



United Nations Development Programme

ENVIRONMENT AND ENERGY

SUSTAINABLE LAND MANAGEMENT AND BIODIVERSITY CONSERVATION FOR COMMUNITY-BASED ADAPTATION

A Comparative Study of UNDP-GEF Community-Based Adaptation Portfolio in Jamaica



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FOREWORD

Climate change is one of the most serious and challenging issues of our decade. Millions of people and ecosystems are experiencing harsh conditions resulting from the global warming. While climate change mitigation offers opportunities to remedy increasing greenhouse gases (GHG), national mitigation pledges still fall short of the objective to keep global warming below 2°C. Without increased action, this shortfall commits mankind to an inexorable increase in GHG emissions in the near future until the 'gigatonne gap' between what countries have pledged and what scientists say is necessary is filled. Alongside low-carbon development strategies, adaptation to climate change is a promising path to securing investments in poverty reduction, food security, gender equality, child and maternal health, and environmental sustainability, and ultimately to achieving the Millennium Development Goals. The United Nations Development Programme (UNDP) is working on a wide range of initiatives to mainstream climate change adaptation into human development, including the UNDP-GEF Community-Based Adaptation (CBA) Programme.

The CBA Programme is a five-year (2007-2012) initiative funded by the Global Environment Facility (GEF), the Governments of Japan and Switzerland, and the United Nations Volunteers. It aims to reduce the vulnerability and strengthen the adaptive capacity of local communities to climate change in 10 pilot countries in Africa, Asia and the Pacific, Latin America and the Caribbean. The programme collaborates with national partners, United Nations Volunteers, United Nations agencies, UNDP country and regional offices, and national GEF Small Grants Programme (GEF SGP) staff to carry out adaptation work with community organizations on the ground. GEF SGP provides the essential country-level management structure and delivery mechanism. This inclusive approach streamlines community access to microgrants, engages a diverse group of national stakeholders in community projects and promotes grassroots-based solutions to climate change risks.

The CBA Programme was primarily set up to provide a systematic analysis of the methodological approaches to community-based adaptation, and to test local level adaptation measures in various geographical areas and ecosystems globally. The programme has made progress to this end, with specific insights evolving from each pilot country. This report analyses and summarizes Jamaica's experience in developing and implementing CBA projects. More importantly, it presents innovative practices and emerging lessons resulting from the implementation of a cluster of projects in the area of sustainable land management and biodiversity conservation. Ideally, the results will be disseminated, replicated and brought to scale for use in vulnerable communities facing similar conditions across the globe.

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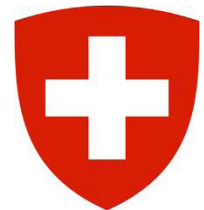
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ACRONYMS

BHCDC	Bunker Hill CDC
CBA	Community-Based Adaptation
CBO	Community-based organization
CCPS	CBA Country Programme Strategy
GEF	Global Environment Facility
GHG	Greenhouse gas
IAS	Impact Assessment System
IPCC	Intergovernmental Panel on Climate Change
JCDT	Jamaica Conservation and Development Trust
NGO	Non-governmental organization
OP	Operational Program
PIA	Participatory Impact Assessment
SGP	Small Grants Programme
STEA	Southern Trelawny Environmental Agency
UN	United Nations
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
VRA	Vulnerability Reduction Assessment

INTRODUCTION

Jamaica is a small island developing State of the Greater Antilles in the Caribbean Sea. The landscape consists of mountains surrounded by a narrow coastal plain dominating the island (Gleaner 2010). The climate is tropical with hot and humid weather, but prevailing temperate conditions in higher altitudes. Climate change poses significant challenges to the island's natural and built environments. According to the Intergovernmental Panel on Climate Change, there is a 90 percent likelihood that temperatures will increase in the Greater Antilles between 1.0°C-1.6°C by 2050 (Solomon *et al.* 2007). The same scenario also indicates that sea level will rise near the global average of 0.2-0.5 meters (relative to 1999 levels) by 2090, and that annual rainfall will decrease and even dry out by 2050. Other predictions by the IPCC indicate that there is more than 50 percent likelihood that extreme weather events such as storm surges will become more intense in the Caribbean. In addition to baseline (non-climate) factors, climate variability and extremes will pose significant threats to vital sectors, especially agriculture and coastal-related activities and their surrounding ecosystems.

