
  - *i. Core indicator 2: Direct and indirect beneficiaries reached*
  - ii. *Supplementary indicator 2.4: Beneficiaries (female/male) covered by new or improved early warning systems*
  - iii. *Supplementary indicator 3.1: Change in expected losses of economic assets due to the impact of extreme climate-related disasters in the geographic area of the GCF intervention*
- **ARA 4: Ecosystems and ecosystem services**
  - i. *Core indicator 4: Hectares of natural resource areas brought under improved low-emission and/or climate-resilient management practices*

Beneficiary calculations

143. The project is expected to reach 315,226 direct beneficiaries and 420,864 indirect beneficiaries, for a total of 736,090 (of which 334,421 are women). This represents a substantial contribution to building climate resilience within Jamaica's agricultural sector, which is critical to rural livelihoods and food security for the most vulnerable smallholder farmers. Special attention will be given to women and youth farmers through targeted outreach strategies and prioritization in selection criteria. At least 33% of all participants will be women, and youth farmers (18-29 years) will be given priority in selection processes.

	Direct beneficiaries	Indirect beneficiaries
ARA1	189,616	607,210
ARA2	8,904	8,322
ARA3	185,839	530,970

ARA4	98,124	-
Total[60]	**315,226**	**420,864**

144. Through the project, smallholder farmers will receive comprehensive support, including: (i) training in climate-resilient agricultural practices and food loss and waste reduction through Farmer Field Schools (Output 1.2); (ii) obtaining direct investments of low-cost climate resilience and food loss reduction technology packages for the most vulnerable farmers experiencing food insecurity (Output 2.1); (iii) Improved access to climate information and early warnings (Output 3.1 and 3.2); (iv) Training to understand and apply climate information for farm-level decision-making (Output 3.2); access to agricultural finance products specifically tailored for climate resilience investments (Output 4.2); (iv) enhanced policy for mainstreaming climate resilient agriculture (Output 4.1). In response to the devastating impacts of Hurricane Melissa, the project will also provide immediate livelihood recovery support through cash-for-work and cash transfers to the most vulnerable rural community members, while rehabilitating critical RADA agricultural infrastructure damaged by the storm (Activity 2.1.5).
145. The project will identify and support 68 model farmers (45 individual farmers and 23 as leaders of farmer clusters) to establish model farms that serve as Farmer Field Schools demonstrating climate-resilient agriculture and food loss reduction interventions. These farmers will receive comprehensive support packages, intensive Training of Trainers, and assistance in developing business plans for their model farms. Each model farmer will train approximately 30 farmers per year for 4 years, creating a multiplier effect of knowledge transfer. Farmers working in clusters (both regular clusters and in bauxite reclamation areas) face collective challenges in implementing climate adaptation measures. The project will work with 20 farmer clusters (10 JSIF co-financed clusters and 10 additional clusters), benefiting approximately 340 farmers through collective climate-resilient interventions including improved water management infrastructure and post-harvest handling facilities. Additionally, farmers leasing land in three Agro Parks (approximately 90 farmers) will benefit from climate-resilient irrigation solutions in one Agro Park and a multipurpose cold chain facility at Ebony Park Agro Park with solar power systems and backup generation. The project will also support 100 farmer associations through organizational strengthening and capacity building. These associations will receive support in transitioning from informal groups to registered associations, developing comprehensive farm investment plans, receiving financial literacy and business planning training, and establishing market linkages across the value chain.
146. Capacity of RADA and MSJ personnel (100 RADA, 40 MSJ) in climate data collection, interpretation, quality control, storage, and dissemination will also be built by the project (Output 3.2). Government officials and policymakers will be supported in developing comprehensive policy frameworks for climate-resilient agriculture (Output 4.1), while financial institutions will receive training in climate finance and developing specialised products for climate-resilient investments (Output 4.2). Businesses and agricultural service providers will be aided in establishing formal public-private partnerships for CRA and FLW practices and interventions, and young entrepreneurs will be supported through a business incubator and accelerator programme for the most promising and marketable agribusiness propositions (Output 4.1).

Adaptation benefits

147. ADAPT Jamaica will generate substantial adaptation benefits across multiple dimensions. In terms of agricultural productivity and food security, smallholder farmers will experience: (i) increased yields through improved water management and climate-adapted farming practices; (ii) reduced crop losses from extreme weather events through early warning systems and hurricane preparedness; (iii) enhanced post-harvest handling through improved storage facilities and food loss reduction technologies; (iv) diversification of income sources through value addition and market linkages.
148. The project will enhance the resilience of agricultural infrastructure through: (i) installation of collective water harvesting and storage systems in farmer clusters; (ii) development and installation of hurricane-resistant protected agriculture structures; (iii) construction of energy-efficient cold storage facilities with solar power systems; (iv) improving the irrigation infrastructure of Agro Parks, leveraging existing infrastructure and institutional arrangements for maximum impact; v) rehabilitation of essential agricultural infrastructure and equipment damaged by Hurricanes Beryl and Melissa, restoring RADA/MOAFM's greenhouse and nursery production capacity, and recovery of agricultural lands and seedling production in Agro Parks and demonstration sites.
149. The project will also create lasting knowledge and capacity through: (i) the establishment of a farmer-to-farmer extension system for climate-resilient agriculture in the form of Farmer Field Schools; (ii) better integration of climate information into agricultural decision-making processes by enhancing the existing digital solutions in Jamaica, such as the RADA app and platforms operated by the MSJ; (iii) strengthened capacity of local institutions to provide climate extension services; (iv) enhanced understanding of climate risks, adaptation options, and hurricane preparedness among farmers; (v) development of local expertise in climate-resilient technologies and practices, particularly for financial institutions who currently perceive agricultural lending with too high of a risk.

D.2. Paradigm shift potential (max. 500 words, approximately 1 page)

[60] The project identified beneficiaries across all four GCF ARAs. As Jamaica is a Small Island Developing State, the total beneficiary pool is relatively small, and the interventions across the various ARAs will largely apply to the same beneficiaries. To ensure accuracy and avoid double counting, several assumptions have been made. See Annex 23a – Beneficiary calculations.

Paradigm shift

150. ADAPT Jamaica seeks to drive transformational change in Jamaica's agricultural sector through integrated development planning of CRA and FLW reduction for climate adaptation needs, while simultaneously addressing immediate recovery needs following Hurricane Melissa. Through Component 1, the project establishes a network of model farms serving as farmer field schools that demonstrate and validate CRA practices suited to local conditions, ensuring adaptation interventions are appropriate for different farming contexts, from individual smallholders to collective infrastructure in Agro Parks and Production Zones and farmer clusters in bauxite reclamation areas. The project enables community-responsive policy frameworks by supporting the revision of regulations around access to climate-resilient crop varieties and establishing clear protocols for agriculture-focused early warnings at the last mile. Component 2's enhancement of agrometeorological services creates the foundation for climate-informed agricultural planning, while Component 3 strengthens institutional frameworks for sustained investment in climate resilience through policy interventions and multi-stakeholder platforms, thereby forming an integrated approach to planning and programming that helps ensure that climate resilience becomes embedded in agricultural decision-making at all levels.
151. The project will catalyse innovation by promoting agribusiness models for climate-resilient agriculture. Through Component 1, it introduces and validates innovative CRA and FLW reduction technologies tailored to local contexts, while developing standardised investment packages that will incentivise their adoption, from individual smallholders to farmer associations. Component 3 will establish specialised credit lines and risk management frameworks that enable financial institutions to support these climate innovations.
152. The project will also contribute to creating transformative change in agricultural financing by facilitating improved access to credit specifically designed for smallholder farmers implementing CRA and FLW reduction practices and technologies. Through Component 3, the project will work with the Development Bank of Jamaica to establish dedicated credit lines for CRA and FLW investments, while strengthening the capacity of agricultural financial institutions to assess and manage climate risks. The project bundles technical assistance with financial products and supports public-private partnerships to stimulate resilient supply chains, creating sustainable financing mechanisms that can be scaled across the sector. In addition, through Output 3.2 the project will also explore existing government programmes and ways to enhance them with robust social protection mechanisms for the most vulnerable farmers. The project's response to Hurricane Melissa demonstrates this integrated approach by combining immediate livelihood recovery through targeted cash transfers with longer-term infrastructure rehabilitation that incorporates climate-resilient features, ensuring that recovery investments contribute to sustained adaptation rather than simply restoring pre-disaster conditions.
153. Lastly, the project will build knowledge-sharing systems to ensure sustainable impact. Through farmer field schools and multi-stakeholder platforms established under Components 1 and 3 respectively, ADPT Jamaica will create mechanisms for sharing technologies and management practices suited to different agro-ecological contexts. The project will promote successful business models for scaling resilient agriculture through demonstration effects and peer learning networks. It will strengthen private sector engagement by mainstreaming climate risk considerations into business operations and builds capacity of cooperatives and industry groups to sustain climate-resilient practices beyond the project period.
154. The table below illustrates ADAPT Jamaica's project activities' alignment with the sectoral pathways and the four pillars of the GCF strategic plan for the agricultural sector.

Sector		Alignment with GCF Strategic Plan					
Agriculture and Food security		**Transformational planning & programming**	**Catalysing climate innovation**	**Mobilising finance at scale**		**Coalitions & knowledge to scale up success**	
	Pathway 1: Promoting Resilient Agroecology	Integrated agricultural development planning that mitigates the risks of maladaptation Enabling community-responsive policies, frameworks & policies	Promoting new business & financing models for reaching scale that incentivise low-emissions resilient inputs practices & technologies Integration of climate-responsive technologies, services, and programmes	Facilitation of improved access to financial services (e.g., credit, insurance) for smallholders Bundling services & interventions together	Technical investment assistance	Knowledge platforms for sharing what technologies, management practices & business models are most suited for different agro-ecological & socio-economic contexts Promoting successful business models for scaling resilient agriculture	Monitoring, evaluation & learning to inform scaling Promoting public awareness & capacity building for scale

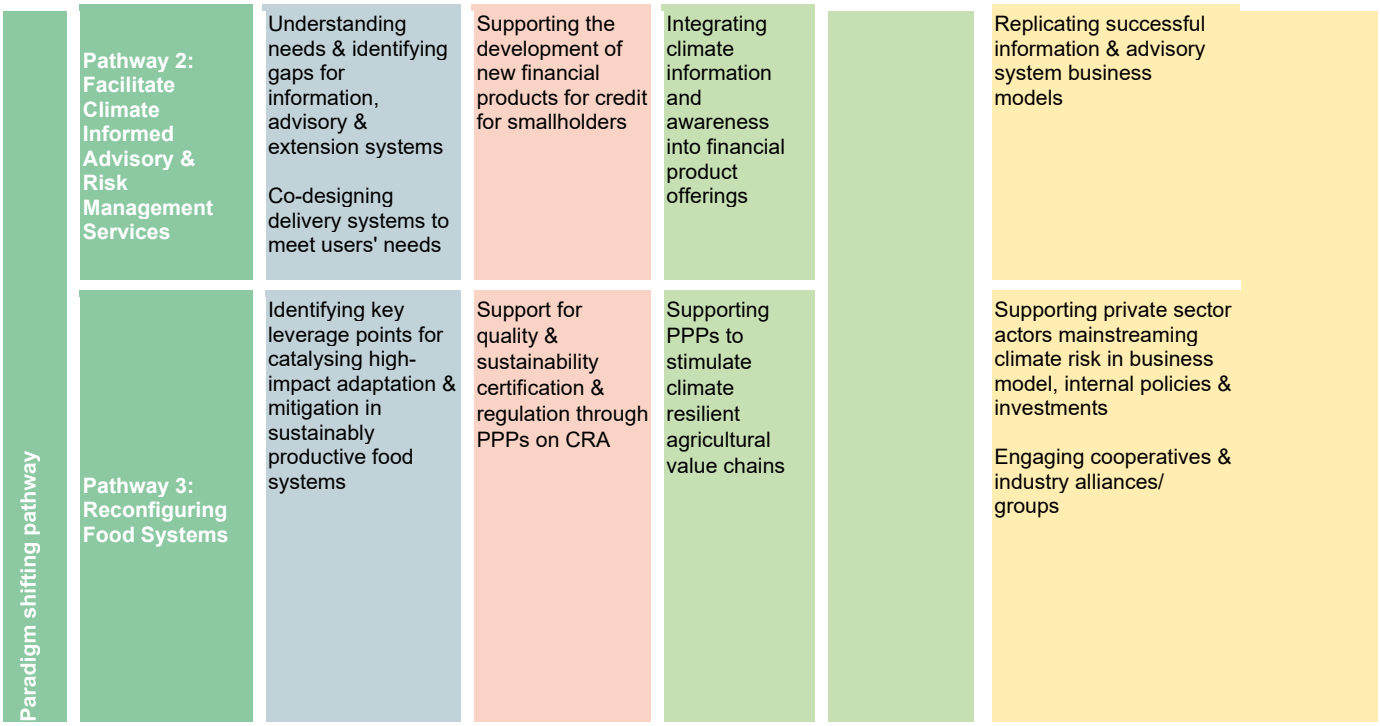


Figure 14 Alignment of ADAPT Jamaica with the GCF Strategic Plan for Agriculture and Food Security.

Scale-up

155. The CRA and FLW-reduction practices demonstrated and scaled-up by this project can be adapted and further upscaled to other regions in Jamaica. For example, interventions designed to enhance productivity and resilience with minimal investment under Model farm 1 can be disseminated to other parishes through extension services and farmer networks. As a result of project interventions, smallholder farmers will have improved capacity to implement CRA and FLW practices and technologies, make informed farming decisions taking into consideration climate data, and have access to CRA and FLW infrastructure. Improved access to finance and agricultural financial services under Component 4 will also serve as an upscaling strategy, facilitating broader uptake across farmers in the country. Improved access to specialised financial products for CRA and FLW will enable much-needed investments to increase productivity in the sector, while the most vulnerable farmers will improve their food security from direct project interventions. ADAPT Jamaica's integrated approach to climate resilience brings together farms, extension services, climate information service providers and financial institutions, building their capacity and ensuring access to sustainable practices and finance. A strengthened policy environment will mainstream climate resilient agriculture into the Government of Jamaica's policies and strategies, leading to an informed and coordinated approach to address climate hazards.

Replicability

156. Subject to further CRVA and suitability assessments for the local context, many of the project interventions are replicable across Jamaica. All the parishes can benefit from the strengthened policy environment and generated capacity to select and implement CRA and FLW-reduction strategies. Improved climate information developed under the project will also serve any future climate change projects, along with the dissemination of early warning systems and climate information through SMS alerts, mobile applications, radio and community-based networks.

157. Demonstration sites (model farms) provide evidence for the feasibility, effectiveness, and efficiency of CRA and FLW technologies and practices to both farmers and financial institutions and other value chain actors. Farmers engage in climate-informed decisions and utilise financial products to replicate tried and tested practices and technologies, strengthening their climate resilience. Implementation of CRA and FLW interventions lead to increased productivity and reduced losses improving their livelihoods. Farmers are informed timely and in comprehensible language concerning potential extreme weather events taking the necessary measures to protect their production. The easy and accessible nature of the information provided leads to the utilisation of digital solutions by a majority of farmers.

D.3. Sustainable development (max. 500 words, approximately 1 page)

158. ADAPT Jamaica will directly contribute to the following Sustainable Development Goals (SDGs):

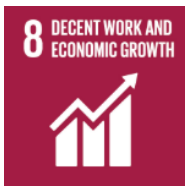
159. 

SDG 1 - No poverty: The project will build a strong relationship between climate resilient agriculture and rural poverty alleviation through its prioritization and targeting of the most climate vulnerable and impoverished provinces and smallholder farmers. The beneficiaries will benefit from improved capacities to improve their food production and income generation opportunities along the value chains. The adaptation interventions will protect against extreme weather events, reduce post-harvest losses, provide support for irregular harvest, enhance crop yield, water conservation and soil health, amongst others.

Social co-benefits will have a positive impact on smallholder farmers, of whom many are reliant on agriculture for their livelihoods. The project will improve these livelihoods and reduce poverty.

160. 

SDG 5 – Gender: Selection criteria for low-cost CRA and FLW-reduction intervention packages will include factors such as climate and social vulnerability, including gender and youth targets, to maximise the outreach of the project. The project will rely on participatory community approaches and gender-transformative approaches that promote the participation of all community and household members including women, men, female and male youth. The project will provide gender-inclusive training and capacity building to women participants, which will help to improve their skills, knowledge, and confidence. Special attention will be given to gender-inclusive training approaches and participatory learning methods in training of trainers activities.

161. 

SDG 8 - Decent work and economic growth: ADAPT will improve climate-resilient agriculture and food loss and waste reduction, contributing to climate change adaptation. Technical assistance provide by the project will help to improve smallholders working conditions, by ensuring a more equitable share of the benefits along agricultural value chains. Co-benefit 1 will result in improvement of the local economy through better economic opportunities and will create job opportunities for income generation in the agriculture and FLW sector. Economic co-benefits will be achieved by increasing the climate resilience of vulnerable smallholder households by developing sustainable value chains and improving agricultural enterprises. The project's economic impact and how the project will improve incomes can be found in Annex 3 Economic and Financial Analysis.

162. 

SDG 12 - Responsible consumption and production: By promoting FLW-reduction strategies, ADAPT will make a significant contribution to SDG 12 in Jamaica. Crop-specific climate-resilient interventions across the selected ADAPT Jamaica value chain will particularly target improved production outcomes, such as through a wider uptake of water saving techniques, enhanced climate advisory support, improved land management practices to reduce soil erosion, and intercropping with complementary crops.

163. 

SDG 13 - Climate action: ADAPT Jamaica is designed to achieve climate action by reducing the vulnerability of farmers to climate impacts through the application of climate-resilient agriculture (CRA) and food loss and waste (FLW) reduction practices and technologies.

164. 

SDG 15 - Life on land: It is estimated that 17,304 hectares of agricultural land will be brought under improved low-emission and/or climate-resilient management practices (ARA 4). The project focuses on transforming agricultural practices and post-harvest management through a systematic approach to building climate resilience at the farm level. The project will showcase proven solutions including water management systems, protected agriculture, efficient solar-powered cold and dry storage facilities, agroforestry practices using species with proven adaptive ecosystem services, and climate-adapted crop varieties. **Environmental co-benefits** include improved biodiversity by increasing agroforestry systems, adopting climate-resilient varieties and enhanced soil and water quality through adaptive agricultural practices. These in turn directly improve soil quality and contribute to water conservation, resulting in enhanced ecosystem services across the target landscapes. See Table 4 for further information on the adaptation benefits of the interventions.

Environmental co-benefits

- Water conservation and management infrastructure (other than irrigation systems) primarily increase adaptation by providing access to water resources during droughts and managing excess water during heavy rainfall / flooding. Reduced runoff minimises soil erosion and nutrient loss, supporting healthier ecosystems. Measures such as retention basins and soil bunds can support or be part of ecosystem restoration interventions, also contributing to biodiversity recovery in degraded landscapes.
- Solar-powered efficient irrigation systems can be structured / designed to optimise water use by delivering it precisely where needed . This minimises losses from evaporation and runoff, conserving valuable water resources. The controlled delivery of water from irrigation systems reduces the risk of soil erosion and salinisation, contributing to healthier soils and supporting long-term agricultural sustainability.
- Improved storage conditions minimise food waste, lowering the environmental impact associated with agricultural production and reducing resource inefficiencies. The integration of solar energy to power some of its components also improves energy efficiency (and reduces operational costs).
- Renewable energy use in storage operations reduces greenhouse gas emissions. Solar-powered systems have a low(er) carbon footprint compared to fossil-fuel-powered irrigation systems.
- Biodiversity conservation: By preserving a wide variety of seeds belonging to different species, seed banks contribute to the protection of genetic resources over various time horizons.
- Nutrient cycling: Organic matter from trees and crops enriches the soil, improving its fertility and reducing the need for external fertilisers, ultimately enhancing long-term soil health.

Social co-benefits

- Infrastructure projects create opportunities for local engagement and skill-building.
- Stored water provides safer access to clean water for domestic use, but not exclusively, during droughts.
- Enhanced storage conditions reduce the need for pesticides, improving food safety.
- Food security: By improving water availability, agricultural productivity is enhanced, in turn contributing to more stable food supplies.
- Reduced dependency on external aid: With improved agricultural productivity and food security, greenhouse systems help farmers reduce reliance on external aid, particularly in disaster situations.
- Cultural preservation: Many traditional crop varieties stored in seed banks are integral to local cultures and diets. The integration of trees and crops often aligns with traditional farming practices, preserving cultural heritage.

Economic co-benefits

- Reliable water access boosts agricultural productivity, ultimately stabilising incomes.
- Modernised storage infrastructure helps farmers stabilise their incomes by reducing post-harvest losses and preserving the marketability of their produce.
- Building, maintaining, and operating new technologies and facilities generate employment opportunities, particularly in rural communities.
- Reducing operational costs and increasing crop yield supports smallholder farmers' incomes.
- By preserving valuable and climate-resilient crop varieties, seed banks can support agricultural productivity, reducing the risks of crop failure and / or supporting recovery efforts by supplying seeds in post-disaster scenarios.

Gender-sensitive development benefit

- Diversified income streams: Family orchards provide households with additional revenue from selling fruit, spices, and other tree-based products, reducing dependence on a single income source. Agroforestry diversifies farm incomes by providing additional products such as timber and fruits, alongside traditional crops.
- Established nurseries provide employment and management opportunities for women.
- Financial literacy training and individualised support to women and youth to develop and implement business plans and improve business prospects.
- Improved opportunities for women-led enterprises and women farmer / agribusiness organisations.
- A key pillar of ADAPT Jamaica's approach is the integration of gender mainstreaming across all project components. By recognizing the unique challenges faced by women in agriculture and their vital role in building climate resilience, the initiative ensures that women are included in decision-making processes and have equitable access to resources, training, and technologies.

D.4. Needs of recipient (max. 500 words, approximately 1 page)

Vulnerability of the country and the target groups

165. The agricultural sector represents a critical component of Jamaica's national development strategy, contributing just over 8% of Jamaica's Gross Domestic Product (GDP) in 2020 (STATIN, 2020) and serving as a significant source of employment, foreign exchange earnings and rural livelihoods. The **sector employs approximately 258,000 registered farmers** (33 % of which are women) that represent an estimated 15% of Jamaica's labour force, and supports over 200,000 farm households (ABIS, 2024; RADA, 2021). This sector is therefore **highly important in terms of national food security and poverty alleviation**. Poverty rates for rural families are generally double that of Kingston. And parishes that have a large rural population (such as Hanover, Westmoreland, St. Elizabeth, and Trelawny) comprises some of the highest poverty rates for the country (CIDA 2009; World Bank, IADB). Under Output 2.1, ADAPT Jamaica will also provide targeted support to the most vulnerable farmers through low-cost CRA and FLW-reduction investment packages, ultimately reaching 1,023 farmers and their households.
166. **Poverty remains a pressing issue in Jamaica**, particularly among rural populations, where agriculture is often the primary livelihood. Rural areas disproportionately bear the burden of poverty, with rural poverty rates significantly higher than those in urban areas. The agriculture-dependent rural communities are particularly vulnerable due to limited economic diversification, exposure to climate shocks, and inadequate infrastructure.
167. Between July 2023 and February 2025, a comprehensive stakeholder engagement process was conducted, engaging over 500 stakeholders across national, parish, and community levels in six target parishes: St. Catherine, Clarendon, Manchester, St. Elizabeth, St. Ann, and Trelawny, along with government entities, civil society organisations and international development partners. The stakeholder engagement process has illuminated both the strengths and weaknesses in the current agricultural system. While strong institutional frameworks exist, **significant gaps remain in farmer support systems, particularly in access to finance, water management, and market linkages**. These findings suggest the need for a comprehensive intervention strategy that addresses both technical and social aspects of agricultural resilience while ensuring inclusive participation of women, youth, and persons with disabilities. The success of the ADAPT Jamaica Project will depend on effectively addressing these identified challenges while building on existing community strengths and institutional frameworks.

Economic and social development of Jamaica

168. **Budgetary constraints are a major barrier**, with the Government of Jamaica allocating only JMD 50 million annually to the National Disaster Fund; far below the estimated JMD 50 billion needed to address the annual impacts of disasters. Most parishes **lack dedicated budgets or disaster funds**, with only Saint James and Saint Catherine having specific financial allocations for disaster preparedness. In 2018, the Inter-American Development Bank (IDB) assessed Jamaica's disaster risk management governance using the Index of Governance and Public Policy in Disaster Risk Management (iGOPP). Jamaica scored 26%,

highlighting **gaps in its framework for risk identification, risk reduction, preparedness, recovery, and financial protection** (MLGCD, 2022).

169. A crucial aspect of disaster risk management is the allocation of sufficient resources to all of its facets, including preparedness and response. Despite significant efforts to strengthen disaster risk financing, Jamaica continues to face gaps, particularly in recovery efforts. **Past disasters have underscored the need for public support**, especially in sectors like housing and agriculture. For instance, Hurricane Dean caused extensive damage in 2007 to these sectors, prompting significant government expenditure, including over USD 8 million (JMD 1 billion) to support vulnerable households. In contrast, private insurers paid out USD 35 million (JMD 5 billion), mostly for commercial claims (World Bank, 2018).
170. Despite agriculture contributing around 8% to GDP and employing 16% of the officially registered labour force, **agricultural lending represents only 2.38% of the total loan portfolio** from deposit-taking institutions, amounting to approximately JMD 1.217 billion (USD 7.7 million). Nevertheless, there is growing recognition of climate-related financial risks, as evidenced by Jamaica's Minister of Finance joining the Coalition of Finance Ministers for Climate Action in 2019. This has led to concrete actions such as the World Bank's support for Jamaica's first catastrophe bond to protect against severe tropical cyclones, setting a precedent for future climate-resilient financial instruments.

Absence to alternative sources of funding

171. Public sector financial support for Jamaica's agricultural sector is primarily channelled through two key institutions: the Development Bank of Jamaica (DBJ) and the Agro-Investment Corporation (AIC). The DBJ has established itself as a cornerstone of agricultural financing, facilitating over 14,358 loans totalling JMD 9.7 billion through approved financial institutions and microfinance institutions over the past decade. Its impact extends beyond direct lending, with JMD 1.2 billion allocated across 32 loans specifically for strengthening the agro-processing sector, and JMD 21 million in grants distributed to 107 agriculture-based businesses for business development services.
172. **Access to private sector financing remains challenging for most farmers**, particularly smallholders. A primary obstacle is the **collateral requirements**, which exceed the means of small-scale farmers. The sector's **inherent risks** related to market volatility and environmental uncertainties, lead to cautiousness among financial institutions toward agricultural investments. **Many farmers struggle with the comprehensive financial documentation** required for loan applications, creating a significant barrier even when financing options exist. The cyclical nature of agricultural cash flows and delays in payment for supplied goods also complicate farmers' ability to maintain consistent loan repayment schedules. **Climate-related disruptions (and losses from extreme weather events such as Hurricane Ian in 2022, Beryl in 2024, and Melissa in 2025) interrupt the import and export of agricultural products, affecting both foreign exchange earnings and access to essential farming inputs.**
173. The agricultural sector also faces inadequate support services, including insufficient development and maintenance of farming and fishing feeder roads, irrigation works, and packaging and storage facilities. Limited access to resources disproportionately affects women and youth in agriculture, creating additional barriers for these demographic groups. Security concerns, such as crop and livestock theft, along with illegal fishing practices, add another layer of risk that financial institutions must consider in their lending decisions.
174. Many financial institutions lack the specialised knowledge needed to properly assess agricultural projects, while farmers often require more support in financial planning and climate-smart agricultural practices. This knowledge gap contributes to higher perceived risks and, consequently, more conservative lending practices.

D.5. Country ownership (max. 500 words, approximately 1 page)

Alignment with existing policies and plans

175. Jamaica submitted its first **Nationally Determined Contribution** in 2015 and updated it in 2020, which reflects its commitments under the Paris Agreement. The NDCs update is relevant to ADAPT Jamaica because it highlights the project's areas of intervention and its contribution to the fulfilment of the country's committed NDCs, creating conditions for additional actors in their sphere of influence to join the project´s effort. The updated NDC, 2020 underscores that the "*Climate Change Policy Framework for Jamaica (2015)* identifies the agriculture sector as a critical sector of importance for both mitigation and adaptation. Strategic aims include facilitating the use of water (and energy) efficient agricultural methods, improved food storage systems, and diversifying food production techniques including the expansion of agroforestry and aquaculture.
176. Jamaica is currently developing its first *National Adaptation Plan (NAP),* having received approval from the Green Climate Fund (GCF) for readiness and preparatory support in April 2021. The goal of the NAP project is to establish a comprehensive, inclusive, and participatory national adaptation planning and implementation framework by 2025. This plan will guide Jamaica in addressing the impacts of climate change and fostering climate resilience across sectors, including agriculture. Jamaica's GCF Country Programme identified several priorities which would be supported by ADAPT Jamaica.[61] These include:
    - Enhancing hydro-meteorological network
    - Enhancing farmers' access to weather data and early warning systems
    - Seed management, preservation and resilient crops
    - Climate-smart agriculture
177. The outcomes of ADAPT will be institutionalised and fully aligned with Jamaica's climate change policies and plans, helping to ensure continuity once implementation is completed. The main areas of alignment include:
    - The project supports Jamaica **Vision 2030's** core objectives for agricultural transformation and climate resilience. The project's focus on climate-resilient agriculture (CRA) and food loss and waste (FLW) reduction directly advances Vision 2030's goals of enhancing agricultural productivity, strengthening rural development, and improving environmental

[61] https://www.greenclimate.fund/sites/default/files/document/country-programme-jamaica.pdf

sustainability. The project's comprehensive approach to farmer capacity building and technology adoption supports Vision 2030's emphasis on modernising agricultural infrastructure and improving farming practices.

- The project's climate resilience components strongly align with the **National Climate Change Policy Framework** and Jamaica's climate commitments. The focus on strengthening climate information services and EWS directly supports the NCCPF's priority of strengthening climate information and knowledge management. The project's focus on CRA practices and technologies aligns with Jamaica's updated NDC, which emphasises adaptation co-benefits and strengthened focus on sustainable land use practices, as well as the use of renewable energy technologies in agricultural operations.
- Through Outcome 2, the project is in clear alignment with the **Comprehensive Disaster Risk Management Policy 2020-2040**. The project's emphasis on "building back better" through improved hurricane preparedness and EWS supports the policy's Goal 1 of mainstreaming disaster risk management and Goal 5 of building strong preparedness systems. The project's approach to community-based climate information dissemination and response capacity building particularly aligns with the policy's emphasis on enhancing local-level capacities.
- In terms of financial inclusion and market development, Outcome 3 strongly aligns with Jamaica's broader economic development strategies. The establishment of climate-resilient agricultural financing mechanisms and market linkages supports the **Medium-Term Socio-Economic Policy Framework's** vision of a research-driven, technology-oriented, and market-led agricultural sector. The project's emphasis on developing specialised credit lines for climate-resilient agriculture and building financial institution capacity directly advances the Framework's goal of enhancing sector competitiveness through private sector engagement and market development. The development of public-private partnerships for agricultural infrastructure and the creation of multi-stakeholder platforms further supports the Framework's objective of strengthening sector linkages and repositioning agriculture as a central pillar of the national economy.

Capacity of Accredited Entities and Executing Entities

178. FAO is a specialised agency of the United Nations with the mandate to improve food security, nutrition, and agricultural productivity and reduce rural poverty. FAO is a leading global institution with highly technical expertise and knowledge in several critical sectors concerning its operational mandate. FAO demonstrates a solid commitment to meeting the 2030 Agenda for Sustainable Development through the transformation to more efficient, inclusive, resilient, and sustainable agri-food systems for better production, nutrition, environment, and life, leaving no one behind.
179. Over the past 15 years, the FAO's representation in Jamaica has been instrumental in advancing climate resilience, food security, and sustainable agriculture in the country. Through strategic partnerships and technical expertise, FAO continues to lead key initiatives in Jamaica. For example, FAO has supported the UN Joint Team in implementing community-based climate resilience projects in Northern Clarendon and West Kingston, enhancing local adaptation efforts. Insights from these initiatives will help shape the implementation of the proposed ADAPT Jamaica Project, further reinforcing national climate resilience strategies, including the Jamaica Agriculture Development Plan 2025 – 2035 that the government is developing with FAO's support. Guided by the Country Programming Framework (CPF, 2022-2026) and Technical Cooperation Programmes (TCPs), FAO continues to drive sustainable agricultural transformation by supporting the National Aquaculture Extension Strategy, promoting cost-effective livestock feed alternatives, and leveraging e-agriculture through the Digital Villages Initiative. Collaborating with RADA, AIC, the Ministry of Agriculture, Fisheries, and Mining, WFP, UNESCO, and UNICEF, FAO has also strengthened food security initiatives, particularly in school feeding programs. With funding from partners including the India Fund, SDG Fund, GCF PPF, GEF, STDF, and Global Affairs Canada, FAO is scaling climate-smart agricultural solutions, fostering resilience, innovation, and self-sufficiency in Jamaica's agricultural sector. These efforts align with national priorities and global commitments, ensuring a more sustainable and food-secure future.
180. The Jamaica Social Investment Fund (JSIF) will serve as Executing Entity for some activities of Component 1. As a GCF Direct Access Entity with extensive experience implementing community-based climate resilience initiatives across Jamaica, JSIF brings valuable expertise in managing development projects, and is an eminent institution in Jamaica with established systems for fiduciary management, environmental and social safeguards, and community engagement. The JSIF plays a critical role in the Government of Jamaica artillery in helping to reduce poverty as well as creating opportunities for the most vulnerable in the society by supporting Vision 2030 and facilitating the empowerment of communities and the growth of national capacity. The JSIF employs multifaceted approaches that address in a coherent, mutually consistent way, the various challenges that are faced by persons living in underserved communities. JSIF has successfully implemented projects valued at billions of dollars and has obtained repeated and successive funding from International Development Funding Partners. The Community driven approach adopted and utilized by the JSIF is a central intrinsic part of its operation. An example of this is the World Bank Funded REDI II project, which provides co-financing to ADAPT Jamaica while the GCF funding is intended to scale up its successful approach.

Role of NDA

181. The Ministry of Water, Environment and Climate Change (MWECC) is the NDA for the GCF through its Climate Change Division. The NDA's active participation throughout the project design process, from initial planning to incorporating stakeholder feedback into the project design, underscores Jamaica's commitment to building climate resilience in its agricultural sector through inclusive and participatory approaches. The NDA was engaged since the conception stage, providing guidance on country priorities and target areas, while ensuring proper coordination with national entities and access to key information. Based on the directive of the NDA after Hurricane Beryl hit Jamaica in July 2024 and Hurricane Melissa in October 2025, the feasibility studies, activities and budget were reoriented towards building back better, to improve resilience of agricultural facilities and climate information infrastructure among others, while keeping the focus on the most vulnerable communities.

Stakeholder engagement

182. The ADAPT Jamaica project demonstrates strong country ownership through a comprehensive stakeholder engagement process, conducted between July 2023 and February 2025, reaching over 500 stakeholders across six target parishes. This extensive engagement, facilitated in close collaboration with the National Designated Authority (NDA), ensured alignment with national climate priorities and strategies. Consultations spanned national, parish, and community levels, incorporating government entities, civil society organizations, and international development partners. The process revealed critical insights into the demographic and economic realities of agricultural communities, particularly highlighting the disproportionate reliance of women on farming, the low participation of youth, and the challenges faced by households with persons with disabilities. Furthermore, the consultations detailed the specific climate vulnerabilities and adaptation needs of farmers, including water access, financial constraints, and market linkages, across each target parish. In addition, regular meetings throughout the process were established with key entities, namely JSIF, RADA, AIC, MOAFM, and MWECC to obtain information, decide on proposed approaches, and monitor progress (more details in Annex 7).

D.6. Efficiency and effectiveness (max. 500 words, approximately 1 page)

183. **The Project's Expected Impact**: The proposed project, ADAPT Jamaica, with a total budget of USD 39.32 million, including a GCF grant of USD 30 million, will contribute significantly to Jamaica's climate resilience. The project targets 729,023 beneficiaries, representing 25.76% of the nation's population, with a focus on vulnerable smallholder farmers who are disproportionately affected by climate change impacts. This translates to a GCF grant cost per beneficiary of USD 41.15, demonstrating an efficient allocation of resources to maximize impact. By enhancing the climate resilience of the agricultural sector, the project will not only improve the livelihoods of these farmers but also contribute to national food security and economic stability.

184. **Concessionality Justification**: The request for grant funding is grounded in the unique challenges and vulnerabilities faced by Jamaica, as well as the project's focus on public goods that are unlikely to attract private investment. The following factors underscore the justification for grant funding:

- **High Unmet Climate Finance Needs**: Jamaica has a substantial climate finance gap, particularly in the agricultural sector, which is highly vulnerable to climate change impacts. Grant funding is crucial to bridge this gap and support adaptation initiatives that would otherwise be unfeasible.
- **Limited Private Sector Investment:** The project includes investments in public goods such as early warning systems and climate information services. These investments, while critical for climate resilience, do not generate direct financial returns, making them unattractive to private investors. Grant funding is therefore essential to ensure the provision of these vital public goods.
- **Financial Constraints**: Jamaica faces fiscal constraints, with competing priorities for public expenditure. While the government is committed to addressing climate change, allocating substantial domestic resources to climate resilience initiatives may not be feasible. Grant funding will provide the necessary financial support to implement these critical interventions.
- **Vulnerability of Smallholder Farmers**: Smallholder farmers in Jamaica are highly vulnerable to climate change impacts, often lacking the resources and capacity to adapt to changing conditions. Grant funding will enable targeted support for these vulnerable groups, including technical assistance, technology transfer, and capacity building, empowering them to enhance their resilience and livelihoods.

185. **Economic and Financial Analysis:** A comprehensive cost-benefit analysis has been conducted to assess the project's economic viability, considering both a 6-year implementation period and an estimated 20-year investment lifetime. The analysis reveals that while the project's financial returns over the 6-year period are negative when considering only marketable benefits, while including non-marketable benefits, i.e. avoided losses due to EWS, significantly enhances the project's KPIs (EIRR 51% and 70% for 6 and 20 years respectively). The analysis highlights the appropriateness of the project design making the case that market or concessional loans would not be a financially viable option for the proposed interventions. Demonstrations sites, that are viable under concessional loan will be supported by the DBJ credit line supporting scaling up of activities, further supporting the appropriateness of the project design. The substantial societal benefits of the project underscore the importance of GCF investment in delivering climate resilience, food security, and environmental sustainability.

186. **Application of Best Practices:** The project design is informed by best practices and lessons learned from similar projects in other contexts. It leverages existing knowledge and expertise to ensure efficient and effective implementation, maximizing the impact of the GCF investment. The project promotes a participatory approach, engaging stakeholders at all levels, from local communities to national government agencies, to foster ownership and ensure the long-term sustainability of project outcomes. By integrating best practices and promoting stakeholder engagement, the project is well-positioned to achieve its objectives and contribute to Jamaica's climate resilience goals. For the full analysis please consulta Annex 3.

E. LOGICAL FRAMEWORK

*This section refers to the project/programme's logical framework in accordance with the **GCF's Integrated Results Management Framework** to which the project/programme contributes as a whole, including in respect of any co-financing.*

E.1. Project/Programme Focus

☐ Reduced emissions (mitigation)

☒ Increased resilience (adaptation)

E.2. GCF Impact level: Paradigm shift potential (max 600 words, approximately 1-2 pages)

Assessment Dimension	Current state (baseline)		Potential target scenario (Description)	How the project/programme will contribute (Description)
	Description	Rating		
Scale	Smallholder farmers, who constitute nearly 80% of all agricultural holdings in Jamaica, manage less than 15% of arable land, and their agricultural holdings are very small. Farmers do not have access to climate-resilient agricultural technologies and post-harvest infrastructure, and value chains are fragmented, with smallholders selling raw produce at disadvantageous prices to higglers. The sector has been characterised by very slow growth, low productivity, and high vulnerability to climate change, notably hurricanes, with the subsequent devastating instances being the passing of Hurricanes Beryl and Melissa, which caused extensive damage to approximately 116,000 structures across Jamaica's agricultural heartland and severely disrupted farmer livelihoods, affecting Saint Elizabeth parish in particular.	Low	As a result of project interventions, smallholder farmers will have improved capacity to implement CRA and FLW practices and technologies, make informed farming decisions taking into consideration climate data, and have access to CRA and FLW infrastructure. Improved access to specialised financial products for CRA and FLW will enable much-needed investments to increase productivity in the sector, while the most vulnerable farmers will improve their food security from direct project interventions. Improved productivity and reduced losses will increase the adaptive capacity of farming households reducing their vulnerability.	The project will catalyse a transformative expansion of smallholder farming, increasing resilience and improving productivity, thereby bolstering livelihoods in the face of climate change. Farmers will increase their capacity and knowledge about climate change and CRA and FLW reduction practices under Output 1.2, incorporate climate information in their decision-making process (Output 1.2 and Component 3), and improve access to finance for climate-resilient practices and technologies. The project will support investments directly through Output 2.1, and indirectly through the improved access to financial products to support CRA and FLW under Output 4.2. Through Activity 2.1.5, the project will address immediate Hurricane Melissa recovery needs by rehabilitating damaged agricultural infrastructure while simultaneously strengthening resilience through livelihood recovery support targeted at the most vulnerable farmers, particularly women-led households. Early warning systems will be covering all of Jamaica concerning potential extreme weather events and hurricanes, even if initially it will

				focus on improving responses in the six target parishes.
Replicability	Information, technical, financial and market barriers limit the ability to scale CRA and FLW reduction technologies and practices. Smallholder farmers lack the capacity, information, and access to finance to invest in such practices and technologies. The absence of post-harvest infrastructure puts further pressure on limited profitability and reduces the appetite of farmers to take on the financial risk to increase climate resilience with practices and technologies they are not familiar with. Digital solutions and EWS for the agricultural sector are fragmented (such as through the various apps and digital platforms of both RADA and MSJ). Climate information is either not available, of limited use, or hard to understand and interpret. The limited warnings specific to agriculture are disseminated through fragmented and informal channels.	Low	Demonstration sites (model farms) provide evidence for the feasibility, effectiveness, and efficiency of CRA and FLW technologies and practices to both farmers and financial institutions and other value chain actors. Farmers engage in climate-informed decisions and utilise financial products to replicate tried and tested practices and technologies, strengthening their climate resilience. Implementation of CRA and FLW interventions lead to increased productivity and reduced losses improving their livelihoods. Recovery efforts from Hurricane Melissa incorporate climate-resilient design principles that can be replicated in future reconstruction scenarios. Farmers are informed timely and in comprehensible language concerning potential extreme weather events taking the necessary measures to protect their production. The easy and accessible nature of the information provided leads to the utilisation of digital solutions by a majority of farmers.	The capacity of farmers is built through Output 1.2 maximising its outreach. Through targeted support (Outputs 1.1 and 2.1) the project will increase the uptake of CRA and FLW reduction practices and technologies. Model farms will provide the necessary data for evidence-based decisions of FIs and farmers ensuring that proposed interventions are bankable, reducing the perceived financial risks, and leading to easier access to loans for CRA and FLW investments through the tailored credit line with CRA and FLW-reduction taxonomy developed under Output 4.2. Crop-specific weather and climate information provided to farmers (Output 3.1) will be easily replicated to include additional crops supporting further areas and farmers.
Sustainability	Previous pilot projects in Jamaica have not been proven sustainable due to a focus on only one or two elements, a failure to incorporate long-term management plans, and an inability to overcome underlying barriers. The agricultural sector in Jamaica is currently trapped at a low-climate resilience equilibrium point.	Low	The project will shift the agricultural sector to a high-climate resilience equilibrium. Capacity strengthening for model farms and small-holder farmers, as access to climate information and financial products, will ensure that investments will be able to continue beyond the GCF project implementation period. The rehabilitation of infrastructure following Hurricane Melissa incorporates enhanced climate-resilient features that reduce vulnerability to future extreme weather events**.** The digital solutions that will be strengthened will ensure that there are low operational costs needs and that the intervention will be sustainable. Improved policies to foster the mainstreaming of CRA and FLW reduction solutions and practices, and multistakeholder coordination	The project will embed demonstration sites within two key institutions, JSIF (a GCF DAE) and AIC ensuring that they will remain sustainable and enhance their outreach (Output 2.1). Similarly, it will mainstream climate information and EWS (Component 3) rationalising the cooperation between and within institutions that still remain informal. Expanding on the existing RADA and MSJ apps and web platforms, the project will capitalise on the work that is already being done and ensure the sustainability of the intervention. The close cooperation with DBJ a key financial institution in Jamaica as well as a number of other participating agricultural financial institutions serviced by DBJ will ensure that

			will decrease the transition costs and streamline investments. Preparatory work of DBJ (a GCF DAE) on CRA and FLW taxonomies and evaluation of the investments' bankability will gradually allow for the reduction of the perception of financial risks and/or through access to GCF funding reduces costs of borrowing.	there will be continuity for the interventions beyond the project's lifecycle.

E.3. GCF Outcome level: Reduced emissions and increased resilience (IRMF core indicators 1-4, quantitative indicators)

GCF Result Area	IRMF Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions / Note
				Mid-term	Final[62]	
Total beneficiaries	Core 2: Direct and indirect beneficiaries reached	JSIF reporting Project monitoring and evaluation reports quality assessed by the AE RADA Agricultural Business Information System (ABIS) database	0 direct 0 indirect 0 male 0 female	94,568 direct 126,260 indirect 120,501 male 100,326 female	315,226 direct 420,864 indirect 401,669 male 334,421 female	For more information on the beneficiary calculations, please see Annex 23: Methodology for estimating beneficiaries According to RADA ABIS data, roughly 33% of smallholder farmers are women and 67% men. Note: the total indirect beneficiaries are less than the indirect beneficiaries of ARA1, because those specific beneficiaries, smallholder farmers and their households, are counted as direct beneficiaries instead under ARA3. See Annex 23a. **Assumptions**: Agricultural value chains stakeholders able and willing to adopt CRA and FLW practices and technologies.

[62] The final target means the target at the end of project/programme implementation period. However, for core indicator 1 (GHG emission reduction), please also provide the target value at the end of the total lifespan period which is defined as the maximum number of years over which the impacts of the investment are expected to be effective.

