Contents

Preface 4
Acknowledgements 5
1. Background & Overview 6
A Word of Welcome 6
Overview of the Workshop 6
Workshop Learning Objectives 7
About this Handbook 7
2. Module Units 9
Introductions & Workshop Overview (1 hr & 30 mins) 9
Introduction to Climate Change (3 hrs & 50 mins) 10
Understanding Community Vulnerability and Capacity To Respond To Climate Change (6 hrs & 15 mins) 19
First Steps in Developing a Community Climate Change Adaptation Plan (3 hrs & 55 mins) 21
Using Communication to Support your Climate Change Plan (2 hrs & 35 mins) 23
Workshop Evaluation and Closing (60 mins) 25
3. Learning Journal 26
4. Resources - Frequently Asked Questions (FAQs) 34
Additional Reading 37
Communities in the CDEMA States are already facing increasing threats as a result of climate change. Particularly sea level rise, more intense hurricanes, changes in rainfall patterns, diminishing water availability, new health-related hazards and other impacts are negatively affecting the livelihoods of the most vulnerable people. Moreover, the Caribbean’s heavily populated coastal areas will feel the greatest impact from a changing climate. The poorest will be affected as they are generally ill equipped to prepare for disasters and have little capacity to adapt. Moreover, vulnerability is increased because the region’s primary industries, agriculture, fisheries and tourism are likely to be severely affected by climate variability and climate change. Public health, infrastructure and water security are also at risk. As such there is a need to strengthen community resilience and local adaptive capacity. This is an agreed priority of the CDM Enhanced Comprehensive Disaster Management Programme Framework.

In response to the need for strengthened community resilience, the Mainstreaming Climate Change into Disaster Risk Management for the Caribbean Region Project, funded by the Austrian Development Agency, and executed by CDEMA, in collaboration with the Civil Society Sector Subcommittee of the Comprehensive Disaster Management Harmonisation Council (CSSSC - CDM CHC) facilitated the development of the Climate Smart Community Disaster Management Module and Handbooks. The Module and Handbooks serve as resource tools to help communities and their partners incorporate climate change adaptation considerations into their disaster risk reduction planning processes.

The Module and the companion handbooks for facilitators and participants form part of the Caribbean Disaster Emergency Management Agency’s (CDEMA’s) Climate Smart Community Disaster Management Programme. Specifically, it is designed to be integrated into disaster risk reduction planning processes based on CDEMA’s Community Disaster Risk Reduction Manual. However, it can also be used in other similar community-based disaster risk reduction programmes and processes, such as those being implemented in many Caribbean countries by national Red Cross Societies, and into community development planning and capacity building activities.

The Module defines climate change and explains how it is likely to affect the Caribbean and its communities. It explores the linkages, synergies and differences between climate change adaptation and disaster risk reduction and lays the groundwork for developing a community climate change adaptation plan and communication strategy, which can be integrated into a broader community disaster risk reduction plan. In summary, it has been designed to build the capacity of Caribbean communities to increase their resilience to climate change and to reduce the impacts of climate-related disasters, by providing practical, action-oriented tools and methods that they can use to understand their climate risk and vulnerability and develop and implement strategies for reducing them.

We are pleased to offer the Climate Smart Community Disaster Management Module and Handbooks for use by community facilitators and partner organisations who are working with community groups to develop disaster risk reduction or community development plans. It is hoped that communities will use these important resource tools to build their resilience in the face of a changing climate.
Acknowledgements

The Caribbean Disaster Emergency Management Agency is grateful to the consulting team of the Caribbean Natural Resources Institute (CANARI) who led the process in developing the Climate Smart Community Disaster Management Module and Facilitator’s and Participant’s Handbooks.

The Module and Handbooks have benefited from the insights and technical guidance of the Civil Society Sector Sub Committee of the Comprehensive Disaster Management Harmonisation Council (CSSSC- CDM CHC) whose members represented the Caribbean Policy Development Centre (CPDC), the International Federation of Red Cross and Red Crescent Societies (IFRCS), the Adventist Development and Relief Agency (ADRA), the Caribbean Confederation of Credit Unions (CCCU), the Organization of Eastern Caribbean States (OECS), HelpAge International and the Montserrat Disaster Management Coordination Agency. Further, technical support and informative comments provided by the CDEMA project and management staff of the Mainstreaming Climate Change into Disaster Risk Management for the Caribbean Region project is also acknowledged.