The UNDP-GEF Community-Based Adaptation (CBA) Programme in Jamaica works to address some of these challenges through the implementation of six demonstration projects geared towards capacity building and improved natural resources management to reduce the vulnerability of the community and their ecosystems to climate change variability and extremes, and to generate global environmental benefits. The CBA portfolio in Jamaica specifically focuses on agriculture and coastal ecosystems identified as priority areas by the first and second National Communications to the United Nations Framework Convention on Climate Change (UNFCCC), as well as the National Capacity Self-Assessment Project of the Global Environment Facility (GEF).

This report analyses and summarizes Jamaica's experience in developing and implementing CBA projects and is a companion to similar analysis carried out for two other important CBA countries (Kazakhstan and Samoa). It builds on a cluster of three projects¹ selected to reflect the entire Jamaica's CBA portfolio.

This report compares climate change risks and adaptation responses in selected CBA projects, resulting impacts on communities and their ecosystems, enabling factors to successful adaptation response, challenges encountered, dissemination and replication strategies and the lessons learned.

CLIMATE CHANGE RISKS

Expected climate variability and extremes in Jamaica include, among other parameters, increases in temperature, sea-level rise, rainfall variability, and increased storm activities. These changes pose significant, but differentiated risks to communities and their ecosystems depending on their environment and socio-economic activities.

The CBA project in Northern St. Andrew and Portland has involved the communities of Woodford and Cascade. Woodford is a hillside community of about 1,800 inhabitants located in northern Saint Andrew, below the Holywell Recreation Area in the Blue and John Crow Mountains National Park (BJCMNP). Cascade is a community of about 800 inhabitants located north of Holywell in the Buff Bay Valley outside the BJCMNP. The majority of community members from both areas are farmers growing cash crops, primarily bananas and coffee. These communities farm on steep slopes, often using unsustainable agricultural practices such as slash and burn that increase their vulnerability to climate change. For example, increase in temperatures and reduced rainfalls in the communities have resulted in longer and more intense periods of drought, making soils more susceptible to erosion and landslide. These degradations in soil conditions have significantly reduced crop productivity. Furthermore, farmers were forced to move further up the mountains in search of cool, misty conditions that favor coffee and other crops, resulting in encroachment on BJCMNP that is of international significance for the conservation of the biodiversity. The CBA project has sought to remedy these risks by increasing the capacity of targeted farming communities on the slopes of the Blue Mountains to adapt to climate change.

¹ These projects are 'Reducing climate change-driven erosion and landslide risks through sustainable agriculture for safer slopes in Woodford, Portland' and 'Land and preservation measures to combat climate change pressures in Cockpit Country's Martha Brae Watershed' in area of agriculture and 'Increasing community adaptation and ecosystem resilience to climate change in Portland Bight -Clarendon' in the area of coastal management.



Community members gather during the inception workshop as the project concept and proposal, that they largely contributed to as part of the CBA participatory approach, are approved for implementation.

UNDP/UNDP-GEF CBA Jamaica

The second project in the agriculture sector has been carried out in the Cockpit Country's Martha Brae Watershed. The Bunkers Hill Community is a population of about 2,000, living predominantly from farming. Water level in the river course has increased recently due to intense rainfall, and as a result, farmers and community members who were previously risk free are now facing the impacts of climate-change induced flooding. Increasing erratic rainfalls in the Cockpit Country, as predicted by climate change modeling scenarios, exacerbate flash flooding risks, which threaten the viability of agriculture in the region by eroding croplands, destroying crop production in close proximity to fresh water systems, severely eroding the abutment to the bridge, and causing water contamination due to larger uptake of agricultural chemicals and pollutants by higher flow levels. Residents commuting in and out of the community also face increasing risks of being marooned and experience difficulties in carrying out their regular activities. To protect this community against these risks, the CBA project has aimed to stabilize and reinforce riverbank slopes to protect against the loss of agriculture lands from erratic rainfall and stronger hurricanes.