						Note: 30% mid-term target reflects initial setup time, gradual adoption of new practices, and longer timelines for infrastructure improvements. Accelerated progress expected in later years as systems are established and adoption rates increase
ARA1 Most vulnerable people and communities	Core 2: Direct and indirect beneficiaries reached	JSIF reporting Project monitoring and evaluation reports quality assessed by the AE RADA Agricultural Business Information System (ABIS) database	0 direct 0 indirect 0 male 0 female	56,885 direct 182,163 indirect 133,073 male 105,974 female	189,616 direct 607,210 indirect 443,579 male 353,247 female	Supplementary 2.1 includes the following direct beneficiaries: - Model farmers and their households (204 beneficiaries) - Farmers in clusters and their households (1,380 beneficiaries) - Farmers leasing land in Agro Parks and their households (270 beneficiaries) - The most vulnerable farmers and their households receiving targeted support (3,000 beneficiaries) Note: 30% mid-term target reflects initial setup time, gradual adoption of new practices, and longer timelines for infrastructure improvements. Accelerated progress expected in later years as systems are established and adoption rates increase
	Supplementary 2.1: Beneficiaries (female/male) adopting improved and/or new climate-resilient livelihood options	JSIF reporting Project monitoring and evaluation reports quality assessed by the AE RADA Agricultural Business Information System (ABIS) database	0 direct 0 indirect 0 male 0 female	1,420 direct 0 indirect 783 male 636 female	4,854 direct 0 indirect 2,613 male 2,121 female	
	Core 2: Direct and indirect beneficiaries reached	JSIF reporting	Baseline to be established	2,671 direct	8,904 direct	For more information on the beneficiary calculations, please

ARA2 Health, well-being, food and water security		Baseline survey (using FIES methodology) Project monitoring and evaluation reports quality assessed by the AE		2,497 indirect 2,723 male 2,444 female	8,322 indirect 9,078 male 8,147 female	see Annex 23: Methodology for estimating beneficiaries Core 2 includes the most vulnerable smallholder farmers and their households receiving direct support in terms of the CRA / FLW investment packages, as well as vulnerable community members receiving cash-for-work support and women-led households receiving conditional cash transfers for Hurricane Melissa recovery. An assumed multiplier effect where three neighbouring farmers adopt these practices through observation and peer-to-peer learning. Supplementary indicator 2.2 only includes the most vulnerable farmers and their households experiencing food insecurity (to be evaluated using FIES methodology). A spillover effect in terms of food security is not assumed, therefore there are no indirect beneficiaries considered for Supplementary indicator 2.2. Note: 30% mid-term target reflects initial setup time, gradual adoption of new practices, and longer timelines for infrastructure improvements. Accelerated progress expected in later years as systems are established and adoption rates increase
	Supplementary 2.2: Beneficiaries (female/male) with improved food security	JSIF reporting Baseline survey (using FIES methodology) Project monitoring and evaluation reports quality assessed by the AE	Baseline to be established	1,132 direct 0 indirect 630 male 501 female	3,774 direct 0 indirect 2,101 male 1,673 female	

ARA3 Intrastructure and built environment	Core 2: Direct and indirect beneficiaries reached	JSIF reporting Project monitoring and evaluation reports quality assessed by the AE RADA app metrics	0 direct 0 indirect 0 male 0 female	55,751 direct 159,261 indirect 116,999 male 98,043 female	185,839 direct 530,870 indirect 389,997 male 326,812 female	For more information on the beneficiary calculations, please see Annex 23: Methodology for estimating beneficiaries Beneficiaries covered by improved early warning systems are the total beneficiaries reached under ARA3. Note: 30% mid-term target reflects initial setup time, gradual adoption of new practices, and longer timelines for infrastructure improvements. Accelerated progress expected in later years as systems are established and adoption rates increase For more information on Supplementary 3.1, see Annex 3: Economic and Financial Analysis It is assumed that the improved Early Warning Systems will not be fully operationalised, and stakeholders will not have been capacitated by the mid-term point.
	Core 3: Value of physical assets made more resilient to the effects of climate change and/or more able to reduce GHG emissions	JSIF reporting Project monitoring and evaluation reports quality assessed by the AE	0 USD	6,930,495 USD	23,101,650 USD	
	Supplementary 2.4: Beneficiaries (female/male) covered by new or improved early warning systems	JSIF reporting RADA app users SMS subscribers and RADA WhatsApp users Project monitoring and evaluation reports quality assessed by the AE	0 direct 0 indirect 0 male 0 female	55,751 direct 159,291 indirect 116,999 male 98,043 female	185,839 direct 530,970 indirect 389,997 male 326,812 female	
	Supplementary 3.1: Change in expected losses of economic assets due to the impact of extreme climate-related disasters in te geographic area of the GCF intervention	Project monitoring and evaluation reports quality assessed by the AE. Reports on economic losses from extreme climate-related disasters.	0	32,244,320 USD	80,610,800 USD	
ARA4 Ecosystems and ecosystem services	Core 2: Direct and indirect beneficiaries reached	JSIF reporting Project monitoring and evaluation reports quality assessed by the AE	0 direct 0 indirect 0 male 0 female	29,437 direct 0 indirect 16,387 male 13,051 female	98,124 direct 0 indirect 54,622 male 43,502 female	For more information on the beneficiary calculations, please see Annex 23a: Methodology for estimating beneficiaries **Assumptions**: Using a conservative estimate of 0.8 hectares as the average farm size based on the defined range of 0.2-2 hectares for smallholder farms and recognising that land
	Core 4: Hectares of natural resources brought under improved low-emission and/or climate-resilient management practice	JSIF reporting Project monitoring and evaluation reports quality assessed by the AE	0 ha of farmland sustainably managed through CRA practices	7,850 ha of farmland sustainably managed	26,166 ha of farmland sustainably managed	

				through CRA practices	through CRA practices	distribution typically skews toward smaller plots, the project will bring approximately 26,166 hectares under improved climate-resilient management practices. The farms of all farmers who receive direct support through FFS training and investment packages (8,160), along with the neighbouring farmers who adopt these practices through observation and peer learning (24,480), as well as the model farmers in the various model farms (68) are also included, bringing the total to 32,708 farmers and their land. Note: 30% mid-term target reflects initial setup time, gradual adoption of new practices, and longer timelines for infrastructure improvements. Accelerated progress expected in later years as systems are established and adoption rates increase

E.4. GCF Outcome level: Enabling environment (IRMF core indicators 5-8 as applicable)

Core Indicator	Baseline context (description)	Rating for current state (baseline)	Target scenario (description)	How the project will contribute	Coverage
Core Indicator 5: Degree to which GCF investments contribute to strengthening institutional and regulatory frameworks for low emission climate-resilient development pathways in a country-driven manner	Jamaica's agricultural sector currently lacks a policy framework to support climate-resilient agriculture and food loss reduction. Coordination among institutions remains informal and fragmented, limiting effective implementation of climate resilience initiatives.	medium	Jamaica will have a comprehensive policy framework that incentivises private sector investment in climate-resilient agriculture and food loss reduction. A multi-stakeholder platform will enable coordinated action among government	The project will support policy reform to create enabling conditions for climate-resilient agriculture investments. It will develop standardised planning approaches for future climate-resilient Agro Parks and bauxite reclamation areas, strengthening	National level (one country)

	Agricultural financial institutions demonstrate limited understanding of climate-resilient agriculture investments. The absence of formal data-sharing agreements between key agencies like MSJ, RADA, and WRA hampers coordinated climate information services. Market linkages remain weak, with limited formal mechanisms to connect farmers with buyers, service providers, and financial institutions.		institutions, private sector, farmer associations, and financial institutions. Standardised methodologies for assessing climate-resilient investments will guide both policy and investment decisions. Institutions like AIC and JSIF will serve as effective partners for financial institutions in evaluating and monitoring climate-resilient investments. Formalised public-private partnerships will strengthen agricultural service delivery, while established market linkages will connect farmers with buyers and investors through structured platforms.	institutional capacity of AIC and JSIF as technical partners for mainstreaming CRA and FLW reduction in Jamaica. The project will facilitate public-private partnerships through business incubation programmes and formal service provision arrangements. A multi-stakeholder platform will be established to strengthen market linkages and knowledge exchange, supported by digital tools and regular stakeholder engagement mechanisms.	
Core Indicator 6: Degree to which GCF investments contribute to technology deployment, dissemination, development or transfer and innovation	Jamaica's agricultural sector faces significant technological constraints, particularly among smallholder farmers who lack access to climate-resilient technologies. The existing infrastructure for water management, protected agriculture, and post-harvest handling is inadequate or outdated. Hurricane Melissa further exacerbated this situation by damaging essential agricultural infrastructure and equipment across the agricultural heartland, highlighting the critical need for resilient infrastructure reconstruction. Limited access to modern equipment restricts farmers' ability to implement adaptive practices, while the scarcity of storage and processing facilities leads to substantial post-harvest losses (20-40% for some crops). Solar-powered efficient (drip) irrigation systems and other renewable energy solutions remain largely inaccessible. The	low	Smallholder farmers will have widespread access to and adoption of climate-resilient agricultural technologies, including water-efficient irrigation systems, protected agriculture structures (designed to withstand hurricanes), and energy-efficient post-harvest infrastructure. Solar-powered systems will be integrated into farming operations, supporting both production and storage needs. Modern agrometeorological equipment will provide accurate, localised climate information. Model farms will showcase proven technologies while supporting ongoing innovation and adaptation. The established network of collective infrastructure in Agro Parks and bauxite reclamation sites will demonstrate efficient resource use through shared technology access.	The project will establish model farms demonstrating climate-resilient technologies and practices. Through farmer field schools, it will build technical capacity for technology adoption farmers. The project will modernise Jamaica's agrometeorological network with new automatic weather stations and rainfall loggers and strengthen existing digital platforms for climate information delivery. Implementation of collective infrastructure in Agro Parks and bauxite reclamation sites will demonstrate efficient technology sharing models. The rehabilitation of infrastructure damaged by Hurricane Melissa will incorporate enhanced climate-resilient technologies, including renewable-energy powered cold storage facilities and hurricane-resistant greenhouse designs,	Multiple sub-national areas within a country

	technological gap creates systemic weakness in adapting to climate change impacts for smallholders who constitute the majority of agricultural producers.			demonstrating practical application of resilient reconstruction. The project will also support development of specialised financial products to facilitate technology acquisition by smallholders.	
Core indicator 7: Degree to which GCF Investments contribute to market development/transformation at the sectoral, local, or national level	Jamaica's agricultural sector currently operates at a low-climate resilience equilibrium, with fragmented value chains and limited market integration of smallholders. Smallholders lack access to reliable market information and do not engage with larger buyers. Limited value addition and weak farmer organisations restrict competitiveness and bargaining power. Post-harvest losses are high (20-40% for some crops) due to inadequate storage and processing infrastructure. Financial institutions view agricultural lending as high-risk, with the sector representing only 2.38% of total loan portfolios. Climate-resilient technologies remain inaccessible due to limited financing options and underdeveloped service provision markets.	low	The agricultural sector will shift to a high-climate resilience equilibrium with strong market integration and viable climate-resilient value chains. Farmer organisations will be better positioned to achieve economies of scale through collective infrastructure and coordinated market access. A robust ecosystem of agricultural service providers will support technology adoption and maintenance. Financial institutions will actively lend to the sector through specialised products for climate-resilient investments. Reduced post-harvest losses and improved value addition will increase farmer incomes and market competitiveness. Established market linkages will connect farmers with stable buyers through formal agreements, while incubated agribusinesses will provide essential support services.	The project will catalyse market transformation through complementary interventions across the value chain. It will establish model farms showcasing commercial viability of climate-resilient practices, while strengthening farmer organisations and developing standardised investment packages for low-cost CRA and FLW reduction solutions. Through business incubators and acceleration programmes, the project will foster linkages with agricultural service providers. The project will develop specialised financial products through DBJ's credit line, supported by a standardised taxonomy for climate-resilient investments. A multi-stakeholder platform will facilitate market linkages, while public-private partnerships will ensure sustainable service delivery models.	National level (one country).
Core indicator 8: Degree to which GCF investments contribute to effective knowledge generation and learning processes, and use of good practices, methodologies and standards	Knowledge about climate-resilient agriculture in Jamaica remains fragmented and poorly documented. Extension services struggle with high farmer-to-officer ratios (up to 1:2,500), limiting knowledge transfer. Farmers demonstrate limited understanding of climate-resilient practices and post-harvest handling techniques,	low	Jamaica will have robust systems for generating, documenting, and sharing knowledge about climate-resilient agriculture and food loss and waste reduction. A network of farmer field schools will provide hands-on learning opportunities and demonstration sites will showcase proven	The project will establish model farms serving as learning centres, complemented by comprehensive training programmes. It will develop technical implementation guides for climate-resilient technologies and assessment methodologies for financial institutions to conduct cost-benefit analyses to	Multiple sub-national areas within a country

	while financial institutions lack technical knowledge to assess climate-resilient investments. Climate information services are not effectively packaged for agricultural decision-making. Successful adaptation practices remain poorly documented and disseminated.		practices. Financial institutions will have capacity build for assessing climate-resilient investments. Documented success stories and implementation guides will facilitate widespread adoption of climate-resilient practices. A multi-stakeholder knowledge-sharing platform will connect stakeholders across the sector, enabling continuous learning and adaptation of best practices.	assess their bankability. Through DBJ's open-access certification platform, it will create specialised learning modules on climate-resilient agricultural finance. The project will strengthen agrometeorological services and develop user-friendly climate information products. A multi-stakeholder platform will facilitate knowledge exchange, while documented case studies will capture implementation experiences for future scaling.	

E.5. Project/programme specific indicators (project outcomes and outputs)

Project/programme results (outcomes/ outputs)	Project/programme specific Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions / Note[63]
				Mid-term	Final	
Outcome 1 Enhanced knowledge and demonstration of climate-resilient agricultural practices and technologies	Percentage of household reporting improved resilience to climate change	SHARP+ survey Project monitoring and evaluation reports quality assessed by the AE	0% of households reporting improved resilience Baseline survey to be conducted	0% of households reporting improved resilience	30% of households reporting improved resilience	**Assumptions**: Smallholder farmers apply to receive support from the project.
	Percentage of beneficiaries supported by the project FLW interventions self-reporting reduction in FLW.	Baseline, MTR and Final Evaluation Surveys	0% of households reporting reduced FLW Baseline survey to be conducted	10% of households reporting reduced FLW	20% of households reporting reduced FLW	**Assumptions**: No major climate disasters occur that significantly disrupt project implementation No major health crises or pandemics disrupt in-person project activities Equipment / technology supply chains remain stable
Output 1.1 Model farms established to serve as	Number of model farms established (in both	JSIF reports	Model farms established as:	Model farms established as:	Model farms established as:	**Assumptions**:

[63] Note: Unless noted otherwise 30% mid-term target reflects initial setup time, gradual adoption of new practices, and longer timelines for infrastructure improvements.

farmer field schools to increase knowledge and capacity on CRA FLW-reduction interventions	individual and collective demonstration sites)	Site inspection records External RADA reports Project monitoring and evaluation reports quality assessed by the AE	0 individual model farms 0 Agro Parks 0 clusters in bauxite reclamation areas	20 individual model farms 5 clusters in bauxite reclamation areas	45 individual model farms 20 farmer clusters (both regular clusters and bauxite reclamation areas)	Smallholder farmers apply to receive support from the project. No major climate disasters occur that significantly disrupt project implementation No major health crises or pandemics disrupt in-person project activities Equipment / technology supply chains remain stable Note: 30% mid-term target reflects initial setup time, gradual adoption of new practices, and longer timelines for infrastructure improvements, as well as a lag phase to smallholder farmer selection due to the tie needed to receive capacity building first under Output 1.2.
Output 1.2 Knowledge on CRA and FLW-reduction interventions accessible to key value chain actors and implementation capacity increased	Number of farmers trained by Farmer Field Schools (FFS) on CRA and FLW reduction practices and technologies	JSIF reports Media coverage and documentation of FFS activities Project monitoring and evaluation reports quality assessed by the AE	0 farmers trained by FFS	1,560 farmers trained by FFS	7,800 farmers trained by FFS	**Assumptions**: No major climate disasters occur that significantly disrupt project implementation No major health crises or pandemics disrupt in-person project activities For more information on the beneficiary calculations, please see Annex 23: Methodology for estimating beneficiaries Smallholder farmers apply to receive support from the project.

						Assuming a class of 30 farmers trained per FFS per year (for a total of 4 years, assuming a 2-year setup time for FFS). 65 model farms total (45 individual, 20 clusters). 65 * 30 * 4 = 7,800 farmers trained in total plus their households Assuming 33% women 67% men split for farmers as per RADA ABIS.
Outcome 2: Adoption of CRA and FLW reduction interventions	Number of farmers adopting CRA and FLW-reduction interventions	Beneficiary records Market surveys of technology adoption conducted by industry associations Farmer surveys, mid-term and final evaluations surveys and technical evaluations	0 farmers	7,020 farmers	23,400 farmers	**Assumptions**: Assuming a multiplier effect where successful implementation by trained farmers will catalyse adoption among their neighbours. Based on experience from similar agricultural extension programmes, for each farmer who successfully implements CRA and FLW reduction practices, three neighbouring farmers are expected to adopt these practices through observation and peer-to-peer learning.
	Percentage of smallholder farmers supported by the project with increased livelihood diversification	Farmer surveys, mid-term and final evaluations surveys	0% of farmers reporting diversified livelihoods Baseline survey to be conducted	3% of households reporting diversified livelihoods	5% of households reporting diversified livelihoods	**Assumptions:** No major climate disasters occur that significantly disrupt project implementation No major health crises or pandemics disrupt in-person project activities

						Notes: One of the following indices (Number of income sources, Shannon index of income diversification, Simpson index of income diversification) will be selected during the project inception phase and applied in the baseline, MTR and final evaluation of the project.
Output 2.1 CRA and FLW-reduction interventions are scaled up	Number of farmers receiving investment support for implementing low-cost CRA and FLW reduction packages	JSIF reports Project monitoring and evaluation reports quality assessed by the AE	0 vulnerable farmers receiving investment support	251 vulnerable farmers receiving investment support	1,258 vulnerable farmers receiving investment support	**Assumptions**: No major climate disasters occur that significantly disrupt project implementation No major health crises or pandemics disrupt in-person project activities Smallholder farmers apply to receive support from the project. Farmers maintain adopted practices and technologies they receive investment for. Equipment / technology supply chains remain stable and there are no major cost escalations. Note: 20% mid-term target reflects initial setup time, gradual adoption of new practices, and longer timelines for infrastructure improvements, as well as a lag phase to smallholder farmer selection due to the tie needed to receive

						capacity building first under Output 1.2.
Outcome 3 Enhanced resilience of agricultural production systems to climate change through improved climate information services and early warning systems	Percentage of smallholder farmers reporting access to and use of relevant and understandable climate information in farming decisions (through various channels such as RADA and MSJ web platforms and apps, and agro-met bulletin for two crops)	RADA reports Telecommunication agreement Independent farmer surveys conducted by academic institutions Project monitoring and evaluation reports quality assessed by the AE	Baseline to be established by a survey	10% increase in smallholder farmers reporting access and use of climate information	40% increase in smallholder farmers reporting access and use of climate information	**Assumptions**: Information remains relevant to local conditions All dissemination channels continue to be relevant to farmers.
Output 3.1. Strengthened agrometeorological observation network and forecasting capabilities to support early warning systems	Number of fully operational automatic weather stations (AWS) and rainfall loggers meeting WMO standards installed at priority positions, both to replace equipment damaged by Hurricane Beryl and Melissa and to modernise the agrometeorological network	MSJ technical reports Equipment commissioning records Technical reviews by regional climate centres (e.g., CIMH) Project monitoring and evaluation reports quality assessed by the AE	0 AWS installed 0 rainfall loggers installed	4 AWS installed 14 rainfall loggers installed	9 AWS installed 35 rainfall loggers installed	**Assumptions**: No major climate disasters occur that significantly disrupt project implementation No major health crises or pandemics disrupt in-person project activities Equipment procurement proceeds on schedule Equipment / technology supply chains remain stable and there are no major cost escalations. Tropical cyclones and hurricanes do not lead to equipment losses.
Output 3.2. CIS relevant to agriculture developed and delivered to farmers and other market actors	CIS system operational in the target parishes providing agrometeorological information for at least 2 crops	MSJ technical reports Analytics for website/platform access Project monitoring and evaluation reports quality assessed by the AE	0 CIS system operational	0 CIS system operational	1 CIS system operational	**Assumptions**: No major climate disasters occur that significantly disrupt project implementation

						No major health crises or pandemics disrupt in-person project activities The CIS is expected to be fully operational in year 4 of the project implementation.
Outcome 4 Improved enabling environment for climate-resilient agriculture	Number of loan agreements signed with smallholder farmers for CRA and FLW reduction technologies and practices	DBJ reports Reports from participating agricultural financial institutions Project monitoring and evaluation reports quality assessed by the AE	0 loan agreements	200 loan agreements	1,000 loan agreements	**Assumptions** Macroeconomic conditions remain stable; No major policy changes affecting agricultural lending Participating agricultural financial institutions commit to launching financial products Assuming a 20% mid-term target due to set-up time and other required activities
4.1 Policies, partnerships, and incentives for CRA and FLW developed	Number of policy documents developed and approved for mainstreaming CRA and FLW reduction in the agricultural sector	Policy document on government (MOAFM) website News reporting of policy approval Project monitoring and evaluation reports quality assessed by the AE	0 policy document	0 policy document	1 policy document	**Assumptions**: No major climate disasters occur that significantly disrupt project implementation No major health crises or pandemics disrupt in-person project activities Political support maintained; No major changes in government priorities
4.2 Access to finance and markets increased to support upscaling CRA and FLW practices and technologies.	Number of financial institutions with strengthened capacity to integrate gender-responsive CRA/FLW lending into their portfolio	DBJ reports Reports from participating agricultural financial institutions Independent market surveys on financial product availability	0 financial institutions with capacity strengthened	1 financial institution with capacity strengthened	2 financial institutions with capacity strengthened	**Assumptions**: No major climate disasters occur that significantly disrupt project implementation

		Project monitoring and evaluation reports quality assessed by the AE				No major health crises or pandemics disrupt in-person project activities Participating agricultural financial institutions maintain interest in incorporating CRA and FLW investments in their portfolios
Project/programme co-benefit indicators						
Co-benefit 1: Improved job creation in the agricultural sector	Number of new jobs created in the agricultural sector as a result of investments made by the project	JSIF reports Project monitoring and evaluation reports quality assessed by the AE	0 new jobs created in the agricultural sector	33 new jobs created	112 new jobs created	**Assumptions**: An employment multiplier was utilised from the work of Esteves, Molina, et al. (2024).[64] Based on their analysis, the employment multiplier for the agricultural sector in Jamaica is 5.38 jobs per 1m USD invested. For the estimation of the number of jobs created, based on the project budget, around 70% will be invested in the agricultural sector of Jamaica, or 21m USD.
Co-benefit 2: Improved inclusion of women and youth in the agriculture sector	Number of women and youth in leadership positions in supported farmer organisations	Project monitoring and evaluation reports quality assessed by the AE	Baseline to be established once relevant organisations to be supported are identified	5 additional women and/or youth in leading roles	5 additional women and/or youth in leading roles	**Assumptions**: Women and youth can access required training and resources; Women and youth maintain interest in leadership roles

E.6. Project/programme activities and deliverables

Activities	Description	Sub-activities	Deliverables
Output 1.1: Model farms established to serve as farmer field schools to increase knowledge and capacity on CRA FLW-reduction interventions			

[64] https://www.frontiersin.org/journals/climate/articles/10.3389/fclim.2024.1339877/full

1.1.1 Establish model farms to demonstrate interventions on CRA, FLW-reduction, and hurricane preparedness and response	The activity will establish a network of model farms to demonstrate CRA and FLW practices, technologies, and interventions to improve hurricane preparedness and response. Under the activity, a gender-sensitive application process will be launched to identify farmers. Demonstration farms will be selected based on specific criteria, considering the needs and characteristics of different farmer groups. The selection process will ensure that at least 30% of model farmers will be women and youth. Needs assessments will be conducted to identify required investments and design interventions. Interventions tailored to individual farmers' needs and capacities will be implemented. Solutions will be designed to match farmer capacity and land size, with an emphasis on low-maintenance, climate-resilient systems designed to withstand severe weather conditions. Demonstration sites will serve as farmer field schools and model farmers will be trained under Output 1.2.	1.1.1.1 Launch a gender-sensitive application process for the establishment of model farms to serve as FFS. 1.1.1.2 Identify eligible model farmers, including women and youth, and sign agreements for the development of model farms 1.1.1.3 Implement CRA and FLW-reduction interventions in model farms	1.1.1.1 1x RfP formulated and launched 1.1.1.2 45x model farmers selected (of which at least 20 will be women and/or youth) 1.1.1.3 45x demonstration sites established with CRA/FLW intervention packages for individual smallholders
1.1.2 Design and install collective climate-resilient interventions for model farms	The activity will establish collective climate-resilient model farms. A selection exercise will assess the technical feasibility of collective water harvesting and storage, irrigation, and protected agriculture for demonstration farms in Agro Parks and bauxite sites with the utilisation of the AGRI-Tool. Tried and tested water harvesting and protected agriculture systems designed to withstand Category 5 hurricanes will be installed in selected farmer clusters in bauxite reclamation sites. Collective climate-resilient irrigation solutions will be installed in an Agro Park, either Spring Plain or Amity Hall, to be prioritised during project implementation. Considering the post-Melissa impact, recovery of agricultural lands and key farmer and MOAFM production	1.1.2.1 Identify potential sites for installation and design collective climate-resilient interventions 1.1.2.2 Install collective water harvesting solutions and protected agriculture structures 1.1.2.3 Install collective climate-resilient irrigation solutions for demonstration sites in one Agro Park 1.1.2.4 Technical and capacity development support from the MOAFM (co-financing) for the establishment of climate resilient model farms	1.1.2.1 1x consolidated scoping study / report on site selection for both bauxite reclamation sites and Spring Plan and Amity Hall Agro Parks 1.1.2.2 13x farmer cluster systems established by JSIF 1.1.2.3 1x collective irrigation solution installed in either Spring Plain or Amity Hall Agro Park 1.1.2.4 MOAFM clearance provided on selected systems for the model farms

	infrastructure is essential for recovering the Central Parishes' productive capacity . This aspect is addressed in Activity 2.1.5. . The MOAFM will provide co-financing through AIC, RADA and JBI in the form of staff technical support, seedling support and technical inputs mainly through infrastructure works and CRA demonstration farms.		
1.1.3 Design and install collective FLW-reduction solutions and protected agriculture interventions for model farms	This activity will install energy-efficient temperature-controlled storage technologies and basic processing units for collective use. The site selection process will evaluate storage and basic processing needs for model farms, considering the total number of associated farms, crop types, technical feasibility, and beneficiary capacity. Interventions will include cold and dry storage and basic processing units, solar-powered cooling systems and essential post-harvest handling equipment. The interventions will focus on farmer clusters (including in bauxite reclamation areas), and will include the installation of a multipurpose cold chain facility will be installed at Ebony Park Agro Park. These interventions will be integrated with Component 4 to harness digital solutions, such as the Agricultural Enterprise Networking Platform (Activity 4.1.4.1). Combined with a MRV system for lending solutions (Activity 4.2.1.4), this infrastructure provides the basis for commodity tracking and food-loss-adjusted pricing in high valued products.	1.1.3.1 Identify potential sites for installation and design collective FLW-reduction interventions 1.1.3.2: Install collective FLW-reduction solutions and protected agriculture interventions for bauxite reclamation area clusters 1.1.3.3 Install collective FLW-reduction solutions in Ebony Park	1.1.3.1 1x consolidated scoping study / report on site selection for associations 1.1.3.2 10x bauxite reclamation area farmer cluster systems consisting of: 6 greenhouses, irrigation pond / water harvesting area, main irrigation line, and PV cells and pumps for main line) 1.1.3.3 1x Solar-powered negative cold room - 20 m^2 installed in Ebony Park
1.1.4 Integrate agroforestry into model farms for resilient land management	The activity will support the integration of agroforestry systems. Existing plots operated by the Forestry Department will be selected as agroforestry demonstration sites, and technical guidelines for agroforestry integration will be developed for model farms. The development of nurseries and their management protocols	1.1.4.1 Assess existing successful agroforestry demonstration sites 1.1.4.2 Develop technical guidelines for agroforestry integration 1.1.4.3 Design and establish nurseries, including management protocols	1.1.4.1 1x assessment report on existing agroforestry sites operated by the Forestry Department 1.1.4.2

	will further support the integration of agroforestry systems in demonstration farms of activities 1.1.1 to 1.1.3. Lastly, a monitoring tool will be designed to evaluate the effectiveness of agroforestry in mixed production systems for increasing climate resilience.	1.1.4.4 Support the integration of agroforestry systems in demonstration farms 1.1.4.5 Produce evidence on the effectiveness of nature-based solutions for climate resilience	1x technical guideline developed for agroforestry integration 1.1.4.3 6x agroforestry nurseries established. 1.1.4.4 65x packages of seedlings and inputs for agroforestry integration 1.1.4.5 1x monitoring tool designed and deployed
1.1.5 Evaluate, identify and propagate varieties with improved performance to abiotic factors associated with climate change	The activity will use certified planting material to evaluate, identify and propagate varieties that show improved performance against identified climate related stress in Jamaica. Potential partners will be assessed and research partnerships will be established to conduct the selection and set up field trials focusing on up to three priority crops among the following (cassava, sweet potato, yam, hot pepper). Field trials of promising varieties across different agroecological zones will take place in selected demonstration sites to test their resilience to specific abiotic factors. Demonstration farms will also be utilised to propagate climate-resilient seeds and seedlings to be distributed to supported farmers. Following Hurricane Melissa's impacts, field trial priorities will consider fast-maturing varieties and species that enable rapid restoration of production capacity in severely affected areas, with particular attention to crops demonstrating resilience to multiple stressors including hurricane damage, lodging, waterlogging, flooding, soil bacterial/fungal infections, saline soil conditions and extended drought periods.	1.1.5.1 Establish research partnerships and field trials for climate-resilient crop varieties 1.1.5.2 Conduct field trials of selected varieties 1.1.5.3 Conduct modelling and resilience testing of varieties and disseminate research findings. 1.1.5.4 Propagate and make climate resilient varieties available to supported farmers	1.1.5.1 6x workshops held to develop research partnerships 1.1.5.2 12x field trials 1.1.5.3 4x varieties modelled for resilient testing 1.1.5.4 2x climate resilient varieties available to project supported farms.
Output 1.2 Knowledge on CRA and FLW-reduction interventions accessible to key value chain **actors and implementation capacity increased**			

1.2.1 Operationalise farmer field schools for training on farm planning, CRA and FLW interventions, as well as hurricane preparedness and response	Under this activity, the project will identify area and crop-specific CRA and FLW gaps and challenges faced by model farmers, smallholder farmers, and farmer associations, and develop and disseminate user-friendly training materials for model farmers (trainers) and vulnerable smallholder farmers (trainees). Model farmers will receive intensive ToT sessions to build their capacity as effective trainers. Model farmers will then facilitate hands-on learning sessions at their demonstration sites, following the developed curriculum. FFS will operate on a regular schedule, combining practical demonstrations of climate-resilient practices with peer-to-peer learning opportunities.	1.2.1.1 Conduct training needs assessments 1.2.1.2 Develop and disseminate training materials on production cycle planning 1.2.1.3 Develop and disseminate training materials on CRA, FLW-reduction, and hurricane preparedness 1.2.1.4 Conduct training of trainers (ToT) for model farmers 1.2.1.5 Operationalise and activate FFS	1.2.1.1 1x assessment report on training needs 1.2.1.2 1x set of training materials on production cycle planning 1.2.1.3 1x set of training materials on CRA, FLW-reduction and hurricane preparedness 1.2.1.4 12x ToT training workshops model farmers, 30 participants per workshop 1.2.1.5 1x guiding document on the operation of FFS 90x Farmer Field School days. 45 FFS sessions per planting season (two planting seasons per year in Jamaica), maximum 30 participants per session. Includes printed handouts, field worksheets and record keeping, catering
1.2.2 FFS training of smallholder farmers and farmer associations on farm planning, CRA and FLW-reduction interventions, as well as hurricane preparedness and response.	This activity concerns the implementation of hands-on training sessions in FFS covering all aspects of production planning. Sessions will be scheduled to accommodate both men's and women's availability, and include practical exercises using real farm scenarios and will focus on demonstrating CRA and FLW-reduction interventions, and hurricane preparedness and response, considering in particular the devastating impact of Hurricane Melissa. FFS will also be used to facilitate exchanges between farmers, buyers, service providers, and financial intermediaries during visits to the farms. Lastly, through mentoring, smallholder farmers will receive regular check-ins,	1.2.2.1 Deliver FFS training on production cycle planning 1.2.2.2 Deliver FFS training on CRA and FLW-reduction interventions and hurricane preparedness and response 1.2.2.3 Facilitate exchanges in FFS across the value chain 1.2.2.4 Provide ongoing support and mentoring	1.2.2.1 12x training workshops held on production cycle planning 1.2.2.2 6x training workshops held on CRA and FLW-reduction interventions and hurricane preparedness and response 1.2.2.3 8x FFS fairs held to facilitate exchanges between value chain actors 1.2.2.4 1x mentoring programme established

	troubleshooting sessions, and guidance on adapting their farm plans.		
Output 2.1 CRA and FLW-reduction interventions are scaled up			
2.1.1 Develop investment-ready packages for CRA and FLW-reduction interventions	The activity will create standardised technical specifications for proven CRA and FLW reduction innovations, develop modular, scalable packages, and create practical implementation guides. Guides for each technology package will include site preparation requirements, installation procedures, and maintenance protocols. Guides will support farmers in planning and executing investments once financing is secured.	2.1.1.1 Develop technical specifications for CRA and FLW-reduction solutions 2.1.1.2 Design scalable technology packages 2.1.1.3 Prepare technical implementation guides	2.1.1.1 1x set of technical specifications developed 2.1.1.2 5x scalable technology packages developed 2.1.1.3 1x set of technical implementation guides for packages developed
2.1.2 Equip farmers and clusters with low-cost CRA and FLW-reduction intervention packages	This activity will scale up CRA and FLW-reduction intervention packages supporting vulnerable farmers. Beneficiaries will be selected from participants in Output 1.2 activities, using vulnerability criteria combined with demonstrated capacity and commitment. These low-cost sustainable technology packages are explicitly designed to transition the most vulnerable subsistence farmers toward commercial farming and increase their potential for eventually accessing Non-Grant Instruments (NGIs).	2.1.2.1 Select vulnerable farmers and farmer clusters for technology support 2.1.2.2 Implement low-cost CRA and FLW-reduction packages 2.1.2.3 Provide implementation support and monitoring	2.1.2.1 1x list of identified beneficiaries 1,000x signed agreements with most vulnerable smallholders 2.1.2.2 1,023 low-cost CRA and FLW-reduction packages implemented for most vulnerable smallholders 2.1.2.3

	Farmers demonstrating successful grant uptake will receive targeted support in financial literacy and business planning (Activity 2.1.4), enabling them to meet the criteria necessary to access the specialized credit line facilitated through DBJ (Output 4.2). This pathway ensures farmers build capacity and credibility, allowing them to engage with new financial and market partners as part of the project's long-term sustainability and exit strategy. Selection criteria will include factors such as climate and social vulnerability, including gender and youth targets, engagement in the FFS, as well as potential to maximise the outreach of the project. Low-cost technology packages developed under Sub-activity 1.3.2.1 will be rolled out to selected beneficiaries, with technical support from RADA, which will also deliver ongoing technical support to beneficiaries during package implementation, including troubleshooting assistance and performance monitoring. The post-Melissa assessment identified severe crop damage in St. Elizabeth, St. Ann, Trelawny, and St. Andrew, highlighting the urgent need to provide inputs such as seeds, planting materials, fertilizers, greenhouse materials, and tools. The CRA and FLW intervention packages are well positioned to address these recovery needs while building resilience against future climate shocks.		1x mentoring programme established
2.1.3 Strengthen farmers' and organizations' capacity to access finance and markets	The activity will support individual farmers, informal farmer groups, established farmer clusters, and registered farmer organisations in improving their associative processes with the aim of formalising associations and identifying smallholder farmers and farmer associations that demonstrate readiness for accessing financial products and	2.1.3.1 Strengthen farmers' organizational capacity 2.1.3.2 Identify market-ready smallholder farmers and associations 2.1.3.3 Develop farm investment plans 2.1.3.4 Facilitate linkages across the value chain	2.1.3.1 12x workshops on financial capacity training to farmer associations 2.1.3.2 1x list of market-ready farmers and associations

	market engagement. Market-ready individual farmers and registered farmer associations will receive additional support in developing comprehensive farm investment plans on CRA and FLW-reduction interventions that align with available financing options, thus increasing their bankability. Linkages between farmer-based organisations and other stakeholders will be supported to broker formal public and private sector agreements. These agreements may be for the supply of inputs with improved conditions or accessing markets via public or private procurement.		2.1.3.3 100x farm investment plans developed 2.1.3.4 10x agreements brokered
2.1.4 Train and support farmers in financial literacy and business planning	The activity will support farmers in financial literacy and business planning. Farmers will receive hands-on curriculum focused on essential business skills for farmers, including record-keeping, cost tracking, profit calculation, and basic financial planning incorporating real-life climate resilience considerations. Training and support will be provided to individual farmers and associations in formulating and implementing business plans that match the investment requirements identified in sub-activity 1.3.3.3. For commercial and more affluent farmers, emphasis will be placed on ensuring sufficient cash flows to maintain the farm operation while paying for the CRA and FLW-reduction interventions. For subsistence farmers, the emphasis will be on creating a profitable farming enterprise.	2.1.4.1 Develop practical "farming as a business" curriculum 2.1.4.2 Provide training and individualised support to farmers and associations in developing and implementing business plans.	2.1.4.1 1x training curriculum on “farming as a business” developed 1x training curriculum on financial literacy developed 2.1.4.2 100x business plans developed 1x evaluation report for business plan implementation
2.1.5 Support livelihood recovery and rehabilitation of essential agriculture infrastructure and equipment damaged by Hurricanes Beryl and Melissa	This activity will rehabilitate essential agricultural production infrastructure and equipment damaged by Hurricanes Melissa and Beryl to restore production capacity and support livelihood recovery. It will involve livelihood recovery packages and inputs with special focus on women-led households, as well as installing renewable-energy powered dry/cold	2.1.5.1 Support livelihood recovery through equipment and inputs	2.1.5.1 258 sets of Model Farm 1 livelihood recovery packages delivered (solar pump, drip irrigation, tank, IPM/INM, etc.) 1x completion report on Model Farm recovery package distribution

	storage facilities, while restoring MOAFM's greenhouse and nursery production capacity through provision of equipment, inputs, materials, and installation services. The activity will also support post Beryl and Melissa recovery through the rehabilitation of agricultural land and seedling production in Agro Parks and demonstration sites. The sub-activity will also employ FAO Manual Section 702 to provide two cash transfer modalities to vulnerable communities who had their incomes affected by Hurricane Melissa. The cash for work modality provides short-term employment opportunities to poor, vulnerable men and women through short-term intensive and unskilled labour focused on building or rehabilitating productive assets, sustainably managing land, promoting climate change adaptation and enhancing resilience to shocks and crises. Cash for work activities will be related to production area recovery in select AgroParks, Bauxite reclamation areas and on the demonstration farm plots. The second modality under MS702 will be to provide cash transfers for women-led households, considering their needs for livelihood recovery (broilers, seedlings, trees, mulch, sheds, and water tanks). Special emphasis will be placed on supporting women's recovery, particularly those who suffered losses in backyard broiler farming, which contributes significantly to local food security. The sub-activity will also engage a national ESS consultant to ensure all infrastructure activities comply with the project's environmental and social safeguards.	2.1.5.2 Rehabilitate key MOAFM agricultural production infrastructure 2.1.5.3. Rehabilitation of agricultural lands and livelihoods through cash-transfers	2.1.5.2: 5x decentralized RE-power units and dry/cold storage facilities installed 12x MOAFM greenhouses and nurseries reinstalled (two per parish) 1x technical oversight report 2.1.5.3: 1x service contract executed for rehabilitating agricultural lands in Agro Parks and demonstration sites 1x cash-for-work completion report documenting activities and compliance 1x cash-transfer completion report documenting disbursement and compliance
Output 3.1: Strengthened agrometeorological observation network and forecasting capabilities to support early warning systems			
3.1.1: Installation of new stations for replacing outdated equipment and expansion of the network	This activity addresses the critical decline in Jamaica's weather monitoring network, which has seen a steady decrease in the	3.1.1.1: Conduct network optimisation analysis	3.1.1.1

	number of weather stations since the early 2000s. This modernisation effort replaces manual stations with automated systems, improving data collection efficiency while also expanding coverage to areas currently relying on distant weather stations. The emphasis on agricultural areas with significant elevation changes recognises the limitations of the current 7 km representative radius for accurate weather monitoring in Jamaica's varied topography.	3.1.1.2: Procurement of meteorological equipment 3.1.1.3: Install new Automatic Weather Stations (AWS) and rainfall data loggers	1x assessment report on needs and priority areas 3.1.1.2 1x consolidated invoice of equipment (including, but not limited to 18 automated weather stations, rainfall data loggers, 1 weather radar and spare parts for maintenance 3.1.1.3 1x installation and training report
3.1.2: Replace and rehabilitate damaged hydro-meteorological stations and equipment in agricultural areas impacted by Hurricanes Beryl and Melissa	This activity responds to the urgent need to restore climate monitoring capabilities in agricultural areas following Hurricane Beryl and Hurricane Melissa's impacts. The replacement of damaged equipment in St. Elizabeth and Trelawny is prioritised due to these parishes' significant contribution to national agricultural production and their vulnerability to climate impacts. The replacements will not only restore monitoring capabilities, but also upgrade the installations to meet WMO standards with enhanced protective features, ensuring greater resilience to future extreme weather events.	3.1.2.1: Replace equipment in six parishes	3.1.2.1 1x installation report of 6x replaced AWS
3.1.3: Establish robust data management and operational infrastructure	This activity addresses the current deficiencies in data management systems and infrastructure that hamper effective climate information services, creating the technological foundation needed for reliability. The establishment of a secure central database at MSJ with advanced analysis capabilities and off-site redundancy will ensure data security and continuity, preventing scenarios like the previous data loss from fire. This modernisation of data management infrastructure is critical for transforming raw climate data into actionable	3.1.3.1: Set up central database and analysis system at MSJ 3.1.3.2: Provide computing hardware for RADA and MSJ	3.1.3.1 1x modernised database established at MSJ 3.1.3.2 1x installation report of IT equipment to support RADA and MSJ

	information for agricultural decision-making.		
3.1.4: Establish SMS-based climate information delivery system	This activity addresses the need to strengthen and diversify climate information communication channels, particularly for farmers in remote areas without internet connectivity. Through strategic partnership with major telecommunication providers (Digicel or Flow), the establishment of a one-way SMS push notification service offers a reliable and accessible method for delivering critical climate information. This approach leverages the widespread use of mobile phones among farmers, ensuring that essential weather updates and alerts can reach them directly, regardless of their location or access to other communication channels.	3.1.4.1: Operationalise SMS-based climate information delivery through telecommunication partnership	3.1.4.1 1x service contract for 1-way SMS push notifications
3.1.5: Expand the dissemination of targeted early warnings and advisories to farmers and other market actors using multiple methods	By developing clear protocols that differentiate between disaster warnings and agriculture-specific advisories, while ensuring coordinated messaging across multiple channels, this activity creates a more effective and relevant warning system for farmers, integrating warning messages for new risk dimensions such as storm intensification (and considering how this influences the timeliness of asset protection measures). The integration of community-based networks and local knowledge through formalised roles for information 'superspreaders' ensures warnings reach the last mile in a culturally relevant manner. The activity strengthens agricultural stakeholders' response capacity by developing standard operating procedures that align agricultural preparedness measures with ODPEM's broader disaster response framework.	3.1.5.1: Develop protocols for agriculture-focused warnings 3.1.5.2: Enhance agricultural monitoring system 3.1.5.3: Implement multi-channel warning dissemination system 3.1.5.4: Strengthen community-based early warning dissemination networks integrating local knowledge 3.1.5.5: Build response capacity for agricultural impacts	3.1.5.1 9x national workshops for development of protocols 3.1.5.2 1x report with improvements to agricultural monitoring system 3.1.5.3 1x protocols developed for multi-channel warning dissemination system 3.1.5.4 12x workshops for community-based EWS dissemination networks 3.1.5.5 12x workshop held on agricultural impact response 1x SOP developed for agricultural stakeholders on impact response

Output 3.2: CIS relevant to agriculture developed and delivered to farmers and other market actors			
3.2.1: Re-establish and enhance agro-meteorological bulletin service	This activity addresses the current gap in specialised agrometeorological information products for the agricultural sector. Through partnerships with, among others, the Climate Studies Group, Mona and the Caribbean Institute for Meteorology & Hydrology, MSJ staff will be trained in comprehensive bulletin development, inclusive of special event bulletins (e.g. for upcoming hurricanes) that include advisories on impact mitigation and preparedness actions. The comprehensive bulletins will be covering essential areas from climate data analysis to effective communication of agricultural advisories. The establishment of a dedicated online platform for bulletin dissemination through a sub-domain on the MSJ's website, integrated with the RADA mobile app (via Activity 2.2.2), ensures wide accessibility. The implementation of a heat stress monitoring in the bulletin using the Temperature Humidity Index (THI) will add crucial information for both livestock and crop management.	3.2.1.1: Build capacity for agro-meteorological bulletin development 3.2.1.2: Develop online platform for bulletin dissemination 3.2.1.3: Establish heat stress monitoring and warning system	3.2.1.1 1x training report on capacitated MSJ and RADA personnel 3.2.1.2 1x MSJ online platform for agro-met bulletin development re-established 3.2.1.3 1x heat stress monitoring system established
3.2.2: Improve integration of climate information into RADA's digital platform	This activity strengthens the accessibility and utility of climate information by integrating it seamlessly into RADA's existing farmer app. Through the development of technical protocols for automated data transfer and standardised alert formats, the activity ensures reliable delivery of weather forecasts, agrometeorological bulletins, and early warnings through a platform already familiar to farmers. The enhancement of the app's climate information features (via Activity 2.2.1), including push notification capabilities and user-friendly visualisations, makes climate information more accessible and actionable. These features will also be integrated into ABIS	3.2.2.1: Develop technical protocols for climate information integration 3.2.2.2: Enhance RADA app's climate information features 3.2.2.3: Build technical capacity for platform maintenance	3.2.2.1 1x technical framework established for API integration 3.2.2.2 1x report on improvements made to RADA app 3.2.2.3 1x training report on capacitated RADA personnel

	to advance RADA's Agricultural Decision-Making Service (ADMS). Building technical capacity within RADA for platform maintenance will ensure sustainable operation of these enhanced features beyond the project timeframe.		
3.2.3: Training of MSJ and RADA technical personnel and extension workers in data collection, interpretation, quality control, storage, and dissemination	This activity builds the lacking institutional capacity needed for sustainable climate information services. Through comprehensive training programmes, technical staff at MSJ and RADA will develop expertise in operating and maintaining the modernised weather monitoring network provider under Output 2.1. The development of formal data sharing frameworks between MSJ, RADA, and WRA addresses the current lack of standardisation and coordination in climate data management. Extension workers will be specifically trained in translating technical climate information into practical agricultural advisories, and on practical techniques in nowcasting data/information (e.g. from doppler radars) to enhance overall capacity for providing in-situ advisories to farmers, thus ensuring effective communication of climate information to farmers.	3.2.3.1: Build capacity in technical operations 3.2.3.2: Strengthen data management capabilities 3.2.3.3: Establish data sharing frameworks 3.2.3.4: Train RADA extension staff in data interpretation	3.2.3.1 4x capacity-building workshops held 3.2.3.2 8x capacity-building workshops held 3.2.3.3 3x workshops to establish data sharing agreement held 1x formal data sharing agreement established 2.2.3.4 3x capacity-building workshops held
3.2.4: Equip farmers to understand and utilise climate information services (CIS) services and products	This activity ensures that enhanced climate information systems translate into improved on-farm decision-making. Through the development of practical, user-friendly training materials and hands-on sessions, farmers' capacity in interpreting and applying various climate information products, from seasonal forecasts to heat stress indices, will be strengthened. The training will include practical application, teaching farmers how to use climate information for specific decisions such as planting timing, irrigation scheduling, and hurricane preparedness. By ensuring farmers can effectively access and utilise the online	3.2.4.1: Develop tailored training materials for farmers on CIS 3.2.4.2: Deliver hands-on training on accessing climate information and applying it	3.2.4.1 1x set of training materials on CIS for farmers 3.2.4.2 6x training workshops held on accessing climate information

	climate information (either via MSJ or the RADA app), the activity completes the chain from information generation to practical application at the farm level.		
Output 4.1: Policies, partnerships, and incentives for CRA and FLW developed			
4.1.1: Support the GoJ in the revision of relevant policies and regulations to incentivise investment in practices, technologies, and infrastructure related to CRA and FLW reduction	This activity will strengthen Jamaica's policy environment to accelerate private sector investment in climate-resilient agriculture and food loss and waste reduction solutions. Through comprehensive policy analysis and stakeholder engagement, the project will help identify and address key barriers to technology adoption while developing new incentive mechanisms for climate-resilient investments. The activity will also create standardised frameworks for evaluating the commercial viability of climate-resilient solutions, enabling both policymakers and private sector actors to make informed decisions about investments. These efforts will complement the financial sector interventions under Output 3.2 by ensuring supportive policies are in place for expanding climate-resilient agricultural lending.	4.1.1.1 Support development of a comprehensive policy framework to promote CRA and FLW reduction solutions 4.1.1.2 Identify potential incentives to enable access to climate-resilient varieties, and CRA and FLW reduction technologies. 4.1.1.3 Develop methodology for assessing commercial viability of CRA and FLW technologies	4.1.1.1 1x comprehensive report with recommended policy reform measures 4.1.1.2 1x technical report and market study for incentives for climate-resilient varieties and technologies 4.1.1.3 1x guidebook with methodology for FIs and other private sector actors
4.1.2: Support the development of climate-resilient approaches for new Agro Parks and bauxite reclamation areas	This activity will support the development of climate-resilient approaches for new agricultural production zones in Jamaica, with a focus on Agro Parks and bauxite reclamation areas. Through detailed planning assessments and operational guidelines, it will ensure that climate resilience and food loss reduction considerations are integrated from the design phase. The activity will produce practical planning manuals that address both physical infrastructure needs and operational arrangements, helping developers create production zones that are both climate-resilient and commercially viable. This work builds on successful approaches demonstrated through ADAPT	4.1.2.1 Develop integrated planning assessments for two new Agro Parks and two new bauxite reclamation sites 4.1.2.2 Develop operational manual for climate-resilient planning of new Agro Parks, agricultural production zones, and bauxite reclamation areas 4.1.2.3 Strengthen AIC, RADA and JSIF capacity as technical partners for agricultural financial institutions 4.1.2.4 Quality assurance and technical input for the development of climate-resilient approaches (MOAFM cofinancing through AIC).	4.1.2.1 2x integrated planning assessments for new Agro Parks 2x integrated planning assessments for bauxite reclamation sites 4.1.2.2 1x operational manual 4.1.2.3 1 x training workshop held at JSIF with minimum 15 participants each 1x training workshop held at AIC with minimum 20 participants

	Jamaica while strengthening AIC and JSIF's capacity to serve as technical partners for financial institutions investing in these areas		1x training workshop held at RADA with minimum 15 participants 4.1.2.4 MOAFM clearance of integrated planning assessments and operational manual.
4.1.3: Facilitate public-private partnerships for agricultural business development and service provision	This activity will foster entrepreneurship and innovation in agricultural services through targeted business development support. It will establish incubators focused on youth and women entrepreneurs developing services that enable climate-resilient agriculture and food loss reduction. Through a dedicated acceleration programme, promising enterprises will receive support in scaling up their operations beyond initial Agro Parks and bauxite reclamation areas targeted by ADAPT Jamaica. The activity will also formalise arrangements between public entities and private service providers to improve delivery of critical agricultural services. This complements the demonstration activities under Component 1 by creating sustainable mechanisms for service provision while supporting enterprise development.	4.1.3.1: Establishment of business incubator opportunities for young entrepreneurs to provide supporting services to farmers in Agro Parks and Bauxite reclamation areas 4.1.3.2 Develop acceleration and scaling programme for agribusiness enterprises 4.1.3.3 Establish formal service provision arrangements between public and private sectors	4.1.3.1 1 x business incubator programme established with operational guidelines, supporting 12 women and youth-led enterprises through incubation 4.1.3.2 1 x scaling programme established with operational guidelines, supporting 3 of the incubator enterprises demonstrating strong market demand 4.1.3.3 10 x public-private partnership agreements established for agricultural service provision
4.1.4: Support the creation of a multi-stakeholder platform to connect agricultural enterprises with investors and facilitate knowledge exchange and collaboration	Based on the assessment of the existing ALEX platform, this activity will establish, improve or upgrade a multi-stakeholder platform to strengthen market linkages and investment flows in climate-resilient agriculture. The platform will connect farmer associations, agro-processors, agricultural service providers, and investors both through a digital platform and regular stakeholder meetings. It will help producer groups access needed services while enabling enterprises from the incubator and acceleration	4.1.4.1 Create or improve agricultural enterprise networking platform 4.1.4.2 Facilitate value chain partnerships and agribusiness enterprise investment opportunities	4.1.4.1 1 x digital agricultural enterprise networking platform established or improved, including a virtual marketplace for agricultural products and services 4.1.4.2 4 x business matchmaking events between producers, buyers, investors, and other agricultural value chain stakeholders

	programmes to develop market relationships.		
Output 4.2: Access to finance and markets increased to support upscaling CRA and FLW practices and technologies			
4.2.1: Develop a Jamaican resilience finance taxonomy on sustainable agriculture solutions available on the market	This activity will establish a standardised classification system for climate-resilient agriculture and food loss reduction investments in Jamaica in close coordination with DBJ. Working with technical experts, the project will develop clear criteria for evaluating climate-resilient agricultural investments, drawing from successful demonstrations in ADAPT Jamaica's model farms. The activity will also create practical assessment guidelines and digital workflow management systems to help financial institutions consistently evaluate and monitor these investments. This foundational work enables the potential for expanded lending activities under 4.2.3 by providing a clear framework for investment decisions.	4.2.1.1 Develop a comprehensive CRA and FLW reduction solutions taxonomy 4.2.1.2 Incorporate the CRA and FLW reduction solutions taxonomy into the sustainable agriculture taxonomy 4.2.1.3 Develop assessment guidelines on lending for CRA and FLW reduction 4.2.1.4 Apply digital workflow management for monitoring and verification 4.2.1.5 Upgrade of Climate, Environmental, and Social Risks Management System (ECSMS) 4.2.1.6 Build capacity of personnel in DBJ	4.2.1.1 1x taxonomy document 4.2.1.2 1x document categorising CRA and FLW reduction solutions 4.2.1.3 1x lending guidelines developed 4.2.1.4 1x digital MRV system for CRA and FLW reduction solutions taxonomy developed 4.2.1.5 1x report of upgraded ECSMS 4.2.1.6 1x report on capacitated DBJ personnel
4.2.2: Build comprehensive capacity of AIC and participating FIs for CRA and FLW finance	This activity will strengthen the institutional capacity of financial institutions to develop and deliver climate-resilient agricultural finance products. It will support AIC's transition to becoming a DBJ-accredited microfinance institution serving Jamaica's agricultural sector, and will build capacity of other participating agricultural financial institutions. Through technical assistance, the activity will help these institutions develop specialised products for climate-resilient investments using the taxonomy developed under 4.2.1, supported by appropriate systems and procedures.	4.2.2.1: Support AIC to become an FI accredited by DBJ 4.2.2.2: Build comprehensive capacity of participating FIs for CRA and FLW finance	4.2.2.1 1x institutional assessment report of AIC 3x operational framework documents drafted 1x report on capacitated AIC personnel 4.2.2.2 1x institutional assessment report of participating AFIs 1x training materials developed 8x capacity-building workshops held for AFI personnel 1x report on capacitated AFI personnel

4.2.3: Facilitating participating FIs access to DBJ's agricultural credit line for CRA and FLW reduction solutions lending.	This activity will facilitate increased lending for climate-resilient agriculture and food loss reduction solutions through DBJ's existing agricultural credit line, including increasing credit access to women farmers. It will ensure the CRA/FLW taxonomy developed under 4.2.1 is fully integrated into DBJ's financing criteria, enabling participating agricultural financial institutions to access funds specifically for climate-resilient investments. The activity will support piloting and scaling of the new financial products developed under 4.2.2 with a 1M USD dedicated credit line for CRA and FLW, documenting implementation experiences to guide future expansion of climate-resilient agricultural lending across Jamaica's financial sector.	4.2.3.1: Definition and adjustment of DBJ's credit line for CRA and FLW investments 4.2.3.2: Scale CRA and FLW investments via participating FIs using the DBJ credit line 4.2.3.3: Document and disseminate lessons from accessing the dedicated credit line	4.2.3.1 1x tailored CRA and FLW reduction lending product developed/modified per participating AFI 1M USD credit line to support CRA and FLW reduction interventions 4.2.3.2 1x report detailing the application of the CRA and FLW reduction taxonomy to the credit line 4.2.3.3: 1x report with lessons learned
4.2.4: Develop a CRA and FLW reduction learning module for an open-access certification course platform	This activity will develop specialised learning modules on climate-resilient agricultural finance for an open-access digital e-learning platform to be potentially operated by DBJ. The training materials will focus on key aspects including climate finance taxonomies, risk identification and management, and CRA/FLW solutions, with special emphasis on supporting vulnerable groups like smallholder farmers, women, and youth. By building broader financial sector awareness and capacity, this activity complements the institution-specific training delivered under 4.2.2 while creating a sustainable mechanism for knowledge transfer beyond the project timeline.	4.2.4.1: Develop CRA and FLW-specific training materials on climate-resilient agricultural finance, particularly for smallholder farmers, women and youth 4.2.4.2 Integrate the materials on an open-access certification course platform	4.2.4.1 1x set of training materials developed 4.2.4.2 1x online course developed
4.2.5: Supporting social protection and the development of agricultural insurance for CRA and FLW reduction investments	This activity will explore opportunities to integrate insurance coverage into climate-resilient agricultural lending products. Through a detailed feasibility assessment, it will examine current gaps in agricultural insurance availability in Jamaica, particularly for technologies like protected agriculture. Where relevant, the activity	4.2.5.1: Identify social protection mechanisms for vulnerable farmers 4.2.5.2: Feasibility assessment for integrating agricultural insurance into CRA and FLW reduction financial products	4.2.5.1 1x social protection mechanisms analysis 4.2.5.2 1x feasibility assessment for agricultural insurance

	will consider mechanisms such as CCRIF and the Livelihood Protection Policy (LPP), which provide fast payouts to low-income and vulnerable groups to support rapid recovery from climate shocks, targeting groups traditionally excluded from formal insurance markets (e.g. small farmers). If feasible, the activity will develop standardised frameworks for incorporating insurance coverage into the financial products developed under 4.2.2, creating operational guidelines that financial institutions can use when working with insurance providers. This complements other financing interventions by addressing a critical risk management gap.	4.2.5.3: Support development of operational framework for agricultural insurance integration into CRA and FLW reduction lending	4.2.5.3 4x technical workshops on agricultural insurance 1x framework developed for agricultural insurance integration into financial products

E.7. Monitoring, reporting and evaluation arrangements (max. 500 words, approximately 1 page)

187. In its role as Accredited Entity, FAO (specifically the Project Task Force) will oversee and supervise the implementation of this project in accordance with the FAA and the Accreditation Master Agreement (AMA) signed between FAO and the GCF. As per the GCF Monitoring and Accountability Framework, and in accordance with the AMA, FAO will provide the GCF with an Inception Report, Annual Performance Reports, an independent Mid-term Evaluation report, a Project Closure Report, and an independent Final Evaluation report. FAO will also provide semi-annual and annual Financial Reports throughout project implementation.