CDEMA also wishes to thank the Steering Committee of the Mainstreaming Climate Change into Disaster Risk Management for the Caribbean Region Project for the professional guidance provided, which included the International Federation of the Red Cross and Red Crescent Societies (IFRCS), the four CDEMA Sub-Regional Focal Points- Department of Emergency Management (DEM), Barbados, Office of Disaster Preparedness and Emergency Management, (ODPEM), Jamaica, National Office of Disaster Services (NODS), Antigua, Office of Disaster Preparedness and Management (ODPM), Trinidad and Tobago, the Caribbean Community Climate Change Centre (CCCCC), the Caribbean Policy Development Centre (CPDC), Chair of the Climate Change and Disaster Management Working Group (CCDM-WG), the University of the West Indies, Centre for Resource Management and Environmental Studies (CERMES).

CDEMA also acknowledges the inputs of the two pilot community workshops held under the auspices of the Red Cross Societies and National Disaster Offices in Old Harbour Bay, Jamaica and Mayaro, Trinidad and Tobago. The detailed review and useful comments provided by the regional training of facilitators’ workshop convened through the support of the Office of Disaster Preparedness and Management (ODPM), Trinidad and Tobago is especially acknowledged.

CDEMA also expresses its appreciation to the Austrian Development Agency for the financial support provided for the production of the Climate Smart Community Disaster Management Module and Handbooks.
1. Background & Overview

A Word of Welcome
Welcome to this Climate Smart Community Disaster Management Workshop! Climate Change is everyone's business and so we do appreciate that you have taken time out to participate in this activity. We hope that by the end of this workshop you will have a clear idea of what you can do individually and collectively to help ensure that your community is doing all it can to reduce its risks in this area and adapt to Climate Change.

Overview of the Workshop
This workshop is based on the Caribbean Disaster and Emergency Management Agency's (CDEMA’s) Climate Smart Community Disaster Management Module. The Module has been developed to help Caribbean communities understand:

✪ What is Climate Change.
✪ The risks posed by a changing climate.
✪ Climate Change’s threat to your communities and livelihoods.
✪ How as individuals and communities you can reduce vulnerability to Climate Change and withstand its impacts; and
✪ How Disaster Risk Reduction and Climate Change adaptation activities can help build your community's resilience.

THE HANDBOOK PROVIDES GUIDANCE ON:
✪ Your preparation for and response to climate-related disaster risks; and
✪ Ensuring your community disaster preparedness and response activities take Climate Change into account.

The module is divided into six core units. Each unit is divided into shorter sessions. Although there are a few presentations from the facilitator, the focus throughout the workshop is on practical and fun activities that will provide you with the tools for further development of your community’s plan of action.

The module was designed with the recognition that you are an agent of change rather than a victim of climate related risks and disasters. Therefore, your knowledge of what is happening in the community and what needs to be done to reduce your risks is essential. Although the facilitator will provide you with some additional useful information, particularly about Climate Change, and how Climate Change adaptation links to Disaster Risk Reduction, the emphasis will be on guiding you to build on and apply the wealth of knowledge, skills and experience that already exists in your community.
Workshop Learning Objectives

By the end of this workshop, participants will be able to:

✓ Explain the main causes of global Climate Change and the likely impacts on the Caribbean region, their country and community.

✓ Describe how Climate Change adaptation and Disaster Risk Reduction are linked.

✓ Identify ways in which they can increase their community’s resilience to Climate Change.

✓ Identify and apply tools to integrate Climate Change considerations into the community’s Disaster Risk Reduction plan and develop a plan of action for Climate Change adaptation.

✓ Identify indicators of successful Climate Change adaptation and building of community resilience.

✓ Identify ways in which community members can explain the impacts of Climate Change to others, including lobbying policy makers for necessary action; and

✓ Access a wide range of resources to build on the skills and knowledge developed during the workshop.

About this Handbook

This Participant’s Handbook is designed to be used both during the workshop as a workbook and afterwards as a resource that you can refer to during future stages of community disaster risk reduction planning. Your Handbook binder package has been designed in a format that allows you to add any materials that you find useful to your local planning process.

IN THIS HANDBOOK YOU WILL FIND THE FOLLOWING:

✪ Agenda: The agenda sets out the programme of activities that you will follow throughout the workshop.

✪ Overview of the Module Units: This will give you an outline (or summary) of what will be covered in each unit of the Module. It describes the learning objectives for each unit and provides explanations of the key words and concepts it introduces.

✪ During the workshop, the facilitator will be providing you with a number of handouts, so that by the end of the workshop you have a comprehensive Handbook. In each unit overview, there is a checklist of the handouts you will receive.
Learning Journal: The Learning Journal has been designed to help you reflect on the material we cover. We encourage you to take time to complete it. It also includes blank pages where you can make additional notes.

Resources: This section includes Frequently Asked Questions and a list of material you can consult to get further information about some of the topics covered in the workshop.

Frequently Asked Question: We have compiled a list of questions that reflect some of the things that people often misunderstand about Climate Change. These maybe helpful to you during the workshop or you may be asked similar questions when talking to others about Climate Change afterward.