The CBA project on coastal management has been implemented in the Portland Bight Protected Area (PBPA) in Clarendon. The population is about 20,000, living directly or indirectly from fishing, farming (sugar) and mining (bauxite). The communities place a high value on protecting these natural resources as they provide them with livelihoods. For example, the limestone hill forests sustain aquifers that support many springs and wells, while further inland forest hills reduce the frequency of flash flooding and protect the soil against erosion. Along the coast, the mangroves and the sea grass protect the coastline and the infrastructure behind it, while providing nursery habitat for fishable resources. Because of its geographic position, Portland Bight-Clarendon has always been vulnerable to natural disasters, especially flooding, hurricanes and storms; climate change scenarios forecast an increase in these types of events and other impacts that could be detrimental to the biodiversity. Increase in temperature places stress on coral ecosystems and increases coral bleaching. Sea-level rise accelerates mangroves retreat and prompts saline intrusion into coastal aquifers. Increase in tropical storm activities lead to increased risks of both landslides and coastal erosion; increase in erratic rainfall raises the risks of drought and flooding. These changes result in the loss of critically endangered biodiversity habitats (mangroves, coral reefs and tropical dry forests) and ecosystem services (coastal protection, fish nurseries, recharging of aquifers, erosion control and natural regeneration of forests). Accordingly, the CBA project in Portland Bight -Clarendon has sought to reduce the threats to globally endangered biodiversity habitat and species and ecosystem services by empowering communities to manage ecosystems more sustainably in the face of climate change.

In general, climate change-related risks in Jamaica are carved into the landscape. Landslide, drought and soil erosion are common on the mountains slope, while flooding, coastal erosion and coral bleaching characterize low-lying coastal environment. These risks stem not only from the landscape architecture of the country, but also from the intensity and frequency of climate hazards, in addition to baseline activities (communities' activities that increase their vulnerability). The risks pose significant challenges to communities' livelihoods and the ecosystems they rely on for goods and services. The overarching goal of the CBA Programme has been to address these vulnerability factors through community-driven adaptation interventions.

ADAPTATION MEASURES

The UNDP-GEF CBA Programme champions context-specific adaptation strategies that reduce community vulnerability to climate change, and provide new opportunities for livelihoods and global environmental benefits. Adaptation technologies introduced by CBA projects in Jamaica consist mainly of 'soft' adaptation measures² consistent with climate change risks characterizing each project.

The CBA project in Northern St. Andrew and Portland has used three soft adaptation techniques to protect the soil against erosion and landslides. The first technique consists of planting native fruit trees and pineapples barriers on slopes sensitive to erosion and landslides, and on degraded land. The second technique includes agro-forestry activities, such as mulching, terracing and improved drainage to preserve humid microclimate while reducing water loss and decreasing erosion risks. The third technique consists of greenhouse farming to provide farmers with alternative to farming in degraded and erosion-sensitive lands.

The adaptation measures introduced by the CBA project in the Cockpit Country's Martha Watershed also have revolved around soft technologies. Measures against flash flooding include the establishment of culverts in seasonal flooding streams to divert water away from the bridge and access roads, and keep it at lower level in critical flow areas. As flooding is usually associated with erosion, another measure consists of the reinforcement of points prone to erosion with natural stone barriers and topsoil coverage planted with indigenous plant species to protect against soil and bank erosion (also referred to as bioengineered bank treatment).

Similar to a small number of CBA projects in Jamaica, the pilot project in Portland Bight-Clarendon has essentially focused on capacity building and awareness raising. Accordingly, no specific adaptation techniques directly targeting the risks mentioned above have been carried out. However, the activities implemented are considered an essential first step towards a more comprehensive adaptation programme that includes more practical adaptation interventions.

Overall, the adaptation strategy in Jamaica has focused on education and the application of soft technologies to reduce the vulnerability of poor communities to climate change. This strategy was developed after consultations with communities, who pinpointed awareness raising and capacity building as prerequisite to reduce their vulnerability and increase their adaptive capacity. The focus on soft adaptation technologies in these CBA projects also fits with the communities' livelihood needs and activity preferences; in opposition to hard technologies that are risky and costly. Evaluating the impacts of these measures on communities and their ecosystems is a central component of the CBA Programme.