188. FAO has standard M&E procedures which are compliant with the GCF performance measurement framework. FAO will manage and coordinate reporting to the GCF according to its standards and procedures. The monitoring will take place under the following levels.

Project execution level:

189. The project will include implementation of a monitoring system to understand efficacy, targeting and verifying the assumptions that the program is making as well as implementing a learning plan so elements emerging from the monitoring systems can feed back into the project implementation and planning Components. The M&E at this level will be managed by the M&E specialist and coordinated by the Project Technical Committee (PTC) with oversight and guidance from the Project Steering Committee (PSC). Data will be stored in a database accessible to the GCF, the counterpart as well as to FAO.

Supervision, Support and Evaluation level:

190. FAO will support the PTC and PSC in reviewing and analysing progress reports and to assess performances against baseline and targets. FAO will also secure, according to its rules and regulations, financial control and midterm evaluation and final evaluation phases via an independent and external evaluation expert.

191. In accordance with the AMA between FAO and GCF, the FAO Office of Evaluation will be responsible for the independent interim and final evaluations. The evaluations will be conducted using a question-driven approach, and address the GCF evaluation criteria. The interim evaluation will be instrumental in contributing – through operational and strategic recommendations – to improve implementation, setting out any necessary corrective measures for the remaining period of the project. The final evaluation will assess the relevance of the intervention, its overall performance, as well as sustainability and scalability of results, differential impacts and lessons learned; coherence in climate finance delivery with other multilateral entities; gender equity; as well as innovativeness in result areas. The evaluation should also assess the extent to which the intervention has contributed to the Fund's higher-level goal of achieving a paradigm shift in adaptation to climate change in Jamaica. The evaluation will draw on mixed-methods, using qualitative methods (e.g. participatory rural appraisal) in combination with counterfactual analysis, depending on the existence of reliable control group data from the project's baseline and

end line surveys. In addition to primary data collected by the evaluators and secondary national data, both interim and final evaluations will draw on the monitoring reports and activities prepared by project staff. Careful attention will be paid to the disaggregation of data, results and components by gender and cultural groups.

Annual Reporting

192. The PMU will prepare Annual Reports for each year of implementation and FAO will review/clear them. The FAO agricultural climate change technical officer and the M&E Specialist will ensure that the indicators in the results framework are monitored and reported annually. Annual Reports will be shared with the PSC, PTC and other stakeholders. Annual Reports will be due to GCF 60 days after the end of the calendar year. The final Annual Report and the terminal evaluation report will serve as the final project report package.

Mid-Term and Terminal Evaluations

193. In compliance with the requirements in FAO's Accreditation Master Agreement with the GCF, the FAO Office of Evaluation (the Accredited Entity independent evaluation office) will be responsible for the independent evaluation of this project. This evaluation shall be conducted in accordance with the GCF Monitoring and Accountability Framework (MAF) and the requirements outlined in the GCF Evaluation Policy, Evaluation Standards and Evaluation Operational Procedures and Guidelines. To this end, the evaluation will include multiple components, such as assessments of implementation and impacts. The overall evaluation will, inter alia, study the effectiveness, efficiency, and timeliness of project implementation; analyse partnership arrangements; identify issues requiring decisions and remedial actions; and, through the interim evaluation report, the impact of the project is assessed, and the report may propose mid-course corrections or needed adjustments to the implementation strategy. The final evaluation report will focus on project impacts and the degree to which expected long-term results have been achieved and may be sustained. It may also identify future actions needed to sustain results and disseminate replicable good practices and key issues faced during project implementation. The evaluation budget includes all evaluation costs, such as inception phase, evaluation design, data collection activities, analysis, report writing, quality assurance and dissemination. FAO will communicate the results of this evaluation to the GCF Secretariat. At a minimum, this shall be done through the required interim and final independent evaluation reports following the timeline agreed upon by the Secretariat and FAO.

F. RISK ASSESSMENT AND MANAGEMENT

F.1. Risk factors and mitigations measures (max. 3 pages)

Risk Factor 1: Limited implementation capacity of technical service providers and partners

Category	Probability	Impact
Technical and operational	Medium	Medium

Description

Limited implementation capacity of technical service providers and partners (JSIF, RADA, MSJ, Forestry Department, DBJ, AIC) to effectively manage and implement project activities in a timely manner. In SIDS such as Jamaica, the relatively small population often results in a limited pool of specialised human resources, who often emigrate to other countries seeking better-paying livelihoods, thus leaving institutions in the country with a limited number of skilled personnel. This shortage may impact the ability of partners and service providers to dedicate individuals with the necessary knowledge and experience to manage and implement project activities effectively.

Mitigation Measure(s)

FAO has conducted a thorough capacity assessment of JSIF (which is a GCF-accredited DAE) for managing GCF funds, which concluded that JSIF has adequate capacity with the additional support outlined below. As EEs, FAOJM and JSIF will recruit on a competitive and transparent basis the project staff and PMU personnel, who will benefit from technical support from specialists in the FAO sub-regional office for the Caribbean (based in Barbados), the FAO Regional Office for Latin America and the Caribbean (based in Chile), and FAO Headquarters. Project staff will liaise closely with partners at all times, and provide continuous support, with FAO technical officers to provide further guidance as needed. Regular coordination meetings between the PMU and implementing partners will identify any technical or capacity-related bottlenecks early, and agree on prompt corrective actions where needed. The quality of implementation is thus maintained through close technical support and oversight.

Risk Factor 2: Lack of coordination between ministries

Category	Probability	Impact
Governance	Governance	Governance

Description

ADAPT Jamaica will require a concerted and coordinated effort from a number of agencies and government departments housed in different ministries. A lack of information sharing and joint planning and coordination between ministries and constituent departments, such as the Ministry of Agriculture (MOAFM), the Ministry of Water, Environment and Climate Change (MWECC, and the Ministry of Local Government and Rural Development (MLGRD) and their various agencies, may negatively affect project implementation and results.

Mitigation Measure(s)

The project will establish data-sharing agreements and MoUs to establish formal coordination and collaboration mechanisms. Furthermore, the Project Steering Committee, comprising representatives from key ministries and departments, will provide a formal platform for regular communication, coordination, and joint decision-making. Furthermore, the implementation arrangements will mitigate this risk through the project's close involvement of key agencies such as RADA, AIC, MSJ, CCD, and PIOJ, the project will foster collaboration across institutional boundaries. At the local level, coordination will be strengthened through joint planning and implementation of activities between extension services (RADA), climate services (MSJ), and other local stakeholders.

Risk Factor 3: Local administrative delays

Category	Probability	Impact
Governance	Medium	Medium

Description

Delays in administrative processes, approvals and decision-making at various governmental levels (MOAFM, MoFPS, RADA, MSJ, etc.) could slow down project implementation and affect the timely delivery of key interventions. This is particularly critical for activities that have seasonal dependencies, such as the establishment of model farms and climate-resilient agricultural practices, where delays could result in missed planting seasons or untimely delivery of inputs and services to farmers.

Mitigation Measure(s)

The project will work with relevant government agencies to establish clear procedures and timelines for all approval processes by identifying specific steps, responsible parties, and expected turnaround times for each type of approval required. The PMU will proactively engage with relevant authorities to ensure that all required approvals are obtained in a timely manner. Through the project's involvement of various service providers and implementing partners, regular communication channels will be established, and all necessary documentation and information will flow freely and speedily to ensure the project maintains the momentum

required for successful implementation. Parameters will be established within which the PMU will be able to make operational decisions with the lowest level of approval required to not stall on-the-ground progress.

Risk Factor 4: Resistance to women's participation and empowerment

Category	Probability	Impact
Other	Medium	Medium

Description

The project may encounter passive or active resistance to women's participation and empowerment in the communities. Given existing gender inequalities in agriculture, there are risks that women may face barriers in accessing project benefits, including: limited participation in farmer field schools and training activities, reduced access to model farm demonstrations and climate-resilient technologies, exclusion from decision-making processes in farmer organisations, and constraints in accessing productive resources, markets, and finance. Additionally, women may face opposition from male family members regarding their participation in project activities, which in some households could lead to tension or violence.

Mitigation Measure(s)

The project targeting mechanisms including direct, community-based and self-targeting mechanisms (through model farms) will promote women's participation including vulnerable groups such as female-headed households, female youth and girls. The project will rely on participatory community approaches and gender-transformative approaches that promote the participation of all community and household members including women, men, female and male youth. The project will provide gender-inclusive training and capacity building to women participants, which will help to improve their skills, knowledge, and confidence. Special attention will be given to gender-inclusive training approaches and participatory learning methods in training of trainers activities. The project will ensure differentiated materials are designed for model farmers and trainees, including visual guides, practical exercises and troubleshooting tips. It will also develop training materials that focus on vulnerable groups and the different climate impacts they experience, specifically smallholder farmers, women and youth.

The project will prioritise creating opportunities for women to take on leadership roles within the project structure and community organisations. For instance, as the project will include training on the processes for managing farmers' associations, including organisational management, financial procedures and record-keeping, special attention will be provided to women and youth groups.

Selected Risk Factor 5: Money laundering and countering the financing of terrorism

Category	Probability	Impact
ML/FT	Low	Low
Reputational	Low	Low
Prohibited practices	Low	Low
Sanctions	Low	Low

Description

The project could be negatively affected by a combination of financial and governance-related issues that could severely undermine its integrity and success. The project's financial transactions, particularly those involving third-party contractors, are potentially vulnerable to money laundering or the financing of terrorism, where project funds could be diverted to illicit activities. There is also a risk of fraud, corruption, abuse, or conflicts of interest among staff, contractors or beneficiaries, which could include the misuse of funds, inflated procurement costs, or retaliation against whistleblowers. Any such incidents could cause severe reputational damage to the project and its service providers and implementing partners, eroding public trust and jeopardising the long-term sustainability of the initiative. These risks, though individually of low probability, have the potential for interconnected impact if they occur, and could significantly undermine the goals of the project.

Mitigation Measure(s)

FAO has consistently complied with the principles of Anti-money Laundering and Countering the Financing of Terrorism Policy and applied its own rules in order to comply with the objectives of the Policy on Prohibited Practices, as per Clause 9.03 of the current Accreditation Master Agreement (AMA) and will continue complying with such obligation for the Funded Activity in alignment with the Funded Activities Agreement to be executed between FAO and the GCF.

The proposed Project foresees that FAO and the Jamaica Social Investment Fund (JSIF) act each as an Executing Entity for the implementation of the Project as described in the Funding Proposal. FAO, in its capacity of Accredited Entity of the Funding Proposal, confirms that a capacity assessment for JSIF has been conducted and that it is satisfied with the results of the assessment.

The Project will be executed in full compliance with the following policies and procedures regarding AML/CFT (KYC), as also confirmed in the current AMA and assessed in the re-accreditation decision (B.37/18). These policies and procedures apply to all FAO personnel and all contractual arrangements between FAO and implementing partners, suppliers or other third parties for administrative, technical or operational purposes.

In addition, FAO will include in the Project agreement to be signed with JSIF clauses related to AML/CFT, providing, inter alia, that:

- The Government shall comply, and shall require all persons and entities engaged in its activities under the Project to comply, with all internal anti-money laundering, counter-terrorism financing laws, rules, and regulations;

- The Government confirms it has obtained sufficient undertakings from all persons and entities involved in its activities under the Project that they shall not engage in any prohibited practices; the Government undertakes and confirm that it shall comply with the substantive objectives of the GCF's Policy on Prohibited Practices;
- Consistent with numerous United Nations Security Council resolutions adopted under Chapter VII of the UN Charter, the Government and FAO are firmly committed to the international fight against terrorism and, in particular, against the financing of terrorism. It is the policy of the Government and FAO to seek to ensure that none of their funds are used, directly or indirectly, to provide support to individuals or entities: i) associated with terrorism, as included in the list maintained by the Security Council Committee established pursuant to its Resolutions 1267 (1999), 1989 (2011) and 2253 (2015); or ii) that are the subject of sanctions or other enforcement measures promulgated by the United Nations Security Council. This provision must be included in all agreements that may be concluded with third parties for the implementation of activities under the Project.

During project implementation FAO, as AE, will ensure close monitoring and supervision through its Office of Climate Change, Biodiversity and Environment (OCB), with support from the Sub-Regional Office for the Caribbean (SLC), the Regional Office for Latin America and the Caribbean (RLC) and its Representation in Jamaica (FAOJM) to ensure that the activities are implemented in full compliance with the signed project agreement and as the FAA/AMA.

FAO is committed to identifying, mitigating and addressing fraud, corruption and other Prohibited Practices. If wrongdoing by a Third Party involved in FAO operations is established, FAO has in place a mechanism to impose the most appropriate sanction(s) or corrective and rehabilitative measure(s) in accordance with the FAO Sanctions Procedures. Any Third Party that is proven to have engaged in unethical, corrupt or fraudulent activities may be debarred and deemed ineligible to conduct business relations with FAO, among other possible sanctions. Debarred Vendors will be classified as Ineligible Vendors and included on the UN Ineligibility List shared with other UN agencies through the UN Global Marketplace. If wrongdoing is established, FAO will inform GCF and, as necessary, discuss possible approaches with regard to any funds that may have been misappropriated or otherwise affected.

As per FAO rules, regulations and procedures, established unsatisfactory conduct by FAO staff members and all other personnel gives rise to administrative and/or disciplinary action. FAO does not tolerate any type of fraudulent and other corrupt practices within the workplace or associated with the work performed on behalf of the Organization. It has a zero-tolerance policy in respect of fraud and other corrupt practices in all its manifestations and, accordingly, FAO will consistently impose a disciplinary measure on FAO staff members, including dismissal, termination of contractual relationships in the case of other FAO personnel, debarment from doing business with FAO in the case of a third-party entity, or other sanctions, as appropriate. Such actions will be taken in accordance with the relevant provisions of FAO's Administrative Manual.

G. GCF POLICIES AND STANDARDS

G.1. Environmental and social risk assessment (max. 750 words, approximately 1.5 pages)

194. In accordance with FAO and GCF's Environmental and Social Policy (ESSP), the ADAPT Jamaica project design underwent an environmental and social assessment following FAO's environmental and social safeguards guidelines (FAO, 2015). An Environmental and Social Management Framework was prepared (ESMF) and is presented in Annex 6. The ESMF identifies policy triggers for the project, screening criteria for activities, environmental and social impacts of the activities, and measures to mitigate identified risks. Mitigation actions will avoid, minimize and mitigate negative impacts during project implementation and operation. These actions will be in line with FAO and GCF ESS policy, and national legislation, and adhere to whichever is most stringent. The ESMF also sets out the modalities for stakeholder engagement, and the procedure and process for dealing with complaints, through the Grievance Redress Mechanism. The ESFM will be disclosed on relevant portals, and shared with stakeholders during stakeholder engagement consultations, so they are aware of potential consequences of project activities. During these stakeholder consultations, the Grievance Redress Mechanism will also be presented and explained. Consultations with stakeholders during project implementation will take place yearly, at the time of the preparation of the Annual Work Plan and Budgets (AWPB). The AWPB will be presented by the PMU to the Project Steering Committee for approval. In order to ensure a smooth and effective ESMF process, an ESS specialist will be engaged by the project to be responsible for the environmental and social safeguards process (including GRM), interacting on a regular basis with key stakeholders and being available to respond to any grievances.
195. The consultations held in the frame of workshops and multilateral and bilateral meetings at the national and local level, verified the technical feasibility of project components and allowed to obtain feedback from stakeholders on all aspects of the initiative. Furthermore, this process allowed ensure that the design met national priorities and local needs, and to identify activity priority areas and gaps, project target areas, and main stakeholders. The project engaged in a Risk Identification process, identifying thirteen E&S Risks from project activities summarised in the table below.

Risk Title	Description
1. Protected Area Indirect Impacts	Activities near the Portland Bight Protected Area risk indirect negative impacts, including water diversion and runoff affecting downstream habitats. Interventions are outside buffer zones, but changes in practices could alter local hydrology and biodiversity.
2. Invasive Species & Market Disruption	Introducing new climate-resilient seeds and crops could inadvertently introduce pests or invasive species. There is also a risk that new crop varieties may not be accepted by farmers or could disrupt local markets.
3. Water Resource Depletion & Pollution	Efficient water technologies may paradoxically lead to groundwater decline or degraded water quality if not managed correctly, potentially increasing agricultural runoff and affecting aquatic biodiversity.
4. Agrochemical Pollution & Safety	Agricultural intensification may lead to the overuse of pesticides and fertilizers, causing soil degradation, water contamination, and occupational health risks. High input costs could exacerbate economic disparities.
5. Income Instability & Benefit Inequality	Interventions could fail, leading to income decline or unequal access to benefits where vulnerable groups are excluded, potentially widening the economic gap.
6. Perpetuation of Gender Inequality	Existing gender disparities may be worsened if women are not actively engaged, excluding them from decision-making and benefits, entrenching the gender gap.
7. Exclusion of Migrant Labour	Seasonal labour migrants risk having their views overlooked. Failure to consult this group effectively excludes a key part of the workforce and ignores their specific vulnerabilities.
8. Occupational Health and Safety (OHS)	Agriculture is high-risk for accidents. Beneficiaries face injury risks from tools and machinery. Without protocols, the project could increase workplace accidents.
9. Infrastructure Construction Risks	Greenhouses and nurseries involve risks like land disturbance, plastic waste, improper siting, and occupational hazards during construction.
10. Energy Storage & E-Waste Hazards	Solar-powered storage units introduce electrical, fire, and e-waste risks. Disposal of batteries and panels poses long-term environmental concerns.
11. Soil Erosion & Community Safety	Farm road rehabilitation and drainage clearing can cause erosion and sediment issues. Physical work poses safety risks to workers and the community.
12. Livestock Waste & Vector Risks	Broilers risk water contamination and odours via manure. Vulnerable farmers may lack capacity for safe management.
13. Sexual Exploitation, Abuse & Harassment (SEAH)	Risk of power abuse by staff/contractors or harassment during training. Potential harm remains high in post-disaster contexts or where power dynamics are unequal.

196. A key risk faced by the project is the increase in use of water by the irrigation interventions in Agro Parks. Empowering women is mainstreamed in project interventions with specific activities also identified to promote women's agency. There will be no significant or irreversible negative environmental impacts associated with the project. The proposed project investments are

designed to have positive social and environmental benefits; the project has however been classified as ***moderate risk (Category B)*** largely due to works associated with water resources and irrigation.

197. The project has adopted an active stakeholder engagement strategy since its inception and throughout development and design following a bottom-up approach. Particular attention has been paid to identifying key stakeholders and involving them meaningfully and at the right time, to ensure their advice, knowledge and inputs are duly considered in all aspects of this project. Stakeholder engagement is fully mainstreamed in all project activities. The identification of stakeholders was done using a collaborative approach, consulting Jamaican government authorities at national and parish level as well as FAOJM's experience and expertise. Analysis of each stakeholders' potential influence on, benefits from, and contribution to the project was done combining desk review and interviews or discussions.
198. A participatory process for the design of this project was conducted starting in July 2023, culminating in November 2024. This process involved gathering ideas, suggestions, inputs, and contributions from stakeholders identified above, including farmers, county governments, development partners and others. Details of meetings, consultations and feedback received is included in Annex 7. A series of analytical consultations, designed to assess needs and gaps, understand barriers, and refine the technical components of the project were also deployed. These included in-person and virtual surveys, interviews and workshops with all categories of stakeholders. Throughout implementation, the project will make every effort to provide relevant information to stakeholders in appropriate and timely manner.
199. Dissemination of information will be done using a variety of media such as print (newspapers, posters), radios, public meetings and workshops to ensure maximum reach to stakeholders. Particular attention will be paid to the adequate communication of project criteria, targeting approaches, activities and benefits to vulnerable groups, including women, youth, and persons living with disabilities. Provisions will be made for the use of pictorial or image-based communication in order to ensure communication about the project is not limited by literacy rates. Details of how each stakeholder and stakeholder group is to be engaged are included in Annex 7.
200. The project will establish one grievance mechanisms at the field level to file complaints, sensitive to the location wherein the project is being implemented. Both (i) contact information and (ii) information on the process one must follow to file a complaint will be disclosed in all meetings, workshops and other related events throughout the life of the project. It is also expected that all awareness raising material to be distributed will include the necessary information regarding the process for filing grievances and key contacts. The project will be responsible for documenting and reporting, as part of the safeguard's performance monitoring, on any grievances received and how they were addressed.
201. The Project Management Unit (PMU) will be responsible for addressing incoming grievances regarding environmental and social standards; as part of the safeguard's performance monitoring, the FAO agricultural climate change technical officer will be responsible for documenting and reporting on any grievances received and how they were addressed. FAO as well as JSIF as co-EE will inform communities about the GRM through culturally appropriate mechanisms, ensuring information on the mechanisms at different levels through preferred communication channels, which are to be agreed and discussed as part of the project FPIC.
202. The GRM will include methods/process to (i) receive and register external communications from the public; (ii) screen and assess the issues raised and determine how to address them; (iii) provide, track, and document responses, if any; and (iv) adjust the management program, as appropriate.
203. The project will identify and mitigate SEAH risks or potential adverse impacts on women, youth, persons living with disabilities, and other vulnerable peoples as early as possible as a part of environmental and social risk screening and reflect such risks or impacts in relevant safeguards instruments (including ESMF and ESMPs, Gender Action Plans and others as appropriate), and propose mitigation measures, differentiated by gender and age where relevant as follows: (i) Include measures (including pre-project implementation awareness raising for host communities and project workforces) to enhance gender equality, and to prevent, address and eliminate SEAH in the relevant projects or programs and safeguards instruments; (ii) implement, monitor and continuously improve all measures to mitigate and manage the identified SEAH risks and impacts; (iii) Ensure that sufficient and adequate financial and human resources are allocated to ensure SEAH-related compliance; (iv) Ensure that stakeholder consultations prior and during project implementation include awareness raising and stakeholder-differentiated understanding of SEAH related risks and mitigation measures.

G.2. Gender assessment and action plan (max. 500 words, approximately 1 page)

204. A Gender Assessment and Gender Action Plan (GAAP), under Annex 8 of this Funding Proposal, has been prepared as part of the design of the proposed Green Climate Fund (GCF) ADAPT-Jamaica *Enhancing Climate Change Resilience of Vulnerable Smallholders in Central Jamaica*, herein ADAPT-Jamaica. This assessment has been designed in close coordination with the Government of Jamaica and focuses on building the adaptive capacity of small holder farmers to reduce their vulnerability to climate change impacts, considering the different needs and priorities of men and women. Strengthening climate resilience will support local economies, with tangible benefits for vulnerable groups, particularly women, and can be expected to indirectly generate new job opportunities for both men and women.
205. The ADAPT-Jamaica project will aim to increase institutional representation and meaningful participation of women in climate resilient agriculture and in the implementation of climate change adaptation interventions. Improved gender equality and women's empowerment will help deliver the adaptation pathway chosen by the project and sustain results to ensure that communities are able to move towards a climate-resilient future.

Gender Assessment

206. The gender assessment employed a mixed method approach using both quantitative and qualitative investigations, carried out in close collaboration with the Stakeholder Engagement Plan (SEP) to ensure that the SEP was gender responsive. These methods included:

- In-depth review of relevant secondary literature;
- Key Informant Interviews (KII) at the national policy and parish levels, with representatives of key stakeholder agencies;
- Community-based consultations with potential beneficiaries;
- An on-line survey with members of the Jamaican Network of Rural Women Producers (JNRWP);
- A quantitative stakeholder survey with potential beneficiaries; and
- Focus Group Discussions (FGDs)

207. Initial stakeholder consultations and KIIs were undertaken at the National level during the concept note phase with the National Designated Authority (NDA) and policymakers in 2018. Other national, sub-national institutions and with in-country NGOs and CSOs representatives of the proposed project parishes (St Catherine, Clarendon, Manchester, St. Elizabeth, St. Ann and Trelawny) were consulted in July 2023 then continued throughout the project preparation phase.
208. The gender assessment during project design phase assessed established gendered inequalities in Jamaica, primarily driven by traditional gender norms. Labor force participation rates are lower for women than men, due in part to the time burden than domestic care represents, have less access to land, financial services (credit) and decision-making power. In the smallholder agricultural sector, women play a crucial role despite their activities being unrecognised as labor. While there is limited disaggregated data on their specific roles, their agricultural productivity often directly impacts production and food security. A majority of respondents to the baseline survey conducted in the target parishes indicated women's involvement in selling and marketing produce (68%), while significant percentages also reported women's roles in reaping (67%), sowing (61%), watering (57%), and weeding (54%). Although women are less involved in land preparation (33%) and processing (37%), their contributions range from livestock care, post-harvest handling, record-keeping, to pesticide application.
209. The assessment identified gender-specific risks such as low participation of women and other groups in activities, the use of gendered communication channels that exclude these groups, and the failure to identify and address gender-specific climate vulnerabilities in adaptation activities. Additionally, there is a risk that project investments may not benefit or empower women, youth, and the elderly, or that they may even exacerbate existing inequalities.

Gender Action Plan

210. **Gender Impact Statement:** The ADAPT Jamaica project seeks to implement gender-responsive climate-resilient best practices, technologies, and innovations in a holistic way with an integrated value-chain approach in central Jamaica. In doing so, ADAPT Jamaica will lead to improved agricultural output, incomes and food security while reducing food loss which will contribute to improving the resilience and adaptive capacity of women and girls, and other vulnerable groups, particularly in relation to health, wellbeing, food and water security, infrastructure, and ecosystems-related services within the agriculture sector.
211. To mitigate the risks identified in the Gender Assessment, the Gender Action Plan ensures that the project's activities are gender responsive. Specific targets have been set to ensure that women are actively involved in the project, including, amongst others, 50% of model farms established with women ownership, at least 15% of model farmers being young women, and 100% of potential sites assessed with a gender-responsive site evaluation tool. The project will provide targeted training and capacity building on gender-related issues and identify and prioritize gendered communication channels. The relationships among the project objectives, actions, indicators, targets, and baselines are as shown in the GAP in Annex 8.
212. Additionally, the risk of GbV and SEAH has been identified. The project will integrate SEAH screening across all of its activities and follow international best practice, most notably the GCF SEAH Risk Assessment Guideline.

G.3. Financial management and procurement (max. 500 words, approximately 1 page)

213. As Accredited Entity for this project, FAO will ensure that financial management and procurement of goods and services using GCF resources adheres to relevant FAO rules and regulations, as well as relevant provisions in the Accreditation Master Agreement (AMA) signed between FAO and GCF. These rules and regulations were reviewed and deemed satisfactory by the GCF Secretariat and Accreditation Panel as part of FAO's accreditation process.
214. FAO has deployed an Oracle-based Enterprise Resource Planning (ERP) system, the 'Global Resources Management System' (GRMS), which provides all FAO employees in all locations globally with travel, human resources, procurement, and finance functionalities. Using GRMS improves the flow of financial information, supports financial monitoring and reporting, increases transparency and visibility, and strengthens internal control. FAO maintains a Chart of Accounts which is used by the whole Organization and that allows for a separation of income and expenditure by donor and project, and it provides a standardized coding structure that enables data to be recorded, classified, and summarized to facilitate internal management and external reporting requirements.
215. Direct procurement by FAO is done in accordance with its Manual Section 502 on "Procurement of Goods, Works, and Services". To sub-contract the delivery of specific activities using Letters of Agreement, FAO operates in accordance with its Manual Section 507 on "Letters of Agreement". Such services are managed by the FAO Procurement Service, which provides policy and operational support to ensure that the Organization procures goods, works, and services based on "Best Value for Money" principles.
216. Financial management and procurement executed by JSIF as Executing Entity of GCF proceeds will be overseen and supervised by the Project Task Force. The FAO project supervision team will undertake regular supervision missions and recruit a qualified, internationally recognized auditing firm to perform one spot check and one audit per year to ensure financial management and procurement by JSIF are conducted in line with agreed standards and practices. Audits will be performed by a qualified, internationally recognized auditing firm, competitively selected by FAO. As Accredited Entity of the GCF, FAO will have overall responsibility for quality assurance and oversight of executing entities and shall assume fiduciary responsibility in accordance with FAO standards and procedures. In addition to this, FAO will be responsible for the financial execution of GCF

funds according to FAO rules and regulations mainly contained and detailed in the FAO Handbook (including those referred to financial monitoring, audit and procurement).

217. During implementation, FAO will provide oversight and quality assurance in accordance with its policies and procedures. This may include monitoring missions, spot checks and participation at project governance meetings. The project will be audited internally and externally following FAO's Financial Regulations.

G.4. Disclosure of funding proposal

☐ No confidential information: The accredited entity confirms that the funding proposal, including its annexes, may be disclosed in full by the GCF, as no information is being provided in confidence.

☒ With confidential information: The accredited entity declares that the funding proposal, including its annexes, may not be disclosed in full by the GCF, as certain information is being provided in confidence. Accordingly, the accredited entity is providing to the Secretariat the following two copies of the funding proposal, including all annexes:

- full copy for internal use of the GCF in which the confidential portions are marked accordingly, together with an explanatory note regarding the said portions and the corresponding reason for confidentiality under the accredited entity's disclosure policy, and
- redacted copy for disclosure on the GCF website.

The funding proposal can only be processed upon receipt of the two copies above, if containing confidential information.

H. ANNEXES

H.1. Mandatory annexes

☒	Annex 1	NDA no-objection letter(s) **(template provided)**
☒	Annex 2	Feasibility study - and a market study, if applicable
☒	Annex 3	Economic and/or financial analyses in spreadsheet format
☒	Annex 4	Detailed budget plan **(template provided)**
☒	Annex 5	Implementation timetable including key project/programme milestones **(template provided)**
☒	Annex 6	E&S document corresponding to the E&S category (A, B or C; or I1, I2 or I3): **(ESS disclosure form provided)** ☐ Environmental and Social Impact Assessment (ESIA) or ☒ Environmental and Social Management Plan (ESMP) or ☐ Environmental and Social Management System (ESMS) ☐ Others (please specify – e.g. Resettlement Action Plan, Resettlement Policy Framework, Indigenous People's Plan, Land Acquisition Plan, etc.)
☒	Annex 7	Summary of consultations and stakeholder engagement plan
☒	Annex 8	Gender assessment and project/programme-level action plan **(template provided)**
☒	Annex 9	Legal due diligence (regulation, taxation and insurance)
☒	Annex 10	Procurement plan **(template provided)**
☒	Annex 11	Monitoring and evaluation plan **(template provided)**
☒	Annex 12	AE fee request **(template provided)**
☒	Annex 13	Co-financing commitment letter, if applicable **(template provided)**
☒	Annex 14	Term sheet including a detailed disbursement schedule and, if applicable, repayment schedule

H.2. Other annexes as applicable

☒	Annex 15	Evidence of internal approval **(template provided)**
☒	Annex 16	Map(s) indicating the location of proposed interventions
☐	Annex 17	Multi-country project/programme information **(template provided)**
☐	Annex 18	Appraisal, due diligence or evaluation report for proposals based on up-scaling or replicating a pilot project
☐	Annex 19	Procedures for controlling procurement by third parties or executing entities undertaking projects financed by the entity
☒	Annex 20	First level AML/CFT (KYC) assessment
☐	Annex 21	Operations manual (Operations and maintenance)
☐	Annex 22	Assessment of GHG emission reductions and their monitoring and reporting (for mitigation and cross cutting-projects)[65]
☒	Annex 23	Methodology of Beneficiary Calculation
☒	Annex 24	CRA and FLW Fact Sheets

☒ Annex 25 Eligibility Criteria

** Please note that a funding proposal will be considered complete only upon receipt of all the applicable supporting documents.*

[65] Annex 22 is mandatory for mitigation and cross-cutting projects.

No-objection letter issued by the national designated authority(ies) or focal point(s)

ANY REPLY OR SUBSEQUENT REFERENCE SHOULD BE ADDRESSED TO THE PERMANENT SECRETARY AND THE FOLLOWING REFERENCE NUMBER QUOTED:
Tel Number:876-926-1690-3
926-1590-9 FAX: 754-0975

MINISTRY OF ECONOMIC GROWTH AND JOB CREATION
25 DOMINICA DRIVE
KINGSTON 5
JAMAICA

April 15, 2025

Ms Mafalda Duarte
Executive Director
Green Climate Fund
Songdo, Incheon City, Republic of Korea

Dear Ms Duarte:

Re: No-objection letter in respect of the funding proposal titled "ADAPT Jamaica: Enhancing climate change resilience of vulnerable smallholders in central Jamaica" submitted by the Food and Agriculture Organization of the United Nations.

We refer to the funding proposal titled "**ADAPT Jamaica: Enhancing climate change resilience of vulnerable smallholders in central Jamaica**" in Jamaica submitted by the Food and Agriculture Organization of the United Nations to us on April 5, 2025 (the "**Proposal**").

The undersigned is the duly authorized representative of the Ministry of Economic Growth and Job Creation, the National Designated Authority of Jamaica.

Pursuant to GCF decisions B.08/10 and B.37/22, and B.41/02, the content of which we acknowledge to have reviewed, in my capacity as representative of the National Designated Authority, we hereby communicate our no-objection to the Proposal.

By communicating our no-objection, it is implied that:

(a) The Government of Jamaica has no-objection to the Proposal; and
(b) The Proposal is in conformity with Jamaica's national priorities, strategies and plans.

We also confirm that our national process for ascertaining no-objection to the Proposal has been duly followed.

Notwithstanding the foregoing, we expect the Food and Agriculture Organization of the United Nations to take the necessary measures to ensure that the project as described in the Proposal is implemented in a manner consistent with applicable national laws.

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,

Omar Alcock (Mr)
National Designated Authority / Focal Point
Ministry of Economic Growth and Job Creation
Jamaica

copy: Honourable Matthew Samuda, MP – MEGJC
Mrs Arlene Williams, Permanent Secretary – MEGJC
Dr. Sharon Morrison JP, Director General – MEGJC

Environmental and social safeguards report form pursuant to para. 17 of the IDP

Basic project or programme information	
Project or programme title	ADAPT Jamaica: Enhancing climate change resilience of vulnerable smallholders in Central Jamaica
Existence of subproject(s) to be identified after GCF Board approval	Yes
Sector (public or private)	Public
Accredited entity	Food and Agriculture Organization of the United Nations (FAO)
Environmental and social safeguards (ESS) category	Category B
Location – specific location(s) of project or target country or location(s) of programme	The project targets six parishes in Central Jamaica: Clarendon, Manchester, St. Elizabeth, St. Ann, St. Catherine, and Trelawny.
Environmental and Social Impact Assessment (ESIA) (if applicable)	
Date of disclosure on accredited entity's website	Monday, February 23, 2026
Language(s) of disclosure	English
Explanation on language	Jamaica's official language is English and is the language that will be understandable to the affected peoples/stakeholders.
Link to disclosure	FAO disclosure portal (English) https://www.fao.org/environmental-social-safeguards/project-detail/adapt-jamaica--enhancing-climate-change-resilience-of-vulnerable-smallholders-in-central-jamaica/en
Other link(s)	FAO Representation in Jamaica (English) https://www.fao.org/jamaica-bahamas-and-belize/resources/en https://openknowledge.fao.org/items/25df019a-3a95-4912-bfd3-b6f693398bba
Remarks	An ESIA consistent with the requirements for a category B project is contained in the "Annex 6: Environmental and Social Management Framework (ESMF)."
Environmental and Social Management Plan (ESMP) (if applicable)	
Date of disclosure on accredited entity's website	Monday, February 23, 2026
Language(s) of disclosure	English
Explanation on language	Jamaica's official language is English and is the language that will be understandable to the affected peoples/stakeholders.
Link to disclosure	https://openknowledge.fao.org/
Other link(s)	FAO disclosure portal (English) https://www.fao.org/environmental-social-safeguards/project-detail/adapt-jamaica--enhancing-

	climate-change-resilience-of-vulnerable-smallholders-in-central-jamaica/en FAO Representation in Jamaica (English) https://www.fao.org/jamaica-bahamas-and-belize/resources/en/
Remarks	An ESMP consistent with the requirements for a Category B project is contained in the "Annex 6: Environmental and Social Management Framework of the (ESMF)."
Environmental and Social Management System (ESMS) (if applicable)	
Date of disclosure on accredited entity's website	N/A
Language(s) of disclosure	N/A
Explanation on language	N/A
Link to disclosure	N/A
Other link(s)	N/A
Remarks	N/A
Any other relevant ESS reports, e.g. Resettlement Action Plan (RAP), Resettlement Policy Framework (RPF), Indigenous Peoples Plan (IPP), Indigenous Peoples Planning Framework (IPPF) (if applicable)	
Description of report	N/A
Date of disclosure on accredited entity's website	N/A
Language(s) of disclosure	N/A
Explanation on language	N/A
Link to disclosure	N/A
Other link(s)	N/A
Remarks	N/A
Disclosure in locations convenient to affected peoples (stakeholders)	
Date	Monday, February 23, 2026
Place	**Flyers and hard copies to be delivered to all relevant Rural Agricultural Development Authority (RADA) Parish Offices:** *Zonal Director West* Catherine Hall, Montego Bay P.O. *Zonal Director East* 197 Old Hope Road, Kingston 6 *Clarendon* Denbigh Show Grounds, May Pen P.O. *Manchester* 23 Caledonia Road, Mandeville P.O. *St. Elizabeth* 63 Coke Drive, Santa Cruz *St. Ann* Claremont P.O.

	St. Catherine Vanity Fair, Linstead P.O. *Trelawny* Hague Showgrounds P.O. Box 21, Falmouth, Trelawny **Disclosure information will also be disseminated through @FAOCaribbean X (Twitter)**
Date of Board meeting in which the FP is intended to be considered	
Date of accredited entity's Board meeting	N/A
Date of GCF's Board meeting	Wednesday, March 25, 2026

Note: This form was prepared by the accredited entity stated above.

Secretariat's assessment of FP299

Proposal name:	ADAPT Jamaica: Enhancing climate change resilience of vulnerable smallholders in Central Jamaica
Accredited entity:	Food and Agriculture Organization of the United Nations (FAO)
Country/(ies):	Jamaica
Project/programme size:	Small

I. Overall assessment of the Secretariat

1. The funding proposal is presented to the Board for consideration with the following remarks:

Strengths	Points of caution
One of the pillars of the project structure is focused on community support to increase adaptive capacity and livelihood diversification through strategic access to finance and measures to climate-proof local food systems.	The project's exit strategy is well designed to scale up climate-resilient agriculture (CRA) and food loss and waste (FLW) reduction efforts. It will be strategically important during the implementation to ensure coordination with other partners in light of the impact of Hurricane Melissa (October 2025).
The project will pilot an innovative approach to reducing FLW, not only providing opportunities to increase the value of produced goods but also enhancing market access and introducing solutions based on a circular economy.	

2. The Board may wish to consider approving this funding proposal in accordance with the terms listed in the term sheet agreed between the Secretariat and the accredited entity (AE) and, if considered appropriate, subject to the conditions set out in annex II of document GCF/B.44/02.

II. Summary of the Secretariat's assessment

2.1 Project background

3. The agricultural sector of Jamaica is dominated by smallholder farmers with rain-fed farming systems often farming a mixture of tubers, vegetables and fruits on sloping land. The farmers and their production are very vulnerable to climate change, facing extreme weather events, dry spells, prolonged droughts, and flash floods leading to severe uncertainty and unpredictability in farming systems affecting yield, food security and market access. In addition, the region's previous hurricanes significantly impacted the farming systems and safety nets of smallholder farmers, destroying their crops, trees, damaging local infrastructure and reducing market access.

4. The proposed project seeks to overcome these challenges through building long-term resilience in food systems by improving the technologies and structures of farming systems; diversifying cropping systems, species and varieties; introducing agroforestry modules with improved storage and processing; building better irrigation facilities; and making efforts to reduce FLW. In addition, the project will improve access to and use of early warning systems. Finally, it will support access to finance, supporting transformational investments on the ground.

5. It is estimated that the targeted interventions will reach 315,226 direct beneficiaries and 420,864 indirect beneficiaries.

6. The total project financing is USD 49,999,381, of which USD 40,554,313 is a request for GCF grants. Co-financing of USD 9,445,068 has been secured to support the project. Comprising a loan, grants and in-kind financing, the co-financing will be provided by the Government of Jamaica, the Development Bank of Jamaica (DBJ), the Jamaica Social Investment Fund (JSIF) and the Food and Agriculture Organization of the United Nations (FAO). The project is submitted under environmental and social safeguards (ESS) category B and the total duration of the project will be six years.

2.2 Component-by-component analysis

Outcome 1: Enhanced knowledge and demonstration of CRA practices and technologies (USD 17,478,430 total, of which USD 10,670,980 GCF, or 61 per cent)

7. Outcome 1 will play a crucial role in developing a network of model farms and farmer field schools, with a special focus on withstanding high-category hurricane conditions to support farmers in planning and transforming their local farming systems. The model farms will provide practical evidence showcasing best practices and locally led solutions that farmers can adopt in their own food systems. These will, for example, include specially built greenhouse structures that are able to withstand hurricanes.

8. The model farms will further demonstrate how FLW reduction can be addressed through focusing on post-harvest losses – in particular, better storage facilities and improved post-harvest handling and processing techniques. In addition, the farms will be innovation testbeds, fostering and generating further ideas, opportunities and innovation by testing soil-management techniques, rainwater harvesting, drip irrigation and many more locally led solutions.

9. The farms will also feature agroforestry solutions, testing and species mixing, with a focus on non-timber forest products for livelihood diversification and on planning critical agroforestry infrastructure for hurricane impacts.

Outcome 2: Adoption of CRA and FLW reduction interventions (USD 18,780,400 total, of which USD 18, 430, 400 GCF, or 98 per cent)

10. Outcome 2 will scale up key interventions across the targeted parishes, including by supporting the most vulnerable farmers and communities through ready-made standardized investment solutions and technical capacity and support. Fostering CRA and FLW solutions will help with building back better; allow farmers to uniquely redesign and restructure their damaged farming systems; foster food loss reduction and productivity through improved post-harvest handling; and encourage the crafting of technical solutions during the production phase, particularly focusing on resilient species, varieties and cropping practices. This outcome will help to diversify local production landscapes and connect ecosystem services.

11. This outcome will further create a circular economy approach in local farming systems, converting agricultural waste into new products and commodities, creating jobs, and

encouraging entrepreneurship – all of which are vital in the recovery phase and long-term transformation.