Additional Reading: We have listed some books and videos that we think might be of interest to those of you who want to learn more after the workshop.
2. Module Units

UNIT 1.

INTRODUCTIONS & WORKSHOP OVERVIEW (1 hr & 30 mins)

UNIT OVERVIEW
You will be given an overview of the agenda and the objectives of the workshop, and will have an opportunity to share with other participants your expectations/ or what you would like to get out of the workshop.

You will get to know the workshop organisers and facilitators and your fellow participants. If you already know the participants, you will learn something new about them!

Your learning journal will help focus on what you want to get out of the workshop.

Learning Objectives

By the end of this workshop, participants will be able to:

✔ State the objectives of the workshop.
✔ Name your fellow participants and the facilitators.
✔ Identify other participants’ expectations.
✔ Assess the extent to which you and other participants’ expectations will be met.

UNIT CONTENTS
The material for this unit is covered in one session.
Session 1.1 Participant introductions and expectations.
UNIT 2.

INTRODUCTION TO CLIMATE CHANGE (3 hrs & 50 mins)

UNIT OVERVIEW
In this unit, you will be introduced to the concepts of climate variability and Climate Change. You will explore the causes and effects of Climate Change, and you will look at how Climate Change is affecting the Caribbean and your country. You will examine the linkages between Climate Change and Disaster Risk Reduction and actions that can be taken to respond to Climate Change (mitigation and adaptation).

Do remember to complete your learning journal at the end of this unit.

Learning Objectives
By the end of this workshop, participants will be able to:
✔ Describe Climate Change, and explain its causes and its main effects.
✔ Describe how Climate Change is affecting your country and community (including key sectors such as health, agriculture, fisheries, water, environmental management etc.) and the Caribbean region.
✔ Explain what a Changing Climate means for Disaster Risk Reduction.
✔ Explain the main approaches to addressing Climate Change (adaptation and mitigation) and how to integrate these responses into Disaster Risk Reduction initiatives.

UNIT CONTENTS
The material for this unit is covered in three sessions.
Session 2.1 Climate Change and what it means for the Caribbean.
Session 2.2 Mapping the impacts of Climate Change.
Session 2.3 Reviewing and consolidating knowledge.

KEY WORDS AND CONCEPTS USED IN THIS UNIT
✪ The link between Climate Change and Disaster Risk Reduction
  1: There is significant overlap between Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA). CCA and DRR both seek to ensure that we can build resilience to hazards for sustainable development.

Climate Change increases disaster risk in a number of ways. It changes the magnitude and frequency of extreme events. This means that coping and response mechanisms and economic planning for disasters based on past vulnerabilities may no longer be enough. It changes average climatic conditions and climate variability, affecting underlying risk factors, and it generates new threats, which a country or region may have no experience in dealing with. If Climate Change adaptation policies and measures are to be efficient and effective they must build on and expand existing DRR efforts. And if DRR approaches are to be sustainable they must account for the impact of Climate Change.

DRR can deal with current climate variability and be the first line defence against Climate Change. It is therefore an essential part of adaptation. Conversely, for DRR to be successful, it needs to take account of the shifting risks associated with Climate Change and ensure that measures do not increase vulnerability to Climate Change in the medium to long-term.

Climate Change refers to a significant change in the conditions of our climate (for example precipitation, temperature, atmospheric pressure) over an extended period of time (longer than a few decades).

Climate Change can be due to natural factors or human activities.

You must have heard the term ‘global warming,’ which is used ONLY to describe the average increase of the earth’s temperature due to human activities which release greenhouse gases. These gases, mainly carbon dioxide, methane, water vapour and nitrous oxide, are released into the earth’s atmosphere by the burning of coal, oil, and natural gas for energy and transportation, deforestation, and various agricultural and industrial practices.

These gases operate like a greenhouse by trapping heat (radiated by the sun) in the lower atmosphere.

The Intergovernmental Panel on Climate Change (IPCC), which comprises about 500 scientists from all around the world, report that the average global surface temperatures increased 0.74 +/- 0.18°C over the 100 year period (1906 to 2005).
Climate Variability

Climate variability refers to changes in climatic conditions on time scales of months, years, or decades (30 years or less). This variability is not related to greenhouse gases, but is due to natural factors such as an exchange of heat and gases between the earth’s atmosphere and its oceans and land vegetation.

Climate variability can therefore result in sudden disruptions, such as floods, droughts, or tropical storms. For example, the average maximum (highest) temperature in July in country X could be 29°C (averaged over the last 30 years), but in a particular year, the average maximum temperature for July could be 24°C, making it cooler than usual. This departure from what is “normal” is considered variability. As long as the long-term (30 years) average does not change, the climate is considered stable. Some amount of climate variability is usual, but Climate Change is expected to increase climate variability. That is to say, we can expect to experience more short spells of out-of-the-ordinary weather (e.g., more or less rain or higher or lower temperatures than usual).