IMPACTS OF CBA INTERVENTIONS ON COMMUNITIES AND THEIR ECOSYSTEMS

Two assessment methods were used to evaluate the impact of CBA projects on communities and their ecosystems: the **Vulnerability Reduction Assessment (VRA)** and the **Impact Assessment System (IAS)** (see Box 1). The VRA scores the communities' perception of their current and future vulnerabilities and adaptive capacity at a specific point in time, and discusses the barriers to adaptation as conceived by the communities themselves. The IAS measures the contribution of CBA projects interventions to global environmental benefits. Both tools are useful, though communities found it more challenging to discuss and succinctly make deductions from the IAS results.

² In this report we differentiate between 'hard' adaptation interventions, which imply the construction or the management of infrastructure, and 'soft' adaptation interventions, which focus exclusively on the restoration of the natural ecosystem.

BOX 1: OVERVIEW OF UNDP-GEF ASSESSMENT METHODS

Vulnerability Reduction Assessment (VRA) is a form of Participatory Impact Assessment (PIA) that measures a community's perception of its vulnerability and the potential of adopted measures to lead to successful adaptation to climate change. Perception of change is captured from changes in VRA scores—ranging from zero to five, five meaning high impact or high confidence and zero referring to low impact or low confidence—obtained from communities' responses to a set of four questions tailored to locally-relevant vulnerability factors, and obtained by consensus during a series of three community meetings over the duration of a CBA project (UNDP 2008). Below is an example of VRA questions asked to community members in the context of vulnerability related to soil erosion and landslides.

1. **Assessing current vulnerability** – How serious are the current impacts of soil erosion and landslides on your livelihoods?
2. **Assessing future climate risks** – How serious the impacts of increasing soil erosion and landslides will be on your livelihoods without a change to current practices?
3. **Formulating an adaptation strategy** – What are the barriers (institutional, financial, technical, etc.) that stop you from carrying out measures to reduce soil erosion and landslides?
4. **Continuing adaptation process** – How confident are you in the capacity of adaptation measures to reduce your vulnerability to climate change and about your capacity to sustain these activities after the project?

Impact Assessment System (IAS) is an assessment method required for UNDP-GEF funded projects to measure contribution to global environmental benefits. In Jamaica, the IAS was carried out in biodiversity conservation and sustainable land management based CBA projects. For biodiversity conservation, IAS reports on the number of critically endangered species, endemic species and ecosystems protected or under protection. In the context of sustainable land management, IAS shows the number of hectares of land restored or sustainably managed. The UNDP-GEF CBA Programme that draws resources from the GEF Strategic Priority on Adaptation (SPA), as well as all GEF SPA projects, should be able to show a positive contribution toward reducing global warming. In the case of the CBA projects in Jamaica, their score reflected important progress through CBA measures related to biodiversity protection and sustainable land management.

1. Variations in communities' perception of current and future vulnerabilities and their adaptive capacities

The variations of communities' perception of their vulnerability and adaptive capacity were consistent among the majority of the CBA projects in Jamaica. Overall, VRA scores were highest for the first three questions and lowest for the fourth one at the beginning of the project, meaning that communities considered themselves very vulnerable to current and future climate change at the onset of each project. In Northern St. Andrew and Portland for example, the mean VRA score for the first three questions was 4.60 at the beginning of the project. From the mid-term to the outset of the project, VRA scores decreased sometimes significantly for the first three questions, while increasing for the last one. At the final evaluation, VRA scores of the first three questions were respectively 1.40, 2.42 and 2.5. This suggests that CBA projects have been effective in reducing current communities' vulnerability to climate change and in enhancing their adaptive capacity to future climate variability and extremes. This perception is associated with tangible livelihood benefits (see Table 1) resulting from adaptation activities implemented.

2. Livelihood and global environmental benefits

The CBA projects in Jamaica have been very successful in combining adaptation activities with interventions that generate livelihood and global environmental benefits. In general, livelihood benefits include an increase in the production of certain goods that provide additional incomes to the communities. In Northern St. Andrew and Portland for example, pineapple suckers have been used as barriers to protect against soil erosion, and the fruits sold or consumed. Global environmental benefits have mostly revolved around the restoration of degraded lands. Overall, most projects have resulted in a combination of livelihood

and global environmental benefits, in exception of projects with a sole focus on education (Portland Bight -Clarendon). Such projects tended to generate only indirect benefits to community members.