Outcome 3: Enhanced resilience of agricultural production systems to climate change through improved climate information services and early warning systems (USD 4,420,330 total, of which USD 4,420,330 GCF, or 100 per cent)

12. The third outcome presents a strong opportunity to help strengthen and upgrade existing and degraded climate information systems and early warning systems. Many of these existing systems were damaged during recent hurricanes (e.g. Beryl and Melissa). Through this outcome, the project will support the replacement of such damaged equipment while also taking the opportunity to upgrade the systems and networks for the future. The ultimate goal is to support the agricultural sector and farmers with better access to weather and climate data managed through improvement-dissemination pathways.

Outcome 4: Improved environment for CRA (USD 4,446,466 total, of which USD 2,614,474 GCF, or 59 per cent)

13. The final outcome aims at developing an improved environment for sustainable financing mechanisms in the agricultural sector. This outcome will mobilize strategic finance by supporting a comprehensive policy framework fostering private sector engagement and investment, with the aim of reducing the perceived investment risks in the agricultural sector. Key public and private partners and existing platforms (e.g. JSIF) will gain capacity and a better understanding of how to work with smallholder farmers, while also identifying innovative financial solutions and investments.

III. Assessment against investment criteria

3.1 Impact potential *Scale: N/A*

14. The project has significant impact potential. It will impact almost 750,000 rural farmers and their communities by enabling diversification of livelihoods and providing access to finance, with a key focus on reducing FLW through better access to storage, improved processing and market access, and enhanced CRA investments. Given the recent impacts of Hurricane Melissa, the project will need to explore how its activities can be further streamlined to directly support recovery. The project offers a strategic opportunity to build back better and to restructure and redesign the destroyed and impacted farming systems to be more resilient and diverse, focusing on future needs and impacts. The project impact potential is considered to be high, as the project demonstrates a well-planned approach to supporting communities and local governments with their recovery from Hurricane Melissa and is capable of boosting the farm-to-table approach and reduction of FLW while boosting access to markets.

15. The project proposes a grant award for two activities to provide farming communities with better access to finance. The grant award will be channelled through the revised accreditation framework. FAO has demonstrated a long-term track record of grant award projects with other partners and donors both in Latin America and the Caribbean and in other regions. KPMG conducted an external assessment and concluded that FAO has the capacity to manage grant award.

3.2 Paradigm shift potential *Scale: N/A*

16. The project will unlock an immediate paradigm shift in the local food systems, which were significantly damaged and often destroyed by Hurricane Melissa. It will also provide a

building-back-better strategy for immediate emergency relief, while focusing on restructuring and creating longer-term resilience in food systems – particularly, through diversity and adaptability to enable them to withstand future shocks and impacts. The proposed solutions offer an innovative approach to unlocking rural entrepreneurship in the food production sectors and can provide farmers and local communities with the necessary tools, innovation and finance to quickly rebuild food production capacity and regain access to markets. The measures mainly consist of swiftly diversifying production, enhancing access to storage and processing, and improving access to markets through sustainable finance access and investments on the ground.

17. The project structure offers an effective platform for scaling up solutions and innovations to the national level. There will be a need for further coordination and collaboration with the other emergency funds and support for hurricane recovery looking beyond the emergency. The project exit strategy is well structured to allow this long-term vision and scaling to take place.

3.3 Sustainable development potential *Scale: N/A*

18. The project's social, environmental and economic co-benefits are strongly integrated, well combined and complementary. Its social co-benefits include strong gender mainstreaming (in line with Sustainable Development Goal (SDG) 5: Gender); job creation and rural entrepreneurship to foster innovation and long-term transformation at the farming systems level (in line with SDG 8: Decent Work and Economic Growth); and improvement of the FLW cycle and reductions in FLW through the creation of a circular economy and enhanced post-harvest management (in line with SDG 12: Responsible Consumption and Production).

19. The project's environmental co-benefits are strategically integrated across the four outcomes. They aim to foster (among other co-benefits) improved water conservation, solar-powered irrigation systems, improved access to storage facilities and processing, and integration of the nutrient cycle through the adoption of agroforestry practices. These co-benefits will be instrumental in the successful implementation of the project and will help to provide safety nets for local communities in the future, building long-term resilience.

20. The project's economic co-benefits centre around the diversity of farming systems with the aim of boosting productivity. The intention is to improve access to processing and storage; stabilize farmers' income; and foster innovation, diversity of species and varieties, and enhanced agroforestry that can support the manufacturing of non-timber forest products. The project is based on a circular economy approach, with opportunities for recycling and upcycling food waste and agriculture waste.

3.4 Needs of the recipient *Scale: N/A*

21. The target stakeholders are local farming communities. The majority of them were impacted directly by Hurricane Melissa and saw their entire life savings, farming systems and livelihoods disappear in a matter of hours. After the hurricane, the project design was rethought to fully address the needs of the communities around rebuilding their food production, safety nets and livelihoods. The project is fully aligned with priorities at the national and parish levels relating to building back better and increasing access to finance in the most vulnerable and impoverished communities.

22. The project will improve long-term access to finance among vulnerable farming communities – essential given their current constraints (only worsened by Hurricane Melissa) and the limited fiscal space (i.e. Government spending flexibility) nationally. Key support from DBJ and JSIF will create a strong platform where communities can gain access to capacity and

financial management, while securing direct finance for locally led solutions and community-driven investments.

23. There is limited fiscal space after the massive destructive impact of Hurricane Melissa, which is estimated to have cost the Government of Jamaica at least several USD 9 billion. Consequences include increased food insecurity and limited production of food to supply local markets, significantly affecting food prices and access to food. The private sector perceives there to be a significant risk in investing in food systems after the hurricane, given the level of investment needed to rebuild and then redesign the country's food systems.

3.5 Country ownership *Scale: N/A*

24. The proposed project is a top priority of the Government of Jamaica, as confirmed both through a no-objection letter and through regular communication with the national designated authority and the Government from the early project development stage to the final funding proposal. The project is fully aligned with the country priorities, legal frameworks and existing policies of Jamaica. In particular, after Hurricane Melissa, the project was restructured to meet urgent needs on the ground and to support Jamaica and the impacted communities to build back better. The project will be able to quickly respond to urgent needs and help to transform some of the most damaged and impacted food systems. The project team will work in full coordination with the Government and other bilateral and multilateral partners to assist Jamaica in overcoming the crises it faces following the hurricane. This coordination will be well managed and coordinated through the three national executing entities: the Ministry of Agriculture, Fisheries and Mining (MoAFM), DBJ and JSIF. Furthermore, the project structure is innovatively positioned to focus on the immediate need to build back better while also looking towards longer-term resilience creation at the local food systems level.

3.6 Efficiency and effectiveness *Scale: N/A*

25. The proposal demonstrates efficiency, as shown by an economic and financial analysis (Annex 3 to the Funding Proposal) covering the central agricultural parishes of Jamaica. The analysis confirms that the project is economically viable, while the request for approximately USD 40.55 million in full grant financing is justified by the lack of financial viability of market-based CRA and FLW interventions. This justification is further reinforced by the catastrophic impact of Hurricane Melissa, which caused significant damage on the gross domestic product, severely depleting the country's fiscal space and private sector capacity for non-concessional borrowing.

26. The analysis confirms economic viability over the six-year project implementation period. Applying a social discount rate of 6 per cent, the analysis yields an economic net present value (ENPV) of USD 42.8 million and an economic internal rate of return (EIRR) of 51 per cent. While these figures indicate high economic efficiency, the analysis notes that the EIRR is heavily influenced by significant marketable benefit realization starting in year one. Consequently, the project's economic performance is highly sensitive to implementation pace. A sensitivity analysis indicates that while the project would remain robust under standard variations, a "severe delay" scenario in benefit realization would materially impact the ENPV and EIRR. Therefore, efficient execution and timely procurement are critical to achieving the projected economic outcomes.

27. Financial modelling indicates that the project's core interventions would not be financially viable under commercial terms or via concessional loans. The analysis, which focuses on cash-flow-generating components (agroparks, cluster sites and DBJ-linked loans), shows that without GCF grant support, the net present value would remain negative or only marginally

positive. This indicates a clear lack of bankability for private and commercial lenders. Furthermore, the justification for a full grant is reinforced by the impacts of Hurricane Melissa. With Jamaica having experienced heavy physical damage and significant agricultural losses, the fiscal space for non-grant instruments is non-existent. The country's heavy reliance on tourism further increases its systemic vulnerability to such external shocks.

28. The cost-effectiveness against GCF core indicators is assessed as moderate. The adaptation cost is estimated at USD 128.7 per tonne of carbon dioxide equivalent (t CO_2 eq) per direct beneficiary and USD 55.1 per t CO_2 eq per beneficiary overall, placing the project within the mid-range of the GCF portfolio. The project will mobilize approximately USD 9.45 million in co-financing, corresponding to a co-financing ratio of about 1:0.23, which can be considered appropriate given the high-risk context, the limited revenue potential and the predominantly public-good nature of the interventions in a small island developing State such as Jamaica.

IV. Assessment of consistency with GCF safeguards and policies

4.1 Environmental and social safeguards

29. **Project overview.** The ADAPT-Jamaica project aims to transform production systems across six central parishes (Clarendon, Manchester, Trelawny, Saint Ann, Saint Catherine and Saint Elizabeth,) by implementing an integrated approach to climate resilience. These parishes face the most severe challenges due to compounded climate hazards, high sensitivity and low adaptive capacity. They have a predominantly rural population engaged in agriculture, with high levels of poverty and food insecurity. The project will help smallholders to shift from unsustainable land-use practices and vulnerable crops to more resilient production systems through improving knowledge, awareness, and access relating to CRA and FLW practices and technologies. It will do this via farmer field schools and improved climate information services and agricultural early warning systems, as well as via support for increased access to finance. . By simultaneously addressing knowledge and information (economic and financial) and technical capacity barriers while focusing on the inclusion of women and youth, the project will catalyse a paradigm shift towards CRA that will sustain rural livelihoods and alleviate poverty. The project will bring environmental and social benefits in the agricultural sector, such as increased access to water resources, enhanced water management, reduced soil erosion and salinization, improved energy efficiency, biodiversity conservation, increased employment opportunities (especially for women), improved food safety and security, and cultural preservation.

30. **Environmental and social risk category and safeguard instrument.** The project is categorized as B for environmental and social risks and impacts, in accordance with the GCF revised Environmental and Social Policy and the AE accreditation level. There are no significant risks expected from the project activities, which are anticipated to range from category C (minimal to negligible risks and impacts) to category B (limited, reversible, and readily mitigated risks and impacts). The key environmental risks and impacts are likely to arise from physical works and associated agricultural operations, such as small-scale irrigation interventions, water storage facilities, greenhouse facilities, renewable-energy-powered cold/dry storage facilities, and weather monitoring equipment installations. Given that the specific locations and scope of works will only be identified during implementation, an Environmental and Social Assessment and Management Framework (ESMF) has been prepared to guide safeguards implementation after Board approval. The ESMF provides details on the subprojects expected to be pursued during implementation; the corresponding environmental and social risks and impacts of the proposed activities; screening, assessment and management measures; institutional arrangements, stakeholder engagement and information disclosure

requirements; and grievance redress mechanisms. The ESMF will ensure that the project interventions comply with applicable legal and ESS requirements, the FAO Framework for Environmental and Social Management, the GCF Environmental and Social Policy and standards, and international standards. With regard to activities financed through the credit line under outcome 4, although GCF proceeds will not be used to finance these subprojects, the investments will be limited to categories B and C and the due diligence requirements under the ESMF will be applied.

31. **Compliance with the GCF ESS standards.** The paragraphs below describe how the proposed project complies with the ESS standards.

32. **ESS 1: assessment and management of environmental and social risks and impacts.** The key environmental and social risks and impacts identified include those relating to labour and working conditions, community and occupational health and safety, pollution, and biodiversity conservation. The AE has identified preliminary mitigation measures and management plans in the ESMF. These will be further detailed during implementation, when the specific sites for the interventions have been identified. An exclusion criterion has been developed as part of the ESMF to provide guidance on interventions that will not be considered under the project. For any category B project identified, an environmental and social impact assessment (ESIA), including an environmental and social management plan (ESMP), will be prepared and disclosed to all stakeholders. Additional plans may be required as described in the ESMF. Periodic monitoring measures will be included in the ESMPs for proper implementation and adaptive management.

33. **ESS 2: labour and working conditions.** Moderate risks are identified due to the nature of the project, which will involve small- to medium-scale construction works and agricultural operations. While no sizeable influx of workers is expected as the project will not involve large-scale infrastructure, workers will still be exposed to labour risks and occupational health and safety risks. The project will engage a mix of direct, contracted and community-based workers. Supply-chain-related risks will be screened, assessed and managed for the procurement of construction materials, agricultural inputs and technological equipment. The risks are assessed to be site-specific and can be readily mitigated with the implementation of the project's labour management procedures, occupational health and safety plans, incident-reporting procedures, and routine monitoring and supervision measures. A workplace grievance mechanism will be made available to all project workers to enable them to raise any work-related concerns. Activities involving forced labour and child labour will be excluded as per the project's exclusion criteria. The AE will ensure compliance with the Jamaica Occupational Safety and Health Act 2017, international labour laws, the FAO ESS 4 and ESS 5, and International Finance Corporation Performance Standard 2 to ensure safe, fair and dignified working conditions across all project activities.

34. **ESS 3: resource efficiency and pollution prevention.** This standard is triggered by the moderate risks arising from the project's physical works and agricultural activities, and the introduction of new technologies. Construction and agricultural operations may generate localized emissions, effluents and solid waste. Mitigation efforts will include dust-suppression measures, proper designation of storage materials, prohibition of waste discharge to waterways, selection of refrigerants with low global warming potential, provision of training on safe handling and disposal, and implementation of contractor waste management plans and integrated pest management. All pest-management interventions will follow the FAO International Code of Conduct on Pesticide Management. Where project activities will involve decommissioning or rehabilitating existing structures (such as farm buildings, warehouses or weather-station facilities), the project area will be assessed for the presence of asbestos-containing materials (ACMs). The project will adopt a risk-avoidance hierarchy where sites known or suspected to have ACMs will be excluded – or, if avoidance is not possible, an asbestos assessment and management plan will be prepared. Given the small scale of works, asbestos-

related risks are anticipated to be moderate and manageable. To ensure that the project minimizes resource use, good international industry practices on promoting water, energy and material efficiency will be adopted. These include promoting drip and sprinkler irrigation; using rainwater-harvesting technologies; monitoring water abstractions; promoting solar-powered irrigation pumps, cold-storage units and processing equipment; and using locally available, non-toxic and recyclable materials.

35. **ESS 4: community health, safety and security.** Moderate risks to community health and safety are identified from the planned infrastructure works and during the operation of the proposed agricultural facilities. Activities may involve the use, transportation and storage of hazardous materials and the use of agricultural and construction machinery; they may also raise issues with odour and with vector and waterborne diseases. Construction and operations will furthermore take place in areas prone to natural disasters, where risks to communities may arise if no emergency response procedures and plans are in place. Mitigating measures may include providing warning signs, gates and fencing; formulating emergency procedures and response plans; ensuring standard safe operating procedures; maintaining facilities properly; and providing appropriate safety training to ensure awareness during construction and operations. No security personnel are envisaged to be engaged for the project.

36. **ESS 5: land acquisition and involuntary resettlement.** This standard is not triggered as it is covered under the exclusionary criteria. Any activity involving physical or economic displacement of people will not be supported. Activities will be limited to existing footprints and no access restrictions are anticipated.

37. **ESS 6: biodiversity conservation and sustainable management of living natural resources.** The project sites will not be located within or adjacent to protected areas, critical habitats, key biodiversity areas, or internationally recognized conservation sites, as reflected in the exclusion criteria. However, the implementation of CRA practices is assessed to potentially pose indirect adverse impacts on the environment, if not adequately mitigated. Mitigation measures identified include implementation of water resource management planning to prevent over-abstraction, use of native and non-invasive crop species, and adoption of sustainable land management practices to minimize surface run-off, sedimentation and nutrient loading, which could impact downstream ecosystems. The use of genetically modified organisms will also be ineligible as per the exclusionary criteria.

38. **ESS 8: cultural heritage.** As the project's physical interventions will involve excavations, the ESMF includes simple chance find procedures aligned with FAO ESS 9 and the Jamaica National Heritage Trust Act 1985 to ensure that proper actions are taken and clearances are obtained in case of accidental discoveries. The project management unit will maintain a chance find register and chance find procedures will be part of the training programmes provided to contractors and site personnel.

39. **Implementation arrangements**. Through the project task force (to be established), FAO will provide oversight to the executing entities on safeguards implementation. An Environmental and Social Safeguards Specialist will be engaged to support the project management units of both accredited entities. The Environmental and Social Safeguards Specialist will support the day-to-day implementation of the ESMF. To ensure efficient implementation of safeguards, the AE will undertake a capacity assessment of all individuals and entities involved in the implementation of the ESMF, including the grievance redress mechanism. Preliminary training programmes have been identified in the ESMF to enhance safeguards capacity during implementation.

40. **Stakeholder engagement**. A stakeholder engagement plan has been prepared that summarizes the stakeholder consultations that took place during project preparation and provides a road map for continuous engagement during implementation. Between July 2023 and February 2025, stakeholder engagement activities were undertaken using various methods,

with the participation of 500 stakeholders encompassing Government entities, civil society organizations (including women's and farmers' groups), international development partners, microfinance institutions, and stakeholders at the national, parish and community levels (involving all six targeted parishes). The high participation of women at the field level was notable, as was the finding that 20 per cent of farmer households include persons with disabilities. Key findings gained during the project preparation stage have informed the design of the project. During the implementation period, engagement activities will be guided by the stakeholder engagement plan, which identifies and analyses the stakeholders, outlines procedures and methodologies for effective information-sharing and communication, and establishes a project-level grievance redress mechanism.

41. **Grievance redress mechanism.** FAO will establish an accountability mechanism at the project level as a first point of contact for affected communities, to facilitate resolution of any complaints related to ESS during the implementation of the project. The project-level accountability mechanism will be established based on the following principles: legitimate, accessible, predictable, equitable, transparent, rights-compatible, open to continuous learning and confidential. If a complainant is not satisfied with the resolution provided by the project-level accountability mechanism, they may approach FAO at different levels: FAO Country Representative, FAO Subregional Coordinator, FAO Assistant Director-General or FAO Office of the Inspector General. The FAO institutional Independent Accountability Mechanism has been established to address complaints and concerns of stakeholders affected by FAO programmes and projects. Additionally, the GCF Independent Redress Mechanism will be made available to receive and resolve complaints if the complainant feels the resolutions provided through other channels are inadequate. The available channels will be communicated to stakeholders throughout project implementation.

42. **GCF Indigenous Peoples Policy and ESS 7 (Indigenous Peoples).** The AE has confirmed that the project area does not contain any Indigenous Peoples, nor will Indigenous Peoples be affected by the project's activities. The AE will undertake additional screening for any future subprojects or geographical extensions.

43. **Sexual exploitation, abuse and harassment (SEAH).** The GCF revised Environmental and Social Policy, adopted by decision B.BM-2021/18, requires safeguarding from SEAH in GCF-financed activities. The AE provided information on SEAH safeguarding in its submission to this funding proposal. The project involves activities that present opportunities for various project workers to interact with communities (e.g. farmer field schools and installation of equipment for water harvesting, storage and irrigation) and may expose them to SEAH risks. Context-related risk factors include underreporting of cases and stigma faced by SEAH survivors. Moreover, the current post-disaster environment may exacerbate situations that result in transactional relationships around essential aid and recovery materials, thereby increasing the risk of SEAH. SEAH screening will be undertaken for activities during implementation. Mitigation measures to manage SEAH risks are included in the ESMF and they include the following: a code of conduct that will specifically prohibit SEAH and will be socialized with stakeholders; SEAH-specific trainings for the internal project team and project-affiliated partners; procurement mechanisms that will include a zero-tolerance clause; and awareness-raising modules that will be included in training within project activities. A project grievance redress mechanism will be established and contact details communicated to stakeholders. SEAH cases will be referred to a focal point as well as to the accountability mechanism of the AE. Principles for handling SEAH cases with a survivor-centred approach are included in the project's documentation. Furthermore, the GCF Independent Redress Mechanism will be available to receive and respond to SEAH-related grievances. Performance indicators for SEAH mitigation measures are included in the ESMF, among other mechanisms to check their effectiveness. Quarterly reports and annual project implementation reports will include SEAH issues that are outlined in the ESMF.

4.2 Gender policy

44. The AE has provided a gender assessment and action plan with the funding proposal and complies with the requirements of the GCF updated Gender Policy. The baseline for the agricultural sector and gender issues, as informed by stakeholder consultations and desk reviews, is presented in the gender assessment. Women are disadvantaged on access to land, control over land and land tenure. It is particularly challenging for them to secure land rights due to barriers such as social stereotypes. Women's role in agriculture is substantial: many rural women have farming as an extension of their domestic responsibilities, and agriculture plays an important role in subsistence production of food and as a source of women's income. This makes women's livelihoods extremely vulnerable to climate change impacts. Intersectional factors such as age and disability increase vulnerabilities. Women, particularly those in rural areas, face difficulties accessing finance due to their lack of access to and control of productive assets; this limits their capacity to invest in measures that contribute to building resilience to climate change impacts. They also have limited access to markets and technology as well as limited time to participate in business networks and training owing to caregiving roles taken up by most women.

45. The gender action plan (GAP) specifies activities, performance indicators, sex-disaggregated targets (including for youth), timelines, responsibilities and costs of implementation. The project will promote leadership of women by training them as model farmers and supporting their agency as disseminators of early warning messages in communities. It will respond to the needs of women by supporting financial literacy and business planning, equipping women to use climate information in decision-making concerning farming, and facilitating women's access to markets and finance to assist with scaling up CRA. The GAP includes activities related to training and will provide inputs to address issues related to accessing information and technologies that contribute to improving resilience to climate change impacts. The AE is recommended to include targets in the GAP for other vulnerable groups identified in the gender assessment, such as the elderly and people with disabilities.

4.3 Risks

4.3.1. Accredited entity/executing entity capability to execute the current programme (low risk)

46. While the project will be the first single-country project in Jamaica, FAO, the AE has robust field presence and experience in the country for decades with significant experience in the agriculture and natural resources sectors supporting the government and communities in Jamaica with projects and technical work. The other EEs, JSIF and DBJ have very strong operational capacity and experience in the country.

4.3.2. Programme-specific execution risks (medium risk)

47. Conflict and security issues: Jamaica recently experienced a category 5 hurricane, Hurricane Melissa which caused significant destruction of livelihoods, farming system and increasing poverty levels and vulnerability to climate change.

48. The increasing strength of the hurricanes and combined with increasing climate challenges pose a potential increase in political risk and unrest and could disrupt the project implementation and challenges in reaching certain project areas. As options to mitigate this potential risk, the project is strongly relying on FAO's extensive field presence and operational experience in similar contexts, focusing on integrated, multi-level approaches to ensure strong coordination with local authorities and community structures.

4.3.3. Compliance (low-medium risk)

49. The project is implemented in Jamaica and entails fiduciary and compliance risks arising primarily from the complexity of its implementation arrangements, including decentralised execution through two executing entities (FAO representations and the Jamaica Social Investment Fund [JSIF]), downstream delegation to third-party suppliers under a grants modality, and geographic dispersion of activities across multiple locations. While the project involves grants only and explicitly excludes cash transfers to beneficiaries, exposure remains to prohibited practices, conflicts of interest, and misuse of funds through procurement and supplier-delivered arrangements if controls are not consistently applied.

50. Mitigation measures are anchored in FAO's fiduciary framework and its role as Accredited Entity. FAO applies its Anti-Money Laundeirng and Counter-Financing of Terrorism (AML/CFT), whistleblower protection, and vendor sanctions policies in line with the Accreditation Master Agreement, including sanctions due diligence through the FAO Procurement Service and screening against UN Security Council sanctions lists. Capacity assessments of JSIF did not identify any material compliance or institutional capacity gaps. Nonetheless, AML/CFT and prohibited practices clauses will be embedded in subsidiary project agreements to reinforce controls and contractual accountability. Financial management and procurement are governed by FAO's established rules, supported by centralized ERP systems, segregation of accounts, regular supervision missions, spot checks, and annual external audits. FAO retains full fiduciary responsibility and oversight of executing entities throughout implementation.

51. Residual compliance risks persist due to reliance on third-party suppliers, decentralized execution, and the need for ongoing oversight to ensure consistent application of FAO policies across all contractual relationships. Nonetheless, the absence of cash transfers, low country risk profile, strong institutional controls, and robust audit and sanctions mechanisms substantially mitigate the likelihood and impact of money laundering, terrorist financing, and other prohibited practices. Overall, the residual compliance risk is assessed as low-medium.

4.3.4. GCF portfolio concentration risk (within monitoring threshold)

52. In the event of approval, the impact of this proposal on the GCF concentration risk remains within the monitoring thresholds of the Risk Appetite Statement in terms of results areas, single proposal or AE concentration.

4.3.5. Recommendation

53. It is recommended that the Board consider the above factors in its decision.

Summary risk assessment	
Overall project	Medium
Accredited entity/executing entity capability	Low
Project-specific execution	Medium
Compliance	Low-medium
GCF portfolio concentration	Within monitoring threshold

4.4 Fiduciary

54. FAO is the AE for this project. FAO Jamaica and the Government of Jamaica, acting through JSIF, will serve as executing entities for activities financed with GCF proceeds. MoAFM and DBJ will act as executing entities for their respective co-financing contributions.

55. As the AE, FAO will ensure that all financial management and procurement undertaken with GCF resources complies with FAO rules and regulations and with the provisions of the accreditation master agreement between FAO and GCF. Financial management and procurement executed by JSIF will be overseen and supervised by the project task force. Annual audits will be carried out by a qualified, internationally recognized auditing firm competitively selected by FAO.

4.5 Results monitoring and reporting

56. As an adaptation initiative, the project aims to achieve various results across four GCF results areas, including food security and agricultural productivity. An estimated total of 736,090 direct and indirect beneficiaries are anticipated to receive adaptation benefits, with direct beneficiaries representing 11 per cent of the population of Jamaica and indirect beneficiaries representing 15 per cent.

57. The logical framework and other sections and annexes related to monitoring and evaluation are of good quality. Among the requests made to the AE for further clarification and revision, it was important to confirm whether the project intends to contribute to adaptation results area 3 (infrastructure and built environment). Throughout the consultation, core 3 indicator under the Integrated Results Management Framework (IRMF) was included to measure the results related to climate-resilient infrastructure.

58. The monitoring and reporting budget is within 2–5 per cent of the total project budget, as stipulated in the Evaluation Policy for the GCF. It is assessed that the proposed methodologies and monitoring and evaluation plan are acceptable based on the project activities and implementation arrangements.

4.6 Legal assessment

59. The Accreditation Master Agreement was signed with the Accredited Entity on 8 June 2018 (the "**AMA**"), and it became effective on 4 October 2018.

60. The Accredited Entity has provided a legal opinion/certificate confirming that it has obtained all internal approvals and it has the capacity and authority to implement the project.

61. The proposed project will be implemented in Jamaica, a country in which GCF is not provided with privileges and immunities. This means that, amongst other things, GCF is not protected against litigation or expropriation in this country, which risks need to be further assessed. Moreover, the ability of GCF to undertake redress activities and/or investigations in such countries may be hindered due to the absence of privileges and immunities for relevant GCF personnel.

62. Therefore, it is recommended that the Board considers whether disbursements of GCF proceeds should only be made after GCF has obtained satisfactory protection against litigation and expropriation in the country, or has been provided with appropriate privileges and immunities for GCF and its personnel.

63. GCF does not hold industrial property protection for its combined logo (sphere with the words "Green Climate Fund") in Jamaica. This means that, while industrial property protection is pending, (i) GCF's combined logo could be used by other entities or individuals (including those seeking to impersonate GCF) and (ii) there could be legal claims by entities or individuals asserting their protected trademark, opposing GCF using its combined logo in the country. In both cases, this may lead to reputational risk.

64. To address the matters raised in this section, it is recommended that any approval by the Board is made subject to the following conditions:

(a) Signature of the funded activity agreement in a form and substance satisfactory to the GCF Secretariat within 180 days from the date of Board approval; and

(b) Completion of the legal due diligence to the satisfaction of the GCF Secretariat.

Independent Technical Advisory Panel's assessment of FP299

Proposal name:	ADAPT Jamaica: Enhancing climate change resilience of vulnerable smallholders in Central Jamaica
Accredited entity:	Food and Agriculture Organization of the United Nations (FAO)
Country/(ies):	Jamaica
Project/programme size:	Small

I. Assessment of the independent Technical Advisory Panel

1.1 Overview

1. The project entitled "ADAPT Jamaica: Enhancing climate change resilience of vulnerable smallholders in Central Jamaica" is a six-year initiative targeting the agricultural sector in Jamaica in response to mounting climate vulnerabilities and increasingly constrained access to finance. It aims to protect 736,090 beneficiaries (334,421 women), enhance food security, and build climate resilience across agricultural value chains, with a focus on the most vulnerable parishes in central Jamaica, which were also severely impacted by Hurricanes Beryl and Melissa in 2024 and 2025 respectively. As an adaptation public sector project, it seeks to reduce human and economic losses by transforming the country's approach from reactive disaster response to proactive climate-resilient agricultural development.

2. The project's four core outcomes are: (i) enhanced knowledge and demonstration of climate-resilient agricultural practices and technologies; (ii) adoption of climate-resilient agriculture and food loss and waste reduction interventions; (iii) enhanced resilience of agricultural production systems to climate change through improved climate information services and early warning systems (EWS); and (iv) improved enabling environment for climate-resilient agriculture.

3. To achieve these outcomes, the project will deliver seven outputs: (i) enhanced institutional capacity for climate-responsive agricultural planning, policy development and integrated EWS for agricultural climate risks; (ii) establishment of demonstration sites showcasing climate-smart agricultural practices, drought-resistant crop varieties, conservation agriculture, and agroforestry systems; (iii) large-scale deployment of climate-resilient agricultural practices adopted by smallholder farmers across target areas; (iv) construction of climate-resilient post-harvest infrastructure including storage facilities, aggregation centres, and processing units to reduce food loss and waste; (v) development and operationalization of integrated climate information services and EWS tailored to agricultural decision-making; (vi) strengthening of policy and regulatory frameworks to mainstream climate resilience into agricultural sector planning and investment; and (vii) robust project management, monitoring and evaluation, knowledge management, and gender mainstreaming systems to ensure adaptive implementation and lesson-learning.

4. The project is categorized as environmental and social risk Category B, reflecting moderate risks mitigated through standard safeguards including pesticide management protocols, hydrological assessments for water extraction, and participatory beneficiary selection processes. It delivers environmental and social co-benefits, including ecosystem

restoration, improved soil health through conservation agriculture, enhanced food security for hundreds of thousands of beneficiaries, and women's economic empowerment through dedicated gender programming.

5. The total cost of the project is USD 49.999 million (small-sized project category), of which USD 40.554 million is requested from GCF as a 100 per cent grant. The remaining USD 9.445 million will be co-financed through both cash and in-kind contributions from the Government of Jamaica and the Food and Agriculture Organization of the United Nations (FAO), including a USD 1 million loan from the Development Bank of Jamaica (DBJ).

6. Implementation of the proposed project will be led by FAO, which serves as both the accredited entity (AE) and an executing entity. FAO will ensure fiduciary management, technical implementation, environmental and social safeguards oversight, and gender mainstreaming. The Jamaica Social Investment Fund (JSIF), the Ministry of Agriculture, Fisheries and Mining (MOAFM) and the DBJ are executing entities for their co-finance. Other government partners are the Rural Agricultural Development Authority (RADA) for extension service delivery, and the Meteorological Service of Jamaica (MSJ) for climate information and EWS. A Project Management Unit (PMU) will be established, and a multi-tiered governance framework comprising a Project Steering Committee (PSC) chaired by the Ministry of Economic Growth and Job Creation (MEGJC), and a Project Technical Committee chaired by MOAFM, will facilitate coordination and accountability across all implementing entities.

7. This project is of critical importance to the climate adaptation agenda of Jamaica, addressing urgent agricultural vulnerabilities through a systemic shift from reactive disaster response to proactive climate-resilient development. As a Caribbean small island developing State (SIDS) facing existential climate threats, if successfully implemented, it has the potential to provide replicable lessons for climate-resilient agricultural transformation across other vulnerable island states.

1.2 Impact potential *Scale: N/A*

8. The project is expected to directly benefit 315,226 people and indirectly benefit a further 420,864 people, for a total of 736,090 beneficiaries (approximately 25.9 per cent of the Jamaican population), of whom 334,421 (45.4 per cent) are women. Direct beneficiaries include smallholder farmers and their households receiving hands-on capacity-building, infrastructure support, and low-cost climate-resilient technology packages in six central parishes, namely Trelawny, Manchester, St Elizabeth, St Ann, Clarendon and St Catherine, selected on the basis of a composite Climate Risk and Vulnerability Assessment integrating climate hazard exposure, as well as poverty incidence and food poverty rates (as proxies of sensitivity and adaptive capacity – annex 2: Feasibility study).

9. The principal beneficiaries of the project are smallholder farmers and their households in the six target parishes who are vulnerable to climate change impacts. Direct beneficiaries are identified as participants in project activities together with their household members, based on an assumed average household size of three. Indirect beneficiaries are a distinct category, comprising neighbouring farmers who are expected to adopt practices through observation and peer-to-peer learning, as well as those who benefit from improved climate information systems under Component 3. While direct interventions are concentrated in the six target parishes, all farmers in Jamaica will benefit from certain activities under Components 3 and 4, notably the expanded EWS and climate information services, and the improved enabling environment for climate-resilient agriculture (annex 23a).

10. The project addresses most acute climate hazards for Jamaica: hurricanes and tropical storms of increasing intensity (culminating in the unprecedented Category 5 Hurricane Melissa

in October 2025), rainfall variability, extended droughts, floods, landslides, and extreme heat, which collectively threaten the agricultural livelihoods of over 143,000 smallholder farmers in central Jamaica. Climate projections under Shared Socioeconomic Pathways (SSPs) 2–4.5 and SSP 5–8.5 scenarios through 2070 indicate rising temperatures (up to 1.87 degrees Celsius above the 1970–2000 baseline), declining precipitation in the southern target parishes (up to 52 millimetres reduction), increased irrigation water requirements of 7 to 12 per cent, and a rising frequency of Category 5 cyclones.

11. The project design is grounded in this evidence base and deploys a comprehensive package of climate-resilient agricultures and food loss and waste reduction interventions directly matched to identified hazard-vulnerability pathways. The adaptation rationale is substantive and is not a case of development-as-usual dressed as adaptation.

12. The overarching objective of the project, which covers the four Adaptation Results Areas (ARAs) of GCF, is to improve food security and enhance the resilience of smallholder livelihoods to climate change in central Jamaica. To this end, the project builds resilience across structural, institutional and social dimensions.

13. Structural resilience is enhanced through the installation of hurricane-resistant greenhouse structures and collective farm infrastructure engineered to Category 4–5 specifications across 20 farmer clusters and 3 Agro Parks, solar-powered irrigation and water storage systems for individual and collective use, energy-efficient cold storage facilities with thermal energy storage, and drainage and soil bund rehabilitation following Hurricane Melissa. Improved EWS, through a strengthened agrometeorological network and RADA's expanded digital and community dissemination channels, will facilitate behavioural changes that, combined with the resilient infrastructure, are expected to achieve a projected reduction in expected losses of economic assets valued at USD 80.6 million over the project lifetime.

14. Institutional resilience is built through the development of a climate-resilient agriculture policy framework, a climate-resilient agriculture and food loss and waste taxonomy integrated into the DBJ credit line, and capacity-building for key national institutions including RADA, MSJ, Agro-Investment Corporation (AIC), JSIF, and participating agricultural financial institutions.

15. Social resilience is developed through the cascading Farmer Field School model, by which 68 model farms serve as demonstration and learning centres for 8,160 participants, who are expected in turn to catalyse adoption among a further 24,480 neighbouring farmers through peer-to-peer learning, based on a conservative 1:3 multiplier. Hurricane preparedness training, post-Hurricane Melissa livelihood recovery support (cash-for-work and conditional cash transfers), and climate information literacy activities further contribute to strengthen household and community adaptive capacity.

16. While the project shows solid potential for adaptation impact, two limitations warrant attention:

(a) The largest single contributor to the beneficiary count is the EWS and climate information services component under ARA 3, which accounts for 185,839 direct and 530,970 indirect beneficiaries, figures that together approach the de-duplicated project total of 736,090, reflecting the nationwide scope of Component 3 relative to the more geographically concentrated interventions under other components. The ARA 3 estimates rely on the assumption that a 70 per cent penetration rate among all registered farmers in Jamaica can be achieved through multichannel dissemination. This assumption lacks empirical validation and conflates passive information exposure with active adoption of adaptation practices, such that the depth of resilience benefit for this majority population remains uncertain; and

(b) The outcome 3 indicator measures the percentage of smallholder farmers reporting access to and use of climate information, rather than demonstrated improvements in production system resilience. As a response to a question raised by the iTAP, the AE has explained that this reflects a deliberate design choice: access to and use of climate information is intended to capture behavioural change, such as adjusting planting dates, activating irrigation, or securing assets ahead of a hurricane, which constitutes the necessary step in farmers' adaptation pathway before resilience outcomes can materialize.[1] The iTAP acknowledges this logic but notes that the indicator as formulated does not verify whether the reported use of information translates into actual on-farm adaptive decisions, nor whether those decisions result in reduced production losses or maintained productivity under climate stress. A supplementary indicator measuring demonstrated adaptive action or production outcomes can strengthen the evidence chain between information access and enhanced production system resilience.

17. The iTAP assesses the impact potential of the proposed project as medium to high.

1.3 Paradigm shift potential *Scale: N/A*

18. ADAPT Jamaica seeks to catalyse a systemic shift from a fragmented, recovery-oriented approach to climate adaptation towards an integrated model embedding climate resilience into institutional operations, farming practice, market structures and national policy. By simultaneously addressing technological, knowledge, financial and institutional barriers within a single intervention framework, the proposed project represents a meaningful departure from business-as-usual approaches that have historically delivered direct farmer support without tackling the structural impediments to sector-wide change.

19. The scaling architecture rests on three mutually reinforcing pathways: community-level knowledge diffusion through model farmers and Farmer Field Schools supported by RADA; national-scope agrometeorological and EWS infrastructure under Component 3, institutionalized within the mandates to MSJ and RADA and serving all 14 parishes; and a financial market development pathway under Component 4, combining a climate-resilient agriculture finance taxonomy, capacity-building of financial institutions, a USD 1 million pilot credit line, and transition of AIC to a DBJ-accredited microfinance institution. These mechanisms are coherent, but the absence of a costed, time-bound post-project scaling road map with identified responsible actors limits confidence that demonstrated results will translate into sustained, sector-wide transformation. Replication beyond Jamaica, including to comparable Caribbean SIDS, is not clearly addressed, representing a missed opportunity, given that the FAO Sub-Regional Office for the Caribbean is directly involved in project oversight.

20. The knowledge and learning framework is pragmatic and contextually adapted, deploying SMS alerts, the RADA mobile app, radio, and community-based "information superspreader" networks for last-mile EWS reach, with a training of trainers model creating a self-sustaining knowledge diffusion mechanism. The terminal evaluation is explicitly tasked with assessing the project's paradigm shift contribution using counterfactual methods, providing a credible accountability mechanism. However, the absence of a stand-alone knowledge management strategy and of a regional dissemination mechanism limit the project's external learning value.

21. The policy and regulatory contributions are substantive in alignment but underspecified in execution. Support for development of the country’s first national adaptation plan, policy revision to incentivize climate-resilient agriculture investments, and integration of climate

[1] Written questions from the iTAP with FAO responses (27 January 2026).

resilience into Agro Park planning standards create genuine institutionalization pathways with cross-sectoral reach. However, the policy engagement strategy in activity 4.1.1 identifies no specific target instruments, legislative timelines, or accountability mechanisms for enactment, leaving open the risk that policy analysis produces recommendations without durable regulatory reform.

22. The credibility of the market transformation narrative is constrained by the unconfirmed status of its most critical elements in the funding proposal. Participating financial institutions are described as "to be determined during project implementation", public-private partnership arrangements remain unsigned, insurance product integration is exploratory, and AIC MFI transition is at an early stage. Concurrently, dependence of the scaling mechanism on RADA's post-project extension capacity is under-validated given documented officer-to-farmer ratios of up to 1:2,500. The AE argues that the introduction of digital tools, including the enhanced RADA mobile app and multichannel climate information platforms, will partially offset these constraints by enabling wider reach without proportional increases in extension staffing. While this is a plausible mitigation, the proposal does not explicitly address the connectivity and digital literacy constraints that may limit uptake among the most vulnerable smallholders, leaving the assumption insufficiently validated.

23. The gender equity dimension of the paradigm shift pathway deserves particular attention, as the model farm programme is the cornerstone of the peer-to-peer diffusion mechanism. The land-size eligibility criterion, confirmed at 2 acres in the Q&A session between the AE and iTAP, but still exceeding the average woman farmer's plot of 1.4 hectares (ha), risks systematically underrepresenting women in this vehicle and, by extension, reproducing existing inequalities through the scaling pathway. Rather than relying on annual monitoring as the primary safeguard, the project should proactively embed gender-responsive measures into the eligibility framework itself, for instance, by explicitly allowing cluster-based or jointly managed farms to qualify where individual plot sizes fall below the minimum threshold.

24. The iTAP considers the paradigm shift potential of ADAPT Jamaica to be medium to high.

1.4 Sustainable development potential *Scale: N/A*

25. ADAPT Jamaica delivers meaningful environmental co-benefits through improved climate-resilient management of an estimated 17,304 ha of agricultural land. Agroforestry integration enhances nutrient cycling, slope stabilization, and windbreak protection; retention basins, soil bunds, and drainage systems reduce run-off and manage excess water during flooding; composting practices lower agrochemical run-off; and seed bank activities safeguard the genetic diversity of climate-adapted varieties. These interventions align with Sustainable Development Goals (SDG) 13) (climate action) and SDG 15 (life on land).

26. Anticipated social co-benefits are broad and well-grounded. Reduced post-harvest losses through solar-powered storage, diversified climate-resilient crops, and strengthened value chain linkages, improve food security and incomes in the targeted parishes. The Farmer Field School model builds climate literacy across communities, with each model farmer training approximately 30 peers per year. Community-based EWS, delivered through SMS and RADA's digital platform, reduce climate exposure for remote populations, contributing to SDG 3 (good health and well-being) and SDG 11 (sustainable cities and communities). The proposal targets women, youth, the elderly, and persons with disabilities through culturally adapted engagement anchored in a well-referenced national policy architecture.

27. On job creation, the proposal applies a disclosed employment multiplier of 5.38 jobs per USD 1 million invested to approximately USD 21 million allocated to the agricultural sector, yielding a target of 112 new jobs at project completion. While this target is broadly consistent

with the multiplier applied, the proposal does not disaggregate projected jobs by type, for instance, permanent versus temporary, or skilled versus unskilled, which limits the interpretability of this co-benefit.

28. Gender integration is among the proposal's strengths. A Gender Assessment and Gender Action Plan (annex 8), grounded in mixed-method field research, identifies structural barriers including limited women's land ownership (30 per cent), smaller average women's plot sizes (1.4 ha versus 2.6 ha for men), and domestic care burdens. In response, the proposed project sets concrete targets (at least 40 per cent of model farmers identified as women, 15 per cent as young), deploys a full-time gender and social inclusion (GESI) specialist within the PMU, applies gender-responsive budgeting, and integrates sexual exploitation, abuse and harassment prevention project-wide.

29. The iTAP rates the sustainable development potential of the proposed project as high.

1.5 Needs of the recipient *Scale: N/A*

30. Jamaica is a Caribbean SIDS exposed to four principal climate hazards, namely hurricanes and tropical storms of increasing intensity, rainfall variability, drought, and flooding, each disproportionately affecting its rain-dependent smallholder farming systems. The severity of this exposure was demonstrated during the project's preparation period: Hurricane Beryl (Category 4, July 2024) caused agricultural losses of USD 30 million, affecting nearly 49,000 farmers, while Hurricane Melissa (Category 5, October 2025), the first Category 5 to make direct landfall on Jamaica in recorded history, struck the country's agricultural heartland, generating damages estimated at USD 6–7 billion (28–32 per cent of gross domestic product (GDP). Intergovernmental Panel on Climate Change projections and Columbia HAZard Model outputs confirm that major hurricane frequency is expected to increase under continued warming, making this loss trajectory structurally embedded. Over three-quarters of smallholder farmers in the target parishes cultivate hillsides under rain-fed conditions, concentrating exposure among those with the least capacity to adapt.

31. As mentioned above, the proposed project targets 315,226 direct and 420,864 indirect beneficiaries from smallholder farming communities across six central parishes. Priority groups include women farmers, youth, and subsistence producers in rural areas where poverty rates are approximately double those of Kingston. The Gender Assessment and Gender Action Plan document key structural barriers disaggregated by sex: only 30 per cent of women farmers own land, their average plot size (1.4 ha) is significantly smaller than men's (2.6 ha), and 77 per cent of surveyed farmers, with women overrepresented, had never accessed agricultural credit.

32. Jamaica is classified as an upper-middle-income country (national poverty rate: 11.8 per cent), figures that obscure the acute constraints facing the target population of ADAPT Jamaica. Rural poverty rates are approximately double the national average; over 200,000 farm households depend on subsistence agriculture as their primary livelihood. The agricultural sector contributes 7–8 per cent of GDP but supports 15 per cent of the labour force, concentrated in precisely the parishes and population groups the project targets, where limited asset bases, weak market access, and restricted financial services compound climate vulnerability well beyond what national averages suggest.

33. Financial barriers to adaptation are acute. The country’s nationally determined contribution (NDC) estimates that total upfront investment needs for its 16 adaptation commitments amount to USD 920 million, vastly exceeding available public resources, with fiscal space further compressed by high debt servicing costs, essential service obligations, and post-Hurricane Melissa reconstruction demands.

34. The proposal provides a strong institutional capacity assessment. RADA farmer-to-extension-officer ratios reach 1:2,500 in certain areas; MSJ lacks trained personnel to regularly produce agricultural climate information products; and both agencies lack formal data-sharing frameworks, with infrastructure further degraded by Hurricane Beryl. The project responds through equipment rehabilitation, digital platform integration, formal inter-agency data-sharing agreements, and technical training across meteorological and extension functions. The peer-to-peer model of one model farmer training approximately 30 peers annually will contribute to addressing the structural staffing constraint without requiring proportional RADA expansion.

35. On operations and maintenance (O&M), the response from FAO to a question raised by the iTAP clarifies that O&M sustainability is addressed through a differentiated approach: procurement specifications will require suppliers to include spare parts, training and after-sale service; Agro Park infrastructure falls under the existing AIC management mandate; and hydromet equipment procurement will include calibration, maintenance manuals, warranties, and spare parts as standard. Formal handover agreements explicitly confirming O&M responsibilities are established as an eligibility condition for key activities. Two residual considerations merit attention. First, the assumption that model farmers and clusters will progressively absorb O&M costs rests on the transition to commercial viability, an outcome that is targeted but not guaranteed, and no fallback arrangement is specified if commercialization is delayed or partial. Second, while the procurement approach and handover agreements provide a sound operational framework, the long-term sustainability of the expanded meteorological network ultimately depends on MSJ and RADA incorporating recurrent O&M costs into their institutional budget allocations beyond the project horizon**.** The iTAP would encourage early engagement by the AE with both agencies during project inception to document and consolidate this commitment.

36. The iTAP rates the needs of the recipient of the proposed project as high.

1.6 Country ownership *Scale: N/A*

37. ADAPT Jamaica is strongly aligned with the country's national climate change priorities, including the updated NDC (2020), the National Climate Change Policy Framework, the Comprehensive Disaster Risk Management Policy 2020–2040, and GCF Country Programme for Jamaica. The updated NDC explicitly identifies agriculture as critical for both adaptation and mitigation, calling for water- and energy-efficient farming methods, improved food storage, and diversified food production, all directly addressed by the project's four components. The NDC estimates USD 920 million is required to implement its 16 adaptation commitments, situating the project within a well-documented national financing gap. The project also aligns with four priority areas of the emerging first national adaptation plan for Jamaica, enhancing the hydro-meteorological network, farmers' access to weather data and EWS, seed management and resilient crops, and climate-smart agriculture.

38. The project is coherently integrated into the broader development architecture of Jamaica. The agricultural transformation and environmental sustainability goals of Vision 2030, the Medium-Term Socioeconomic Policy Framework vision of a market-led agricultural sector, and the community-resilience mandate of the Comprehensive Disaster Risk Management Policy are all directly supported by the project's interventions. Co-financing from JSIF, MOAFM, DBJ and FAO Jamaica is formalized through subsidiary agreements with the Government of Jamaica. This multi-institutional domestic financial commitment provides credible evidence of genuine ownership.

39. FAO brings 15 years of institutional presence in Jamaica through its country office and established partnerships with RADA, AIC, MOAFM and MSJ. JSIF, the principal national executing entity, is a GCF-accredited direct access entity with extensive experience in community-based

climate resilience programmes, including the co-financing World Bank-funded Rural Economic Development Initiative II project. An FAO-conducted capacity assessment confirmed JSIF's adequacy for managing GCF proceeds. The PSC chaired by the MEGJC, the Project Technical Committee chaired by MOAFM, and a shared PMU anchor governance firmly in national systems.