Climate variability can result in sudden disruptions, such as floods, droughts, or tropical storms.

Climate versus weather (see Frequently Asked Question 1). Note: “Climate is what you expect, weather is what you get!”

Adaptation is any adjustment (change in conditions) in human and natural systems to prevent, moderate, cope with and take advantage of the effects of Climate Change events.

For example, adaptation actions to address flooding could include river training, or making improvements to drainage systems. An adaptation action to deal with storm surge could be mangrove replanting. A farmer faced with longer droughts could put in place water harvesting measures, shift to using mulch with high moisture-holding capacity, or shift to planting more drought-tolerant crops. All of these are adaptation measures.

Adaptation is not really a new concept since over time, human beings and ecosystems have adapted to different environments and conditions. Importantly, at the community level, planned adaptation is essential as it is the result of a deliberate policy decision, based on an awareness that conditions have changed or are about to change and that action is required to return to, maintain or achieve a desired state (IPCC 2007). Planned adaptation helps us to prepare for and respond to changes in climate.
**Climate Change mitigation** is a term used to describe actions taken to reduce or eliminate permanently long term risks and hazards of Climate Change, mainly by reducing or removing the sources or enhancing the sinks of greenhouse gases (for example forests). This is primarily done by reducing people's impact on the climatic system.

Examples of actions that would be considered mitigation include: using less electricity, driving fuel efficient cars, or making fewer journeys by car – all of which would lead to reduced greenhouse gas emissions. Mitigation can also include actions to boost the natural systems that remove greenhouse gases from the atmosphere. Reforestation, for example, can be considered a mitigation activity as trees help absorb excess carbon dioxide from the air.

Without mitigation, Climate Change would continue unchecked and would eventually exceed all our efforts to adapt.

How is the word mitigation used differently by the Climate Change and Disaster Risk Reduction communities? (See Frequently Asked Question 8)

Even though the effects of Climate Change are first felt in the natural environment the consequences are often social and economic. For example, if warmer sea temperatures cause tuna and parrot fish to leave the Caribbean Sea in search of cooler water, the livelihoods of fishers and their families will be affected.
TAKE-AWAY POINTS FROM UNIT 2

- Climate Change is a serious and urgent issue for the Caribbean. Our region is very vulnerable to natural hazards and, as a result, to the effects of Climate Change.

- Climate Change will increase the intensity (strength) and frequency (the number of times they occur) of the weather-related natural hazards to which the Caribbean is vulnerable, e.g., drought, hurricanes, landslides, storm surge and flooding (coastal and river).

- Climate trends in the Caribbean include:
  - Hotter days and nights (warmer temperatures on land and in the sea);
  - Changing rainfall patterns: More intense wet seasons (landslides and flooding, e.g., Guyana, Haiti, Jamaica); longer dry seasons (and severe water shortages, drought e.g., Guyana, Haiti, Belize; likely severe problems in places like Antigua, Barbados, St. Kitts in the future.
  - More intense hurricanes: The region has had more intense storms over the past 10 years. In 2005, there were 28 named storms. Between mid-August and early September 2008, Haiti was hit by four hurricanes and tropical storms in a row. One of these hurricanes, Hanna, was ranked sixth on the list of 10 worst natural disasters in 2008 by the number of deaths and missing persons.
  - More extreme weather events (more droughts since the 1960s; more flooding events and storms since the mid-1990s): Cuba, Jamaica, and Belize have all experienced severe droughts in recent years and heavy rains have caused catastrophic flooding and landslides in Guyana, Haiti, and Jamaica. Islands that are already short of water, like Antigua and Barbuda, Barbados, and St. Kitts and Nevis, could be faced with severe drought and water shortages in the future.
  - Rising sea levels are set to cause damage to airports, power plants, roads and agricultural land in low-lying areas, as well as to prime tourist locations in many islands.

The climatic trends in the Caribbean are a reflection of what is happening globally.

- The consequences of the climate trends that the Caribbean is experiencing include the following:
CONSEQUENCES OF CLIMATE TRENDS FOR THE CARIBBEAN