TABLE 1: LIVELIHOODS AND GLOBAL ENVIRONMENTAL BENEFITS IN SELECTED CBA PROJECTS IN JAMAICA

PROJECT LOCATION	INDICATORS	
	LIVELIHOOD BENEFITS	GLOBAL ENVIRONMENTAL BENEFITS
NORTHERN ST. ANDREW AND PORTLAND	<ul style="list-style-type: none"> • Additional income from the sale of fruit picked from trees • New income from the sale of pineapples from pineapples suckers used as barriers • New income from the sale of greenhouse agricultural products (e.g., variety of vegetables) 	<ul style="list-style-type: none"> • 40 ha of degraded land sustainably managed • 10 ha of degraded land restored
MARTHA BRAE WATERSHED	<ul style="list-style-type: none"> • Significant reduction in crops losses and increase in income 	<ul style="list-style-type: none"> • 35 ha of degraded land restored • 143 ha of land being sustainable managed

ENABLING FACTORS

The CBA Programme builds on key pillars to achieve successful adaptation to climate change. These six pillars—project formulation, community ownership, influence on policy, gender mainstreaming, project sustainability and capacity building—have been critical in the results being achieved by each project.

1. Project formulation

The formulation of CBA projects accommodated the needs and unique circumstances of each community. In Jamaica, CBA projects formulation followed two main approaches: the first led by a community-based organization and the second by non-governmental organization.

Some of the CBA projects in Jamaica such as the one in Cockpit Country’s Martha Brae Watershed, were initiated and managed by a community-based organization (CBO), and received technical support from non-governmental and governmental agencies during their implementation. This was specifically the case of the Bunker Hill CDC (BHCDC), an umbrella organization of seven community groups that led the formulation of the CBA project in the Cockpit.

Project formulation process in Cockpit Country’s Martha Brae Watershed

The identification of problems: Extensive consultations with the different stakeholders in the Bunker Hill community resulted in the identification of problems, among others, flooding blocking farm roads, damaging infrastructure (bridge and access-way) and crops, transporting debris and chemical contaminated water from upstream.

The selection of priority activities: A community meeting with all stakeholders was held to reach consensus on the priority activities—to reinforce and stabilize river bank slopes—of the project.

The development of the project proposal: BHCDC developed the project proposal with active participation from its partner, the Southern Trelawny Environmental Agency (STEA). STEA also provided assistance in overseeing technical construction by Aljodix Ltd., a designer and construction firm, and in monitoring activities.

Other CBA projects, like the ones in Northern St. Andrew and Portland and Portland Bight-Clarendon, were initiated and led by non-governmental organizations (NGOs), with the involvement of community members in the entire project cycle. This was especially the case of CBA project in Northern St. Andrew and Portland where the Jamaica Conservation and Development

Trust (JCDT), whose mission is to promote environmental conservation and sustainable development in the Blue and John Crow Mountains National Park (BJCMNP) area, led the formulation of CBA project.

Project formulation process in Northern St. Andrew and Portland and Portland Bight-Clarendon

The identification of the problem: JCDT helped identify soil degradation as factor leading farmers to move further up the mountains in search of better soil conditions, resulting in encroachment on the internationally significant biodiversity protected area.

The selection of priority activities: JCDT, after extensive consultations with community members, identified the project’s priority activities, namely the application of soil conservation techniques on slopes exposed to climate-driven erosion and landslides.

The development of the project proposal: JCDT developed the project proposal with frequent discussions and reviews by experts and community members.

These different approaches underscore the flexibility of UNDP-GEF CBA Programme in designing adaptation projects to accommodate context-specific needs, while taking advantage of opportunities and partnerships (i.e. CBOs and NGOs) that reinforce effectiveness.

2. Community ownership

Community ownership is a cornerstone of the UNDP-GEF CBA Programme. It is critical to projects success and helps ensure effectiveness and sustainability of adaptation interventions. Community ownership is achieved by the active implication of community members in all the stages of the project—from project formulation to monitoring and evaluation. Table 2 presents some elements of community ownership in selected CBA projects in Jamaica.