40. The national designated authority engagement reflects genuine institutional ownership. MEGJC participated from the concept note stage, directed the substantive reorientation of activities and budget following Hurricanes Beryl and Melissa, and chairs the Project Steering Committee, making it a permanent governance actor rather than a passive endorser. Stakeholder engagement reached over 500 persons across six target parishes between July 2023 and February 2025, through national workshops, community consultations, key informant interviews and focus group discussions with women farmers and the Jamaica Network of Rural Women Producers. Gender findings directly informed the Gender Action Plan and the PSC's GESI oversight provisions. A grievance redress mechanism framework is documented in annex 8, covering multilevel access points, survivor-centred sexual exploitation, abuse and harassment procedures, and escalation pathways to FAO's Office of the Inspector General and GCF Independent Redress Mechanism.

41. The iTAP assesses the country ownership of the proposed project as high.

1.7 Efficiency and effectiveness *Scale: N/A*

42. ADAPT Jamaica requests USD 40,554,313 in GCF grant financing, complemented by USD 9,445,068 in co-financing from domestic public-sector institutions (JSIF, MOAFM, DBJ) and FAO Jamaica, for a total project cost of USD 49,999,381. The full grant structure is well justified: the project's core outputs: Farmer Field Schools, model farm demonstrations, hydromet network upgrades, climate information and early warning platforms, and policy frameworks, are public goods with no marketable financial returns. The country's documented climate finance gap in the agricultural sector, the fiscal constraints of a SIDS with high debt servicing obligations, and the inherent inability of smallholder-focused adaptation to attract private capital together provide a compelling concessionality justification.

43. The GCF cost per direct beneficiary is approximately USD 129, declining to approximately USD 55 against total beneficiaries (direct and indirect combined, 736,090). These figures are broadly comparable to similarly scoped, infrastructure-intensive adaptation projects targeting smallholder agriculture in small island developing states, where geographically dispersed populations and high unit costs for climate-resilient equipment deployments, encompassing greenhouses, solar-powered irrigation, cold storage and hydromet infrastructure, inherently produce higher per-beneficiary ratios than mass-reach information or social protection programmes.

44. The proposal presents an economic cost-benefit analysis indicating an economic internal rate of return of 51 per cent over the 6-year implementation period and 70 per cent over the 20-year project lifetime. These figures are driven substantially by avoided economic losses attributed to the improved EWS, a non-marketable benefit that is difficult to independently verify. The proposal acknowledges that financial returns over the implementation period are negative when only marketable benefits are considered, which means the economic case rests on assumptions about EWS adoption rates and disaster-loss avoidance that are not accompanied by sensitivity analysis in the funding proposal body.

45. Co-financing at a ratio of 1:0.23 is modest but well-suited to the country context. All co-financiers have provided commitment letters, and the contributions are institutionally grounded in existing mandates. The most catalytic element is the DBJ credit line, which is

designed to mobilize private financial flows for climate-resilient agriculture beyond the project boundary. Questions arise regarding the additionality of JSIF and MOAFM co-financing contributions, which align closely with their existing institutional mandates, raising uncertainty as to whether these resources are mobilized by GCF or would have been deployed in parallel regardless.

46. The sustainability of project outcomes beyond the 6-year implementation period presents the most significant efficiency and effectiveness concern. The proposal allocates approximately USD 18.5 million to equipment procurement across Components 1–3, yet the detailed budget contains no dedicated recurrent O&M lines for this portfolio, as previously mentioned in paragraph 35 of this assessment.

47. The monitoring and evaluation framework is well-constructed, drawing on established FAO evaluation procedures, indicators aligned with the GCF Integrated Results Management Framework, multiple data sources (JSIF reporting, RADA Agricultural Business Information System, Food Insecurity Experience Scale, SHARP+), and a plan for independent midterm and final evaluations by the FAO Office of Evaluation. Procurement standards are governed by FAO Manual Section 502 with best-value-for-money principles embedded. Lessons from prior interventions in Jamaica, including REDI II and FAO technical cooperation programmes, are substantively integrated into the project design, particularly in the choice of the Farmer Field School model.

48. The iTAP considers the efficiency and effectiveness of the proposed project to be medium to high.

II. Overall remarks from the independent Technical Advisory Panel

49. The agricultural sector of Jamaica is exposed to recurrent and intensifying tropical cyclones, droughts and erratic rainfall that threaten food security, rural livelihoods and critical agricultural infrastructure. Through an integrated approach combining climate-resilient agriculture and food loss and waste reduction demonstrations, collective infrastructure deployment, modernized climate information services and EWS, and enabling environment reform, the project aims to deliver direct adaptation benefits to more than 300,000 smallholder farmers across six central parishes while catalysing systemic change in the agricultural finance and policy landscape of Jamaica. The cascading Farmer Field School model, anchored in 68 model farms, is designed to be replicable, providing a tested framework that can be scaled to other vulnerable agricultural communities across the island and across the wider Caribbean.

50. While ADAPT Jamaica is well aligned with the GCF investment criteria, several aspects will require close attention during implementation to secure lasting and equitable results. In this regard, the iTAP formulates the following key implementation considerations:

(a) A financial sustainability strategy that will explicitly include a consolidated operations and maintenance plan for all infrastructure deployed under Components 1 to 3, including solar-powered cold storage facilities, collective irrigation systems, protected agriculture structures, and automated weather stations, specifying quantified annual costs, designated responsible entities, and identified financing mechanisms for the post-project period. A parallel commitment from MSJ and RADA to a dedicated government recurrent budget line for the EWS network will be equally critical to avoid post-project deterioration of climate information assets;

(b) The eligibility criteria for model farms will need to be revised to introduce alternative qualifying pathways beyond the minimum land area threshold, ensuring that women farmers with average-sized plots can equitably access the project's primary

demonstration instrument, thereby reinforcing gender equity and avoiding structural exclusion in the allocation of the project's most substantive technical support;

(c) The scale and ambition of the enabling environment and financial transformation components, which include developing a Jamaican resilience finance taxonomy through DBJ, supporting AIC's transition to a licensed microfinance institution, and establishing an agricultural enterprise networking platform, underscore the importance of robust monitoring and evaluation to track both direct beneficiary outcomes and systemic change; and

(d) Establishing clear baselines and a results framework that links climate information access to measurable reductions in production losses, maintained agricultural productivity under climate stress, and household livelihood improvements will be essential for demonstrating resilience impacts and informing mid-course adjustments.

51. By embedding these financial sustainability, social inclusion and monitoring and evaluation measures throughout implementation, ADAPT Jamaica will be well positioned to deliver durable, inclusive and demonstrably transformational adaptation benefits, while also serving as a replicable model for other Caribbean SIDS navigating the intersection of smallholder climate adaptation and agricultural finance reform.

52. Based on the analyses presented above, the iTAP recommends that the Board approve this funding proposal.

Response from the accredited entity to the independent Technical Advisory Panel's assessment (FP299)

Proposal name:	ADAPT Jamaica: Enhancing climate change resilience of vulnerable smallholders in Central Jamaica
Accredited entity:	Food and Agriculture Organization of the United Nations (FAO)
Country/(ies):	Jamaica
Project/programme size:	Small

Impact potential
The AE acknowledges that the overall impact potential is assessed as **medium to high** by iTAP. The project's impact assessment will measure the improvement in production system resilience as a result of improved climate information access.
Paradigm shift potential
The AE acknowledges that the overall paradigm shift potential is assessed as **medium to high** by iTAP. The project, under activity 4.1.1, will enhance regulatory and policy instruments in view of strengthening the framework for private sector investment in CRA and FLW interventions. The project's indicators will monitor the validation and implementation of the policy reforms supporting CRA and FLW investments. The cellular network in Jamaica is ubiquitous therefore cellular phone and there is also strong evidence that RADA bulletins are extensively accessed in a digital form by all types of farmers in target parishes. The connectivity and digital literacy are therefore not perceived as major obstacles. All efforts will be made to ensure that the 30% women and youth target as model farmers is achievable under the 2-acre threshold. This target will be further discussed during inception phase.
Sustainable development potential
The AE acknowledges that the overall sustainable development potential is assessed as **high** by iTAP.
Needs of the recipient
The AE acknowledges that the overall needs of the recipient are assessed as **high** by iTAP.
Country ownership

The AE acknowledges that the overall country ownership is assessed as **high** by iTAP.
Efficiency and effectiveness
The AE acknowledges that the overall efficiency and effectiveness is assessed as **medium to high** by iTAP. The O&M costs of the equipment under this project are included through a combination of upfront procurement provisions, beneficiary cost absorption, and eligibility and handover arrangements. The AE will engage MSJ and RADA at project inception to secure formal institutional commitments to post-project recurrent budget allocations for the procured equipment.
Overall remarks from the independent Technical Advisory Panel: The AE acknowledges iTAP's overall assessment and recommendation for the Board approval. The AE confirms that financial sustainability and socialising and monitoring evaluation measure will be embedded during implementation.

Annex 8

Gender Assessment and Gender Action Plan

for the

GCF Funding Proposal

ADAPT Jamaica: Enhancing climate change resilience of vulnerable smallholders in Central Jamaica

16 April 2025

Food and Agriculture Organisation of the United Nations

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Abbreviations

AIBFA	All Island Bee Farmers Association
AIC	Agro-Investment Corporation
APA	Annual Performance Assessment
BGA	Bureau of Gender Affairs
C4D	Communication for Development
CARICOM	Caribbean Community and Common Market
CCD	Climate Change Division
CDRRF	Community Disaster Risk Reduction Fund
CEDAW	Convention on the Elimination of All Forms of Discrimination Against Women
COPE	Community Outreach Through Partnership for Empowerment Initiative
CRA	Climate Resilient Agriculture
CRVA	Climate Risk and Vulnerability Assessment
CS	Climate Smart
CSO	Community Service Organisation
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
EDA	Enhanced Direst Access
EnGenDER	Enabling Gender Responsive Disaster Recovery, Climate and Environmental Resilience in the Caribbean (UNDP Project)
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
ESS	Environmental and Social Safeguards
FAO	Food and Agriculture Organization of the United Nations
FLW	Food Loss Waste
FSS	Farmer Field School
GAAP	Gender Assessment and Action Plan
GAC	Gender Advisory Council
GAP	Gender Ambassador Programme
GBV	Gender Based Violence
GCCAP	Gender and Climate Change Action Plan
GCCC	Gender and Climate Change Committee
GCCSAP	Jamaica National Gender and Climate Change Strategy and Action Plan
GCF	Green Climate Fund
GDI	Gender Development Index
GDP	Gross Domestic Product
GESS	Gender and Environmental and Social Safeguards
GFDRR	Global Facility for Disaster Reduction and Recovery
GFP	Gender Focal Points
GII	Gender Inequality Index
GOJ	Government of Jamaica
GRM	Grievance Redress Mechanism
Ha	Hectares
HCI	Human Capital Index
HDI	Human Development Index
ILO	International Labour Organization
IP	Indigenous People
IPV	Intimate partner violence
JAS	Jamaica Agricultural Society
JMD	Jamaican Dollar
JNBank	Jamaican National Bank
JNRWP	Jamaica Network of Rural Women Producers
JNSBL	Jamaican National Small Business Loan
JPGA	Jamaica Pig Rearers' Association
JSLC	Jamaica Survey of Living Conditions
KAP	Knowledge, Attitude and Behavioural Practice study
LAC	Latin American and Caribbean
LAYS	Learning-Adjusted Years of Schooling

M&E	Monitoring and Evaluation
MCGES	Ministry of Culture, Gender, Entertainment and Sport
MEF	Ministry of Economic and Finance
MEGJC	Ministry of Economic Growth and Job Creation
MOAF	Ministry of Agriculture, Fisheries and Mining
MPI	Multidimensional Poverty Index
MSJ	Meteorological Service of Jamaica
NEFA	No Excuse For Abuse
NGO	Non-governmental Organisation
NPGE	National Policy for Gender Equality
NSAP-GBV	National Strategic Action Plan to Eliminate Gender-based Violence
NSPC	National Social Protection Committee
NWC	National Water Commission
PMO	Production & Marketing
PMU	Project Management Unit
PPCR	Pilot Programme for Climate Resilience
PSC	Project Steering Committee
PTA	Parent-Teachers Association
PWDs	Persons with disabilities
RADA	Rural Agricultural Development Authority
RYEEP	Rural Youth Economic Empowerment Programme
SAC	Sustainable Agriculture in the Caribbean project
SDG	Sustainable Development Goals
SEAH	Sexual Exploitation, Abuse and Harassment
SPS	Social Protection Strategy
STATIN	The Statistical Institute of Jamaica
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations Children's Fund
UNFPA	United Nations Population Fund
UWI	University of the West Indies
VMBS	Victoria Mutual Building Society
WASH	Water, Sanitation and Hygiene
WES	Women’s Entrepreneurship Support Project
WROC	Women's Resource and Outreach Centre
WUA	Water User Association
WUSC	World University Service of Canada

Glossary

To ensure a baseline understanding of climate issues, and the development of the analysis based on impact and exposure on women, men, girls and boys, the following definitions, adapted from the USAID Climate Change Adaptation Project Preparation Facility for Asia and the Pacific (Adapt Asia-Pacific)[1], are provided as reference:

Term	Definition
Gender	Is the set of culturally specific characteristics that define the social behaviours of women and men (including female and male children) and the relationships between them. Social perceptions of gender vary across cultures, social classes, time, and degree of urbanization and serve to include or exclude particular people from particular activities.
Gender Equality	Means that women and men have equal value, equal rights, and equal opportunities to participate in programs and services. To ensure equity, specific interventions called affirmative actions are often needed to compensate for historical, social, and economic disadvantages that prevent women and men from otherwise operating on an equal footing. Affirmative actions are designed to "level the playing field" and correct existing inequities. An equal number of women and men participants by itself, is not always an accurate measure of gender equity: factors related to power balance also need to be considered.
Gender Balance	Requires that men and women be equally represented - either in equal numbers or in proportion to their presence - in particular settings.
Gender Neutral	Are project designs and activities that ignore gender factors including roles and relations and can lead to reinforcement of gender-based discrimination and existing inequities.
Gender Transformative	Are programs and interventions that create opportunities for individuals to actively challenge gender norms, promote positions of social and political influence for women in communities, and address power inequities between persons of different genders.
Gender Considerations	Refers to the cultural, social, economic, and political conditions on which certain norms, values and behavioural patterns related to men and women are based, and how these could be utilized to strengthen the capacity of men and women in the performance of their roles and responsibilities. The "gender differential impact of climate change" refers to the different impact of climate change on men and women because of their socially ascribed roles and responsibilities.
Gender Mainstreaming	Is a strategy for considering and addressing the different roles, needs, perspectives, responsibilities and experiences of women, men, children, people with disabilities, ethnic minorities and other socially excluded people in all aspects of program and policy assessment, design, implementation, and evaluation.
Gender and Socioeconomic Analysis	Is the process of collecting information about gender, age and other social differences and analysing the impacts of changing circumstances (i.e., climate change) on specific groups of people. This type of analysis provides the basis for identifying key gender considerations and designing a "socially inclusive approach" that responds to the unique circumstances and needs of all project beneficiaries.
Sex Disaggregated Data	Data that are typically collected and analysed in two biological categories: males and females. However, sex disaggregated health data does not consider gender identity, or gender roles, norms and relations.

[1] Gender and Social Inclusion Strategy of this project can be found here: https://www.nab.vu/sites/default/files/documents/Annex%208%20-%20Gender%20_social%20inclusion%20%20Strategy.pdf

1. Introduction

1.1 Objectives of this annex

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The proposed project, recognises that the lack of a gender-responsive approach, particularly stemming from: (i) Poor or missing gender analysis or assumptions that climate services or adaptation actions are gender-neutral;[2] (ii) Side-lining of gender needs or ethnic vulnerabilities in adaptation design, resilience capacity-building and mitigation services;[3] (iii) The lack of sufficient sex disaggregated data and its corresponding gender analysis; and (iv) Lack or scant allocation of financial means, gender budgets and dedicated resources towards mainstreaming gender action,[4] will limit the potential, inclusiveness and impactof the project objectives in Jamaica. Without gender and socioeconomic analysis, and a thorough Environmental and Social Management Framework (Annex 10 of the Funding Proposal), the benefits of improved local level adaptation actions, in tandem with awareness-raising and capacity-building, may accrue to better-off households or more established support groups that are able to capitalise on new opportunities and respond better to changes implemented through the project, leaving behind the most vulnerable and marginalized men and women .

A 'gender-responsive approach' is both necessary and relevant for the project to maximise its outcomes and ensure resilience of investments against natural and climate-induced hazards, disasters and weather variations that cannot be avoided. A Gender Based Analysis Plus (GBA+)[5] approach is needed that considers all the relevant intersectionalities that are at play, linked to gender, age, ethnicity and other social variables. This gender-responsive approach is also crucial for establishing institutional structures and broad-based political momentum and socioeconomic frameworks to mobilise medium- and long-term adaptation action in the country and derive socioeconomic and gender benefits from increased resilience of the agriculture sector, ensuring to leave no one behind. Particularly, the ADAPT-Jamaica project will aim to increase institutional representation and meaningful participation of women in climate resilient agriculture and in the implementation of climate change adaptation interventions. Improved gender equality and women's empowerment will help deliver the adaptation pathway chosen by the project, and sustain results to ensure that communities are able to move towards a climate-resilient future.

The overall objective, therefore, of the gender assessment will be to provide a tool to ensure the project is as gender responsive as possible, particularly, by identifying relevant entry points to equally benefit men and women with a focus on climate adaptation in agriculture, including resilient livelihoods; health, food, and water safety; infrastructure; and ecosystems. Using a gender lens will also help identify the structural barriers to gender equality and women's

[2] Current literature on climate change, and its effects and emergent risks, are predominantly produced in scientific circles. Yet, there is increasing evidence that adopting social science methods, and situating resilience and adaptation practice within a broader science-policy interface and right-based perspectives, can gear projects towards environmental and socioeconomic co-benefits. Particularly, this could better prepare communities to avoid resource strife and respond to the complexity of social arrangements, reducing far-reaching impacts of climate risks. See Butterfield, R. (2018) 'Bringing rights into resilience: revealing complexities of climate risks and social conflict' in Disasters. Journal Article.

[3] Poor or missing gender analysis, or the lack of gender-responsive action, may lead to planners or personnel depending on women to assume a central role in their coping strategies, which may not be the practical reality for many vulnerable communities. Further, this also glosses over the existing burdens on women among such groups. See Nelson. V., Meadows. K., Cannon, T., Morton, J., & Martin, A. (2002) 'Uncertain predictions, invisible impacts, and the need to mainstream gender in climate change adaptations' in Gender and Development. Journal Article.

[4] International Labour Organization (ILO). 2018. Gender at Work in the Caribbean: Country Report: for Jamaica. Geneva.

[5] GBA+ employs an analytical process used to assess how diverse groups of women, men, and gender diverse people may experience policies, programs and initiatives. GBA+ considers many other identity factors such as race, ethnicity, religion, age, and mental or physical disability and how the interaction between these factors influences the way a person might experience government policies and initiatives. What is GBA+? (cfc-swc.gc.ca)

empowerment and build more equitable relations and power dynamics between women and men, and other marginalized groups in Jamaica.

Local adaptation actions are critical for poor and vulnerable communities, particularly for the most marginalized groups within those communities, including women and girls, while at the same time achieving the development goals.[6] The focus of this study, therefore, is to present an assessment of the different roles, rights, needs and opportunities of women and men, boys, and girls in the project context, and mobilise project resources to tackle existing gender barriers, and contribute towards improved gender equality in Jamaica. In doing so, the assessment will seek to operationalise gender mainstreaming activities through the project's results framework by formulating a Gender Action Plan, based on the project's Logical Framework.

This will ensure that the proposed design to deliver improved implementation of climate change adaptation investments can account for and assess its implementation and impact with identified indicators, timeline and means of verification. The Logical Framework of the project has three Outcomes and corresponding Outputs:

Outcome 1: Enhanced knowledge and demonstration of climate-resilient agricultural practices and technologies

- **Output 1.1:** Model farms established to serve as farmer field schools to increase knowledge and capacity on CRA FLW-reduction interventions
- **Output 1.2** Knowledge on CRA and FLW-reduction interventions accessible to key value chain actors and implementation capacity increased

Outcome 2: Adoption of CRA and FLW reduction interventions

- **Output 2.1** CRA and FLW-reduction interventions are scaled up

Outcome 3: Enhanced resilience of agricultural production systems to climate change through improved climate information services and early warning systems

- **Output 3.1:** Strengthened agrometeorological observation network and forecasting capabilities to support early warning systems
- **Output 3.2:** CIS relevant to agriculture developed and delivered to farmers and other market actors

Outcome 4: Improved enabling environment for climate-resilient agriculture

- **Output 4.1:** Policies, partnerships and incentives for CRA and FLW developed
- **Output 4.2:** Access to finance and markets increased to support upscaling CRA and FLW practices and technologies**.**

1.2 Methodology and workplan

The gender assessment employed a mixed method approach using both quantitative and qualitative investigations, carried out in close collaboration with the Stakeholder Engagement Plan (SEP) to ensure that the SEP was gender responsive. These methods included:

- In-depth review of relevant secondary literature;
- Key Informant Interviews (KII) at the national policy and parish levels, with representatives of key stakeholder agencies;

[6] Winqvist, E. (ed.) (2020). Feminist Policies for Climate Justice. Stockholm: Concord. Available at: https://concord.se/wp-content/uploads/2020/06/fem-rapport-2020-final.pdf

- Community-based consultations with potential beneficiaries;
- An on-line survey with members of the Jamaican Network of Rural Women Producers (JNRWP);
- A quantitative stakeholder survey with potential beneficiaries; and
- Focus Group Discussions (FGDs)

Initial stakeholder consultations and KIIs were undertaken at the National level during the concept note phase with the National Designated Authority (NDA) and policymakers in 2018. Other national, sub-national institutions and with in-country NGOs and CSOs representatives of the proposed project parishes (St Catherine, Clarendon, Manchester, St. Elizabeth, St. Ann and Trelawny) were consulted in July 2023 then continued throughout the project preparation phase.

To collect secondary information and review available literature, the gender team conducted an in-depth desktop review in tandem with the primary and formative remote research through national experts in Jamaica. The literature review focused on gender equality, agriculture, climate change, and resilience as a broader topic, drawing from key players in the sector, such as UN Women, the UNDP's EnGenDER[7] initiative and gender research undertaken by the Global Facility for Disaster Reduction and Recovery (GFDRR).

Additional secondary sources of data were also reviewed, including census data, reports, academic studies, donor agency project reports, recent profiles of the country's agricultural sector, Knowledge-Attitudes-Practices (KAP) studies, labour force surveys and country poverty studies, climate change impact studies, available Community Profiles and Priority Plans prepared by the Social Development Commission (SDC), gender equality policies and strategies, the newly developed Protocol and Guidelines to Mainstream Gender in DRM/CCA, as well as existing gender assessments of both the country overall and the agricultural sector in particular.

In July 2023, in discussion with the president of the Jamaica Network of Rural Women Producers (JNRWP), an on-line survey with JNRWP members was conducted to gain initial direct insight into the issues and challenges that women producers face. The survey was promoted through the JNRWP's WhatsApp network, including 52 members, who proved illustrative of the larger issues that needed to be addressed through the quantitative ADAPT-Jamaica survey of potential beneficiaries, which was instrumental to the design of the larger instrument.

Key informant interviews and focus group discussions were part of the initial stakeholder consultation exercises, including the following main organisations:

- The Jamaica Network of Rural Women Producers (JNRWP)
- The Jamaica Organic Agricultural Movement (JOAM)
- All Island Bee Farmers Association (AIBFA)
- The Pig Farmers Association of Jamaica
- Jamaica 4H Clubs
- Jamaica Agricultural Society (JAS) and
- Rural Agricultural Development Authority (RADA)
- St. Ann Bauxite Protected Agriculture farmers

The data and information collected as part of these initial exercises allowed for assessment of the current extent of adaptation projects in the agriculture sector and initiatives implemented by various stakeholders within the six parishes, analysing data on gender issues and roles

[7] Enabling Gender Responsive Disaster Recovery, Climate and Environmental Resilience in the Caribbean (UNDP Project)

and responsibilities of vulnerable groups in the sector> Information was also collected on capacity and technical support needed by the lead government entity on agricultural extension services, Rural Agricultural Development Authority (RADA). Additionally, stakeholder consultations at the national, sub-national and community levels were conducted to define priorities, understand the main gender-related barriers, refine proposed interventions, engage key partners, and improve the project's design and strategy. These consultations included a specific focus on gender-related aspects of vulnerability to climate change, entry points and opportunities for ensuring equitable participation in and benefit from project activities.

The combination of literature review and intensive consultations provided a robust and contextualised understanding of Jamaica, ensuring that the pre-feasibility study was well aligned with the objectives and precepts of the ADAPT-Jamaica, and responded to the specific needs of beneficiaries, as well as policy priorities of the Jamaican government.

1.2.1 ADAPT Jamaica survey

In addition to the above largely qualitative research activities, the more detailed quantitative ADAPT-Jamaica survey, conducted with potential farmer beneficiaries in all six parishes, provided robust findings to inform the GAAP. In addition to general stakeholder discussion, the ADAPT Survey instrument was one of the methods used during eight (8) workshops held in the six project parishes as follows:

- Frankfield, Clarendon – November 13, 2023
- Renford Clarendon – November 13, 2023
- Linstead, St. Catherine – November 16, 2023
- Mandeville, Manchester – November 20, 2023
- Lacovia, St. Elizabeth – November 21, 2023
- Ballards Valley, St. Elizabeth – November 22, 2023
- Litchfield. Trelawny – November 28, 2023
- Alexandria, St. Ann – November 29, 2023

In total, these eight workshops allowed for inclusion in the assessment of 112 communities/districts in the six parish and ensured that the communities most vulnerable to climate change impacts were represented.

The ADAPT survey included a total of 329 respondents, with more female respondents (191 or 58.05%) than males (125 or 37.99%), while 13 (3.95%) preferred not to give their sex or did not respond when asked their gender identity. There were more female respondents (19%) than male (7%) in St. Elizabeth and more females (12%) than males (6%) in St. Ann, but otherwise there were relatively equal numbers of male and female respondents in each of the other parishes included in the survey. Each of these sessions lasted for a minimum of four (4) hours, in part because some participants (both young and old) could not read well and faced challenges in completing the survey. As a result, ADAPT team members, JAS and RADA officers assisted some participants to complete the ADAPT survey properly, by reading the questions to them directly and then recording their answers/preferences. The key findings from the ADAPT survey have been included throughout the gender assessment and they were used to inform the gender action plan.

2. Gender policy environment in Jamaica

2.1 International treaties and commitments

Jamaica has signed and ratified the following international human rights conventions that pertain to gender equality and women's empowerment:

- Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW)
- International Convention on the Elimination of All Forms of Racial Discrimination
- International Covenant on Economic, Social and Cultural Rights
- International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families
- Convention on the Rights of the Child, Optional Protocol to the Convention on the Rights of the Child on the involvement of children in armed conflict, Optional Protocol to the Convention on the Rights of the Child on the sale of children child prostitution and child pornography
- Convention on the Rights of Persons with Disabilities

2.2 Institutions

The Bureau of Gender Affairs (BGA)

The Bureau of Gender Affairs (BGA), a division within the Ministry of Culture, Gender Entertainment and Sport (MCGES) - is the national machinery responsible for empowering men and women of Jamaica. The BGA confirms the government's commitment to develop the human capital through gender mainstreaming towards achieving gender equality, equity and social justice, by addressing the specific problems faced by women, including the high rates of unemployment and various forms of violence against women such as spousal abuse, rape, incest and sexual harassment The three main functions of the Bureau are Research and Policy Development, Public Education and Training and Project Planning and Monitoring.

Gender Advisory Council

The Gender Advisory Council (GAC) was established in January 2018 as a multi-sectoral body charged with providing support to the implementation, monitoring, and evaluation of the National Policy for Gender Equality (NPGE) and the National Strategic Action Plan to Eliminate Gender-based Violence (NSAP-GBV) in Jamaica 2017-2027.

Gender Focal Points (GFP)

One of the main strategies for implementing the National Policy for Gender Equality (NPGE) (see Section below) across the public sector is the assignment and training of Gender Focal Points (GFP) in all Ministries, Departments and Agencies (MDAs). This strategy requires that the GFPs be in high-level decision-making positions where they can influence the design of policies and programmes, ensuring that gender issues are fully considered and addressed. The BGA has trained approximately 150 persons to be GFPs in the public sector to date, including the Rural Agricultural Development Authority (RADA), who are key partners in the ADAPT Jamaica project. In 2019, a training workshop was conducted by the Climate Change Division of the Ministry of Economic Growth and Job Creation (MEGJC), which targeted both the GFPs and climate change focal points in the MEGJC. In total 106 senior policymakers were trained as Gender Focal Points.

2.3 Policy, legislation, and strategy landscape on gender

The following section presents an overview of the key gender policies, strategies, institutional frameworks, regulations and initiatives in Jamaica.

National Policy for Gender Equality (NPGE)[8]

The National Policy for Gender Equality is a national multi-sectoral policy developed through a consultative process led by the Bureau of Women's Affairs of Jamaica. It was adopted in 2011 and will be implemented up to 2030, in line with the National Development Plan. The NPGE provides a framework within which gender issues should be mainstreamed in the policies and programmes of the GOJ.

Since the adoption of the National Policy for Gender Equality (NPGE) in 2011, the GOJ has established a policy framework within which gender equality can be pursued in all sectors. Its guiding principles are social justice; human rights; equality and equity; good governance, accountability and transparency and participation. The Vision Statement of NPGE is 'Jamaica will be a society in which women and men have equal access to socially valued goods and are able to contribute to national development.'

The NPGE emphasizes the need to mainstream gender across all government institutions, while also highlighting the important role of partnerships with civil society and the private sector. It includes a comprehensive list of strategies and tools to achieve gender equality: gender mainstreaming; gender-responsive budgeting; gender-aware information; gender analysis; cross-sectoral partnering; gender training; gender-aware monitoring and evaluation, and the legislation of temporary special measures.

This policy outlines the strategies for gender mainstreaming to facilitate the incorporation of gender consideration in all national development policies, plans and programmes. One of the objectives of the policy is the use of gender mainstreaming to transform prevailing gender ideologies and create a discrimination-free environment in which gender equality can be achieved. The main tools for achieving gender equality through gender mainstreaming identified by the Policy are:

- Gender Responsive Budgeting
- Collection and use of sex-disaggregated data
- Gender training
- Gender aware Monitoring and Evaluation
- Gender Analysis

Within the Policy, Climate Change and Natural Disasters are referenced as an emerging issue from consultations that ADAPT Jamaica will also advance. The Policy recommends "involving women actively in environmental decision-making at all levels and integrate gender concerns and perspectives in policies and programmes for sustainable development, to minimise the differential effects of climate change and natural disasters." ADAPT Jamaica will utilise available gender analysis tools throughout its implementation from design to closeout and learning to ensure gender considerations are mainstreamed.

The Bureau of Gender Affairs (BGA) is the agency charged with realising and implementing the NPGE and promoting Gender Equality.

The lack of resources to drive sustained gender mainstreaming efforts has been identified as a factor which has thwarted the full implementation of the principles articulated by the Policy. Additionally, the BGA has been unable to effectively engage the private sector and sufficiently raise national awareness about the policy and its objectives.

National Gender and Climate Change Strategy and Action Plan

[8] https://www.nlj.gov.jm/files/u8/NPGE-JA-FINALwCover21311.pdf

The development of the Jamaica National Gender and Climate Change Strategy and Action Plan (GCCSAP)[9] was supported through GCF funding support. The GCCSAP is led by the Climate Change Division (CCD) in the Ministry of Economic Growth and Job Creation (MEGJC) and the Bureau of Gender Affairs (BGA) in the Ministry of Culture, Gender, Entertainment and Sport (MCGES). The GCCSAP flags several factors that are needed to ensure that climate action is gender responsive and further identifies needs for both in the agricultural strategy. These are:

- For climate action to be effective, there must be gender balance in decision-making that must also be inclusive of a diversity of voices, representing women, men and people of different social groups. This means inclusivity at the project design, implementation and monitoring levels.
- Community decision-making structures need to be supported and be gender balanced and inclusive.
- Opportunities for advancement in education must also be gender inclusive, especially in tertiary education.
- Any hiring opportunities involved in climate action need to be gender responsive and balanced.
- In the private sector, special attention also needs to be paid to gender and diversity inclusive hiring practices, pay equity and retention strategies and opportunities for training and advancement. Likewise, in the workplace, strategies are needed to accommodate multiple gender roles and responsibilities throughout the lifecycle process.

Social Protection Strategy (SPS)

Given the ADAPT Jamaica project's intent to support some of the most vulnerable in the six parishes, it is also relevant to consider the country's Social Protection Strategy (SPS), which was developed as a response to the 2008 global economic crisis in order to address the needs of the country's most vulnerable people, such as those living below the poverty lines particularly because there have been increasing trends in poverty rates in the country since 2008.

The poverty reduction aim of the SPS is to promote the attainment of living standards of individuals or households above levels that are considered as being in poverty based on accepted national criteria.

The SPS has identified the population groups that are likely to be the most vulnerable and in need of social protection support. This includes persons facing poverty risk (children in poverty, children in state care, female-headed households, displaced persons, squatters, fire and other natural disaster victims, deportees, ex-inmates, refugees, persons with disabilities, the indigent (on poor relief), the homeless, the elderly (65+)), income risks (the unemployed, chronically ill / HIV/AIDS, small and micro-business persons, information sector workers, persons with low levels of education) and food security risks (inner-city or urban poor, fisherfolk, agriculture households, students on school feeding programme, people in state institutions.[10]

As part of its focus on Food and Nutrition Security, the aim of the Social Protection Strategy is to ensure that enough nutritious food is available through increased domestic production and sustainable importation, and that all individuals have access to resources to always acquire adequate and affordable food.

Among the strategies to achieve food and nutrition security, it recommends:

[9] Government of Jamaica (2022). Jamaica Gender and Climate Change Strategy and Action Plan
[10] Planning Institute of Jamaica. 2014. Jamaica Social Protection Strategy. PIOJ, Kingston. P.119.

- Establishment of links between small farmers and relevant Social Protection target groups, with the government purchasing in bulk from the farmers for its welfare programmes. The farmers will be encouraged to form co-operatives for this purpose. Partnerships involving faith-based organizations, NGOs and the commercial sector will also be used to support this initiative.
- Expansion of food production by schools, community groups and households, and the inclusion of low cost (vegetable) sources of protein in national food security plans. Nutrition education programmes will also be greatly expanded towards enhancing healthy lifestyles for the entire population.

The SPS also speaks to the need for the formation of a National Social Protection Committee (NSPC) with mixed representation from government, private sector and civil society with parish level committees to be established as well.

Disaster Risk Management Act and the Comprehensive Disaster Risk Management (DRM) Policy

The National Comprehensive Disaster Risk Management (DRM) Policy gives a thorough assessment of Jamaica's disaster situation, and particularly climate-related disasters which account for over half of economic losses due to disasters in the country[11]. According to the Inter-American Development Bank (IDB) protocol review, the DRM Policy is also gender sensitive as it mentions the impact of disasters and climate change on vulnerable populations. However, it identifies that there is 'inadequate inclusion of gender sensitivity in the development of policies and plans for Jamaica.' The DRM Policy speaks clearly to the specific needs of men and women to ensure gender equity and social inclusion – leaving no one behind and including women, children, the elderly, the persons with disabilities and other vulnerable people such as those that rely on natural resources for their livelihoods (e.g. fishers, farmers, market vendors, seasonal tourism workers etc.).

For gender issues to be effectively mainstreamed into Disaster Management, the Policy identifies specific challenges inherent with mainstreaming DRM in general such as the lack of knowledge on how to mainstream gender issues. It indicates that to effectively mainstream Disaster Risk Reduction (DRR) into all national sectoral policies and planning will require capacity building within GOJ entities – both at the national and local levels – to enable them to move away from a disaster response culture to an integrated and sustainable disaster risk reduction (DRR) culture that promotes the strategic development and implementation of the DRM and Climate Change Adaptation programmes at national, parish and community levels.

It indicates that there is inadequate inclusion of gender sensitivity in the development of policies and plans for Jamaica. To address this it is important to overcome the inconsistencies in the incorporation of risk assessments in development, considering the different roles of men and women, making sure that the post-disaster needs are adequately incorporated in the gender policy and action plans. In 2021,[12] with support from the IDB, specific protocols were developed to mainstream gender issues into both Climate Change and DRR Management efforts, which are now being implemented.

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National Development Plan: Vision 2030 Jamaica (2009)

[11] Ministry of Local Government & Rural Development. 2019. Jamaica's Comprehensive Disaster Risk Management Policy and Strategy 2020- 2040. Ministry of Local Government & Rural Development, Kingston.
[12] IDB. 2021. Protocol and Guidelines to Mainstream Gender in DRM/CCA. IDB, Kingston.

It integrates Jamaica's population concerns such as gender, youth, working age, the elderly, and persons with disabilities into the development planning. The goals of the plan are to address gender issues in terms of equal access to opportunities and fairness and equality for women and men in governance systems. It also prioritizes the management of climate risks and adapting to climate change, while also contributing to global efforts to stop climate change. Under the Vision 2030, a Climate Change Advisory Board was created, which includes the participation of government and non-governmental actors, including academic institutions, civil society organizations and youth groups. A Thematic Working Group on gender was expected to be established to coordinate the implementation of the gender sector plan under Vision 2030 Jamaica. Yet, in view of the current drafting of this Gender Assessment , the thematic working group has yet to be established.

National Development Plan - Gender Sectoral Plan (2009–2030)

The Gender Sectoral Plan under the National Development Plan develops goals, strategies, and actions for discrimination-free society. It proposes a DRM strategy aimed at the creation of an integrated, gender-responsive and sustainable approach to environmental planning, management, and conservation to solve the issue of unequal burdens imposed on women in DRM and recovery.

Medium Term Socio-Economic Policy Framework (2021-2024)

One of its strategies is to foster gender equality, incorporating gender mainstreaming in all aspects of society and reducing GBV.

Persons with Disabilities (PWDs) Sector Plan (2009–2030)

It recognizes the need to address the barriers that hinder PWDs from achieving their full potential, while promoting personal responsibility among PWDs.

National Youth Policy (Updated 2017-2030
The National Youth Policy identifies key principles such as equity and accessibility, gender inclusion, active participation, youth empowerment and partnerships. This Policy commits to work towards a gender balanced approach across all youth programmes and projects, making sure to address discrimination and equity issues among young people or groups. Youth from different circumstances and with specific needs must have equitable access to all programs and services.

National Policy for Senior Citizens (2018)
.
The guiding principles for the National Policy for Senior Citizens include respect for human rights and dignity; inclusive and participatory development; gender equity; equitable access and reasonable accommodation and evidence-based monitoring and evaluation. In support of the global thrust for credible engagement of elderly people in economic and social life, the Policy is founded on three pillars that support inclusion, well-being and development. These are: Active and Productive Ageing for National Development; Advancing Health and Well-being; and Enabling and Supportive Environments.

Policies on Gender-Based Violence (GBV) in Jamaica[13]

[13] https://documents1.worldbank.org/curated/en/715131614832136041/pdf/Gender-Responsive-Disaster-Preparedness-and-Recovery-in-the-Caribbean-Desk-Review.pdf

The Government of Jamaica has adopted and amended various policies addressing GBV[14], which include:

- **Domestic Violence Act (1996, amended in 2004):** provides for enhanced protection for GBV and Domestic violence (DV) victims and makes provision for a third party to start legal proceedings on behalf of DV victims.
- **Sexual Offences Act (2011):** contains provisions for the prosecution of rape and other sexual offences and for the establishment of a Sex Offender Registry.
- **Childcare and Protection Act (2004, amended in 2009):** ensures that children, particularly girls, are placed in safe living environments and prescribes measures against child abuse.
- **National Strategic Action Plan to Eliminate Gender-based Violence (NSAP-GBV) 2017-2027:** outlines mechanisms for policy, legislation, multi-sectoral collaboration, implementation, prevention, data collection and tracking the progress on GBV.
- **Evidence (Special Measures) Act (2012):** is intended to provide greater protection and security for women and girls who are victims of crimes.
- **Trafficking in Persons (Prevention, Suppression and Punishment) Act (2007, amended in 2013 and 2018):** prescribes measures to prevent and combat human trafficking, particularly of victims who are women and children by: protecting victims; facilitating the efficient investigation of cases; facilitating the effective punishment of traffickers; and promoting cooperation with other states.

Table 1 Other gender-related policies and initiatives.

Name	Relevance
Gender Ambassador Programme (GAP)	Another key effort to promote gender mainstreaming has been the establishment of the Gender Ambassador Programme , which was launched on 29 March 2019. The GAP targets students from secondary and tertiary level institutions, to facilitate awareness-raising and activism on gender equality and the elimination of school-related gender-based violence. Seventeen (17) schools were selected for the first phase of the programme.
Community Outreach Through Partnership for Empowerment (COPE) Initiative	The COPE Initiative is in alignment with the Bureau of Gender Affairs (BGA) mandate to raise awareness of Gender-based Violence . This includes the promotion of good practices to respond to GBV. It also facilitates the empowerment of women and engages men and boys to become positive role models. The first phase of the COPE Initiative was launched on 26 July 2019. The BGA provided eight (8) community groups and NGOs with technical and financial support. In March 2020, one additional NGO was added to the COPE Initiative, bringing the total to nine (9) beneficiaries.
Spotlight Initiative - Strengthening Quality Essential Services for Victims and Survivors	Spotlight Initiative will provide support to the BGA to operationalise the National Shelter and two Regional Shelters in Jamaica for victims of Gender-Based violence. It will also support the establishment and operationalisation of a referral pathway among Government and Civil Society Organizations (CSOs) service providers in each of the targeted parishes. This initiative is also designed to establish Hotlines to receive reports of GBV and to strengthen the psycho-social support to victims.
Male Mentorship Programme (#MentorMe2020)	The #MentorMe2020 Mentorship Programme will assist high school boys, through support and guidance from positive male mentors. It is also designed to develop their life skills, improve their academic performance and improve the interpersonal relationships between the boys, their peers, teachers and family members.

[14] GFDRR. 2021. Gender-Responsive Disaster Preparedness and Recovery in the Caribbean: Desk Review. World Bank, Washington, D.C. https://openknowledge.worldbank.org/handle/10986/35215

Name	Relevance
Young Fathers Jamaica Initiative	The Young Fathers Jamaica Initiative is a joint initiative between the BGA and the Women's Centre of Jamaica Foundation (WCJF). This initiative will provide training and sensitization on parenting roles and responsibilities for fathers who are partners of the mothers from the WCFJ programme. It will seek to empower the fathers to play a more significant role in the development of their child/children.
REFOCUS Perpetrator Programme	The REFOCUS Perpetrator Programme will help to reduce incidences of Intimate Partner Violence, by providing alternative conflict resolution and rehabilitation as options for perpetrators of Intimate Partner Violence (IPV).
No Excuse for Abuse (#NEFA) Public Education Campaign	NEFA is the first public education campaign under the National Strategic Action Plan to Eliminate Gender-based Violence (NSAP-GBV) in Jamaica (2017-2027). The aim of the NEFA campaign was to increase sensitization and raise awareness on GBV. This is designed to increase the access to information on relevant legislation and the client-specific services available to protect victims/survivors of GBV. The Campaign is also designed to highlight the important role of the government, civil society and other sectors as part of the coordinated response to GBV.
Women's Entrepreneurship Support (WES) Project	The Ministry of Industry, Commerce, Agriculture and Fisheries (MICAF) and the Ministry of Culture Gender, Entertainment, and Sport (MCGES) signed a memorandum of understanding on 1 November 2017 to facilitate strategic partnership on programmes for women in entrepreneurship. Through this partnership, female entrepreneurs are selected to receive an award each financial year to strengthen their institutional capacity.
Operationalisation of one National Shelter & two Regional Shelters	The first National Shelter for victims of Gender-based Violence was purchased in July 2018 and operationalized in 2020. Two additional properties were purchased in the western and eastern region and are currently being renovated and retrofitted for full operationalisation.

2.4 Relevant policies of the Green Climate Fund

The GCF adopted a revised version of its 2014 Gender Policy and Action Plan in June 2019 in Korea, which addresses pertinent issues on gender and climate change: the expansion of gender mainstreaming beyond the preserve of 'women's issues'; and the identification of synergies with the in-house Indigenous People (IP) Policy as well as the United Nations Framework Convention on Climate Change (UNFCCC)'s Gender Action Plan (GAP), Sustainable Development Goals (SDGs) and Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW). Overall, the Policy and Action Plan reinforce the responsiveness of GCF to the multiple, heterogeneous, culturally diverse context of gender inequality to better address and account for the links between gender issues and climate change – a perspective that has been mainstreamed in the development of the ADAPT Jamaica project.

2.5. FAO Gender Policies

The FAO Policy on Gender Equality 2020-2030 is centred around FAO's mandate to achieve food security for all through increased levels of nutrition, improved agricultural productivity and natural resource management, and improved rural livelihoods. The Policy notes how these goals can only be met if work towards gender equality support for women's diverse roles in agriculture and rural development are simultaneously addressed. The Policy outlines the importance of a gender-responsive organizational environment and sets standards for mainstreaming gender in all organizational functions. It also seeks to address the root of inequalities through social norms, attitudes and beliefs that discriminate against women.

At a regional level, FAO Regional Gender Regional Strategy for Latin America and the Caribbean 2019-2023 offers initiatives aimed toward structural transformations of unequal relations, in relation to SDG monitoring and indicators under FAO's mandate. The Strategy also responds to current challenges and include slowdowns in economic growth, poverty and hunger, family composition changes and the inefficiencies of current development models from increased inequalities and environmental crises. The Strategy outlines actions geared towards overcoming gender inequality in the Region and sets targets for gender mainstreaming across programs and plans.

3. Gender baseline and findings of the gender assessment

3.1 Gender in Jamaica

Jamaica has made significant strides towards gender equality in the last two decades. Gains have been observed in various areas, including declines in fertility and the achievement of gender parity in primary school enrolment and completion. However, persistent challenges remain. For example, according to the World Bank's Jamaica Country Gender Scorecard[15] adolescent fertility rates remain higher than those for the average Latin American country; boys are less likely than girls to enrol in secondary education (72% vs. 76%, respectively) and children are not learning the basics in school. Test scores are particularly low for boys who tend to drop out of school to engage in paid work. Similarly, 35% of women are enrolled in tertiary compared to 20% of men.

The same score card notes that men are also disadvantaged in specific areas. They are significantly more likely than women to die from non-communicable diseases, due to the prevalence of major risk factors such as increasing levels of physical inactivity, unhealthy diets, smoking and the use of alcohol. Jamaica also has a very high rate of prostate cancer with 1 in 6 men estimated to get this disease. Men are also more reluctant than women to seek mental health support. Homicide rates are particularly high among young men, especially when compared with other countries in the Caribbean.[16]

Despite improvements in educational attainment, Jamaican women do not have the same access to economic opportunities as men. With only 61% of women in the workforce (compared to 78% of men in 2023[17]), Jamaica still trails some countries in the region in terms of female labour force participation. This is partly due to the disproportionate responsibility they

[15] https://documents1.worldbank.org/curated/en/824961645691156835/pdf/Jamaica-Country-Gender-Scorecard.pdf
[16] Ibid.
[17] https://genderdata.worldbank.org/countries/jamaica/#:~:text=In%20Jamaica%2C%20the%20labor%20force,labor%20force%20participation%20has%20decreased.

have for unpaid domestic and care work and gender norms that dictate the role of women and men in society. When women are employed, their jobs on average tend to be of lower quality and poorly paid, particularly in rural areas.[18]

The COVID-19 pandemic exacerbated existing gender gaps and negatively impacted economic opportunities for women. The labour market impact of the crisis fell disproportionately on women, partly because they had a higher participation in sectors that have been hardest hit by the pandemic, including tourism, accommodation and personal services. Jamaican women have also experienced a significant increase in the time allocated to unpaid domestic and care work due to school closures and confinement measures. A household phone survey data collected in June 2021 showed that 61% of women reported increases in the amount of time allocated to childcare during the pandemic, compared to 51% of men.

Gender-based violence primarily affecting women remains a concerning phenomenon in the country. Although there is a scarcity of reliable data on gender-based violence in Jamaica, the existing evidence indicates that one in every four Jamaican women (25.2%) have experienced physical violence from a male partner, while almost half (47.3%) of ever partnered women have been subject to controlling behaviours.

Jamaica has made credible gains in the area of gender equality and women's empowerment at the policy level. Several of the government's institution-building initiatives and legislative measures have contributed to this. As aforementioned (Section 3.3), the National Policy for Gender Equality (NPGE) seeks to safeguard the principle of equality between women and men. It sets out the framework for a more comprehensive and coordinated approach to fully integrating gender in every area of national life. xxx

The Human Development Report 2023/2024, notes that Jamaica's Human Development Index (HDI) for 2023 was 0.706—which put the country in the high human development category—positioning it at 115 out of 189 countries and territories. The HDI for women was 0.730 and 0.735 for men. The Gender Development Index (GDI) is a measure of gender gaps in human development achievements; it accounts for disparities between women and men in health, knowledge and living standards. Jamaica's GDI score increased from 0.975 in 2015 to 0.994 in 2011. For the Gender Inequality Index (GII), which measures gender-based inequalities in reproductive health, empowerment, and economic activity, Jamaica ranks 88 of 162 countries, with a GII score of 0.39674.