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<tr>
<th>Climate Trend</th>
<th>Impact</th>
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<tr>
<td>Warmer temperatures</td>
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<tr>
<td>on land</td>
<td><strong>Agriculture</strong></td>
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<td><em>Crop yields affected. The amount of crop harvested for each acre planted could be reduced.</em> For example, cool nights during the sugar cane reaping season result in better quality juice, fewer cool nights could lead to a decrease in the amounts of sugar produced from each tonne of cane harvested. If the temperature in the Caribbean were to go up by 2°C, the yield of rice, bean and corn crops would be reduced by 25%. Reduced productivity. Warmer temperatures may cause some agricultural areas to be less productive (but in some areas it may also offer the possibility of growing new/different crops.) Spread of diseases and pests: It is thought that changing weather patterns will also affect the spread of pests and crop diseases.</td>
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<td><strong>Human health</strong></td>
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<td><em>Climate Change is linked to increases in diseases carried by some insects and rodents.</em></td>
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<td>Warmer temperatures, for example, are associated with dengue outbreaks. Higher temperatures cause the Aedes aegypti mosquito to breed faster, and the small insects feed more often and this helps spread disease. Higher temperatures alone don’t lead to dengue outbreaks, but are a contributing factor.</td>
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<tr>
<td>Warmer temperatures</td>
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<td>on land</td>
<td>Dengue outbreaks took place in the Caribbean in 2010 and 2005 - two of the five hottest years on record. In Guyana, leptospirosis is known as the “flood disease” because of outbreaks after intense flood events. Flooding doesn’t cause leptospirosis, but it makes the conditions right for the spread of the disease through contaminated water.</td>
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### Climate Trend Impact

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<td><strong>Warmer temperatures in the sea</strong></td>
<td><strong>Coral bleaching:</strong> High water temperatures cause corals to expel the small organisms that live in them and when this happens, the corals appear white or “bleached”. If the organism remains outside the corals for too long, the corals weaken and eventually die. In 2010, the hottest year on record to date, and in 2005, another very hot year, marine scientists in several different parts of the world recorded some of the worst bleaching events to affect corals. Damaged coral reefs weaken coastal defences and have a negative effect on fisheries, and can also affect beach quality and ultimately even the tourist industry. Tourism is important to so many Caribbean economies. Reefs are also vulnerable to damage from strong hurricanes and storm surge.</td>
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<td><strong>Plants and animals:</strong> Warmer seas are also bad for the plants and animals that live in the water and if the water gets too warm some species relocate in search of cooler water, or die. The Caribbean Sea has already warmed by 1.5°C in the past century. If it were to become a further 1°C warmer, species like tuna, parrot, and dolphin fish, that our fishers catch to earn a living and that we eat, would go in search of cooler waters. The ability of some marine animals, like turtles and crocodiles, to reproduce is likely to be affected by warming waters. These reptiles’ eggs are sensitive to temperature. The temperature of the eggs’ environment during the first 3 months determines if the hatchlings (babies) will be male or female. Eggs incubated (hatched) in an environment that is about 30° C develop into females and those in an environment below about 30° C, develop into males. Warmer temperatures will mean more females and over time this will affect the populations of these animals.</td>
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<tr>
<td>Climate Trend</td>
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| Sea level rise     | **Human settlements and livelihoods:** Sea level rise is a threat to livelihoods and settlements in the coastal zone. Some 70% of Caribbean people live and work along the coasts and in some countries, the percentage of people who do so is higher.  
**Coastal erosion:** Sea level rise can contribute to erosion of the coastline. This can lead to loss of beaches as well as of coastal ecosystems, such as mangroves, where fish and other marine animals breed. Erosion of the coastline can affect roads, houses and other buildings in the coastal zone, making them more vulnerable to storm surge and flooding from the sea.  
**Ground water supplies:** Rising sea levels can cause salt water to get into the water table and fresh water near the coast (salt water intrusion). A change in the levels of salt in the water in wetlands like mangrove affects the plants and animals that live and grow there. In some areas, domestic water supplies can be affected by salt water seeping into the water table.  
**Reefs and mangroves (coastal ecosystems):** Rising sea levels can affect the health of mangroves and reefs, both of which are important for fisheries as fish, lobster and other marine species breed and live there. The mangroves and reefs also protect the coastline from strong wave action, so if they are weakened in any way, they are less able to play this important role. Many of our reefs and mangroves have already been damaged by human activity, such as pollution from the land or by direct destruction, (e.g., when we clear mangroves to build along the coast or drop anchors on the reefs or even overfish them) so they are already weakened. Climate Change impacts can make existing problems or weaknesses worse. |
| More intense hurricanes | **Reefs and mangroves (coastal ecosystems):** Hurricanes cause damage to important ecosystems (reefs and mangroves) that play an important role in protecting the coastline and also in supporting livelihoods and industry. |
Livelihoods: Hurricanes are potentially very damaging to the key economic sectors of agriculture and tourism. People who earn a living from fishing and farming and other activities that rely on natural resources can find their livelihoods disrupted.

**National economy:** The cost of damage caused by major hurricanes is high. For example:
- 2004 Hurricane Ivan: Cayman = US$3,432 damage, Grenada = US$919m.
- 2005 Hurricanes Emily and Dennis: Jamaica = US$2.2M damage.
- 2008: 60% of Haiti’s harvest was destroyed by 4 consecutive storms between August and September.