TABLE 2: SOME ELEMENTS OF COMMUNITY OWNERSHIP IN SELECTED CBA PROJECTS IN JAMAICA

PROJECT STAGE		NORTHERN ST. ANDREW AND PORTLAND	COCKPIT COUNTRY’S MARTHA BRAE WATERSHED	PORTLAND BIGHT-CLARENDON
FORMULATION		<ul style="list-style-type: none"> • Selection of priority activities • Development of project proposal 	<ul style="list-style-type: none"> • Identification of the problems • Selection of priority activities • Development of project proposal 	<ul style="list-style-type: none"> • Identification of the problems • Selection of priority activities
IMPLEMENTATION	IN KIND	Voluntary contribution in labor, know-how, materials and tools (worth \$4,434)	Voluntary contribution in labor, knowledge and skills (worth \$6,617)	<ul style="list-style-type: none"> • Labor contribution in the form of community educators and monitoring agents • Oversight of committees and councils
	IN CASH		Co-financing estimated at \$8,000	
MONITORING AND EVALUATION		<ul style="list-style-type: none"> • Oversight of the implementation plans • Participation in VRA evaluations 	Participation in VRA evaluations	Oversight of VRA evaluation processes

3. Influence on policy

The UNDP-GEF CBA Programme's ultimate objective is to generate lessons from pilot projects that can be mainstreamed into local and national policies. Sharing the experiences and results, both positive and negative, generated by CBA projects can help inform and legitimize new adaptation policies. It also facilitates dissemination and uptake of new practices by communities elsewhere. In this respect, significant policy results have been achieved by CBA projects in Jamaica.

The CBA project in Northern St. Andrew and Portland has played an influential role in shaping policies on land degradation at the local and the national level. At the local level, the project has directly influenced farmers' practices in the local communities of Cascade and Woodford as evidenced by change in community's behavior towards sustainable agricultural practices. At the national level, the project findings informed policymakers in developing the Sustainable Land Use Management Policy for Jamaica. For example, JCDT contributed with critical inputs to the policymaking process in relation to sustainable agricultural practices on steep slopes for the eastern end of the island.

In the Portland Bight-Clarendon, the project proponent (Caribbean Coastal Area Management, C-CAM) is partnering with the government to set up new land use policies such as the establishment of fish sanctuaries and development of proposals for the creation of a biosphere reserve.

4. Gender mainstreaming

Gender mainstreaming is an important requirement within the UNDP-GEF CBA Programme. Gender is factored into every CBA intervention to account for the specific needs of different social groups within the community, especially the most vulnerable. Men and women have been deeply involved in all the CBA projects stages: project formulation, implementation, and monitoring/evaluation. Projects have provided gender segregated data on the numbers and the nature of individuals involved, as well as the level of their participation.

In Portland Bight-Clarendon, 32 community members, including nine women, participated in the project planning phase. In the Cockpit Country's Martha Brae Watershed, 34 women (52 percent of project participants) were actively involved in the identification of landslide-prone areas. The CBA project in Portland Bight-Clarendon has included a large number of women (50) and benefited from the participation of a large number of youth (1,000) within its educational programme.

5. Project Sustainability

Adaptation to climate change within the CBA programme is a long term and continuous undertaking. All CBA projects incorporate a sustainability plan to guarantee continuous implementation of adaptation interventions. In general, the linchpin of project sustainability within the UNDP-GEF CBA Programme stems from community ownership.

In the Cockpit Country's Martha Brae Watershed, sustainability is built into community ownership as they have committed to ensure that project benefits would extend beyond the project lifetime. To this vein, JCDT, the project proponent, continues to fundraise to sustain and expand the work started under the CBA project.

Project sustainability in Portland Bight-Clarendon is being achieved through the integration of the CBA interventions into ongoing projects. For example, the methodologies used in the Portland Bight-Clarendon project were adopted and being applied in the fish sanctuary management project.

6. Capacity building and awareness raising

Adaptation to climate change within the UNDP-GEF CBA Programme is fundamentally a learning process. In fact, CBA projects have sought to empower communities to adapt to adverse impacts of climate change by providing them with appropriate tools, techniques and methods that are effective in abating climate impacts.

Capacity building in CBA projects in Jamaica has combined theoretical trainings with field demonstration activities. Capacity building is supplemented with awareness raising, carried out through formal (workshops) and informal (discussion meetings) campaigns, and the dissemination of information about climate change risks using printed (distribution of leaflets, publication in local newspapers) and audio (radio, video) media. The campaign’s target audience (i.e. stakeholders) includes community members directly affected by climate change impacts and representatives of government, NGOs, and the private sector. Table 3 presents an overview of capacity building and awareness raising interventions in the three CBA projects reviewed in this study.