3.2 Socioeconomic baseline

Jamaica has the largest population (and labour force) in the English-speaking Caribbean, reaching over 2.8 million people in 2022, of which 50.4% are women according to the World Bank.[19] The country's annual population growth has incrementally decreased from 0.5% in 2013 to 0% in 2022, down from a peak of 1.6% in 1973.[20] The percentage of the male population has been steadily increasing since 1960, until 2016 where there was a slight decline. Since 1960, the percent of the female population has been slightly declining from 1960 from 52.2% to 50.4% in 2022. Since 2016, there has been a 0.1 percentile increase in female population. The rate of population growth is expected to slow over the coming years and by 2035 the size of the total population is projected to peak at 3.06 million. Jamaica therefore finds itself in a relatively unique position in expecting population decline to begin within less than a decade and a half. Approximately 56% of the population lives in urban areas as of 2021,

[18] https://documents1.worldbank.org/curated/en/824961645691156835/pdf/Jamaica-Country-Gender-Scorecard.pdf
[19] World Bank. (2023c). *Population, total—Jamaica*. World Bank Open Data. https://data.worldbank.org
[20] World Bank. (2023b). *Population growth (annual %)—Jamaica*. World Bank Open Data. https://data.worldbank.org

which is significantly lower than the 83% average urban residency for Latin American and Caribbean (LAC) countries.[21]

The latest population and household census conducted by the Statistical Institute of Jamaica (STATIN) is from 2011. As of December 2024, data is still being collected for the updated household census of 2022 and could not be included in this report. However, as of 2019, the Statistical Institute of Jamaica (STATIN)[22] has put the overall population of Jamaica at 2,734,092 with 1,381,983 females and 1,352,109 males.

Table 2 Key statistics relating to gender equality in Jamaica

Maternal Mortality Rate	Maternal mortality rate refers to the number of women who die from pregnancy-related causes during pregnancy, childbirth, or within 42 days after the termination of pregnancy, per 100,000 live births. According to the World Bank,[23] Jamaica's maternal mortality rate for 2020 was 99 per 100,000 births. This has increased from 91 in 2018 but decreased from 101 in 2014 and 2017.
Infant Mortality Rate	According to UNICEF,[24] infant mortality rate for Jamaica in 2022 is 18 per 1,000 live births (16 for female, 19 for male, upper bound). This has decreased from 20 in 2000 (17 for female, 23 for male, upper bound.
Education status	According to the World Bank: • Jamaica has experienced declining enrolment rates for both boys and girls at all levels but tertiary since 2010. • Since 2010, female enrolment remains substantially higher than male students' at the secondary and especially tertiary levels. • Since 2015, secondary school enrolment has remained stable for girls and slightly increased for boys. • Educational attainment has improved among the new generations, especially for women The educational attainment of the young workforce (aged 25-34) is higher than that of the overall Jamaican workforce (aged 25-64). This pattern is more pronounced among women, which is partly explained by the growing gender disparities in education. In particular, 25 and 16 percent of the female population between ages 25 – 34 attained tertiary education or post-secondary technical training, respectively, compared to 20 and 4 percent for women ages 25-64. • Men, on the other hand, are less likely to attain either level, regardless of age group. For example, 15 percent of men ages 25-34 completed tertiary education, compared to 25 percent of women and 11 percent in the broader age group. Technical and vocational education is even less common among either group, with 11 and 6 percent of men completing this type of training, respectively. • According to the World Bank,[25] in 2020, Jamaica was ranked 97th among 174 countries in the Human Capital Index (HCI), with an HCI score of 0.53. This indicates that children born in Jamaica are expected to achieve only 53% of their full productive potential by age 18, assuming complete education and optimal health. While Jamaica performs slightly better than the Dominican Republic, it lags behind countries like Mauritius and Montenegro. The country does well in expected years of schooling and has a high survival rate until age 5. However, the quality of education in Jamaica is a concern, as reflected in its low average test scores (387), which is the second lowest among its peers. This low score results in a

[21] FAO. (2023). *Jamaica Demographics*. FAOSTAT. https://www.fao.org/faostat/en/#country/109
[22] statinja.gov.jm/Demo_SocialStats/PopulationStats.aspx
[23] https://data.worldbank.org/indicator/SH.STA.MMRT?locations=JM
[24] https://data.unicef.org/resources/data_explorer/unicef_f/?ag=UNICEF&df=GLOBAL_DATAFLOW&ver=1.0&dq=JAM.CME_MRY0.&startPeriod=1970&endPeriod=2024
[25] https://openknowledge.worldbank.org/server/api/core/bitstreams/08372d91-d4dd-5b6a-961e-1e3ec71557e8/content

	low Learning-Adjusted Years of Schooling (LAYS) of 7.1, indicating that Jamaican students effectively receive only 7.1 years of education in terms of learning, despite attending school for an average of 11.4 years (World Bank).
Adult literacy rate	Literacy rate for individuals aged 15 and above in Jamaica was estimated to be around 88% in 2018 (UNESCO[26]), from 80% in 1999 (World Bank[27]). The most recent sex-disaggregated data from the World Bank (above) dates from 1999, where the literacy rates for males aged 15 and over was 74% and 86% for females.
Poverty Index	According to the Multidimensional Poverty Index (UNDP):[28] ● 2.8% of the population in Jamaica (78 thousand people in 2021) is multidimensionally poor. ● An additional 5% is classified as vulnerable to multidimensional poverty (141 thousand people in 2021) ● The intensity of deprivations in Jamaica, which is the average deprivation score among people living in multidimensional poverty, is 38.9%. ● The MPI value, which is the share of the population that is multidimensionally poor adjusted by the intensity of the deprivations, is 0.011. In comparison, Dominican Republic and Trinidad and Tobago have MPI values of 0.009 and 0.002, respectively. ● With a Human Development Index (HDI) value of 0.709 for 2021, Jamaica is classified as "High" in the human development classification,[29] yet poverty is still a prevalent issue. Poverty rates have fluctuated since 2010 from 17.6%, 24.6% in 2013 and 19.3% in 2017.[30] ● According to the Jamaica Survey of Living Conditions (JSLC) 2019, the overall poverty rate was 11% in 2019, similar to the 12.6% observed in 2018. ● Both male- and female-headed households had comparable poverty rates.[31] According to the (as of yet unpublished) 2021, Jamaica Survey of Living Conditions, Jamaica's poverty rate rose to 16.7%, a 5% increase from 2019. This escalation in poverty was most pronounced in rural areas, where the rate reached 22.1%, followed by other urban centres at 15.5%, and the at 10.4%
Labour-force participation rate	According to 2024 labour force survey data from the Statistical Institute of Jamaica[32], the labour-force participation rate in Jamaica stands at: • 53.7% for males • 46.3% for females • 68% for the population as a whole • Global data from the International Labour Organization (ILO)[33] suggests that this 7.4-percentage point difference by sex compares favourably with the world where globally, a gap of 26 percentage points separates women and men in labour force participation. Jamaica's 7.4 percent gap is therefore better than the global average. • According to the ILO, there is a slight decline in labour force participation for men and women in the youth and older adult categories. Projections covering the period 2000 to 2021, show low youth participation, with an average male labour force participation of 47.1% and average female

[26] http://data.uis.unesco.org/
[27] https://data.worldbank.org/indicator/SE.ADT.LITR.ZS?locations=VN%2F1000-JM
[28] https://hdr.undp.org/sites/default/files/Country-Profiles/MPI/JAM.pdf
[29] UNDP. (2023). Human Development Index—Jamaica. UNDP Human Development Reports. https://hdr.undp.org/data-center/specific-country-data
[30] UNDP. (2021). Socio-Economic Impact Assessment of COVID-19 and Policy Options in Jamaica. Sir Arthur Lewis Institute of Social and Economic Studies, Caribbean Policy Research Institute.
[31] PIOJ. (2020). Jamaica Survey of Living Conditions 2019. The Planning Institute of Jamaica (PIOJ); The Statistical Institute of Jamaica (STATIN).
[32] https://statinja.gov.jm/PressReleases.aspx?field1=lfs
[33] https://ilostat.ilo.org/topics/employment/

	labour force participation at 35.7%. Young men's participation exceeded that of young women by 31.9%. Among people aged 25 years and older, average male labour force participation was 83.1%, with average female labour force participation at 64.5%. In this age category, the gender gap was similar to that for youth—28.9%. • Men's labour force participation exceeds that of women in every age group, with the difference being smallest in the adolescent age group (1.3%), and greatest in the age group 65 years and over (26.1%). The large difference among elderly people may be explained partly by the fact that women seem to retire at a younger age (65 years) than men (70 years). This difference in the retirement age is an important area of gender inequality affecting labour force participation rates by sex.
Employment rate	The total employment to population ratio was 63 in Jamaica in 2022, according to the World Bank,[34] 56 for women, and 71 for men.
Unemployment rate	According to the World Bank (modelled ILO estimate), [35] in 2022 total unemployment in Jamaica was 5.5% of the total labour force. Jamaica experiences a steep upward trend in unemployment rate from 2018 (6.7%) to a peak of 9.7% in 2013. It fell to 5% in 2019, increased to 6.5% in 2020 (likely related to COVID-19) and is now decreasing. Unemployment rates for 2022 stood at 6.4% for women in 2022[36] and 4.7% for men in 2022[37]
Land Tenure	Regarding disparities in Land Rights and assets, 30% of women producers own land with major implications for doing business in the formal sector and access to finance. Traditionally, men tend to have greater access to the ownership and use of land resources than women. RADA data reveals that the average plot size cultivated by women farmers is 1.4 hectares in comparison to an average of 2.6 hectares cultivated by male farmers. While Jamaican women have the legal right to hold title deeds, social stereotypes relating to gender limit women's access to land. They also have difficulty obtaining loans. The lack of access to and control of productive assets makes women ill-equipped to face the challenge of transition from subsistence to commercial agriculture and over implementing climate-resilience measures.[38]
Life expectancy	According to the International Labour Organisation:[39] Women: 75.8 years. Men: 73.3 years.

3.3 Gender and decision-making power

The 2015 UNDP's "*Where are the Women: A Study of Women, Politics, Parliaments and Equality in the CARICOM Countries - JAMAICA Case Study*"[40] looked at women in office between 2010 and 2013. Jamaica has been slow to put women in positions of political making power. Despite having had some prominent women leaders such as former Prime Minister Portia Simpson-Miller, Jamaica falls short of its own target of having women in 30% of decision-making positions. The study found that women make up just 20% of Jamaica's cabinet ministers, senators and mayors which is below the global average of 22% women in parliament.

[34] https://data.worldbank.org/indicator/SL.EMP.TOTL.SP.ZS?locations=JM
[35] https://data.worldbank.org/indicator/SL.UEM.TOTL.ZS?locations=JM
[36] https://data.worldbank.org/indicator/SL.UEM.TOTL.FE.ZS?locations=JM
[37] https://data.worldbank.org/indicator/SL.UEM.TOTL.MA.ZS?locations=JM
[38] Value for Women. (2020). Study of the Impacts of Climate Change on the Women and Men in the Caribbean: Pilot Programme for Climate Resilience Countries. Inter-American Development Bank. https://doi.org/10.18235/0002937
[39] International Labour Organisation (ILO) Office for the Caribbean. 2018. Gender at Work in the Caribbean – Country Report: Jamaica. ILO.
[40] https://www.undp.org/sites/g/files/zskgke326/files/migration/latinamerica/UNDP-RBLAC-WomenPoliticalParticipationJM.pdf

Another study commissioned by the Women's Resource and Outreach Centre (WROC) in 2013[41] on Women on Boards and Committees confirmed that women were on 33% of public sector boards and 16% of private sector boards. Despite numerous training and workshops to prepare women to participate effectively on Boards, gender inequality in this area of public leadership continues to be a challenge.

3.3.1 Community-level decision making and community-group engagement

One of the goals of Jamaica's Gender and Climate Change Strategy and Action Plan (GCCSAP) is to promote gender equality within community-level decision-making systems. Although women do not equitably occupy key decision-making positions in formal political structures, women are the backbone of voluntary activities in Jamaica. They are active in their churches, schools, and community groups. Through these networks they exercise influence in their communities and are an important part of the disaster management and climate change adaptation mechanisms and assets at the community level.

The ADAPT survey asked respondents to identify if they were part of any social networks or local organisations at the community level and also whether or not they held any leadership positions within these organisations, but unfortunately, by and large, there were few responses to these questions and included belonging to the Jamaica Agricultural Society (JAS), a farmers group, Parent-Teachers Association (PTA), youth groups, and church groups.

The few responses regarding leadership roles followed traditional gender roles with women holding the position of secretary or treasurer and males being president or chair. These illustrative findings the GCCSAP's goals to enhance gender equality in decision-making at the local level.

One of the key national organisations that should be central to the ADAPT-Jamaica project however, given that its focus is specifically rural women, and because it includes members in all of the six project parishes, is the Jamaican Network of Rural Women Producers (JNRWP). Established in 1999, the JNWRP has 700+ members, all rural women and.., "was the first such organization to be established in the Caribbean and provides a model for similar networks including the Caribbean Network of Rural Women Producers (CANROP) of which it is a member."[42] The goals of the JNRWP are to:

- Create sustainable employment opportunities for its members
- Promote products made by its members
- Promote relevant training to upgrade and develop human resource capacity of rural women producers Strengthen links among rural women producers inter and intra-regionally
- Advocate to promote and sensitize the wider society of the needs of rural women producers
- Promote sustainability of women groups and the Network of Rural Women Producers
- Facilitate communication links among national and regional groups and institutions
- Facilitate research and product development
- Promote self-reliance among rural female producers

The JNRWP also has a strong focus on reducing Gender Based Violence (GBV) had has been working on an anonymous survey to assess the impact of GBV among its members.

Other groups where female membership is reportedly growing and which have direct relevance to the planned ADAPT activities include the Jamaica Pig Rearers Association (JPRA), the All-

[41] https://www.wrocjamaica.com/projects
[42] https://www.fao.org/family-farming/network/network-detail/en/c/196151/

Island Bee Farmers Association (AIBFA), the Jamaica 4H, and the Jamaica Green House Growers Association (JGGA) which have national and parish level chapters and proven successes. These are briefly profiled later on in the document.

One thing that is important for the ADAPT project to note with respect to strengthening of farmers' groups in the Jamaican agricultural context are the challenges that have continually plagued farmer organisations in general, such as producer cooperatives, Production and Marketing Organisations (PMOs) and Water User Associations (WUA). As the FAO/EU/CIRAD[43] report notes, even though approximately 100,000 farmers are members of 39 agricultural cooperatives, cooperatives face many challenges such as poor management, inadequate financing and limited irrigation.

Even though there can be substantial benefits to belong to farmers groups and cooperatives, such as enhanced economies of scale, cheaper overall costs of production, and stronger advocacy, it has been shown that many farmers – both male and female – are generally wary of groups and often prefer to farm on their own rather than agree to shared rules and regulations which they see as costs or burdens. There is often an unwillingness to "offer mutual support for the common good" (FAO/EU/CIRDAD, op.cit). An independent mindset prevails, and groups often fail due to internal conflicts and infighting. The proven benefits of being in a cooperative have to greatly outweigh the costs.

These challenges are worse for women. In their study of the opportunities for women in farmers cooperatives, for example, Ishemo and Bushell (2017)[44] note that while women often make up the core management structure of cooperatives, they can be severely marginalised if the group fails. This is a challenge as most projects prefer to distribute benefits through farmer groups, but history has shown that many groups do not continue once projects end. Farmer cooperatives in Jamaica have seen high failure rate (FAO/EU/CIRDAD, op.cit). If ADAPT is to work through farmer groups, specific criteria will need to be established for their selection. To this end, there are some proven cases of PMOs and green house grower groups that could serve as best practice examples.

3.4 Agricultural sector baseline and findings

This section illustrates the baseline for the agricultural sector, primarily informed by the results of the stakeholder consultation. The topics covered are:

- Gender make-up of farmers in ADAPT target Parishes
- Access and control over land
- Farm Tenure Status
- Farm size
- Farm slope conditions
- Gender roles in smallholder agriculture
- Contribution of farming to household livelihood
- Types of production in small holder agriculture
- Water and irrigation assets for small holder farmers
- Access to Farm Inputs and Supplies
- Access to Market and Value Chain considerations
- Cost of getting goods to the market
- Main Challenges to get goods to the Market

[43] FAO, European Union and CIRAD. 2022. Food Systems Profile - Jamaica. Catalysing the sustainable and inclusive transformation of food systems. Rome, Brussels and Montpellier, France. https://doi.org/10.4060/cc0073en

[44] Ishemo, Amani and Bushell, Brenda (2017) "Farming Cooperatives: Opportunities and Challenges for Women Farmers in Jamaica," *Journal of International Women's Studies*: Vol. 18: Iss. 4, Article 2. Available at: https://vc.bridgew.edu/jiws/vol18/iss4/2

- Access to credit, financial services, insurance, and business opportunities
- Access to communication Assets and WiFi digital services

3.4.1 The agricultural sector

The agricultural sector represents a critical component of Jamaica's national development strategy as an important contributor to Gross Domestic Product (8.68% in 2020), [45] employment, foreign exchange earnings, and rural livelihoods. The sector employs over 200,000 registered farmers (33 % women) that represent an estimated 15% of Jamaica's labour force;[46] supports over 200,000 farm households and is critical to food security. Generally, agricultural land in Jamaica is unequally distributed, with small-scale farmers (farms of two hectares and less) being the most resource deficient, having access to less than 15% of total arable land.

Jamaica's agricultural production system is dualistic in that, a small group of large commercial plantations produce monoculture crops, such as sugar or coffee, for export markets, alongside a large group of mixed crop smallholder farms steeped in a strong rural farming tradition. These smallholder farms produce goods mostly for household consumption, sale in the domestic market and select high-value horticulture markets. Jamaica is highly competitive in the horticulture market segment, as illustrated by several crops where its yields exceed global ones for items including peppers, plantains, spices, tropical fruits, and yams. Agricultural production has fluctuated significantly over the last three decades, with the overall decline being coupled with an increasing reliance on imports and increased vulnerability to food price volatility and food price inflation.[47] Over 2000–2020, yields shrank for selected crops and livestock items (e.g., sugar cane, cocoa, bananas, pineapples, papayas, some other tropical fruits) and rose for others (e.g., sweet potatoes, yams, and coffee).[48] The fluctuations and in some cases decline in production may be attributed to changes in competitiveness for some traditional crops, insufficient use of modern agricultural inputs and innovation, limited access to water, substandard farming practices, and product losses because of adverse weather conditions and climate events, followed by the consequent contraction of investment in the sector among other factors. For example, in 2014, Jamaica experienced its most severe drought in forty years, causing annual agricultural production to fall by 30 per cent. [49] Agricultural output also suffers from a very high percentage of food loss and waste (30–40%), especially the leafy vegetables and soft fruits value chains, owing to challenges with pest and disease management, less-than-optimal harvesting, transportation, and post-harvest management to include temperature-controlled storage.

The ADAPT Jamaica project will work across six parishes: Manchester, St. Elizabeth, Clarendon, Trelawny, St. Ann, and St. Catherine. Focused on the southwestern portion of the island, the project area covers a variety of landforms including limestone mountains, central valleys and plateaus, and alluvial coastal plains; much of which is characterised as semi-arid. The area includes approximately 308,261 hectares of arable land and some of Jamaica's most important agricultural production areas. Production is generally done in open field mixed farming systems, which often takes place on steep slopes with significant areas of environmental degradation and is largely rainfall dependent. The main crops cultivated in the target parishes are coffee, banana/plantain, yam, potatoes, pineapple, and cash vegetables such as peppers, scallion, pumpkin, carrot, cabbage, tomato, callaloo, and cucumber. In

[45] Statistical Institute of Jamaica (STATIN). 2020.
[46] Rural Agricultural Development Authority (RADA). 2021. "Agricultural Business Information System". Retrieved from http://www.abisjamaica.com.jm/#.
[47] *FAO, 2021 Policy Brief, Catalysing the sustainable and inclusive transformation of food systems.*
[48] *World Bank, 2022. Creating Markets In Jamaica: Repositioning for Private Sector–led Sustainable Growth*
[49] *USAID 2021. Still Standing, Still Serving in the Midst of Extreme Weather. https://www.usaid.gov/jamaica/news/still-standing-still-serving-midst-extreme-weather#:~:text=Between%202014%20and%202015%2C%20Jamaica,percent%20from%202013%20to%202014.*

addition, livestock such as small ruminants and poultry are critical to the livelihood and food security strategies of small farmer households, especially women. Lead by Clarendon, the six parishes account for 71% of Jamaica's small ruminant (goat and sheep) population in 2017.[50] Production is dominated by small-scale subsistence farmers with holdings of two hectares of land or less.

3.4.2 Gender composition of the target parishes

The Ministry of Agriculture in its 2020-2021 Annual Report indicated that the average employment for the sector contracted by 350 persons from 188,450 to 188,100 persons. However, there was a 1.4 percentage point increase in the industry's share of total employed labour force. The average number of females employed in the Agriculture, Hunting, Forestry & Fishing industry increased to 47,350 from 45,450, while the average number of males employed declined from 143,000 to 140,750. The male/female share of employment within the industry was 74.8 per cent and 25.2 per cent, respectively, compared with 75.9 per cent and 24.1 percent in 2019.[51]

National data gaps exist with respect to the exact numbers of male and female farmers for each parish, but the table below shows the most recent sex-disaggregated data from the Rural Agricultural Development Authority (RADA).

Table 3 Farmers registered with RADA in the target parishes. Source: ABIS, RADA. December 2024.

Parish	Total registered in ABIS[52]	Females	Males
Trelawny	12,331	4,964	7,367
Manchester	33,024	13,949	19,075
St Elizabeth	38,845	16,389	22,456
St Ann	25,887	9,631	16,256
Clarendon	35,350	14,159	21,191
St. Catherine	27,015	9,522	17,493

Age

Data from RADA indicates that most female farmers are between the age of 35-65 years. Most farmers (approximately 89%) are above the age of 45, with 31% being above the age of 75 years.[53] Most of the respondents in the ADAPT survey were older. Roughly 12% were over 65, 26% were between the ages of 45-64 and 23% between the ages of 55-64 years for a total of 61% over the age of 45. Another 20% were between the ages of 35-44 and another almost 9% between the ages of 25-34. Only two percent were between the ages of 18-24.

Rural youth

According to the FAO/EU/CIRAD 2022 study (op.cit). 35 percent of rural youth were not engaged in employment, education, or training in 2019.[54] The lack of employment puts youth at risk of gang violence. Like women, youth also face challenges accessing the land, credit and inputs needed to get involved in agriculture production.

[50] *Agro-Investment Corporation 2019. Investment Proposal for Goat*
[51] Ministry of Industry, Commerce, Agriculture and Fisheries. May 12, 2021. Annual Report. Kingston. https://www.moa.gov.jm/sites/default/files/pdfs/MOAF-Annual-Performance-Report2020_21-FinalMinisterbudgetspeechsigned.pdf
[52] Agriculture Business Information System, https://www.abis.gov.jm/
[53] *Agro-Investment Corporation 2019. Investment Proposal for Goat*
[54] FAO/EU/CIRAD 2022 op.cit.

In 2019, youth (aged 15-24) accounted for only 12 percent of Jamaica's employed workforce.[55] Many rural youth do not see agriculture as an attractive livelihood choice even when there are few other employment options available. There is a common perception among many rural youth that farming is too hard, too dirty and legacy of slavery, too risky, only for older people, and it takes too long to see returns. These negative attitudes and the lack of awareness of the potential economic benefits of agricultural production – even as a temporary career to something else – persist in excluding youth from the sector and keeping them in poverty.

The 2021 Jamaica Survey of Living Conditions (JSLC) found that while poverty rates increased for all age groups in the country, children and youth continued to have higher rates of poverty, and the margin of increase was larger among children than among the elderly. For children 0–17 years, the prevalence of poverty was 22.1 per cent and for the elderly, 60+ years, 13.9 per cent, registering increases of 8.8 percentage points and 4.5 percentage points, respectively. The main national agency that promotes youth in agriculture is the Jamaica 4-H, which is very aware that these negative attitudes exist and also aware of the barriers youth face even if they want to get into production.

Elderly

It is estimated that roughly 15% of the Jamaican population is 60 years old or more (10.8%[56] over 65) and that this population will double between 2025 and 2030[57] making it the fasted growing cohort[58] of the population. In Jamaica, women live longer than their male counterparts (leading to a "feminisation of the elderly"), and Jamaica presently shares this pattern with greater percentages of older females (51.9 percent in 2015) than males (48.1%). However, Jamaica's National Policy for Senior Citizens, suggests there are signs that this could be reversing although it is not clear why.[59] The rural-urban distribution of the elderly is an important factor of consideration for the ADAPT project. The Policy found that in 2012, 51.4 percent of the elderly reportedly resided in rural areas, down from 58.1% in 1995. There is a slight trend seeing rural elderly moving to the main urban centres if they can, but overall – there are still more elderly in rural arears.

The elderly play a vital role in many of their households. In 2012 – a study done by the Planning Institute of Jamaica (PIOJ),[60] found that among the 68.1 percent of households that reported having an elderly member, it was the elderly person who was actually the head of the household. Of these, 54.3 percent were headed by males and 45.7 percent were female headed.

Most elderly have a strong connection to the community where they live as most have lived in the same place for decades and they feel safe and comfortable there. Strong inter-generational relationships exist. Ashby (op.cit)) notes that just under 50% of elderly people are directly involved in caring for their grandchildren and approximately 20% help care for other elderly persons. Many of the elderly bring important assets to their households. Seventy-three percent own their own home and 80.0 percent paid for their food and bills making them functionally independent even though many have chronic illnesses. The main sources of income among the elderly are:

- Local family support (22.0%);
- Being self-employed (20.9%); and
- Receiving a pension.

[55] PIOJ – cited in FAO. 2019. FAOSTAT Country Profile- Jamaica. FAO, Rome
[56] STATIN and PIOJ. Jamaica Survey of Living Conditions (JSLC). 2023. PIOJ, Kingston.
[57] Ashby-Mitchell, Kimberley, et. al. April 2022. Aging and long-term care in Jamaica. Inter-American Development Bank. https://publications.iadb.org/en/aging-and-long-term-care-jamaica
[58] Ministry of Labour and Social Security. 2018. Green Paper: National Policy for Senior Citizens, 2018.https://opm.gov.jm/wp-content/uploads/2018/05/Green-Paper-National-Policy-for-Senior-Citizens-1-1.pdf
[59] Op.cit.
[60] Op.cit.

In rural areas, 30% of the elderly are pensioners. According to the Green Paper, unemployment among the elderly stood at 7.1 percent in 2012, while 43 percent of the elderly claimed to be retired, and 32 percent described themselves as self-employed. More elderly males (43%) than females (21.9%) reported to still be working. It is notable that more persons in rural areas (35.5%) than in urban areas (28%) reported they were still working, in many instances primarily because they still need to or wish to help their family members out.

The most common types of employment reported by the elderly were Elementary Occupation[61] (roughly 19%) and Skilled Agricultural Worker or Fisheries Worker (also at 19%). The most common employment type for females was elementary occupation (18.5%) while for males it was skilled agricultural or fisheries worker (29.9%). Almost 25% of those still employed are in the agricultural sector followed by construction (17.7%) and community service (15%). These findings show that gainful employment/occupation in agriculture is therefore still very important to rural elderly.

Woodsong's 1994[62] study found that agriculture played an important role in the life of many rural elders because farming in one form or another has always been part of their life even if their main occupation was something else. Rural households always have some type of production on the go (such as subsistence gardens or raising of chickens) regardless of what other type of income they may have. But because it may not be on a large scale, elder farmers are "invisible" to farm surveys and agricultural policy which fail to take into account their special abilities and needs. The same holds true today.

Nationally, the Green Paper asserts that the poverty rate among the elderly has been declining from 27.5% in 1995 to 19.9 percent in 2012. But in rural areas, poverty among the elderly is 21.3 percent. Overall, there are no significant gender differences with respect to males (20.6%) and females (18.2%). While 58 percent of the elderly population at the national level claimed to have enough to eat, in contrast, in rural areas – 47 percent reported that they only had adequate food sometimes (31%) or not at all (16%). The issues of food availability and adequacy are more of a concern for rural elderly.

It is noteworthy that more female elderly persons (55%) than males (42%) live alone. This can have implications for safety. These implications are outlined further in the document in the discussion of gender-based violence.

The Green Paper further found (in 2012) that 25 percent of the elderly had a disability showing a correlation between age and disability. The main categories of disability among the elderly included physical disability (29.5%), sight only (22.5%) and mental challenges (17.%).

The Green Paper's revised National Policy for Senior Citizens outlines six major policy goals and expected outcomes for enhancing the quality of life among the elderly and the ADAPT project is particularly aligned with goals 1 (Increased participation of seniors in all spheres of society) and 2 (improved income security), and 4 (improved independence). If ADAPT provides opportunities elderly involvement in food production this would be especially important to elderly females who live alone and who take care of children. Interventions that support and improve labour reducing backyard gardening (such as raised platform gardens), water harvesting for home gardens, shade/protected home gardening, bee keeping and improved livestock production (chickens, pigs and goats) would not only help to make rural elderly more financially independent and food secure, but it will also help reduce their family's burden and enhance overall household wellbeing.

[61] Such as cleaners, domestic workers, non-skilled day labourers

[62] Woodsong C. Old farmers, invisible farmers: Age and agriculture in Jamaica. J Cross Cult Gerontol. 1994 Jul;9(3):277-99. doi: 10.1007/BF00978215. PMID: 24390092.

Persons with Disabilities (PWD)

Persons with Disabilities (PWDs) are defined by the UN as all persons with disabilities including those who have long-term physical, mental, intellectual or sensory impairments which, in interaction with various attitudinal and environmental barriers, hinders their full and effective participation in society on an equal basis with others[63]. Globally, the World Health Organization (WHO) estimates that at least 15% of each society's population comprise PWDS; yet data from the Jamaica Survey of Living Conditions 2021[64] indicated a disability prevalence rate of 4.3 percent which was similar to the rate for 2019. It is not clear why there is this discrepancy. The Human Rights Research Centre reports that here are challenges getting actual data for this sector of the population.[65] The Jamaica Council for Persons with Disabilities (JCPD) currently has a current enrolment of approximately 39 000 persons who identify as having a disability across the island.

According to the 2021 JSLC, of the individuals who reported having a disability (defined as difficulty with seeing, hearing, walking, remembering, self-care and communication), there were no significant variations by region, poverty quintile, or sex.

However, by age group, disability among the elder (60+ years) was 16.5% in 2021 compared with children and younger adults who registered rates of 2.5 percent. The most common forms of disability reported in Jamaica were physical disabilities (31.1%), multiple disabilities (24.4%), sight disabilities (15.5%), and mental disabilities (15.2%). This is a major concern due to the lack of accessible infrastructure in the country, as well as the poor state of roads and public transportation, which may have significant impacts on those with physical disabilities. Majority of PWDs reside in rural areas (51.9%) where road infrastructure and access to health care are limited, followed by those residing in the Kingston Metropolitan Area (31.8%).

The highest level of education attained by the majority of PWDs was primary level education which is in stark contrast to persons without disabilities who mostly attain secondary level education. The low levels of educational achievement contribute to the pattern of PWDs being largely unemployed or underemployed. Employment estimates differ greatly and range between only one percent of PWDs and 15 percent. It is estimated that less than one percent of PWDs are employed underscoring the vulnerability of PWDs who are amongst the poor in society. It is not known how many PWDs may be involved in agriculture.

Efforts under the ADAPT project to include PWDs will need to take into account the challenges that PWDs face and identify agricultural technologies or forms of production that take into account their physical challenges. Small scale livestock production, bee keeping and raised platform gardening along with protected agriculture are likely entry points, as are processing and bringing value added to agricultural goods.

3.4.3 Access, control over land and land tenure

Most farmers obtain small plots through a tenure system based on kinship ties and many have no written proof of tenure .[66] Men tend to have greater access to ownership and use of land resources than women, as some 11% of female farmers own the land which they cultivate.[67] Securing land rights is particularly challenging for women and youth, who have indicated this

[63] https://www.un.org/esa/socdev/enable/faqs.htm#:~:text=The%20term%20persons%20with%20disabilities,in%20society%20on%20an%20equal

[64] JSCL op.cit.

[65] Coalwell, Autumn. 2024. Disability Rights in Jamaica: Analysis and Policy Brief. https://www.humanrightsresearch.org/post/disability-rights-in-jamaica-analysis-and-policy-brief

[66] *Bedasse. J. 2018. IICA: Assessment of the Vulnerability of Jamaica's Agricultural Sectgor to the Adverse Conseqeuneces of Server Weather Events.*

[67] *Bailey et. al. 2005. Gender Profile Jamaica, Centre of Gender & Development Studies, University of the West Indies.*

as a major barrier.[68] At a 2017 forum for example, sponsored by the World University Service of Canada (WUSC) Caribbean Sustainable Agriculture in the Caribbean (SAC) Project, women and young farmers claimed that men are usually given first preference to land while they remain sidelined. Nevertheless, improving access to agricultural lands by female and young farmers is a recognised priority of the ministry, with the Agro-Investment Corporation (AIC) seeking to allocate 20 per cent of government-owned lands to youth, including women (aged 17 to 35), for agribusiness projects.[69]

Farm tenure status

While Jamaican women have the legal right to hold title deeds, social stereotypes relating to gender limit women's access to land. As noted in Table 3 above, the Value for Women 2020 study (op.cit. page 22) estimated that only 30.2% of female agricultural producers own land in comparison to 69.8% of male producers. The issue of access to, and ownership over, land is further complicated by the fact that – as noted above many farmers – both male and female – claim to "own" their land when in fact it is often "family land" for which there is no actual property title and only kinship ties. This has implications for accessing credit and loans for which land titles are usually required as collateral.

Insecure land tenure also makes it less likely that farmers – both males and females – may be willing to invest in longer term, more structural climate smart farming methods such as agro-forestry or land husbandry stabilisation technologies that require permanent structures some of which the ADAPT project is considering implementing. It is important therefore that the land tenure situation of the potential beneficiaries is considered when activities are implemented. Youth are also constrained by the lack of access to arable land.

Farm size

When the IDB gender assessment was done for the development of the Protocol and Guidelines to Mainstream Gender in DRM/CCA IDB Consultancy in 2020, it noted that of the total number of farmers registered in the Agriculture Business Information System (ABIS) at that time, 45,616 are females operating on 72,693 hectares of land while 104,712 are males on 306,380 hectares of land clearly showing that farm size is also gender differentiated. More recent RADA data reveals that the average plot size cultivated by women farmers is 1.4 hectares in comparison to an average of 2.6 hectares[70] cultivated by male farmers. Data from the 2007 Agricultural Census published in 2010 found that most farms were relatively small, as per Table 5 below and while the 2007 Agricultural Census average size of farm data was not sex disaggregated, it also shows it confirms the relatively small holding size.

Table 4 Average size of Farm in Hectares (Ha) of ADAPT target Parishes in Jamaica. Source: Statistical Institute of Jamaica (STATIN). Census of Agriculture 2007 Preliminary Report. STATIN, Kingston.

Parish	Average Size of Farm in Ha (2007)
St. Ann	1.83
Trelawny	2.26
St. Elizabeth	0.87
Manchester	1.01
Clarendon	1.40
St. Catherine	1.65

The same was found in the ADAPT Jamaica survey as well. Although there were challenges getting respondents to report the size of their farm, but of those who did, majority of

[68] https://www.jamaicaobserver.com/2023/11/07/women-farmers-voice-concerns-over-unequal-access-in-agriculture/
[69] JAS honours 20 women in agriculture - Jamaica Observerhttps://www.jamaicaobserver.com/2022/06/11/jas-honours-20-women-in-agriculture/
[70] *1 hectare is 2.47105381 acres*

respondents, both male and female had farms under five acres with the smallest farm reported being a third of an acre. Only 10 respondents reported having a farm size of more than 10 acres. This is also in keeping with the findings of the E Co. online survey of Jamaica Network of Rural Women (JNRWP) members, which found that 50% of members farmed less than two acres while another 34% farmed under four acres of land. There is a very major reason why many holdings in Jamaica are small. The small subsistence farm size is understood as a direct holdover from Jamaica's slavery history, wherein slaves were allotted very small parcels of land – usually on the steepest slopes and with the poorest soils – to grow their own food and thus save plantation owners that expense.

Farm slope conditions

In Jamaica as a whole, much of the small-scale agriculture occurs on slopes as some 80% of the land surface is hilly or mountainous. About 50% of these lands have slopes at or exceeding 20% and are often in important watershed areas. This mode of small-scale production has its origin in the land inequalities stemming from Jamaica's colonial history[71]. These are often badly degraded and prone to flooding due to unsustainable cultivation practices such as "slash and burn" which causes deforestation. Resource poor farmers are those who farm on the most climate vulnerable tracts of land (such as steep slope sites, landslide prone areas), and are less likely to invest in longer-term and more sustainable and climate resilient coping strategies such as fruit tree crop production. They may also be more likely to employ unfriendly climate practices – such as slash and burn agriculture – because these are deemed to be less labour and cash intensive. So, they are more likely to contribute to carbon emissions while also being more vulnerable to climate impacts.

This situation applies to the potential beneficiaries under the ADAPT project. Most respondents (48%) in the ADAPT beneficiary survey reported that their farm had a fair slope while 47% claimed that their farm was either somewhat steep (30%) or very steep (17%). A greater percentage of females (29%) than males (16%) reported that their farm was level, but likewise, more females (24%) than males (18%) said their farm was either somewhat steep or very steep. The ADAPT project will need to identify climate smart technologies that are appropriate and affordable for the relative slope conditions.

Gender roles in smallholder agriculture

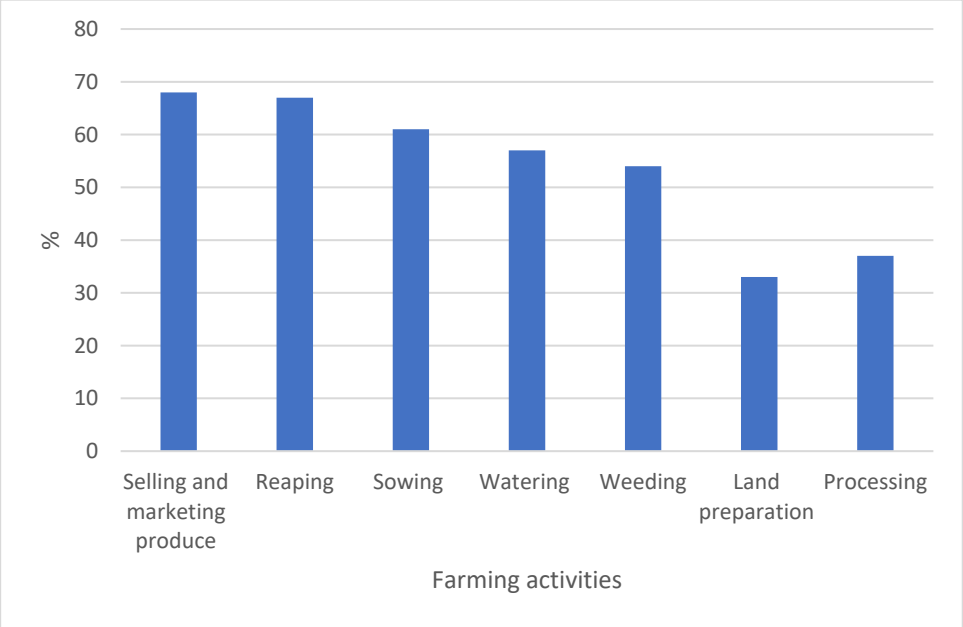
Both males and females are involved in the agriculture sector in Jamaica as farmers and labourers for various crops and livestock, making significant contributions to family income and economic well-being. Ishemo and Bushell[72] (2017), note that historically, and today – "women's role in agriculture is significant. Apart from maintaining the household, planting, weeding and harvesting of crops on their farms, women play a major role in marketing and selling of farm produce." However, there is limited disaggregated data on the roles of women in the food production system, but most are believed to be small farmers with significant involvement in the production, as well as marketing and processing of fresh food. It is often women's agricultural productivity often determines how much food is available to the family. This is because in the subsistence farming model under slavery, producers were allowed to sell whatever modest surplus produce they grew if they had any left over after providing for their themselves and their family's needs. As a result, Ishemo and Bushell (op.cit.) assert: *The reality is that all women farmers in Jamaica view farming as an extension of their domestic responsibilities. They concentrate mainly on subsistence production of food crops, and small-scale farming remains the main source of income for the majority of the rural women.*

[71] FAO. 2019. FAOSTAT Country Profile- Jamaica. FAO, Rome.

[72] Ishemo, Amani and Bushell, Brenda (2017) "Farming Cooperatives: Opportunities and Challenges for Women Farmers in Jamaica," Journal of International Women's Studies: Vol. 18: Iss. 4, Article 2. Available at: https://vc.bridgew.edu/jiws/vol18/iss4/2

In the ADAPT Survey, respondents had clear ideas about the roles that women play in the agricultural production process. Sixty-eight percent said that women were involved in selling and marketing the produce, while they also played important roles in reaping (67%), sowing (61%), watering (57%), and weeding (54%). Women were reportedly less involved in land preparation (33%) and processing (37%).

Figure 1 Perception of farm activities that women are engaged in - ADAPT survey.



Among other activities women participated in included livestock care, post harvesting handling, book and record keeping and spraying pesticides. However, when asked where women were more involved, 61% of respondents said that women were more involved in the processing marketing stage than in actual production (22%) however the majority of higglers are women (FAO/EU/CIRAD, op.cit).

Labour

Labour is a critical production input for all farmers in the ADAPT project and is often the most expensive, so the team wanted to gain some understanding of the types and sources of labour that were used. Discussion during the parish-level stakeholder workshops showed that the cost of day farm labour is high – roughly $JA 4000 per day (approximately USD25 per day per worker) plus food and drink.

During the ADAPT Survey, respondents could select all of the labour modes that applied to them and thus, with respect to who works on their farm, 57% of the respondents said they worked on their farm themselves, 66% reported they paid workers to work for them, 30% said their spouse assisted them, and 24% said their children worked on the farm. A higher percentage of female respondents (21%) than males (13%) said they paid workers, and a higher percentage of females (9%) than males (4%) reported that their children worked on their farms. Women farmers have to spend more for assistance – often for land preparation and other labour-intensive tasks for which they may not have the physical strength and they are more likely to encourage their family members to assist. Given these high labour costs and given that women are more likely to have to pay for farm labour, the ADAPT project should consider labour saving agricultural production technologies and farming methods for women in particular.

Types of production

The majority (60%) of respondents reported that mixed crop farming was their main type of agricultural livelihood, but other five percent reported "agricultural produce" as their main livelihood which would imply that crop production was the main livelihood for 65% of the respondents. However, another 39% reported "other" and in this category, a mixture of both crop production and livestock rearing was reported. Fifteen percent reported that livestock rearing was their main type of agricultural livelihood while six percent said bee farming was theirs. Higher percentages of females (33%) than males (24%) reported mixed cropping as their main agricultural livelihood and more females (10%) than males (4%) reported livestock production. More females were also involved in bee farming.

These findings indicate that the project should support and seek to strengthen mixed farming production that is already being practised and that potential beneficiaries may likely benefit from more than one type of intervention. In other words, livestock farmers will not only need to benefit from climate improved livestock activities under the project but will likely also need crop production interventions. Mixed production interventions are also more likely benefit women, youth and PWDs who need to diversify their risk by not relying on only one type of production.

Types of production in smallholder agriculture

The ADAPT beneficiary survey found that a wide variety of mixed crops were reported grown by the ADAPT respondents. Of these the main ones were yam, tomato, sweet pepper, cucumber, banana, plantain, pumpkin, melon and lettuce, but other crops included ginger, turmeric, okra, corn, cauliflower, sweet potato, pak choy, beet root, cassava, dasheen, coco, coffee, string bean, peas, peanut, sorrel, Irish potato, scallion, thyme, and hot peppers. Outside of banana and plantain, the tree crops mentioned included papaya, star fruit, pear (avocado), Otaheti apple, turmeric, mulberry, lemon, coconut, and cocoa but timber trees were also mentioned. Table 6 and 7 below provide an illustration of the type of crops and livestock in the ADAPT target Parishes and main farming activities. The Agricultural Census data dates to 2007 and is the latest data that could be obtained.

Table 5 Number of Farms by Main Activity for ADAPT-Jamaica target Parishes. Source: Statistical Institute of Jamaica (STATIN). 2007. Census of Agriculture 2007 Preliminary Report. STATIN, Kingston. Note: one farm can have multiple activities.

Parish	Total Farms	Main Activity							
		Export Crops	Other Crops	Cattle Rearing	Poultry Farming	Pig Farming	Goat and/or Sheep Rearing	Other Activity	Not Reported
St. Ann	20204	3102	13890	337	1136	674	851	37	214
Trelawny	10963	1388	7707	91	664	398	541	32	142
St. Elizabeth	34440	3249	21841	661	2637	2038	3700	101	213
Manchester	24190	2708	15652	273	2197	805	2026	65	464
Clarendon	32003	8225	9306	194	3238	1122	2618	64	7236
St. Catherine	23025	6848	9463	114	3340	1313	1701	73	173

Respondents in the ADAPT beneficiary survey mentioned rearing chickens, goats, pigs and bees – with chickens are the main type of livestock. No respondents mentioned rearing rabbits or cattle or being involved in fish farming which is somewhat in contrast to the 2007 census data. This could be since the 2007 data dates to 2007, and there have been subsequent changes in farming activities. The value chain report produced in conjunction with this report

collected data on different farming activities in the parishes. However, gender disaggregated data was not available.

Key Informant Interviews (KII)s with the Jamaica Pig Growers Association (JPGA) found that of its approximately 800 members, currently 131 pig farmers are in in Clarendon, 168 in Manchester, 46 in St. Ann, 169 in St. Catherine, 120 in St. Elizabeth, and 35 in Trelawny. Of the overall membership, 27.6% are women and 72.4% are male. Female membership is growing within the organisation and ADAPT should support the JPGA's capacity building and leadership development of its female members.

Key Informant Discussions with the All-Island Bee Farmers Association of Jamaica (AIBFA) representatives indicated that female, youth and person with disabilities (PWD) membership is growing substantially within the organisation. A AIBFA survey done in 2012,[73] found that of the 2508 apiaries, 1831 were owned by bee farmers of home 1439 (78.59%) were males, 260 (14.2%) were females, another 82(4.48%) were own by institutions and 50 (2.73%) for which ownership was not clearly identified. The AIBFA does collect sex-disaggregated data of its members, however the last survey was done in 2005. The organisation is planning to conduct another census within the next few years.

Unfortunately, the ADAPT survey did not capture this information as the number of bee farmers and their colonies has been growing in all the ADAPT project parishes, with perhaps the exception of St. Elizabeth. It is also noteworthy given the critical role that bees play in the pollination process and in climate change adaptation. Bee farming holds much promise for women with small children, farmers because they tendency to have limited land space and for including the elderly, youth and PWDs in bee farming activities. Apiaries can be established close to homes or in nearby fields with the permission of other farmers – so direct land ownership is not necessarily required which is major barrier for many women and youth. The KII discussion with AIBFA showed that this industry can change the lives of many vulnerable persons – including homeless persons, PWDs, ex-convicts, deportees and others. Indeed, the Farmers with Disabilities Beekeepers Association in Saint Lucia shows just what a difference bee keeping can make in the lives of PWDs and their careers. It's an important case study example to consider for ADAPT as well. The ADAPT project could consider implementing climate-resilient bee farming activities as a part of the suite of climate-resilient agriculture (CRA) activities to be considered, due to its opportunities it provides to women and other minority groups.

Youth role in agriculture

The role of youth in agriculture is primarily through the Jamaica 4-H Clubs whose mission to: "To empower youth in agriculture and related areas using adaptive technologies to create wealth while contributing to national development". The recent Rural Youth Economic Empowerment Programme (RYEEP) was an entrepreneurial training programme organised by the Jamaica 4-H Clubs in partnership with the HEART Trust/NTSA. It was designed to support 510 youth participants over a four-year period (2016-2021) through training in the areas of life skills, business development and management as well as best practices in agriculture. As such, it could serve as a platform for developing similar capacity building activities under the ADAPT project. The Jamaica 4-H has also been involved with EnGenDER and has created an "*Agvocate Council*" for the inclusion of youth voices in agricultural decision-making and as such it is a critical agency to help ADAPT not only reach its youth targets but also for achieving gender equity as it has a growing female membership as shown in the table below.

[73] https://hughsmithja.weebly.com/jamaica-beekeeping-industry.html

Table 6 Jamaica 4-H Membership Data by Parish by activity – Source Jamaica 4-H Headquarters, December 2023.

PARISHES	DATA						
	Age Range		Gender		TOTAL	Agriculture Activity	4-H Involvement
	5-18 years old	19- 35 years old	Male	Female			
St. Catherine	2799	1655	2383	2071	4454	Crop production, Fisheries,	Grafting, Circumposing and Potting, Fisheries,
St. Ann	5077	1047	2858	3266	6124	Livestock	Fisheries, Livestock, Crop Production
Clarendon	3317	788	1635	2470	4105	Aquaponic, hydroponic	Goat Care and mgmt, Rabbit Care and mgmt,
St. Elizabeth	4606	586	2245	2947	5192	Seed bed preparation	Apiculture, Poultry Care and mgmt,
Manchester	3825	1969	2543	3251	5794		Cattle Care and mgmt, Goat Care and mgmt
Trelawny	2866	187	1296	1757	3053		Home Economics, Staplewich, Table Setting, Cake making and decoration, Recitation, Public Speaking, Leadership, Entrepreneurship
TOTAL	22490	6232	12960	15762	28,722		

Water and irrigation assets for smallholder farmers

At a national level, the majority of smallholder farmers rely on rainwater to water their crops.[74] The FAO 2014 Feasibility Study of Rainwater Harvesting for Agriculture in the Caribbean Subregion estimates that two thirds of farmers, mostly those who farm on hillsides, would benefit from appropriate rainwater harvesting technologies as the lack of water greatly limits production. [75] The proportion of irrigated agriculture is approximately only 30 percent in agriculturally important parishes such as St. Thomas, St. Elizabeth, Trelawny and Westmoreland.[76] St. Elizabeth and Trelawny are two of the parishes included in the ADAPT project. It is not clear what the percentage of irrigation is outside of these four parishes, but it would be less than 30% for small scale farms.