Extreme weather

**Damage to ecosystems on land and in the sea.** Like hurricanes, storms can cause damage to reef, mangroves, forests etc.

**Livelihoods:** Extreme weather, such as flooding and drought also disrupt livelihoods. Farmers are challenged by changing rainfall patterns which sometimes means that they can no longer plant or reap certain crops at the time of year that they are accustomed to doing so. Too much rain at the wrong time can ruin a crop, too little water can also lead to losses.

Many of the actions that you have been taking in your communities to reduce disaster risk are exactly the sort of thing you need to do and/or promote to ensure you respond effectively to Climate Change.

But Climate Change means that we have to think about natural hazards and disasters in a slightly different way. We have to plan for more frequent and stronger weather-related natural hazards and we have to take a long-term perspective in our planning.

Even though the effects of Climate Change are first felt in the natural environment the consequences are often social and economic. For example, if warmer sea temperatures cause tuna and parrot fish to leave the Caribbean Sea in search of cooler water, the livelihoods of fishers and their families will be affected.

We have to take action to ensure that our homes and communities can stand up to effects of Climate Change.

If we scale up our Disaster Risk Reduction work, we will be taking an important first step towards Climate Change adaptation.

**Everybody has a role to play!**

**HANDOUT CHECKLIST**
- Handout 1: What is Climate Change? (PowerPoint Slides)
UNIT 3.

UNDERSTANDING COMMUNITY VULNERABILITY AND CAPACITY TO RESPOND TO CLIMATE CHANGE (6 hrs & 15 mins)

UNIT OVERVIEW
In this unit, you will explore how Climate Change is likely to affect your community and the livelihoods of community members. You will work through practical exercises to identify key areas of vulnerability that will be made worse by Climate Change. You will also assess the community’s capacity to respond to Climate Change and disasters, develop a vision of climate resilience for your community, and identify what changes in attitudes and behaviour are necessary.

This unit will bring out your creativity. Have fun even while you are talking serious business!

Your learning journal will encourage you to reflect on some of the things you saw in your community while working through the exercises and how you felt about them. Don’t forget to fill it out!

Learning Objectives
By the end of this workshop, participants will be able to:
✔ Identify the main risks and vulnerabilities in your community that will be caused or made worse by Climate Change hazards.
✔ Identify which geographic locations, economic/livelihood sectors, and types of people in your community that will become more vulnerable as a result of Climate Change.
✔ Describe your vision for community climate resilience.
✔ State how community members’ attitudes and behaviours will need to change in order to build a resilient community and how you will know this has happened (indicators of success).

KEY WORDS AND CONCEPTS USED IN THIS UNIT

❖ Hazard
A hazard is something that could result in harm. It is the threat of a potentially damaging physical event, phenomenon or human activity that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation.

A hazard can be geological, such as an earthquake or sinkhole; it can be hydrological, such as a flood or tsunami, or it can be climatic/meteorological, such as a hurricane or drought. Climate Change can increase or decrease the risk of other hazards.

❖ Disaster
A hazard becomes a disaster when it negatively affects people, seriously disrupts the functioning of the community or country and causes harm/damage that is beyond the affected area’s ability to cope using its own resources.
When a hurricane hits land and causes damage to homes, crops and infrastructure it is considered a disaster. If that same hurricane did not strike land but stayed out at sea, it would be considered a hazard, but not a disaster.

✪ **Vulnerability**
Vulnerability relates to the features and conditions of a community, a natural system (e.g., a mangrove) or a physical asset (e.g., a building or a bridge) that makes it susceptible to the damaging effects of a hazard. A community's vulnerability takes into account the degree to which it is exposed to risk from hazards, and its ability to cope with harm (i.e., its resilience, see below)².

✪ **Risk**
The combination of the probability of an event and its negative consequences (UNISDR, 2009).

✪ **Resilience**
Resilience is the ability to recover (spring back) from a shock or disaster. A climate resilient community is one that can survive and recover from the effects of Climate Change. It can understand potential impacts and take the action that is needed to minimise negative effects and maintain the ability to respond³.

✪ **Indicators (of success)**
Indicators are the visible or measurable things that show that your action plan or strategy has been successful. For example, the number of homes with hurricane straps; the number of trees planted along the river bank.

**Take-away Points from Unit 3**
- Understanding your community’s risk and vulnerabilities to natural hazards.
- Understanding how Climate Change is likely to affect your community’s risk and vulnerability is a first step towards developing a Climate Change response.
- It is important to understand the underlying causes of your community’s vulnerability. This way you can address these along with the symptoms of the vulnerability.
- There is little we can do about natural hazards, but by reducing risk and vulnerability, we can minimise the effects of a disaster.
- Understanding how people in your community need to change in order to be resilient to Climate Change helps you to identify the priority actions.