TABLE 3: CAPACITY BUILDING AND AWARENESS RAISING IN SELECTED CBA PROJECTS IN JAMAICA

CAPACITY BUILDING	NORTHERN ST. ANDREW AND PORTLAND	COCKPIT COUNTRY’S MARTHA BRAE WATERSHED	PORTLAND BIGHT-CLARENDON
THEORETICAL INTERVENTIONS	Training in organic farming and compost heaping	Video projections of methods of flooding and erosion abatement	Distribution of training manual about the monitoring and protection of threatened ecosystems and species
PRACTICAL INTERVENTIONS	<ul style="list-style-type: none"> • Demonstration of soil conservation techniques • Demonstration of greenhouse farming 		Demonstration of rainwater harvesting techniques
AWARENESS RAISING	<ul style="list-style-type: none"> • Projection of a short documentary on unsustainable agricultural practices • PowerPoint presentation on climate change risks 	Distribution of brochures on climate change risks	Distribution of leaflets, community theatre showcases, radio and cable TV diffusions, and organization of competition blogs about climate change impacts on globally endangered ecosystems and species

CHALLENGES

The UNDP-GEF CBA Programme’s scope and transverse approach expose projects to a variety of challenges. In Jamaica, every CBA project has anticipated and responded effectively to a number of challenges. Table 4 presents an overview of the challenges and coping strategies within the selected CBA projects.

TABLE 4: CHALLENGES AND COPING STRATEGIES IN THE SELECTED CBA PROJECTS IN JAMAICA

CHALLENGE		COPING STRATEGIES		
		NORTHERN ST. ANDREW AND PORTLAND	COCKPIT COUNTRY’S MARTHA BRAE WATERSHED	PORTLAND BIGHT-CLARENDON
SOCIO-CULTURAL	Weak participation of community members	Community mobilization through local organizations and community leaders		Community mobilization through the Social Development Commission Promotion of project’s activities and potential benefits to community members Provision of incentives, such as stipends, during community meetings
TECHNICAL	Low performance of soil conservation and greenhouse techniques	Guidance from soil conservation and greenhouse technicians		
FINANCIAL	Limited funding for the conservation of Fish Sanctuaries			C-CAM actively sought co-financing to supplement government fund
ENVIRONMENTAL	Bad weather (heavy rains and draught)	Project’s interventions spread across three growing seasons	Implementation during the period of stable weather	

DISSEMINATION AND REPLICATION STRATEGIES

The rationale behind every CBA project within the UNDP-GEF Programme is to generate lessons and best practices for dissemination, replication and up-scaling. In Jamaica, the strategy varies among projects and includes training-of-trainers sessions and the development of new proposals for similar projects within the country.

In the Cockpit Country's Martha Brae Watershed, farmers-to-farmers (training-of-trainers) skill-share sessions were organized and led to new practices adopted by farmers outside the intervention area. In Northern St. Andrew and Portland, the CBA project has been scaled up through the development of new proposals to carry out similar activities in the communities' buffer zone of the Blue and John Crow Mountains National Park facing similar climate change hazards to those of Woodford and Cascade.

Institutional and financial leverages

The UNDP-GEF CBA Programme champions institutional and financial leverages to create new conditions and opportunities for the effective implementation and the sustainability of CBA activities. To this end, many CBA projects in Jamaica have leveraged institutional and financial supports across their adaptation interventions.

In Northern St. Andrew and Portland, the Forest Conservation Fund has provided a four-year reforestation fund to finance adaptation baselines activities (not related to climate change), in support to UNDP-GEF CBA Programme fund specifically addressing climate-related components of the project. As a whole, co-financing is estimated at US\$78,291, including in-kind support from farmer cooperatives (JA Farms).

Institutional leverage in Portland Bight-Clarendon is one of the strongest within the CBA portfolio in Jamaica. The fisheries division co-shares monitoring costs of the fish sanctuaries developed under the project and has provided materials for the community education component of the project. Similarly, Christian Aid has provided educational materials on climate change, including a practical guide for community members and students. The Clarendon Parish Development Committee has provided a platform for the dissemination of information amongst community members. In addition, the Social Development Commission and Clarendon of St. Catherine has assisted the project in mobilizing community participants for workshops and other activities, and in disseminating the information generated during the project. In general, the total additional (in cash and in kind) support from SGP regular projects in Jamaica is estimated at \$20,000.