Most respondents (72%) of the ADAPT survey likewise depend on rainfall alone to water their crops. Of these, 41% were female and 28% were males. Sixty-two percent of respondents did not irrigate their crops in any manner at all. A greater percentage of female respondents (36%) than males (24%) did not irrigate at all while 23% of females and 14% of males said they did do some type of irrigation.

As is noted in the FAO 2014 Feasibility Study (op.cit.), rainwater harvesting for small and micro farmers is not new to the subregion as a whole and many small farmers try to innovate on their own and experiment with simple, homemade harvesting and irrigation systems. The same was found in the ADAPT survey. Among those respondents who did irrigate in some fashion or another, 29% reported using tanks and another 22% reported harvesting rainwater in some way such as barrels, cement tanks and buckets. Six percent reported using river water.

[74] L. Fulton. (Rural Agricultural Development Authority 2010) . Drought Conditions and Management Strategies in Jamaica
[75] FAO. 2014. Feasibility Study of Rainwater Harvesting for Agriculture in the Caribbean Subregion. FAO, Rome. https://openknowledge.fao.org/server/api/core/bitstreams/2344a513-3963-4ff1-8ca7-a69ef4c28f85/content
[76] Bedasse, Janet. 2018. Assessment of the vulnerability of Jamaica's agricultural sector to the adverse consequences of severe weather events / Inter-American Institute for Cooperation on Agriculture. IICA, Kingston.

In the ADAPT study, a greater percentage of females (25%) than males (10%) reported using tanks and a greater percentage of females (19%) than males (7%) reported using some type of rainwater harvesting method as described above (tanks, barrels, buckets). More females than males reported using some other type of method, but roughly similar small percentages of both females (4.26%) and males (3.88%) claimed to use river water.

A couple of respondents in the ADAPT survey indicated that they had installed some type of canal irrigation system on their lands, while three indicated they pump water from a spring or pond or river near their far, while five indicated that they physically carry water from these sources and water their crops manually. The actual carrying of water is not common, however, as it is in some other countries where it is considered part of women's domestic duties. Others have tank-based water harvesting systems with hoses and drip irrigation.

Among those respondents who said that they do irrigate in some way, the majority (20%) indicated they buy truck water from the National Water Commission (NWC) which is very expensive (between JMD 12,000.00 (approximately USD 77) and JMD 17,000 (USD 109.00) for 4,000 gallons). As a result, buying water is not a common nor widely affordable practice.

In recognition of this serious need, between January and April 2024 – which has been one of the driest periods recorded, the National Irrigation Commission (NIC) reported trucking more than nine million gallons of water to 900 farmers[77] in the country's main agricultural areas. In 2019, the Ministry of Agriculture and Fisheries[78] trucked approximately 276,000 gallons of water to 136 farmers who had experienced threats or damage to crops because of drought conditions. Additionally, some 500 water tanks were distributed to farmers across the island to farms in key production areas. In 2019, the Ministry reported awarded a contract for the distribution of 2,000 ¼ acre irrigation kits covering 500 acres of land and refurbished ten catchment ponds to support greenhouse production in Manchester, St. Elizabeth and St. Ann. The efforts pursued by the Ministry mainly focus on the above methods, but without more affordable and appropriate water harvesting solutions, trucking water will remain one of the only options. This emphasises the importance of the ADAPT project to design and implement rainwater harvesting solutions. The types of rainwater harvesting technologies explored in FAO's 2014 Feasibility Study (op.cit) include:

- Building mini dams on seasonal waterways to store rainwater
- Road-cross dam for interception of runoff
- Series dams on same river-course
- Rainwater harvesting from the natural slope
- Rainwater harvesting from artificial slopes
- Rainwater harvesting from various types of rooftops.
- Mini roof rainwater harvesting for vegetable production

In its 2021 Technology Action Plan (TAP) the Government of Jamaica has prioritised the use of Sub-canopy Sprinkler and Drip Irrigation for Crop Farmers. The TAP study thus identifies additional rainwater harvesting technologies which may be more affordable and appropriate for women and youth. These are some systems which should be explored under the ADAPT project but in consultation with potential women and youth beneficiaries.

Reasons for not irrigating

[77] https://www.stabroeknews.com/2024/04/12/business/nine-million-gallons-of-water-trucked-to-jamaica-farmers-as-drought-intensifies-holness/#:~:text=A%20Wednesday%20April%2010%20Jamaica%20Observer%20report%20has,hundred%20farmers%20in%20various%20parts%20of%20the%20country.

[78] Ministry of Industry, Commerce, Agriculture and Fisheries. May 12, 2021. Annual Report. Kingston. https://www.moa.gov.jm/sites/default/files/pdfs/MOAF-Annual-Performance-Report2020_21-FinalMinisterbudgetspeechsigned.pdf

The main reason (46%) of respondents said they did not irrigate because they could not afford to, while another 16% said there was no source of water at all, or the distance was too far (14%). Ten percent claimed other reasons kept them from irrigating and five percent did not know why they did not, and the remainder did not respond. The main other reasons given were that the slope of the farm would not facilitate gravity fed irrigation, the tank and catchment needing repair, not needing to because they were growing mainly drought resistant crops, but the main reason was the cost of the equipment. This is in keeping with the findings of other sources and supports the rationale for the ADAPT project to address water access and to find affordable, appropriate water harvesting and irrigation technologies that will benefit all farmers, but especially women, youth and the elderly who have less access to financial capital, land and labour.

Greenhouse production and protected agriculture

Protected agriculture (PA) (otherwise known as greenhouse farming) is a form of production that is really growing throughout the island, particularly within the last 10 years, and holds much potential for female and young farmers. Moulton (2017:6)[79] quotes a member of the Jamaica Agricultural Society (JAS) as saying, the days of the "dirty shirt, tear up trousers" type of farmer are gone. The popular view of greenhouse farming Moulton suggests is that it is "sexy and desirable, particularly for young people who are hooked on technology."

A variety of different types of shade houses are used (some with galvanized metal frames covered with plastic", others are made of wood with shade cloth. While there are green houses throughout the country, St. Ann, St. Elizabeth, St. Mary and Manchester (op.cit. page 7) and these are assisted with irrigation water pumping systems that allow for year-round production. Farmers attribute the success of PA production not only to the enclosed protected structure technology, but also due to the availability of water. They are two sides of the same production coin, so to speak. PA without irrigation is far less likely to be successful.

Although greenhouse production can reduce the cost of labour, time and food loss associated with production – and thus hold benefits for female and young farmers, Moutlon (op.cit. 8) reports that most greenhouses (80.7 percent) are operated by individual farmers of whom 82 percent are males. Farmer groups, including faith-based organisations and cooperatives operate another 12 percent of the registered greenhouses, while 7.3 percent are registered to research or educational institutions. This gender imbalance clearly shows that more is needed to allow women and young farmers to benefit from PA.

Access to farm inputs and supplies

Most respondents in the ADAPT beneficiary survey (83% of the 329 respondents) obtained their inputs (seeds, fertilizer, feed) from a farm store while another 11% said they saved and shared seeds or potato slips with other farmers. A few (4%) make their own compost for fertiliser and nine percent obtain their inputs from other sources. Among the "other" sources indicated, obtaining inputs from RADA or the JAS was mentioned most often and obtaining food waste from restaurants to feed pigs was also mentioned. There were no considerable gender differences among respondents with respect to where they obtained their inputs.

Access to markets & value chain considerations

[79] Moutton, Alex A. 2017. Agrarian Change and the Development of the Greenhouse farming sector in Jamaica. Caribbean Geography.
https://www.researchgate.net/publication/358432512_Agrarian_change_and_the_development_of_the_greenhouse_farming_sector_in_Jamaica

In the ADAPT survey of potential farmer beneficiaries, the main markets supplied were higglers[80] (74%), neighbours (28%), local shops (19%) or others (20%). With respect to how they market their produce, most respondents (74%) sell only to higglers at the farm gate. Another 25% hire transport and sell at one farmers' market or another, while another 16% sold their produce in other ways. There were no real gender differences in this regard.

Some farmers sell directly to restaurants or butchers. Some to family, friends, and neighbours. For those farmers who take their produce to market themselves, some go quite far out of their own parish to Coronation market in Kingston while others from Clarendon and Trelawny sell at Brownstown market in St. Ann. Some also reported selling to hotels. Among those who marketed their produce themselves, some went to Coronation market (Kingston), Brownstown, Linstead, Santa Cruz, May Pen – schools, restaurants, direct orders, exports (1 person), and hotels.

Consultation related to the Value Chain (VC) study that were done for ADAPT found that women play the following roles in the value chain:

- As farmers: Owner/lessee of agricultural land and engaged in the cultivation of crops, raising of livestock, or production of agricultural products.
- As farm workers: Employed to undertake planting, weeding, harvesting activities, post-harvest activities such as sorting, cleaning, and packaging sweet potatoes for transportation to markets or processing facilities.
- As aggregators/distributors: Purchasing, packaging, transporting and selling commodities to buyers in various market segments, mainly municipal markets.
- As small agro-processors: Owners of small enterprises involved in the processing of agricultural products into higher value-added roots and tuber, condiment and fruit - based products for commercial purposes.
- As workers in medium-large agro-processing establishments: Operating processing equipment, and managing production processes
- As food caterers/chefs: Purchasing produce and preparing meals for immediate consumption
- As exporters: Owners of fresh produce export companies, employing persons to grade, pack and transport produce to ports of exit and performing administrative duties.
- As workers in export operations: Cleaning, selecting, grading, packing produce, and labelling containers for export markets
- As extension agents: Providing training and capacity-building initiatives to enhance the skills and knowledge of smallholder crop and livestock farmers, agribusinesses, and other value chain actors in areas such as agricultural best practices, post-harvest handling, quality control, and financial management. Women as extension agents can ensuring that training programs are gender-responsive and address the specific needs of women by facilitate market linkages and access to market information for female smallholder farmers and women entrepreneurs. They can also strengthen women-led farmer groups, and producer organizations in value chain coordination mechanisms and foster partnerships with private sector actors, retailers, exporters, and other market players to create market opportunities for women small-scale producers.
- As researchers: Working in research institutions, universities, and agricultural organizations to advance knowledge and technology in cultivation, pest management, and post-harvest handling, value added product development, animal health care.
- As policy planners: Working within GOJ Ministries and conducting research, data analysis and policy assessments to identify gender-responsive policies related to land tenure, access to credit, extension services, and social protection. Ensuring that

[80] A higgler is a person who generally buys directly from the farmer and then moves around to sell their goods/produce at a higher price in farmer markets. But they are not large sellers. They are in a sense petty traders. Purveyors on the other hand are much larger business operators on a commercial scale.

national development strategies and investment plans prioritize women's and youth's economic empowerment and inclusion in agricultural value chains.
- Advocacy leaders: Participating in women agricultural networks that support women's empowerment, gender equality, and access to resources and opportunities with commodity value chains.

The VC survey found that most higglers in Jamaica were women. Despite their role across the chain of production, findings from separate qualitative investigations with additional players in the value chain system found that:

- Most of the large farmers who did not have barriers to entry in the value chain were male;
- Input suppliers (seeds, fertilizers, feed, etc.) were predominantly male;
- There was mixed sex representation in the finance sector, but this sample size was small;
- Exporters were predominantly male;
- Purveyors (as distinct from higglers - persons who market produce to supermarkets, hotels, etc.) are predominantly male;
- Agro-processors were mixed. The larger ones were predominantly male with the exception of the Glastonbury Potato Farm;
- Males know much more about the value chain than do females.

As a result, while women and youth are clearly active along all the value chain activities, they play a minor role relative to males. The Value Chain (VC) survey also found that there are three main barriers and constraints faced by small farmers (including women and youth) when doing business with larger public and private buyers namely: Unequal bargaining power, quality, standards and volume compliance, infrastructure challenges. However, the Value Chain report does suggest that there are some areas/roles within the value chain which have the most potential for women and youth. It suggests that the best opportunities for women and youth producers lie with the sweet potato, pumpkin, pineapple, and hot pepper value chains whereas the best employment opportunities for women and youth are as farm workers, food caterers/chefs, extension agents, researchers, policy planners and advocacy actors.

Cost of getting goods to the market

The cost of transporting produce to market varied among respondents. For those who sold directly to higglers (a person who generally buys directly at the farm gate from the farmer and then moves around to sell their goods/produce at a higher price in farmer markets), no transportation costs were incurred. But for those who reported taking their produce to market themselves, the cost of transportation varied between JMD 3,000 (USD 19) to 20,000 (USD 127) per trip based on the distance. The cost of toll road charges was considered for those who sold in Kingston.

Main market challenges

The main challenges in getting produce to market included bad road conditions (64%), high cost of transportation (57%) while another 12% said an unwillingness to work as a group to sell in quantities to attract better prices was an issue. Among "other" challenges, respondents mentioned having gluts of produce at specific times which reduced the price the farmers could receive, lack of proper market linkages, high supply chain costs, high levels of competition and

having to be CAP[81] certified, and sometimes quality of the produce is not good enough. One female respondent also mentioned sexual harassment and gender-based violence experienced in some markets and that market infrastructure – in particular bathrooms – were not safe and secure.

3.4.4 Access to credit, financial services, insurance, and business opportunities

Insurance

Many Jamaican households, especially the poorest, do not have home or property insurance. When the Pilot Programme for Climate Resilience (PPCR) conducted its island-wide climate change Knowledge, Attitude and Behavioural Practice (KAP) study[82] for instance, only 14.7% of respondents indicated they had home insurance.

The 2020 Community Disaster Risk Reduction Fund (CDRRF) KAP Survey is much more illustrative of the rural context as only 6% of respondents stated that they had home insurance in that study, 86% saying that they did not have home insurance and 8% were unsure. The lower percentage in the CDRRF KAP study was expected as it was done with rural communities in the Peckham area of Clarendon with relatively high levels of poverty, while the PPCR national survey captured respondents in more urban areas with higher incomes.

The ADAPT survey did not ask respondents about home or farm insurance per se, but several respondents did indicate that if they could afford to do so, they would buy farm and home insurance and disaster insurance.

Access to credit / loan

Rural women in Jamaica have difficulty obtaining loans. The lack of access to and control of productive assets makes women ill-equipped to face the challenge of transition from subsistence to commercial agriculture and over implementing climate-resilience measures.

The ADAPT survey asked potential beneficiaries about their access to credit. Seventy-four percent of the ADAPT respondents claimed they did not have access to credit or financing while 19% said they did. Another eight were not sure or did not know. The same was true for female and male respondents.

The ADAPT survey did not ask respondents if they knew where or how to get credit or not. However, the CDRRF KAP sheds some light on this among farmers in Clarendon. In that study very few persons (17%) knew where to obtain credit for climate resilience, with 70% of those who did so mentioning a commercial bank.

Likewise, in the CDRRF KAP, more than 60% also did not know of the Jamaican National Small Business Loan (JNSBL) offered through the Jamaican National Bank (JNBank) for climate change and disaster mitigation investments. In the CDRRF KAP, 83% of respondents said they did not know where they could get credit specifically for climate change activities. Of the 17% who said they did know where credit could be obtained, the majority (60%) identified commercial banks as a source, followed by the People's Cooperative Bank (PCB) or a Credit Union and Victoria Mutual Building Society (VMBS). There was no mention of the Jamaica

[81] Certification of Agricultural Produce (CAP) Programme. The CAP programme is designed to certifiy local agricultural produce based on the farmer's use of required Good Agricultural Practices (GAP), safety, quality and environmental standards and guidelines. http://www.ncbj.org.jm/certification-agricultural-produce-programme

[82] Caribbean Institute of Media and Communication (CARIMAC), UWI. 2012. Report on Climate Change Knowledge, Attitude and Behavioural Practice Survey for the Jamaica Pilot Programme for Climate Resilience (PPCR), Planning Institute of Jamaica (PIOJ), Kingston, Jamaica.

National Small Business Loan, which is a Line of Credit being administered through the Jamaica National Bank under the Adaptation Fund Project provides an affordable line of credit available to small business operators.

The practice of applying for and accessing loans for farming is not widespread. The ADAPT Jamaica survey found that 77% of respondents said they had never taken out a loan or accessed credit to invest in their farm production while 18% said they had done so, and five percent were not sure. This finding is similar to the Jamaica Network of Rural Women Producers (JNRWP) online survey results, where 80% of respondents reported that they had never tried to get a bank loan or credit. A greater percentage of females (47%) than males (27%) in the ADAPT survey said they had not applied for credit.

Given that several respondents in the ADAPT survey suggested that they were not implementing certain climate change adaptation practices, even if they knew about them, because they could not afford them or get access to credit, understanding the obstacles to obtaining credit is very important.

From among the respondents who provided reasons why they had not taken a loan out before, the main reason given was that the interest rate was too high and that they did not want to be in debt, as illustrated in the table below. More females than males reported these reasons. But a number also stated that their farm would not make enough money for them to be able to pay back the loan. Other reasons were that they did not think farm loans were available, they would not qualify or that they did not have land title or some type of collateral. Others noted that loans had to be repaid on a regular basis, but farming did not bring in regular income.

Table 7 Reasons for not accessing credit/loans. Source: ADAPT Jamaica survey.

Reason	Female	Male	Gender Not Given	Total
Interest rate too high	13	5	2	20
Don't want debt	15	3		18
Crop won't cover interest – doesn't make sense	12	1		13
Don't need to. Not interested.	9	2		11
Can't afford to pay it back	6	3		9
Would not qualify	4	4		8
Need land title	3	3	1	7
It's too risky	4	3		7
To tedious/difficult to apply	5	1		6
No farm loans are available	2	2	1	5
Income is not regular	3	1		4
Age is a factor		1		1

Some countries have had success upscaling informal saving systems, so the ADAPT survey wanted to find out if potential beneficiaries were involved in any type of informal saving scheme such as the Jamaican "partner system", but the majority (67%) said they did not. Only 24% said that they did so, and nine percent were either unsure or did not respond. This suggests that the partner system does not hold promise for upscaling under ADAPT. However, more females than males in the ADAPT survey indicated that they did participate in such an informal system. For those who did, 16% said their partner consisted of mostly females while 15% said there were equal numbers of males and females and only 4 percent said mostly males.

Access to business opportunities

In Jamaica, woman-led businesses tend to be smaller, concentrated in less profitable sectors, and hire more women employees than man-led businesses. Businesses led by men have, on

average, 16.9 employees while businesses led by women have, on average, 13.2 employees (World Bank 2023, op.cit.). Also, the share of businesses with no employees is higher among women than men business owners. Women tend to hire more female employees, on average. In fact, 71.5 percent of employees in woman-led businesses are women, in contrast to 46.5 percent in man led businesses.

In the ADAPT beneficiary survey, most of the respondents (both men and women) reported having other sources of income some of which were small, informal business related, such as keeping a shop, seamstress work, cook shop, and so forth.

There are many challenges that all women in Jamaica face to becoming successful entrepreneurs such as those that pertain to their respective gender roles and responsibilities, social norms, childcare, and the lack of an enabling environment that supports their need to balance work and family caregiving responsibilities which are even more acute in rural areas. Women also have limited access to affordable and gender-sensitive financial and non-financial services; markets and technology; and limited time to participate in business networks and training. This was confirmed in the ADAPT beneficiary study as is noted above.

Access to communication assets, WiFi, and digital services and technology

According to the 2021 Jamaica Survey of Living Conditions (JSLC)[83] mobile phone penetration decreased from 111% to 102% and tele-density from 125.5/100 population in 2019 to 117.2/100 population in 2020. The number of mobile phone users in 2020 was 2,873,259 – down 7.9% from the previous year.

Even though this may be the case, the ADAPT survey found quite a high percentage of mobile phone – and in particular smartphone users – among the respondents. Eighty-nine percent of respondents reporting having a smart phone that could take videos and photos. Fifty-two percent of females indicated that they did so in comparison to 33% of male respondents. Indeed, in one of the stakeholder engagement surveys, farmers with smart phones showed how they utilised the Meteorological Service of Jamaica's (MSJ) weather app to get the weather information they needed for production. Clearly then, this is a technology that holds much merit for ADAPT.
The majority (63%) of respondents reported not having a computer or laptop in the household. Only 36% of respondents indicated that they did so. Sixty-two percent of all respondents said they had reliable WiFi service at home, with a greater percentage of females (34%) as compared to males (25%) saying they did so. A higher percentage of female respondents (38%) than males (22%) indicated that they had a laptop or computer at home.

There is limited technical capacity among small farmers to adapt to climate change. Studies noted that women are more receptive to new technologies that could increase their productivity and resiliency. Women are more likely to attend training sessions to upskill or learn a new technology. Male farmers' technical capacity may be improved by reaching them more easily through other measures, such as demonstration plots. Farmers within the project area however, benefit from traditions and emerging technical knowledge, as well as a network of public and private extension service providers available to support adaptation.

[83] PIOJ and STATIN. 2021. Jamaica Survey of Living Conditions. STATIN, Kingston.

4. Climate change vulnerability, perceptions, and considerations

Regarding vulnerability to climate risks, women in particular face challenges in recovering from shock as they have smaller asset holdings than men, must often balance traditional household roles and duties with farming activities, and have limited access to information, finance, and technology. Not only do women and men acquire and act on climate risk information differently but the livelihoods of vulnerable women are often at a higher risk of being negatively impacted due to disparities.

Current understandings/perceptions of climate change impacts

The ADAPT project stresses the importance of enhancing awareness about climate change among beneficiaries, and about climate resilient production methods. As a result, the gender assessment sought to understand how potential beneficiaries understand climate change and its impacts.

The secondary data, however, regarding levels of awareness with respect to climate change and its impacts is varied. Some evidence from some of the Knowledge, Awareness and Practices (KAP) studies that were done suggests that there are gender differences in perceptions and views. For example, a study by a researcher from the University of the West Indies (UWI) showed that a greater percentage of male respondents were more aware about climate change compared to their female counterparts; 79% and 52% respectively. Another 2016 KAP also found that more awareness of climate change in general is needed for all age groups and genders. These findings are in keeping with the baseline KAP Study that was done for the Pilot Programme for Climate Resilience (PPCR) in 2012.

Other studies have suggested that there is now relatively high awareness about climate change in general, even among rural audiences. Findings from a more recent KAP study that was done among farmers in the Peckham area of Clarendon are more likely to be illustrative of real climate change awareness levels among small farmers in inner Jamaica. For example, in the 2020 CDRRF KAP that was done in Clarendon, it was found that nearly all respondents (94%) claimed to have heard of climate change with small differences between men and women (94.7% among men, 92.8% among women), among age groups (100% - 30 and under; 95% - 31 -59; 85% - 60 and over), or educational level (100% - Masters and Higher; 89% - secondary; 83% - primary).

Likewise, 87.5% of households with persons with disabilities have heard of climate change. This compares with 84% of respondents in the 2012 PPCR National Survey.

Concern about climate change

The level of concern about climate change was high among respondents in the CDRRF KAP with 77% very concerned about climate change and another 13% moderately concerned, compared with 49.5% very concerned and 32% moderately concerned in the 2012 KAP National Survey. There was a high level of concern among women, men, and all age groups. Seventy-one per cent of men and 62% of women were very concerned. Among age groups, 81% of those 30 and under, 77% of those 31 to 59 and 78% of those 60 and over were very concerned.

In the ADAPT study, the main ways that respondents noted climate change impacting their livestock production included increased pests and diseases (42%), not having enough water for the animals (41%), and heat stroke (39%). The main climate change impacts that respondents reported affecting their crop production included heat waves (40%), sometimes too much rainfall (37%), having to change when they plant (28%), increased drought (26%), increased pests (25%) and having to change the types of crops grown (24%). As a result, they

note that plants do not grow the way they should, and that farming is becoming increasingly expensive.

In terms of things that respondents noticed have impacted their livelihoods and personal lives, many similar responses were given. Several respondents said that farming was becoming far too expensive, they'd had to change the hours they go out work (in the early morning when it is not as hot or later in the evening – when it was dark, although that posed security risks). Others said they had to work harder but with fewer results. These findings are in sync with those of the 2019 CDRRF KAP as well.

Among the members of the JNRWP who participated in the on-line survey, 76% of those respondents mentioned that drought was the most important climate change impact and as a result, there was significant loss of crops and spoilage.

Awareness of climate-resilient farming practices

The ADAPT survey did not drill down to identify all of the possible climate smart farming practices that potential beneficiaries are currently using but focused more on irrigation as noted earlier. However, the CDRRF 2020 KAP done in the Peckham area of Clarendon does shed light on what some of these practices are and if there are gender differences with respect to their implementation as shown in Table 9. These findings illustrate that overall, women are less likely to be aware of sustainable farming practices compared to men.

Table 8 Awareness of Climate Smart Farming Practices by Sex (% of respondents) (Source: CDRRF 2020 KAP of the Peckham Farming Community in Clarendon)

Practice	Male	Female
Knowing your Soil type	31.3%	23.1%
Use of an A-Frame	12.5%	12.8%
Proper Setting of contours	37.5%	15.4%
Strip Cropping	39.1%	25.6%
Alley Cropping	43.8%	35.9%
Grass Barriers	51.6%	33.3%
Pineapple Barriers	40.6%	41.0%
Organic trash barriers	37.5%	25.6%
Bench Terraces	23.4%	15.4%
Individual Basins	23.4%	25.6%
Diversion Ditches	57.8%	35.9%
Raised Beds	35.9%	23.1%
Check Dams	23.4%	17.9%
Retaining walls	40.6%	17.9%
Agroforestry	64.1%	56.4%
Reforestation	67.2%	59.0%
Mulching	70.3%	64.1%
Cover Cropping	68.8%	48.7%
Minimum Tillage	45.3%	17.9%
Composting	60.9%	48.7%
Drought Tolerant Crops	60.9%	51.3%
Wind Tolerant Crops	71.9%	51.3%
Creating Fire Breaks	37.5%	23.1%
Establishing Wind Breaks	12.5%	7.7%
Triangular Bracing for Bananas	39.1%	25.6%
Protected Agriculture (Shade Houses)	26.6%	23.1%
Rain Water Harvesting	26.6%	23.1%
Drip Irrigation	20.3%	12.8%
Raised poultry houses	43.8%	64.1%
Raised goat houses	45.3%	41.0%

Practice	Male	Female
Aqua-Culture	45.3%	41.0%
Aquaponics	7.8%	10.3%

In terms of which of the above practices Peckham farmers were actually implementing, the CDRRF 2020 KAP found that large proportions (94%) particularly of male farmers reported actually planting wind tolerant crops, 89% planting cover crops and 88% planting drought tolerant crops. On average, a smaller proportion of women claimed to utilize these practices.

Perceptions of who is most impacted by climate change

Respondents in the ADAPT Survey had low awareness of whether climate change impacted women, school children, persons with disabilities (PWDs) and youth more than other persons. Forty-six percent felt they were more impacted, but 39% did not know or were unsure and 15% said they did not think so. There did not seem to be any statistically significant gender difference in respondents' views in this regard. The main reasons given were that the heat due to climate change affected these people more, and their lack of finances also meant they had fewer resources to counter climate impacts. These were the two main reasons cited.

Respondents in the CDRRF KAP, on the other hand, identified older persons as those most at risk when emergencies and disasters occur, followed to a lesser extent by persons with disabilities and children. A higher proportion of women than men thought that persons with disability were more vulnerable, while a greater proportion of men though that children were more vulnerable, but this may be because women saw protecting children as their responsibility so did not consider them vulnerable. Interestingly, among households with persons with disabilities, 75% thought older people were most vulnerable while only 17% listed persons with disabilities.

Table 9 Who in the community is most vulnerable to climate change disasters by sex (Source: CDRRF 2020 KAP study of Peckham Community)

Response		Sex		
		Male	Female	Total
Older Persons	Count	26	18	44
	%	47.3%	45.0%	46.3%
Disabled Persons	Count	11	11	22
	%	20.0%	27.5%	23.2%
Children	Count	12	6	18
	%	21.8%	15.0%	18.9%
Pregnant Women	Count	3	2	5
	%	5.5%	5.0%	5.3%
Single Mothers	Count	1	0	1
	%	1.8%	0.0%	1.1%
Men	Count	1	1	2
	%	1.8%	2.5%	2.1%
Youth	Count	0	2	2
	%	0.0%	5.0%	2.1%
Other	Count	1	0	1
	%	1.8%	0.0%	1.1%
Total	Count	55	40	95
	%	100%	100%	100%

Adaptive measures and coping strategies

In the face of climate change, households adapt as best they can. Some of these coping measures may be positive and innovative practices that should be supported, strengthened and even scaled-up, but others may be negative or even harmful. Building resilience usually involves strengthening those coping strategies that are positive and identifying contingency measures for those that are negative. For this reason, the GA sought to understand what some of the most common coping strategies were among the potential beneficiaries of the ADAPT project, if these were similar or different to those found in other studies, and also what – if any – gender differences there might be. For each type of hazard identified, respondents were asked how they coped and were also asked if they could identify different coping strategies.

In the ADAPT survey, it was found that to cope or adapt, some respondents indicated they had to cut back on the number of paid labourers they used, were planting different crops, changing their planting times and seasons, mulching or other took other steps. Only five percent said they were doing nothing. Others said they were raising a few chickens or cutting back on production. Others indicated that they plant only when the rain comes. Some were getting out of farming altogether.

Similar responses were given for both male and female respondents. Resorting to buying water was a common coping practice that was reported as was placing animals in shadier areas.

Forty-four percent of respondents reported that they had been investing in more water harvesting and storage tank systems, 22% were trying to improve the shelter for their livestock, and 18% trying to put in irrigation systems. But 17% were not doing anything and nine percent were taking other steps. Both males and females reported these responses with insignificant differences.

The results also showed a select few were taking innovative approaches to dealing with water scarcity. This included the construction of a small pond to conserve water, covering their crops with netting to protect them, and hydroponics.

Respondents were asked to also provide information on some of the more negative coping practices that they have had to resort to at times to cope with climate change impacts. The main negative practice (55%) reported was having to dip into their savings. Another 35% reported having to borrow money and go into debt while another 26% indicated that they had had to find other or additional employment. Sixteen percent said they had had to sell key assets and another 11% relied more on remittances. In some cases (5%), respondents indicated that they had had to take their children out of school or send their children away (three percent). Fourteen percent claimed having to resort to other types of measures that they would rather not have to do. There were not statistically significant gender differences in these responses except for having to get more employment – a greater percentage of females (11%) than males (five percent) reported having to do so.

These findings are in keeping with the World Bank Group 2023 study which found that:

Jamaicans, particularly women, rely on loans and gifts from family, including remittances from abroad, during emergencies. A national survey of remittance recipients conducted by the Bank of Jamaica in 2010 found that out of 2072 remittance recipients interviewed, 75 percent were women and 25 percent men. Most of the interviewees were single (60 percent), 34 percent were married or lived with a partner, and 6 percent were in the "other" category, including divorcees and widows (Ramocan 2010, cited in World Bank Group 2023 report).

Relying on social protection and assistance programs were not mentioned. Another measure mentioned was moving out of the area or migrating out of the country altogether. The World Bank Group 2023 report specifically notes that, *"…women in rural areas have more limited*

access to formal work, land ownership and finance, which makes their livelihoods particularly insecure in the face of climate related events. The degradation of rural livelihoods due to natural hazards has been a key driver of rural-to-urban migration. Those women who manage to migrate may find it more challenging to find jobs and adequate housing in urban areas and face unsafe conditions and limited social support" (ECLAC, 2021 cited in World Bank Group 2023 report).

4.1 Gender-based violence

Secondary sources, and in particular the UN Women 2016 Women's Health Survey reports that one in every four Jamaican women (25%) has experienced physical violence from a male partner, while almost half (47%) of never-partnered women have been subject to controlling behaviours.

The higher level of education women has, the less likely they are to experience intimate partner physical violence (IPV). Physical violence appears to be more severe among women with no education or only primary schooling, and among those with vocational education. Women who started living with their partner at a younger age (early cohabiters) are more likely to experience IPV, as well as women who have been pregnant (30% compared with 14% among women who have not been pregnant). Young women between 15 and 24 years old are more vulnerable to sexual violence.

The UN Women report notes that GBV poses significant economic costs—not only due to increased health and social system demands, but also because of productivity losses among survivors and their families. Even though there has been no local estimation on the cost of GBV in the country, The World Bank estimates that violence against women costs countries on average around 1.2-3.7% of GDP.

The sexual abuse of girls is a pervasive challenge in Jamaica. In most cases, the perpetrators of violence against girls were persons known to the victims (friends, parents, or siblings). Around 14% of respondents had their first sexual experience before the age of 15, which constitutes statutory rape since the legal age of consent is 16. Among women who reported first having intercourse at an age below 15, almost one-third (32.8 percent) reported that this experience was forced (STATIN, 2016, cited in UN Women, 2016).

Persons with disabilities (PWDs) and the elderly are also subject to abuse and violence – including GBV. The National Policy for Senior Citizens (op.cit) Research indicates that older persons in Jamaica are disproportionately susceptible to violence, particularly because of stigma, negative cultural beliefs and ignorance. They are at increased risk of becoming victims of physical, sexual, psychological, and emotional abuse, neglect, financial exploitation and chronic poverty. Moreover, older women may be particularly more exposed to these than men. According to the ESSJ (2015) 383 persons in the 65+ age groups were victims of serious crimes in 2015, where 256 (67.0 per cent) were men and 127 (33.0 per cent) were women. The gender breakdown is like what obtains for all victims of major crimes, where males accounted for 62.0 per cent and women for 38.0 per cent. Furthermore, violent crimes and abuse against older persons occur as frequently in their own homes as outside the home by strangers which is alarming. Wilson-Scott's report (op.cit.) likewise notes that PWDs are more likely to suffer abuse of various kinds, include at the hand of their caregivers.

In contrast to the national statistics about GBV, in the ADAPT Jamaica survey, 56% of respondents said there had not been any instances of GBV in their community. Another 32% said they did not know and 12% said yes, they were aware of some instances. The data do not show statistically significant sex differences in this regard based on the sex distribution of the respondents overall.

Another 43% did not know if GBV was increasing or not in their community, while 22% did not think so, and a small percentage (6%) said they did think so. There was also no statistically significant gender difference in these perceptions. Another 65% of respondents overall did not know if the project activities would likely contribute to GBV or not, while 26% said no, and nine percent yes, perhaps. Again, there were no statistically significant differences in this regard. There were divided opinions among those who commented, however. Some said men would be jealous or intimated of women's success while others said empowering women is better for everyone. These findings not only contradict the national statistics about GBV but also contradict the findings of a recent study on GBV that is being conducted by the JNRWP among its own members.

Preliminary findings suggest that GBV is indeed quite widespread, but persons do not want to talk about it (or do not identify GBV as such) and there are reasons why. Survivors of GBV in Jamaica often face stigma and rejection from their community and family. Although most women reported telling someone of their abuse, almost two-thirds (63%) of the survivors did not seek help, and those who did, turned to the police (32%) or to the health care system (12%). Cases are often not pursued because of the high financial and time costs involved in pressing charges and taking a case to court.

Cultural beliefs and GBV

Strong, traditional beliefs about masculinity are key drivers of GBV in Jamaica.[84] Traditional views of masculinity and femininity are deeply entrenched in Jamaican society with over 70% of women agreeing that men are 'natural' household heads, and almost one-third (31%) stating that violence between a man and a woman was a private matter (UN Women, 2016).

The UN Women report (2016) also suggests that some of these views may be changing, slowly. Women do not believe that men were entitled to beat women if they act contrary to gendered expectations. Women almost universally believe that men and women should share authority in the home, and that women should be free to spend their earnings as they wish. Taken together, this data suggests that while some traditional beliefs are still widely held, some of these views may be changing. Over 90% of respondents reported believe that women should spend their own money and share authority with the men in the household. Although this indicates the prevalence of liberal views on gender norms, it coexists with around a 70% of the population indicating that a wife should always obey her husband and is obligated to have sex with him. Also, more than 30% of respondents believe that women should take care of the house and family, and that it is natural for men to be the heads of the household. Gender norms interfere with the types of jobs that women can or cannot do, as there is a clear social expectation that they will be the main caregivers for their families.

Jamaican women from low-income and rural backgrounds are more prone to expressing traditional beliefs with regards to the roles of women and men in society. More than one-third of women in rural areas (36%) believed that a woman should always obey her husband, compared with 20% of urban women.

Although violence against women in Jamaica is not generally condoned, rural, and less educated women hold more traditional views around gender-based violence. There are varying levels of belief regarding the need to tolerate violence to keep the family together. Around 8% of rural women and 18% of women with primary education, compared with 4 percent of urban women and 4% of those with tertiary education. Close to one-fifth of rural women and those with primary education believe that rape is usually the result of the victim's careless behaviour. In contrast, women who earned their own income were less likely to justify violence against women by their male partners (UN Women, 2016).

[84] https://caribbean.unwomen.org/en/materials/publications/2018/6/womens-health-survey-2016-jamaica

4.2 Gender-related needs identified through stakeholder engagement

This section describes some gender related needs that the project could consider that were identified through different stakeholder meetings throughout the stakeholder engagement process:

- Hire a Gender Officer to the ADAPT Jamaica PMU/project-specific gender specialist(s) to complement the human resource and financial resource shortfalls in RADA and other partner agencies to promote gender equity within the project activities.
- Support the Bureau of Gender Affairs (BGA) and the certified gender equity focal points within RADA and the MoAF to do gender responsive budgeting and reporting.
- Explore participatory and beneficiary inclusive M&E tools and technologies to enhance sex disaggregated data throughout the project.
- Identify, promote labour saving technologies for land preparation and harvesting inclusive a gender equitable user and maintenance methodology. This is particularly important for farmers with disabilities and given the fact that many of the farmers in the project parishes are older and even likely to be elderly
- Explore the feasibility of gender equitable protected agricultural production.
- Explore options for climate resilient honey production (inclusive of raw sugar production as bee feed) and expand and integrate bee farming and honey production in each of the project areas but ensure gender equity and inclusion of PWDs and other disadvantaged groups including the elderly. The AIBFA has a proven track record working with these groups.
- The findings confirm the high priority that was placed in the CN to improve water availability in the project and to extend sustainable irrigation systems throughout. Reduce the barriers to implementation of irrigation systems, particularly for vulnerable groups.
- Expand climate resilient livestock production among select beneficiaries that includes climate proof housing and feed systems.
- Development of gender responsive mixed media learning modalities for all training, learning and public awareness to be conducted.
- Develop and implement a Gender Responsive Communication for Development (C4D) strategy that also uses Participatory Video (PV) approaches and as well as gender responsive strategy for using smart phone technology for learning and M&E. Integrate gender responsive C4D and PV modalities in all Farmer Field School (FFS) and Climate Smart (CS) learning. Likewise ensure that literacy levels are taken into account given the experiences that was encountered executing the ADAP Survey during the parish level workshops. Participatory video methods can reduce the need for “reading” in most cases.
- Ensure that a quota of the poorest farmers benefit through the project particularly those that may be currently on the poverty threshold.
- Ensure that any wages to be paid to beneficiaries through the project are fair and gender equitable.
- Gender stereotypes in the production process need to be challenged. Both genders need to be shown in any materials and resources to be developed and used for education and training in order to challenge traditional views.
- Education and awareness are needed to inform beneficiaries of the advantages of formalizing their land tenure situation and assistance provided to make it easier and less complicated for them to do so, particularly for women
- Work with financial institutions and insurers to provide creative, affordable insurance, credit and financing opportunities for farmers is very much needed – but with different payment terms and schedules that reduce the risk to farmers.

- Find creative solutions to link farmers directly to customers/consumers perhaps through the creation of digital linkages such as PRProduce App[85] used in Puerto Rico and or promote further use of/expand the public and private digital agricultural trading platforms such as the Agri-Linkage Exchange (ALEX), AgroCentral, Farmlinkr, and OEXONE as identified in the Value Chain report. The Rural Agricultural Development Authority (RADA) manages ALEX which is funded by the Tourism Product Development Company (TPDCo). Digital trading platforms such as ALEX will facilitate greater inclusion of smallholder farmers (particularly women and youths) and connectivity between them and purveyors who are struggling to satisfy the food needs of Jamaica's growing tourism sector.
- Identify opportunities and facilities for local processing or cold storage and implement same.
- Improve key feeder road conditions and identify affordable transportation options need to be provided.
- Support gender responsive and equitable leadership and capacity building training among community groups and link to parish and national leadership networks and goals under the NPGE and the Jamaica National Gender and Climate Change Strategy and Action Plan.
- Support the BGA's effort to integrate mechanisms to deal with GBV instances in project activities and support the development and implementation of a Protection from Sexual Exploitation and Abuse (PSEA) protocol. The development of a PSEA protocol should be done within the first year of the project. An example table of contents or template for a PSEA protocol is included in Annex B of the GAAP.
- Explore opportunities to expand bee farming among the elderly, women with small children, PWDs and youth as bee farming does not require substantial land space but can be very lucrative for these vulnerable groups and bees also assist with pollination which is critical for climate change resilience.
- Support the Jamaica 4H in its various ongoing activities to engage rural youth in agriculture and the promotion of "farming as a business" and as an attractive and viable career path especially given the fact that youth unemployment is high in rural areas
- Promote gender equity at all points throughout the value chain and enhance the role of both women and youth in the value chain

[85] https://www.greenbiz.com/article/puerto-rican-farm-fork-app-creating-sustainable-food-system-island

5. Gender-responsive project inputs

5.1 ADAPT Jamaica and gender

The aim of the ADAPT project is to increase agricultural output and reduce food loss, bolster rural livelihoods, and ensure food security in the intervention parishes in Central Jamaica, through encouraging the uptake and investment in the planning, practices, and technologies to make food systems climate resilient.

To ensure that the ADAPT-Jamaica project effectively identifies and addresses the needs and concerns of all vulnerable populations, including women, throughout the project's life cycle, a systematic and comprehensive gender assessment of the overall project's gender-related vulnerabilities and capacities for change is outlined in the table below. The vulnerabilities have been informed by the Gender Assessment.

Table 10 ADAPT Jamaica Gender-Specific Vulnerabilities and Capacities for Change by GCF Result Area

GCF Result Area	Vulnerabilities	Capacities for Change
Most vulnerable people and communities	As small-scale farming is one of the main sources of income for most rural women in Jamaica, their livelihoods are extremely vulnerable to climate change impacts. Women and children, unemployed youth, the elderly and PWDs are at increased risks for a variety of impacts resulting from climate change, including those pertaining to health, education, water, and food security.	Ensure that women and youth (as well as PWDs) are represented in project activities and in any research or assessments. Include disaggregation and affirmative action for women in most vulnerable communities (within the target population). Ensure project activities improve the operationalization of policies on the local level and to address gender-specific vulnerabilities. Ensure that communications channels are tailored to women's unique needs (and those of PWDs, youth, and the elderly) use of various modalities. Gender assessments used at the local level prior to releasing grant funding for project investments
Health and well-being, and food and water security	Women experience increased exposure to water, food insecurity, natural disasters, and health risks. Increased frequency of droughts and floods require women to devote more time for freshwater acquisition, as women are most often having primary responsibility for water, sanitation, and hygiene (WASH) activities in Jamaica, particularly in rural areas. Women and elderly are at increased risk for health-related complications resulting from climate change, including water-borne diseases, and health-related complications after natural disasters.	Gender assessments used at the local level prior to releasing grant funding for project investments. Gender considerations embedded in policies and institutional frameworks and gender indicators generated for the policies and programmes.
Infrastructure and built environment	Lack of investments and expenditure towards critical public infrastructure – particularly in health and education – has an acute impact on women and often impacts women before men.	Ensure that funding is allocated to women with a role in the design and maintenance of infrastructure and built environment. PWDs should also have a role in infrastructure design. A gender specialist should oversee this

GCF Result Area	Vulnerabilities	Capacities for Change
	Critical infrastructure to women's livelihoods, are also experiencing unprecedented wear and tear due to climate change, putting women, the elderly and PWDs at risk. Women have more limited access to secure spaces in the event of a disaster.	work to ensure gender responsive investment. Develop and implement gender responsive methodologies that will allow women and other vulnerable groups to participate in decision making Gender assessments used at the local level prior to releasing grant funding for project investments. Gender considerations embedded in policies and institutional frameworks.
Ecosystem and ecosystem services	Forest ecosystems and agriculture are among the sectors that contribute greatly to livelihoods opportunities for women. The sectors are experiencing the acute effects of climate change, faster than other sectors.	Ensure that funding is allocated to women with a role in the design of community-led ecosystem adaptation interventions. A gender specialist should oversee this work to ensure gender responsive investment. Gender assessments used at the local level prior to releasing grant funding for project investments. Gender considerations embedded in policies and institutional frameworks.

Given that the project will include a range of activities and investment options within the project (e.g., CRA and FLW technologies, water harvesting, information services etc), it is unfeasible to evaluate the specific environmental risks associated with potential investments. Each potential investment and activity will undergo a thorough, multi-stage Environmental and Social (E&S) screening process. This process mandates interested investees to formulate mitigation plans for any potential E&S risks and devise tailored monitoring plans for individual cases.

Therefore, the table below offers a summary of the overall gender-specific risks at the project level that can be anticipated at this preliminary stage. The table below includes an indicative list of potential risks along with some general mitigation strategies.

Table 11 Gender-Specific risks and mitigation strategies by project outcome

ADAPT Project Outcome	Gender-Specific Risks	Mitigation Measures
Outcome 1. Reduced vulnerability of farmers to climate change	Low participation of women, youth, youth women and elderly in farmer-field schools (FSS) and other capacity-building exercises, workshops, seminars, etc. Low participation of men in trainings (training track records show that women and youth oftentimes are the ones who can make it to the trainings while men are in the field) Gendered communications channels are not identified, and gender-specific messaging excludes and alienates women, youth and elderly from participating in the project	Design of capacity building activities to be at least gender sensitive and inclusive taking into account the needs of youth, women and elderly people, if not gender responsive. Tailored capacity building and training will be offered to women specifically, with timings considered to engage as many women as possible. If female participants are uncomfortable speaking in front of men, then female-only meetings will be held and established. Set specific sex-disaggregated targets for participation in trainings and activities, informed by the Results-

ADAPT Project Outcome	Gender-Specific Risks	Mitigation Measures
	activities e.g., FFS, demonstration farms, trainings. Gender-specific climate vulnerabilities and risks are not identified and incorporated into design of activities. The investments made by the project do not actively target or subsequently benefit or empower women, youth women, youth or elderly (e.g., Climate Resilient Agriculture (CRA) and Food Loss and Waste (FLW) infrastructure and technology, water harvesting) Adaptation investments will have a negative impact on women, youth or elderly by exacerbating inequalities pertaining to access to resources, visibility, and perhaps (though it is low-risk) gender-based violence (GBV) and SEAH. Adaptation investments will have a negative impact on women, youth or elderly by exacerbating inequalities pertaining to access to resources, visibility, and perhaps (though it is low-risk) gender-based violence (GBV) and SEAH.	Framework. To be monitored on a continuous basis (e.g., for Annual Performance Review for GCF) using gender-responsive indicators. Targeted training and capacity building for all key staff and stakeholders on Sexual Exploitation, Abuse and Harassment (SEAH) and gender-related risks by the Gender Equity and Social Safety (GESS) officer. Gendered nature of communication channels will be identified, and modalities of reaching women specifically will be prioritised. If there is deemed to be a tangible risk, trainings / FFS / demonstration farms will be separated by sex to ensure the safety and comfort of all participants. The design of trainings / FFS / demonstration farms will be gender responsive. In addition, the project will endeavour to develop a multitude of provisions to ensure that SEAH has actively been targeted and addressed before it becomes an issue. The project will implement the codes of conduct and SEAH protocols of Jamaica's FAO country office. The Grievance Redress Mechanism (GRM) will also be consistently advertised through a variety of modalities to ensure that all relevant stakeholders are aware of it and are able to access it (i.e. through posters and QR codes). Finally, SEAH-specific trainings and awareness sessions will be conducted on all relevant levels. Design gender-responsive investment programs that explicitly prioritize marginalized groups, including women, youth, and the elderly, by offering tailored access to resources such as credit, land,

ADAPT Project Outcome	Gender-Specific Risks	Mitigation Measures
		and climate-resilient technologies. Allocate funding to initiatives that directly target underrepresented groups to reduce structural inequalities. Zero Tolerance Policies: Enforce strict policies against GBV and SEAH within all adaptation projects, with clear reporting and accountability mechanisms. Conduct gender-responsive training for project implementers and community members to prevent GBV and SEAH and create a culture of safety. Establish confidential and accessible channels for reporting incidents of GBV and SEAH, ensuring appropriate follow-up and support for survivors. Work with local organizations to develop community-based protections, such as watchdog groups or resource hubs for at-risk individuals.
Outcome 2. Enhanced resilience of agricultural production systems to climate change through improved climate information services and early warning systems	Low participation of women, youth women, youth, and elderly in trainings and other capacity-building exercises, workshops, seminars, etc (e.g., related to climate information for the agriculture sector)	Design and implement gender-responsive activities and ensure sex-disaggregated targets.
Outcome 3. Improved enabling environment for climate-resilient agriculture	Unequal access to resources Knowledge and training gaps Disproportionate labour burdens	Ensure women have equal access to land, credit, seeds, and inputs through gender-responsive policies developed with the support of a gender expert. Develop gender-responsive financial products (e.g., microloans or group lending models), based on a gender diagnosis developed by a gender specialist. Provide gender-responsive tailored training programs accessible to women (e.g.,

ADAPT Project Outcome	Gender-Specific Risks	Mitigation Measures
		flexible scheduling and localized delivery). Generate a gender-responsive extension program and employ women extension agents to facilitate knowledge transfer. Introduce gender-responsive labour-saving technologies and practices that reduce time and physical effort. Promote co-responsibility in relation to care and generate agreements with local childcare programs or develop community-based childcare or other support systems to ease women's workloads.