**HANDOUT CHECKLIST**
- Handout 2: Community Mapping Exercise (Small Group Activity Instructions).
- Handout 3: Creating a Vision of a Resilient Community (Small Group Activity Instructions).
- Handout 4: Developing a Body Map of Indicators of Successful Community Resilience (Small Group Activity Instructions).

UNIT 4.

FIRST STEPS IN DEVELOPING A COMMUNITY CLIMATE CHANGE ADAPTATION PLAN (3 hrs & 55 mins)

UNIT OVERVIEW
This unit will help you to outline a Climate Change adaptation action plan for your community.

Your learning journal has extra pages for notes.

Learning Objectives
By the end of this workshop, participants will be able to:
✔ Describe the elements of a community Climate Change adaptation action plan.
✔ Describe existing community capacity to deal with Climate Change impacts.
✔ Identify priority actions for your community.
✔ Describe a process for implementing the identified priority actions.

UNIT CONTENTS
The material for this unit is covered in four sessions.

Session 4.1: Linking Community-Based Climate Change Adaptation Planning with Disaster Risk Reduction Planning.

Session 4.2: Community Climate Change Adaptation Resources Inventory.

Session 4.3: Identifying Existing Coping Strategies for Dealing with Climate Change and Climate Variability.

Community-based adaptation
Community-based adaptation processes (or projects) are led by the community and based on local priorities, needs, knowledge and capacities. They empower local people as well as helping them to better cope with and plan for the impacts of Climate Change.

Take-away Points from Unit 4
✔ Some of the actions that your community has been taking over the years to respond to disaster risk can likely be scaled up as part of a Climate Change response.
✔ Your community’s disaster risk reduction plan can be expanded to take the effects of Climate Change and climate variability into account, in other words, it can be made climate smart.
✔ Do not reinvent the wheel – build on your community knowledge, experiences and resources to put measures in place to cope with the effects of Climate Change.
✔ Climate Change may pose new threats to your community, be sure to look at how you will deal with these.
✔ You cannot do everything at once; the community will need to prioritise its actions to address Climate Change.

HANDOUT CHECKLIST
❑ Handout 5: Coping Strategies Table
❑ Handout 6: Framework for Climate Change Adaptation Action Plan

UNIT 5.

USING COMMUNICATION TO SUPPORT YOUR CLIMATE CHANGE PLAN (2 hrs & 35 mins)

UNIT OVERVIEW
In this unit you will learn the basics of effective communication on Climate Change. You will be introduced to some of the main challenges of sharing information about Climate Change and you will go through a practical exercise to help you understand how to communicate Climate Change issues to other people, including policymakers, the media and other community members.

Remember your learning journal!

Learning Objectives
By the end of this workshop, participants will be able to:
✔ Describe how to frame Climate Change communication.
✔ Explain how to develop a Climate Change communication plan.

UNIT CONTENTS
The material for this unit is covered in two sessions.

Session 5.1 Introduction to Climate Change communication.

Session 5.2 Using communication to build support for your activities.

KEY WORDS AND CONCEPTS USED IN THIS UNIT

Communication
Communication is sending, receiving, or exchanging information, ideas, signals or messages between individuals through appropriate media. When we apply communication techniques to our work what we are doing is transferring or transmitting a message to a group of people in order to bring about some kind of result that will help meet our project’s goal or target (see public awareness and education and behaviour change below). Communication takes place when you send a message and it is received, understood and acted upon by the target audience.

Public awareness and education
Communication for public awareness and education provides people with information about a subject so they can better understand it. It develops a concern and encourages specific changes in practices or behaviour. For example:
❖ A reduction in harmful practices (deforestation that leads to flooding, improper garbage disposal that blocks key drains and gullies and leads to flooding); or,

❖ An increase in practices that enhance a person’s or community’s resilience to Climate Change (reforestation or livelihood activities that conserve forest resources, water harvesting; sustainable agriculture).

This kind of communication is also called an “individual behaviour change” campaign.

❖ **Advocacy**
Communication for advocacy seeks to influence policy and decision-makers to take a particular action. Advocacy campaigns generally focus on achieving change on a specific issue or policy of local, regional, national or international importance. For example:

❖ A policy that provides financial incentives for the use of renewable energy technologies; or

❖ Reinforcing buildings to make them more resilient to extreme weather events.

This is also called a “policy change” campaign.

❖ **Communication planning**
This is the step-by-step process that is used to figure out how to send a message to a specific audience and ensure it is received, understood and acted upon. A good planning process will help you define what you want to say to your intended audience and map out how you will get the message across (see Handout 10).

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**Take-away Points from Unit 5**

✔ Communication is a tool that can help you meet the goal of your Climate Change adaptation plan or of a specific activity or set of activities within the plan. It should not be an add-on or an afterthought. Build it into your project from the very start.