In a CBA field workshop, community members build capacity as they discuss the climate change-driven challenges they face with CBA project staff. The project's adaptive practices such as soil conservation techniques and greenhouse construction replace the communities' old maladaptive practices of 'slash and burn'. These lead to land restoration, income generation, food security and conflict resolution due to less migration.

UNDP/UNDP-GEF CBA Jamaica

LESSONS LEARNED

Several lessons can be drawn from the implementation of CBA projects in Jamaica:

1. The influence or impacts of adaptation interventions on policies requires longer timeframe.

As previously mentioned, a primary goal of the CBA Programme is to generate experiences that can eventually be mainstreamed into local, regional and national policies. Though laudable results have been achieved in this respect, the process revealed the need for a longer timeframe than the two-year average duration of the majority of CBA projects to fully materialize into tangible policy results. This underscores the need to ensure the sustainability of adaptation interventions for longer-term impacts and potential policy influence at the national level.

2. Factoring resource sharing into adaptation planning is essential to avoid potential conflicts.

The UNDP-GEF CBA Programme provides community members with tangible benefits—in terms of goods and services—through (from onset to outset) the project's adaptation interventions. Given the ability of the projects to provide such benefits, it is important to ensure that resources are distributed equitably during all stages of the project. This will help the benefits to reach all social groups and hopefully surmount conflicting interests, where they exist, between different groups. Measures should be put into place from the onset to assist with equitable distribution. Lack of a structured system, as in Northern St. Andrew and Portland where seedlings and seeds were distributed to participants through an *ad hoc* process, could result in conflicts. This supports the need for adaptation interventions such as those undertaken within the UNDP-GEF CBA Programme to factor benefits sharing into adaptation planning. This will help avoid potential conflicts, while strengthening community ownership and ensuring the sustainability of the interventions.

3. Connection between community members and policymaking institutions is necessary for policy adoption.

One answer to the multiple challenges arising from climate change is the exponential development of policies in a variety of domains related to climate change adaptation. This approach was followed by the UNDP-GEF CBA Programme, which advocates for policy change from local to the national levels. The CBA's experience in Jamaica shows that special consideration should be given to the adoption of policies. In some cases, policies promoted under CBA activities were even already in place at national level, but not yet adopted at the community level. Furthermore, our piloting activities reveals a weak connection between national policymaking bodies and communities. This gap stresses the need to strengthen connections between all the stakeholders involved in the implementation process. This could be achieved among others through the establishment and/or the strengthening of extension services and continuous capacity building aimed at liaison agents involved in the policy planning and implementation.

1. Community participation and confidence in adaptation interventions is driven by tangible benefits

The CBA portfolio in Jamaica is unique in that it places considerable emphasis on education, capacity building and awareness raising. Though these activities are fundamental to increase the adaptive capacity of communities, in many cases they have not been associated to interventions generating livelihood benefits. This has resulted in limited participation (less than anticipated) by community members. In Portland Bight-Clarendon for example, the participation of community members is limited as they commit most of their time to activities generating tangible benefits for their livelihoods. The ones who participated in the educational programme were reluctant to express their opinion about their confidence in the implemented activities to reduce the community's vulnerability (VRA question 4). Future CBA interventions should strike a balance between the implementation of adaptation-related educational programmes and activities generating livelihood benefits.

CONCLUSION

The UNDP-GEF CBA Programme in Jamaica has been very successful in reducing participating communities' vulnerability to climate change variability and extremes. This outstanding achievement is reflected in the communities' confidence about their capacity to adapt to current and future climate change, as well as the wide range of benefits generated for communities and the global environment. This success stems from the UNDP-GEF CBA Programme approach, which champions community ownership, capacity building and sustainability, and advocates for policy change from the grassroots level. The projects in Jamaica have resulted in pertinent lessons, essential in informing future community-based adaptation initiatives.



Community members, with the help of Peace Corps volunteers, work on reforestation interventions to prevent landslides during heavy rains as well as to reduce carbon emissions.

UNDP/UNDP-GEF CBA Jamaica

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