5.2 Gender mainstreaming

ADAPT Jamaica is structured around three complementary components that create a holistic intervention framework for building climate resilience in Jamaica's agricultural sector. The project structure not only addresses systemic vulnerabilities but also provides an opportunity to increase resilience following the devastating impacts of Hurricane Beryl to the agricultural sector, ensuring that recovery efforts contribute to long-term resilience.

A key pillar of ADAPT Jamaica's approach is the integration of gender mainstreaming across all project components. By recognizing the unique challenges faced by women in agriculture and their vital role in building climate resilience, the initiative ensures that women are included in decision-making processes and have equitable access to resources, training, and technologies. This focus on gender not only empowers women but also enhances the overall effectiveness and sustainability of climate adaptation efforts.

Component 1 focuses on transformative change at the farm level through practical demonstrations, knowledge transfer, and upscaling the uptake of CRA and FLW practices and technologies. By establishing model farms as learning centres, building capacity through farmer field schools, and providing targeted support for implementing CRA and FLW reduction technologies, this component creates a clear pathway from demonstration to widespread adoption.

Component 2 builds on the demonstration and capacity building of the previous component to adoption of low-cost CRA and FLW reduction packages for the most vulnerable smallholder farmers.

Component 3 strengthens the critical information infrastructure needed to support climate-informed agricultural decision-making. This component modernises, expands, and assists with the recovery from Hurricane Beryl of Jamaica's agrometeorological network, while simultaneously developing tailored information products and multi-channel dissemination systems that ensure climate information reaches farmers in an actionable and timely manner.

Component 4 ensures the sustainability and scalability of CRA and FLW practices and technologies by creating a supportive ecosystem for investment in climate resilience. Through

a combination of policy interventions, establishing a dedicated credit line for climate-resilient agriculture, and public-private partnerships, this component establishes the institutional frameworks and market conditions necessary for continued investment in climate-resilient agriculture.

5.2.1 Outcomes 1 and 2

Outcome 1: Enhanced knowledge and demonstration of climate-resilient agricultural practices and technologies and Outcome 2: Outcome 2: Adoption of CRA and FLW reduction interventions

Reducing the vulnerability of farmers to climate change necessitates a strong focus on inclusivity and gender sensitivity, particularly in capacity-building efforts. Women, youth, and the elderly often face unique barriers to participation in activities such as farmer-field schools (FFS), workshops, and trainings. To address these disparities, capacity-building activities must be tailored to ensure accessibility and comfort for these groups. For instance, offering women-specific training sessions and establishing female-only meetings when needed can create safe spaces that encourage active participation. Sex-disaggregated targets for participation should be set, continuously monitored, and integrated into the project's Results Framework to ensure equitable outcomes.

Gender-responsive communication channels are critical to ensuring that marginalised groups are not excluded from project activities. Gender-responsive communication and outreach strategies should be prioritised, using culturally appropriate and accessible formats to engage women, youth, and the elderly effectively. If risks related to safety or cultural norms are identified, gender-separated trainings and activities may be implemented to create an environment that fosters comfort and security for all participants. Moreover, all stakeholders and staff should receive targeted training on Sexual Exploitation, Abuse, and Harassment (SEAH) and other gender-related risks, led by a dedicated Gender Equity and Social Safety (GESS) officer. These efforts will ensure that communication and project delivery are aligned with the needs of diverse groups.

To mitigate SEAH risks, robust safeguards must be implemented across all project levels. The country office SEAH protocol, should be implemented. The project must advertise the Grievance Redress Mechanism (GRM) widely, using diverse modalities such as posters and QR codes to ensure accessibility for all stakeholders. Additionally, SEAH-specific awareness sessions should be conducted to create a culture of vigilance and accountability. By integrating these measures into project design, the initiative can foster a more inclusive environment that empowers marginalized groups to actively participate in and benefit from climate-resilient agricultural practices.

5.2.2 Outcome 3

Outcome 2: Enhanced resilience of agricultural production systems to climate change through improved climate information services and early warning systems

Enhancing the resilience of agricultural production systems to climate change necessitates inclusive and equitable investments that actively target, and benefit marginalised groups, including women, youth, and the elderly. These groups often encounter systemic barriers to accessing resources such as credit, land, and climate-resilient technologies, which adaptation projects should explicitly address. Gender-responsive investment programmes incorporating the intersectional approach[86] can prioritise the unique needs of these groups, ensuring they

[86] https://openknowledge.fao.org/server/api/core/bitstreams/253d8f7e-afea-4c4c-8865-4edd567cd619/content

gain equitable access to training, infrastructure, and early warning systems that enhance climate resilience.

Adaptation investments risk exacerbating existing inequalities if they fail to incorporate participatory approaches and targeted measures. To mitigate this, projects must allocate specific funding to initiatives that reduce structural disparities, such as programmes promoting women-led, gender-responsive climate-resilient agriculture and technology adoption. Enforcing zero-tolerance policies for gender-based violence (GBV) and sexual exploitation, abuse, and harassment (SEAH) is equally vital. These policies should include confidential reporting mechanisms, community awareness campaigns, and mandatory training for project staff and implementers to foster a culture of safety and inclusivity.

Finally, gender-responsive and intersectionality approaches must be central to project design and implementation. Women, youth, and the elderly should have active roles in shaping, monitoring, and evaluating project activities. This ensures that interventions align with their needs and priorities, such as climate information services and food loss reduction initiatives. Collaborative efforts with local organisations can amplify these voices and provide additional layers of support, such as community-based protection hubs and watchdog groups. By embedding these strategies into project frameworks, agricultural production systems can become more resilient while addressing inequalities and empowering marginalised groups.

5.2.3 Outcome 4

Outcome 4. Improved enabling environment for climate-resilient agriculture

This requires adopting a gender-responsive approach and addressing structural inequalities that hinder the participation and empowerment of women. Unequal access to resources such as land, credit, seeds, and inputs remains a significant barrier to women's ability to adopt climate-resilient practices. To overcome this inequities, inclusive policies must be developed to ensure equitable access, alongside gender-sensitive financial products like microloans or group lending schemes that cater specifically to women’s needs. These measures not only empower women economically but also enhance their capacity to contribute to and benefit from climate-resilient agriculture initiatives.

Bridging knowledge and training gaps is essential for fostering equitable participation. Tailored training programmes should be designed to accommodate women’s unique circumstances, incorporating flexible scheduling and localised delivery to maximise accessibility. Employing women extension agents can facilitate knowledge transfer by creating relatable and supportive learning environments. This approach helps ensure that women are equipped with the necessary skills and information to adopt climate-resilient practices effectively, thereby improving agricultural productivity and sustainability.

Addressing disproportionate labour burdens is equally critical for creating an enabling environment. Women in agriculture often face significant workloads that limit their capacity to engage in training or implement new practices. Introducing labour-saving technologies and practices can significantly reduce the time and physical effort required for agricultural activities, which requires gender-responsive mechanization and agricultural services. Additionally, promoting community-based childcare and other support systems can ease the dual burden of agricultural and domestic responsibilities. By alleviating these barriers, women can more fully participate in and benefit from climate-resilient agriculture, contributing to stronger, more inclusive agricultural systems.

5.3 Sexual Exploitation, Abuse, and Harassment (SEAH)

ADAPT-Jamaica project staff and consultants will closely engage with the target communities during the provision of technical assistance and training. This interaction may place them in a position of relative power regarding the distribution of program inputs, which could increase the risk of SEAH breaches. Furthermore, community members might not be aware of the SEAH policies that project employees and contractors are obligated to follow, or the available grievance redress mechanisms (GRMs). However, the project will adopt and disseminate the country office SEAH protocol.

Since the risk of SEAH is considered low due to the project's robust policies and monitoring frameworks, the Gender Equity and Social Inclusion (GESI) specialist will ensure that all communities are informed about the GRM systems outlined in this annex. This system has been designed with multiple levels to be survivor-centric and responsive to the unique and specific needs and risks for women. Throughout all levels and steps of the GRM process, confidentiality and respondent protection will have the utmost priority. In line with this approach, the following principles will be systematically applied through all steps and actions:

The rights, needs, and wishes of the survivor (or victim) is the foremost priority of everyone involved with the project. The survivor has a right to:

- be treated with dignity and respect instead of being exposed to victim-blaming attitudes.
- choose the course of action in dealing with the violence instead of feeling powerless.
- privacy and confidentiality instead of exposure.
- non-discrimination instead of discrimination based on gender, age, race/ethnicity, ability, sexual orientation, HIV status or any other characteristic.
- receive comprehensive information to help her or him make their own decision instead of being told what to do.

The safety of the survivor shall always be ensured. Potential risks to the survivor will be identified and action take to ensure the survivor's safety and to prevent further harm including ensuring that the alleged perpetrator does not have contact with the survivor. If the survivor is an employee of the Project, reasonable adjustments may be made to the survivor's work schedule and work environment to ensure their safety.

- All actions should reflect the choices of the survivor.
- All information related to the case must be kept confidential and identities protected. Only those who have a role in the response to an allegation should receive case-level information, and then only for a clearly stated purpose and with the survivor's consent. This applies to any documentation, or reports related to the case. Identities will not be revealed unless explicit written consent is provided by the survivor.
- The survivor must provide informed consent to progress with each stage of the complaints process. Survivors may withdraw their consent at any time during the process.

Outside of potential discrimination against women, the project will integrate SEAH training to all affiliated staff, contractors, training consultants, and model farmers. Also, it will include specific SEAH zero-tolerance procurement mechanisms across all project contracts and SEAH awareness raising modules targeted to beneficiary communities across all project outcomes. This will include information about potential SEAH risks, the project's Code of Conduct, available GRM, as well as specific SEAH prevention and attention.

A project/program Code of Conduct prohibiting SEAH (amongst other behaviours) will be developed. This should be signed by all workers at the same time the work contract is signed. The Code of Conduct must be made available in languages the workers understand. The PMU of the project will also appoint a focal person to ensure compliance with SEAH requirements. This will include; (i) Tracking whether reporting mechanisms are being used – looking at where

reports are coming from/not coming from, and seeking to identify patterns; (ii) Asking workers and community members if they are aware of and trust reporting mechanisms, understand their rights and what constitutes SEAH; (iii) Checking whether workers demonstrate knowledge and understanding of the policy and code of conduct – and can locate them; (iv) Checking whether community members have knowledge of what behaviours to expect from project/program workers and which are prohibited; and (v) Checking mitigation measures are consistently being implemented – e.g., undertake spot checks to see if contracts include clauses, use basic records to track whether SEAH training is being delivered, check reporting mechanisms are functioning, use monitoring visits to check whether awareness-raising materials are clearly visible and awareness-raising exercises are being delivered and engaged with.

The AE will also require a completed SEAH Risk Screening checklist (following best practice, i.e. as per page 17 of the GCF SEAH Assessment Guidelines).[87]

[87] https://www.greenclimate.fund/sites/default/files/document/gcf-SEAH-risk-assessment-tool.pdf

6. Gender Action Plan (GAP)

The entirety of the proposed project has been designed to deliver gender-responsive activities that prioritise women's empowerment, leading to the direct integration of the proposed gender action plan into the project's Theory of Change (ToC) and Logical Framework. The table below emphasises the alignment between the project activities.

The Gender Action Plan (GAP) forms the basis for operationalising the results and recommendations of the gender assessment presented in the above sections. It contains specific gender-responsive elements that have been integrated into the overall project design and lays out activities to undertake during the implementation of project to maximise the development impact and co-benefits of the GCF investment.

The GAP is aligned to the outputs of the project's logical framework and activities. This does present certain gender-related risks and the project has initiated mitigation of these by conducting the Gender Assessment and developing the Action Plan. Please note that individual investments (e.g., climate resilient agriculture, food waste loss and water harvesting technologies) will require to be gender sensitive.

Gender Impact Statement: The ADAPT Jamaica project seeks to implement gender-responsive climate-resilient best practices, technologies, and innovations in a holistic way with an integrated value-chain approach in central Jamaica. In doing so, ADAPT Jamaica will lead to improved agricultural output, incomes and food security while reducing food loss which will contribute to improving the resilience and adaptive capacity of women and girls, and other vulnerable groups, particularly in relation to health, wellbeing, food and water security, infrastructure, and ecosystems-related services within the agriculture sector.

Table 12 ADAPT Jamaica Gender Action Plan

Activities	Sub-Activities	Indicator(s)	Target(s)	Timeline	Responsibilities	Budget (USD)[88]
Across Outcomes Activities						
Project's governance	A full-time Gender Equity and Social Inclusion (GESI) specialist with relevant experience in gender mainstreaming will be hired by FAO as a full-time consultant across Components. The specialist will occasionally participate in PSC as technical advisor. The project's Steering Committee will include Ministerial Gender Focal Points as standing PSC to ensure gender expertise and women's representation in decision making bodies of the project.	a) Number of GESI specialist hired for the project's activities b) Number of Gender Focal Points including as part of the PSC. c) Percentage of women participants in the PSC	a) 1 b) At least 2 standing occasional members	**Y1-6**	**FAO**	**GESI Specialist Budget: USD 462,000**

[88] Not GAP-specific, but taken from full-time GESI specialist as detailed in Annex 4.

Activities	Sub-Activities	Indicator(s)	Target(s)	Timeline	Responsibilities	Budget (USD)[88]
SEAH prevention and mitigation	A Code of Conduct including specifically the prohibition of SEAH is designed, socialized with all project related stakeholders (affiliated staff, contractors, training consultants, model farmers) and implemented across activities. SEAH-specific trainings for internal team and project affiliated staff, (contractors, training consultants, model farmers) will be developed, including the project's Code of Conduct, SEAH prevention and attention protocols, and project's GRM. Trainings will include time for mapping support services for survivors in remote locations. All project-related procurement mechanisms will include a SEAH zero-	A) # of project's code of conduct for the project staff and beneficiaries designed, socialized, and implemented across activities. b) # of SEAH specific training for project staff c) Percentage of project procurement instruments that integrate zero-tolerance SEAH clauses. d) # of GRM in place and socialized e) % of project-related trainings and capacity-building activities that include SEAH awareness raising module and materials	a) 1 b) 1 annually c) 100% d) 1 e) 100%	**Y1-6**	PMU (GESI specialist responsible for SEAH prevention and mitigation) Procurement: FAO	**GESI Specialist Budget: USD 462,000** **Budget for workshops and trainings that include the mainstreaming of GESI, ESS, and SEAH prevention: USD 368,000** **Budget for GRM-related monitoring: 60,000**

Activities	Sub-Activities	Indicator(s)	Target(s)	Timeline	Responsibilities	Budget (USD)[88]
	tolerance clause in accordance with the project's Code of Conduct and FAO's policy. A project's GRM is in place and socialized with all project relevant stakeholders, including specific channels for SEAH attention SEAH awareness raising modules will be included in training modules within each of the project's Component. The full-time GESI specialist will also act as the SEAH prevention focal point, and will be hired to design the project's Code of Conduct, oversee the GRM, and be responsible for SEAH awareness raising across all relevant trainings and workshops.					
Output 1.1: Model farms established to serve as farmer field schools to increase knowledge and capacity on CRA FLW-reduction interventions						

Activities	Sub-Activities	Indicator(s)	Target(s)	Timeline	Responsibilities	Budget (USD)[88]
Activity 1.1.1: Establish model farms to demonstrate interventions on CRA, FLW-reduction, and hurricane preparedness and response	Sub-activity 1.1.1.1: Launch a gender-sensitive application process for the establishment of model farms to serve as FFS.	a) Gender-sensitive diagnosis and baseline including considerations for PWD, youth and elderly developed for the project b) Percentage of FFS methodologies developed that are inclusive and gender-responsive c) Number of model farms established with women ownership	a) 1 gender-sensitive diagnosis and baseline developed for the project b) 100% c) At least 40% of model farms established with women ownership[89]	Y1	JSIF (lead), FAO (GESI specialist and technical support), RADA (implementation support)	19,250.00 (GESI specialist budget)
	Sub-activity 1.1.1.2: Identify eligible model farmers, including women and youth, and sign agreements for the development of model farms	Percentage of women farmers identified as model farmers Percentage of youth farmers identified as model farmers	a) 40% of model farmers are women b) At least 15% of model farmers are youth	Y1	JSIF (lead), FAO (GESI specialist and technical support), RADA (implementation support)	3,500.00 (GESI specialist budget)
Activity 1.1.2: Design and install collective climate-resilient interventions for model farms	Sub-activity 1.1.2.1: Identify potential sites for installation and design collective climate-resilient interventions	Percentage of potential sites evaluated using a standardized gender-responsive assessment tool that examines both the physical vulnerability and the social dynamics of communities.	100% of potential sites are assessed with gender-responsive site evaluation tool	Y1	JSIF (lead), FAO (GESI specialist and technical support), RADA (implementation support)	50,700.0 (GESI specialist budget under 1.1.2.3)

[89] Indicator calculated using insights from the Gender Assessment and the RADA Agricultural Business Information System registration data.

Activities	Sub-Activities	Indicator(s)	Target(s)	Timeline	Responsibilities	Budget (USD)[88]
Activity 1.1.3: Design and install collective FLW-reduction interventions for model farms	Sub-activity 1.1.3.1: Identify potential sites for installation and design collective FLW-reduction interventions	a) Number of women-led farmer groups consulted b) Percentage of selected sites that were identified using gender-responsive criteria agreed with women-led farmer organizations.	a) At least 30% of consulted groups are women-led, including the Jamaican Network of Rural Women Producers (JNRWP) b) 100%	Y1	JSIF (lead), FAO (GESI specialist and technical support), RADA (implementation support)	77,000.00 (GESI specialist budget)
Activity 1.1.4 Integrate agroforestry into model farms for resilient land management	Sub-activity 1.1.4.3: Design and establish nurseries, including management protocols, and SEAH awareness raising training.	Percentage of established nurseries providing employment and management opportunities for women	At least 40% of nursery staff and management positions filled by women.	Y2-Y3	FAO (lead, including GESI specialist), Forestry Department (implementation support)	7,000.00 (GESI specialist budget)
Output 1.2: Knowledge on CRA and FLW-reduction interventions accessible to key value chain actors and implementation capacity increased						
Activity 1.2.1: Operationalise farmer field schools for training on farm planning, CRA and FLW interventions, as well as hurricane preparedness and response	Sub-activity 1.2.1.1: Conduct training needs assessments	Percentage of gender analysis conducted within training needs assessments, including considerations of youth, elderly, PWD, and SEAH.	100%	Y1	JSIF (lead), FAO (GESI specialist and technical support), RADA (implementation support)	31,500.00 (GESI specialist budget)
	Sub-activity 1.2.1.3: Develop and disseminate training materials on CRA, FLW-reduction, and hurricane preparedness, including awareness raising on SEAH modules.	a) Percentage of gender responsive and inclusive training materials, including awareness rising on SEAH. b) Percentage increased knowledge of CRA and FLW-	a) 100% b) At least 90% of women and youth participating on the learning sessions demonstrate increased knowledge of CRA and FLW-reduction	Y2-3	JSIF (lead), FAO (GESI specialist and technical support), RADA (implementation support)	10,000.00

Activities	Sub-Activities	Indicator(s)	Target(s)	Timeline	Responsibilities	Budget (USD)[88]
		reduction by women and youth farmers (evaluated within the curriculum post-training skill test compared to gender baseline)	in post-training evaluation.			
	Sub-activity 1.2.1.4 Conduct training of trainers (ToT) for model farmers	a) Percentage of model farmers trained who are women and youth farmers b) Percentage of trained women and youth farmers who adopt at least 2 CRA or FLW technologies/practices demonstrated at the model farms within 12 months of training.	A)At least 40% of model farmers are women. At least 15% of model farmers are youth farmers. b) at least 70% of trained women and youth report active adoption of CRA and FLW practices (verified through site visits and reports).	Y2-3	JSIF (lead), FAO (GESI specialist and technical support), RADA (implementation support)	48,000.00 (workshops that include GESI, ESS, and SEAH prevention aspects)
	Sub-activity 1.2.1.5: Operationalise and activate FFS	Percentage of field days, exercises and sharing sessions that integrate gender-responsive considerations and SEAH modules.	a) 100% of the field days, exercises and sharing sessions will integrate gender-responsive considerations and a SEAH awareness raising module. .	Y2-Y3	JSIF (lead), FAO (GESI specialist and technical support), RADA (implementation support)	120,000.00 (FFS days that include GESI, ESS, and SEAH prevention aspects)
Activity 1.2.2: FFS training of smallholder farmers and farmer	Sub-activity 1.2.2.1: Deliver FFS training on	Percentage of women and youth farmers participating on the	a) At least 40% woman farmers and 15% youth farmers	Y2-Y3	JSIF (lead), FAO (GESI specialist and technical	72,000.00 (workshops that include GESI, ESS,

Activities	Sub-Activities	Indicator(s)	Target(s)	Timeline	Responsibilities	Budget (USD)[88]
associations on farm planning, CRA and FLW-reduction interventions, as well as hurricane preparedness and response	production cycle planning	training Percentage increase of skills related to knowledge of production cycles and planning by women and youth farmers (evaluated within pre training assessment and regular check-ins)	b) At least 90% of women and youth farmers demonstrate increased knowledge on post-training check-in evaluations.		support), RADA (implementation support)	and SEAH prevention aspects)
Output 2.1 CRA and FLW-reduction interventions are scaled up						
Activity 2.1.1: Develop investment-ready packages for CRA and FLW-reduction interventions	Sub-activity 2.1.1.1: Develop technical specifications for CRA and FLW-reduction solutions	Percentage of CRA and FLW-reduction implementation guides that are gender responsive Percentage of technology packages designed with specific options/modules suitable for women farmers' needs and constraints	100% of technical implementation guides 100% of technology packages	Y1	FAO (lead including GESI specialist)	136,500.00 (GESI specialist budget)
Activity 2.1.2: Equip farmers and clusters with low-cost CRA and FLW-reduction intervention packages	Sub-activity 2.1.2.1: Select vulnerable farmers and farmer clusters for technology support	Percentage of women and youth farmers receiving support	At least 40% of farmers receiving support are women and at least 15% are young farmers	Y1-Y6	JSIF (lead), FAO (GESI specialist and technical support), RADA (implementation support)	Included in FAO GESI specialist budget
Activity 2.1.3: Strengthen farmers' and organisations' capacity to access finance and markets	Sub-activity 2.1.3.1: Strengthen farmers' organisational capacity	Percentage of women and youth in training.	At least 40% of farmers receiving support are women	Y1-Y6	JSIF (lead), FAO (GESI specialist and technical support), RADA	

Activities	Sub-Activities	Indicator(s)	Target(s)	Timeline	Responsibilities	Budget (USD)[88]
			and at least 15% are young farmers		(implementation support)	
Activity 2.1.4: Train and support farmers in financial literacy and business planning	Sub-activity 2.1.4.2: Provide training and individualised support to farmers and associations in developing and implementing business plans, including a training session specifically targeted to women and youth farmers and a specific module dedicated to SEAH prevention and attention.	Percentage of women and youth in financial literacy training. Percentage increase in financial literacy scores among trained women and youth based on pre-post training assessments. Percentage of women-led farmer groups or individual women farmers who successfully develop a bankable business plan.	a) At least 40% of farmers receiving support are women and at least 15% are young farmers b) At least 90% of women and youth farmers demonstrate increased knowledge on financial literacy. c) At least 30% of the business plans developed are submitted by women or women-lead organizations.	Y1-Y6	JSIF (lead), FAO (GESI specialist and technical support), RADA (implementation support)	
Output 3.1: Strengthened agrometeorological observation network and forecasting capabilities to support early warning systems						
Activity 3.1.5: Expand the dissemination of targeted early warnings and advisories to farmers and other market actors using multiple methods	Sub-activity 3.1.5.4: Strengthen community-based early warning dissemination networks integrating local knowledge. This includes formalised roles for information 'superspreaders' to ensure that warnings reach the last mile in a	Proportion of early warning messages/materials that are developed using gender-sensitive language and imagery, including specific information on disaster SEAH prevention and attention.	100% of disseminated materials include gender-sensitive content and local narratives by Year 3, including SEAH prevention in disaster settings.	Y3	FAO (lead, including GESI specialist), MSJ (technical and implementation support)	5,250.00 (GESI specialist budget)

Activities	Sub-Activities	Indicator(s)	Target(s)	Timeline	Responsibilities	Budget (USD)[88]
	gender-sensitive and culturally relevant manner.	Percentage of women that are community 'superspreaders'	At least 50% of community warning 'superspreaders' are women			
Output 3.2: CIS relevant to agriculture developed and delivered to farmers and other market actors						
Activity 3.2.4: Equip farmers to understand and utilise climate information services (CIS) services and products	Sub-activity 3.2.4.1: Develop tailored training materials for farmers on CIS, including specific information on SEAH prevention and attention.	A) Percentage of training materials that are gender responsive and include specific information on SEAH prevention and attention. b) Percentage of women farmers who report using increased CIS to make farm and management decisions	A) 100% b) At least 60% of the trained women confirm using CIS for decision-making (measured in technical reports)	Y5-Y6	FAO (lead, including GESI specialist), MSJ (technical and implementation support)	17,500.00 (GESI specialist budget) 24,000.00 (workshops that include GESI, ESS, and SEAH prevention aspects)
Output 4.1: Policies, partnerships, and incentives for CRA and FLW developed						
Improved enabling environment for climate resilient agriculture	Number of loan agreements signed with smallholder farmers for CRA and FLW reduction technologies and practices	Number of loans for CRA/FLW reduction technologies disbursed specifically to women-led MSMEs or female smallholders	At least 35% of the total value of the DBJ/AIC agricultural credit line is disbursed to women	Y3-Y4	FAO (lead, including GESI specialist), AIC (implementation support)	Included in loans budget.
Activity 4.1.3: Support the creation of multi-stakeholder platforms to facilitate knowledge exchange and collaboration on CRA and FLW initiatives	Sub-activity 4.1.3.3: Facilitate discussions and negotiations between public and private sector stakeholders to	Ensure women-led enterprises are represented in PPP opportunities	At least 35 [90] % women-owned/led businesses in partnerships	Y3-Y4	FAO (lead, including GESI specialist), AIC (implementation support)	10,500.00 (GESI specialist budget) 64,000.00 (workshops that include GESI, ESS,

[90] Indicator calculated based on gender assessment's findings in which higher barriers to women-led businesses and enterpreneurship exist due to barriers on accessing financing and resources, thus a gender-balanced indicator might generate higher pressure without addressing the barriers.

Activities	Sub-Activities	Indicator(s)	Target(s)	Timeline	Responsibilities	Budget (USD)[88]
	establish public-private partnerships					and SEAH prevention aspects)
Activity 4.1.4: Support the creation of multi-stakeholder platforms to facilitate knowledge exchange and collaboration on CRA and FLW initiatives	Sub-activity 4.1.4.2: Create a formal gender-responsive platform as a working group within the AIC / MOAFM	Number of women farmer / agribusiness organisations included in the working group	At least 3 women farmer / agribusiness organisations representation in working group	Y4-Y6	FAO (lead, including GESI specialist), AIC (implementation support)	15,750.00 (GESI specialist budget) 32,000 (gender-inclusive business matchmaking event)
Output 4.2: Access to finance and markets increased to support upscaling CRA and FLW practices and technologies						
Activity 4.2.1: Develop a Jamaican resilience finance taxonomy on CRA and FLW reduction solutions available on the market	Sub-activity 4.2.1.6 Build capacity of personnel in DBJ	Percentage of training materials designed to include specific needs of women and youth farmers, including key insights from the gender diagnosis and baseline conducted during Y1 and an specific module on SEAH prevention and attention. .	100% of training materials	Y2	FAO (lead, including GESI specialist), DBJ (technical support)	7,000.00 (GESI specialist budget)
Activity 4.2.2 Build comprehensive capacity of AIC and participating FIs for CRA and FLW finance	Sub-activity 4.2.2.1 Support AIC to become an FI accredited by DBJ	Percentage of women in FI receiving training	60% of women participation among trained staff	Y3-Y6	FAO (lead, including GESI specialist), DBJ (technical support)	28,000.00 (GESI specialist budget) 8,000.00 (workshop that include GESI, ESS, and SEAH prevention aspects)
	Sub-activity 4.2.2.2 Build comprehensive capacity of participating FIs for CRA and FLW finance	Percentage of women in FI receiving training.	60% of women participation among trained staff	Y3-Y6	FAO (lead, including GESI specialist), DBJ (technical support)	Included in GESI specialist budget

Activities	Sub-Activities	Indicator(s)	Target(s)	Timeline	Responsibilities	Budget (USD)[88]
Activity 4.2.3: Facilitating participating FIs access to DBJ's agricultural credit line for CRA and FLW reduction solutions lending	Sub-activity 4.2.3.3: DBJ credit line for CRA and FLW	Percentage of credit lines and investment designed integrating gender considerations and targets.	A) 100%	Y3	FAO (lead, including GESI specialist), DBJ (technical support)	Included in GESI specialist budget

7. Implementation guidance and mechanisms

This section provides guidance and frameworks as implementation mechanisms to ensure gender-sensitive and responsive project planning and implementation.

7.1 Gender-responsive budgeting

Gender-responsive budgeting (GRB) is a strategy that promotes the goal of gender equity by allocating funds to gender indicators of project activities that support equity for women, men, and vulnerable groups as beneficiaries of the project. The purpose of GRB is to promote accountability and transparency in fiscal planning; increase gender-responsive participation in the budget process and advance the gender equity agenda. For projects executed under the Green Climate Fund, GRB must be executed in tandem with climate-responsive budgeting (CRB). A Climate-responsive budget (CRB) is a budget that seeks to address existing and potential impacts of climate change by allocating resources to fund and support critical adaptation and mitigation measures. Key steps in implementing a gender-responsive climate budget include:

- Reviewing and assessing the extent to which the budget is gender and climate responsive
- Analysing the impact of the existing budget on different groups
- Developing and assigning trackers for monitoring and evaluating the performance of finances
- Identifying priority actions for changing the guidelines and the budgeting process
- Recommending priorities for planning and implementation
- Recommending/mandating:
    - Ways of measuring gender and climate responsiveness in budget requests (e.g. using a climate and gender marker)
    - Clearly defined gender and climate objectives
    - Gender and climate impact statements.

Allocating funds to support gender and social inclusion activities ensures that these activities are not overshadowed by overarching project objectives, but a calibrated and integrated throughout.

7.2 Gender-responsive capacity building

The project will prioritize the development of skills and knowledge that are essential for closing gender gaps through targeted capacity-building initiatives. Training sessions, workshops, and learning modules will be designed to empower project staff, partners, and community stakeholders to engage in gender-responsive planning, design, implementation, monitoring, and evaluation. These activities will focus on equipping participants with the technical and strategic tools necessary to identify and address gender disparities, thereby promoting an equitable distribution of resources and opportunities. By fostering an environment of continuous learning and mentorship, the project aims to build robust capacities that enable stakeholders to make informed decisions that contribute to reducing gender gaps and enhancing overall project outcomes.

7.3 Gender-responsive stakeholder engagement

The actions of this plan are grounded and supported by engagement with stakeholders and beneficiaries relevant to this project. Gender-responsive stakeholder engagement allows project actors to identify and assess the proposed benefits of the project, while also identifying and mitigating potential negative social and gender impacts of planned activities and measuring the impacts of said activities. Engaging community stakeholders in a gender-

responsive way allows for the representation of underserved groups, active and meaningful participation, gender-based violence (GBV) mitigation and overall project sustainability by fostering community buy-in and participation.
Gender-responsive community stakeholder engagement must:

1. Contextualize impacts on the community by using (and collecting where data does not already exist) sex and age-disaggregated data, and through informed community engagement.
2. Identify potential risk factors for GBV in communities to:
a. Identify whether factors are influenced by elements that fall within the project's goals, and
b. Mitigate/avoid worsening risk factors identified.
3. Acknowledge that communities (geographical, social, religious, cultural, ethnic) are unique and as such, cultural/geographical contexts should be considered during engagement with the use of gatekeepers or key informants where needed.

Gathering data/information from stakeholders and the community can take the form of surveys, community town halls, key informant interviews, group interviews or focus group discussions, and should engage those who are located within or affected by project implementation. In the implementation phases, the project actors should explore the following with community stakeholders – specifically women and other marginalized groups:

1. How the community is likely to be impacted: Consider land, livelihoods, displacement, and environmental impact.
    a. Are costs, risks and benefits shared equitably among different women and men?
2. Opportunities for employment, ownership, and access to resources.
3. What inequalities exist in the community about women and men's access to resources? Consider employment and responsibilities.
4. How will access to resources be impacted (both positively and negatively) by project implementation?
5. Community suggestions for impact mitigation where applicable.

The project will implement an inclusive stakeholder engagement strategy that is explicitly focused on closing gender gaps across all phases of project development and execution. This strategy will ensure that the voices of women, youth, persons with disabilities, and other underrepresented groups are not only heard but are instrumental in shaping project policies and interventions. Through regular participatory dialogues, community consultations, and collaborative planning sessions, stakeholders will have ample opportunity to contribute to gender-responsive planning, design, implementation, and monitoring. By embedding these principles in the engagement process, the project will generate the necessary capacities for all stakeholders to actively participate in decision-making, thereby fostering an equitable and sustainable environment where gender disparities are progressively reduced.

7.4 Sex-disaggregated data collection and management

Critical for assessing existing gender inequalities and creating plans to address these issues is the need for sex-disaggregated data. Sex-disaggregated data allows for a holistic view of how project activities are impacting men and women based on their social and economic realities; in order to understand, assess and respond to different experiences, sex-disaggregated data is a necessity.

Sex-disaggregated data is any data on individuals broken down by sex; gender statistics rely on sex-disaggregated data to reflect the realities of the lives of women and men, and to assess policy and programme issues relating to gender. Data collected must be analysed both separately and comparatively for women and men, as this allows for the measurement of differences between women and men on various social and economic dimensions; this is one of the requirements in obtaining gender statistics.

Gender statistics are more than data disaggregated by sex. Having data by sex does not guarantee, for example, that concepts, definitions, and methods used in data production are conceived to reflect gender roles, relations, interests and/or inequalities in society, including compounding factors such as geographic location and economic status. As such, intersectional considerations require data that adds to the understanding of the lived realities of persons.

Examples of sex-disaggregated data that can be collected to aid in nuanced understandings of gender norms, relations and impacts are included in the table below by qualitative (interview/focus group data collection) and quantitative (survey data collection).

Table 13 Sex-disaggregated data

Quantitative intersectional data	**Qualitative intersectional data**
DEMOGRAPHIC DATA COLLECTION	
Number of persons in household	Household Responsibilities by individual, disaggregated by sex
Ethnicity	Implications of ethnicity on participation and representation
Ethnicity	Implications of race on participation and representation
Parenthood Status	Number of children Responsibility for child rearing
Marital Status	Responsibilities to spouse and family
Household income	Formal vs. informal income Spending power and financial decision making
Breadwinner Status	Implications of income earned and how it relates to gender roles / expectations
Employment Status	Implications of employment status and how it relates to gender roles / expectations
Access to Resources	Responsibility for paying for / collecting resources such as food, water, electricity, internet, other.
Labour	Division of Labour (between household, work, and other responsibilities)
IMPACT ASSESSMENT DATA COLLECTION	
Access to Livelihood	Personal / familial implications of changes in access to livelihood / responsibilities
Access to Employment	Personal / familial implications of changes in employment status / access
Dependency	Impact to resources depended on
Sustainability	Sustainability of beneficial impacts
Mitigation	Mitigation and/or consequences of negative impacts
CLIMATE CHANGE DATA COLLECTION	
Disaster Impacts	Impacts of disasters on livelihood, income, living circumstance, and workload.

Quantitative intersectional data	Qualitative intersectional data
Climate Change	Impacts of climate change on livelihood, income, living circumstance, and workload.
Adaptation Strategies	Strategies used to mitigate negative impacts in personal and professional life.
Access to Food/Water	If and how food and water as critical resources are obtained, including time/money spent to obtain them
Environmental Degradation	Impacts of degrading environment on livelihood, income, living circumstance, and workload.

7.5 Grievance Redress Mechanism (GRM)[91]

Acknowledging that protection and mitigation mechanisms are not guaranteed to be effective, a GRM is a crucial element for ensuring gender and social inclusion are promoted and advanced through project work while also ensuring that there are avenues for both beneficiaries and project actors to report issues and file complaints with project implementation. It serves as a monitoring tool for project oversight and facilitates the redress of issues related to the project.

The GRM is designed to respond to risks within the project, and as such should facilitate the reporting of, but not limited to, the following:

- Allegations of GBV and SEAH
- Reports of damage to property, and natural and cultural heritage.
- Reports of crime / criminal activity.
- Reports of pollution/waste dumping
- Disruptions to livelihoods/economic displacement
- Disruptions to community activities and functions

The project will establish a grievance mechanism (GM) in order to receive and manage potential grievances that may arise during and after the implementation of project related activities. This mechanism will provide an access point for individuals, communities and other relevant stakeholders, including project staff and workers, to submit complaints. It will also record and process all complaints relating to the project's activities, results or impacts and reference the Office of the Inspector General (OIG) for notification and archiving purposes.

The project must design the Grievance Redress Mechanism (GRM) as soon as possible and at the latest before project approval, and implement it as soon as possible and at the latest when the Implementation phase begins. A step-by-step guide to designing and implementing a GRM is presented in the FAO Draft Framework for Environmental and Social Management (2023).

GRM must be accessible, collaborative, expeditious, and effective in resolving concerns through dialogue, joint fact-finding, negotiation, and problem resolving. It should be designed to be the “first line” of response to stakeholder concerns that have not been addressed through proactive stakeholder engagement. GRM will serve as a communication channel between the project beneficiaries/ relevant stakeholders and the programme/ project team.
GRM will remain operational for at least 6 months after project closure.

[91] For more information on the GRM, including specific focal points, see Annex 6 – ESMF.

Table 14 Key principles of the GRM.

Principle	Implementing Measure
Right-compatible	• Protect the anonymity of complainants if required; • Ensure confidentiality in the event of sensitive complaints; • Limit the number of people with access to sensitive information; • Guarantee that the outcomes and remedies align with international human rights
Accessibility	• Widely disseminate the mechanism to target groups (taking into account restrictions, such as language, geography, gender etc.); • Clearly explain procedures; • Diversify possibilities for filing complaints; • Assist people with special access challenges;
Predictability	• Present a clear process, with deadlines for each step; • Provide clarity on the types of processes and outcomes as well as means of monitoring them
Impartiality	• Ensure impartiality of those involved in investigations; • Ensure no person with a direct interest in the outcome of the investigations is involved in the handling of the complaints concerned; • Ensure impartiality in addressing the concerns of complainants
Transparency	• Inform the parties concerned about the progress and the results of a complaint in process;
Equitability	• Respond promptly to all complainants; • Guarantee that aggrieved parties have adequate access to sources of information, advice, and expertise required to engage in a grievance process on faire, informed and respectful terms;
Continuous learning	• Use lessons learned to proactively prevent future grievances and mitigate potential harm;
Based on engagement & Dialogue	• Emphasize dialogue as the primary approach for addressing and resolving grievances;

The redress system must be prepared to provide counselling, or other enabling support when needed. The grievance process must be kept confidential; throughout the process, the names of the complainant and respondent must be kept confidential. A hearing must be done at a time, and in a place that is private. All parties must agree to keep the entire process confidential; there should be no discussion with staff and external stakeholders.

In developing a gender responsive GRM, the following considerations are important:

1. Are complainants protected from retaliation? - This supports the creation of a safe work environment, which allows for redress for misconduct
2. Is complainant/respondent confidentiality maintained? – This allows for the building of trust
3. Are records of complaints kept? - Records allow for the assessment of trends or identification of chronic misconduct
4. Are breaches thoroughly and fairly investigated, and sanctions enforced? - This supports the building of trust in and respect for the system
5. Are local authorities engaged in the investigation and response process when necessary?

6. How is the grievance mechanism monitored? - How often is the process reviewed for satisfaction by complainants/respondents?
7. Are systemic changes made if the investigation reveals a fault in the system, which has facilitated the incidence of breaches?

Organization and Functioning of the Complaint Mechanism

The mechanism shall be extended and accessible to all stakeholders. The system will be closely linked to the FAO institutional grievance mechanism, especially for the handling of major sensitive complaints. If necessary, complainants may also refer/escalate matters to the Green Climate Fund's Independent Redress Mechanism (IRM). It should also be noted that an aggrieved person/complainant may also resort to judicial court of law or administrative remedies available through the country system(s) at any stage.

Both the complaint form of FAO and the IRM of GCF[92] will be made publicly accessible, electronically and in written forms.

The project-level grievance mechanism (GM) will be communicated to the stakeholders, including the target communities, throughout the project using multiple channels that respond to different accessibility conditions. At national and regional level, the GM will be communicated at the project launch, and during steering committee meetings. At community-level, the GRM will be communicated and explained during farmers training modules, as indicated in the GAP, startup meeting with the village development committees and farmers clubs. Regular reminders will be made during public events, and information on the GM will be published at the offices of regional directorates. Moreover, officers and other stakeholders engaged in field activities will visit project-affected communities as well as neighbouring areas to gather any grievances that may exist. Project staff conducting the work on the ground with communities will be trained to have solid understanding of the complaint mechanism, and instructed to sensitize communities accordingly using a diverse set of gender-responsive communication channels that respond to communities' needs, including local radio stations, community organizations involved during project activities, and community radio, among others.

Tailored procedures will be developed within the GRM to minimize SEAH risks and ensure a survivor-centred approach. This may include establishing protocols for confidential reporting, prioritizing survivors' needs, and facilitating linkages to related services for redress. Confidential and accessible reporting channels—such as secure online platforms, and in-person reporting— will be established and coordinated by the GESI expert, with strict data protection measures limiting case details to trained personnel. The mechanism will follow a survivor-centered approach, prioritizing informed consent, a do-no-harm principle, and multiple, safe entry points for complaints. Survivors should have access to immediate medical care, legal aid, and long-term psychosocial and economic reintegration support, with strong referral pathways to local NGOs, UN agencies, and government services. Additionally, complaint-handling staff must be trained in gender-sensitive and trauma-informed approaches, allowing survivors to choose the gender of their case handler where possible, ensuring culturally appropriate responses.

The survivor-centered GRM will align with FAOs action plan for the Prevention of Sexual Exploitation and Abuse and Sexual Harassment and follow FAO corporate policies and procedures, namely: a) Policy on the Prevention of Harassment, Sexual Harassment and Abuse of Authority – 2015; b) Protection from Sexual Exploitation and Sexual Abuse (PSEA) – 2013; c) Whistleblower Protection Policy – 2011. By aligning with FAO guidelines and integrating these measures, the project aims to strengthen FAO's approach to addressing

[92] https://irm.greenclimate.fund/case-register/file-complaint

SEAH within the project and ensure the safety and well-being of all project stakeholders. These measures reflect best practices outlined in FAO's PSEAH Policy, the UN Secretary-General's Bulletin on PSEA (ST/SGB/2003/13), and the Inter-Agency Standing Committee (IASC) guidelines on PSEAH.

In the case of any SEAH allegations, the project will refer to the PSEA Focal Point for Jamaica and to the OIG.

Review level	Contact details
Project Management Unit (PMU)	The focal points at the PMU will be the safeguards specialist and the project coordinator. Official FAO email accounts will be established once they are recruited. Alternatively, generic accounts such as *safeguards_Jamaica_adapt@fao.org* may be created. It should be noted that a Project Steering Committee (PSC) will be formed, with the participation of the Ministry of Agriculture and the Ministry of Economic Growth and Job Creation, FAO, among other entities. Grievances may also be referred to the PSC.
FAO Country Representative	If the grievance cannot be resolved at the project level, the petitioner may contact the FAO country representative for Jamaica. This position is held by Dr. Ana Touza. Email address: ana.touza@fao.org.
Higher level Regional Office for Latin America and the Caribbean	If the grievance cannot be resolved at the country/subregional level, the petitioner may contact the FAO Assistant Director-General/ Regional Representative at the Regional Office for Latin America and the Caribbean: Anthony Kellman; Office of the Sub-Regional Coordinator for the Caribbean. E-mail: Anthony.Kellman@fao.org; RLC-ADG@fao.org Tel: +1 246 492 2002
Office of the Inspector General (OIG)	Contact FAO's independent Office of the Inspector General : • To report non-compliance with FAO's environmental and social management guidelines in case your grievance could not be resolved through the previously mentioned channels;

	• To report non-compliance with FAO's environmental and social management guidelines in case you have a good reason for not approaching the project management (e.g., fears about your safety); • To report possible **fraud and other corrupt practices, as well as other misconduct such as sexual exploitation and abuse.** By confidential hotline (online form & by phone): fao.ethicspoint.com By e-mail: Investigations-hotline@fao.org (+ 39) 06 570 52333

Organizational framework

Complaint management will be integrated into the project activities. The tasks and responsibilities of the project team with regards to complaint management are well defined. The management of the mechanism will be supported by the FAO OIG, in collaboration with the Environmental and Social Committee (ESC), and from committed civil society/local communities' representatives, who will be available and trained to implement the mechanism. Decentralized Offices (including country offices) appoint a safeguards and grievances focal point and register the name of the focal point in COIN. They should also establish an office-level GRM. Offices may consider alternatives, such as cases where an existing GRM is used. Projects and programmes should appoint a project-specific grievances focal point. They can either implement a project-specific GRM, or make use of an established Country Office GRM. However, in the latter case this needs to be made explicit in the project document. A summary of how the country GRM operates also needs to be provided and the relationship to the project described, and the project should still budget for project-specific GRM-related activities, especially outreach/awareness raising among potentially affected parties.

In terms of project activities that are delivered by parties other than FAO, FAO must still ensure that the parties potentially affected by those activities have full access to the project/country office GRM. For cases where there are multiple financially independent delivery partners which together comprise a coordinated project or program; agreement must be explicitly reached in writing on how to coordinate outreach and feedback, as well as decision making on the processing of any grievances. Ideally the programme/project should have one centralized GRM. The procedures and channels should be as simple and clear as possible to stakeholders. Even if a grievance was to arrive through a parallel channel, it would need to be logged by FAO internally in the grievance monitoring system at project and/or country level. Finally, GRMs must be up and running as soon as possible upon project declared operational; indeed, this should be one of the first actions taken by the project team.

For more information on the GRM, including specific focal points, see Annex 6 – ESMF.

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Appendix A – Gender screening and gender assessment tools

Any investments under the ADAPT-Jamaica project will be required to undertake a gender assessment, which entail to: (i) look at gender differences in terms of ensuring needs and capacities have been accounted for considered; (ii) gender-equitable participation will be encouraged and actively fostered, especially regarding decision-making; and (iii) all benefits – including financial benefits – are inclusive to both men and women.

Table 15 Example gender assessment template

Guiding Questions	Response
What are the main sources of livelihood and income for men and women? If survey data is available, it should be included otherwise qualitative descriptions are helpful.	
What are the key vulnerabilities being addressed by the project? How do these differ for men and women? Are there any gender-specific vulnerabilities which need to be addressed (directly or indirectly)?	
Based on initial stakeholder engagement, what are the needs and priorities related to the envisioned activities? Are men's and women's needs/priorities different?	
How are women and men expected to benefit from project activities? Are these benefits equitable?	
What specifically will the project do to ensure that women and men have equal opportunity to benefit from the project activities?	

Guiding Questions	Response
Are project outcomes/results gender disaggregated? If so, describe the specific indicators and how they will be monitored.	

Table 16 Gender assessment screening tool

Question	Response	Actions to take	Revisions needed
Are women/gender focused groups, NGOs/CSO's or gender units in partner organizations consulted in the project/programme development?			
Are women/gender focused groups, NGOs/CSO's or gender units in partner organizations involved in project implementation? Included as beneficiaries?			
Does the project include strategies to reach out to the underrepresented sex that would benefit from the project/programme?			
Does the project ensure that gender-specific obstacles to participation are identified and solutions designed, so that both women and men can access and participate in project activities in an equal manner?			
Are outcomes, outputs and activities designed to meet the different needs and priorities of women and men, boys, and girls?			
Does the results framework include gender responsive indicators, targets, and a baseline to monitor gender equality and women's empowerment results?			
Are gender responsive methodologies developed and implemented?			

Appendix B – Protection from Sexual Exploitation and Abuse (PSEA) protocol template

Links to example protocols:

Protection from Sexual Exploitation and Abuse (PSEA) - Inter-agency cooperation in community-based complaint mechanisms (CBCM)[93]

FAO fact sheet[94]

IASC Minimum Operating Standards on PSEA[95]

Example Table of Contents

[93] https://interagencystandingcommittee.org/sites/default/files/migrated/2016-06/psea-global_standard_operating_procedures_june_2016.pdf

[94] https://www.fao.org/fileadmin/user_upload/emergencies/docs/AAP%20Fact%20Sheet%20Committment%206%20Protection%20against%20sexual%20exploitation%20and%20abuse.pdf

[95] https://psea.interagencystandingcommittee.org/resources/minimum-operating-standards-mos-psea

e. IASC Statement on PSEA (11 December 2015)
f. Sample Common Code of Conduct, Incident Report Form, and Complaint Referral Form
g. Templates for providing feedback to survivors/complainants
h. Contact Information for Humanitarian Agencies' Units for Receiving SEA Allegation

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