✔ It is important to plan your communication carefully.

❖ Decide what you want to achieve through communication (changing behaviour or changing/influencing policy).

❖ Be clear on who you need to reach and what you want to say.

❖ Think about who can be the best messenger for your issue.

❖ Think about the best ways to send the message. This requires knowledge of the characteristics and interests of your target audience.

❖ Don’t forget to identify the resources you will need.
UNIT 6.

WORKSHOP EVALUATION AND CLOSING (60 mins)

Learning Objectives
By the end of this workshop, participants will be able to:

✔ State whether the workshop met your expectations at the start of the workshop.
✔ Identify the most important concept and ideas you have learned.
✔ Identify what you can apply that will contribute to community Climate Change adaptation and Disaster Risk Reduction.
✔ Identify additional related capacity building needs (optional – adapt evaluation form if not relevant).

UNIT OVERVIEW
In this unit you will give the organisers and facilitators your spoken and written feedback on the workshop. Think about whether or not your expectations have been met and if you will be able to use what you have learned in your community.

Use this opportunity to let the workshop organisers know of any additional training or support your community may need. Remember to be as specific as possible about this.

UNIT CONTENTS
The material for this unit is covered in one session.

1. Workshop evaluation and closure

HANDOUT CHECKLIST

✔ Handout 11: Workshop Evaluation Form
3. Learning Journal

The learning journal is a tool for your reflection to help you to track what you found useful, how you felt during the training, and what will be most useful to you in your community work (or even other aspects of your life).

You will have opportunities to share what you have written but you will not be forced to do so – this is your private document. You can also decide whether you want to note a few points after each Unit or just at the end of the day.

Getting Started

📝 Wherever you see the smiley face symbol, it means there is a suggestion or tip that can help you to make the most of the workshop

WHAT DO YOU WANT TO GET OUT OF THIS WORKSHOP?

The facilitator will ask you early on in the workshop to note two or three major expectations you may have of the workshop. Why don't you jot down here all the things you would like to get out of the workshop? There may be more than the two or three. At the end of the workshop you can go back and see how many of them have been met.

My expectations of this workshop are...

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Thinking about how you felt during the training as well as what you learned can help you to reflect on why some things make you feel comfortable, respected, happy, angry or sad and how this affects the work you do in the community and the way you interact with other people. It can also provide useful feedback to the facilitator at the end.
WHAT ARE YOU PREPARED TO PUT INTO THIS TRAINING?

You are giving up your time to attend this workshop, so it makes sense to do everything you can to make sure you get good value out of it. The facilitator and the participants are a team and the success of the workshop depends on active involvement and commitment of everyone.

Think now about what kind of commitment you are prepared to make to ensure that the workshop is a success. This can range from ensuring you arrive on time to committing to share the knowledge, skills and experience that you undoubtedly have.

You may be the sort of person who doesn't usually feel comfortable asking questions or speaking in large groups. Don't worry; there will be plenty of small group work too. But why don't you also commit to participating a little more than usual in the large group sessions and remember “the only dumb question is the one that doesn’t get asked”. Very often, once one person starts asking questions or providing community examples, it helps everyone else to feel comfortable joining in too.

My commitment to this workshop is...

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Unit 1

1. When I had to introduce myself, I felt......

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

2. When the facilitator had finished explaining what the workshop was about, I felt (e.g. excited, uncertain, glad it met my expectations etc.)

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
3. Any other comments

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Unit 2
1. One thing I learned about Climate Change that I did not know before.
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

2. When I watched the video, I thought....
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

3. I think the worst impact of Climate Change on our country will be....
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

4. When I think about Climate Change, I feel....
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Unit 3  
1. On the mapping/transect walk, I was most worried that Climate Change would affect.....

2. When I was thinking about how the community would look if it were more resilient (the problems were solved), I felt....

3. I think the most important thing that people in the community need to change to become more resilient is.....

4. The changes I want to make are......

Unit 4  
1. I think the community’s most important capacities/resources to become resilient to Climate Change are....
2. I think I can be useful in the Climate Change adaptation process because I have the following knowledge/skills/resources......


3. I see my role in the Community Climate Change Adaptation Plan as being......


Unit 5
1. When I watched the Voices for Climate Change video, I felt.....


2. I think the most important people we need to tell about Climate Change are.....


3. If I could tell the politicians one thing they could do to help my community be more resilient, it would be.....


During this workshop
1. The most important things I learned were……

________________________________________
________________________________________
________________________________________
________________________________________
________________________________________

2. One thing from the workshop I can apply in my community work……

________________________________________
________________________________________
________________________________________
________________________________________
________________________________________

3. One thing I felt strongly during the workshop (emotions)…. 

________________________________________
________________________________________
________________________________________
________________________________________
________________________________________
4. Resources
Frequently Asked Questions (FAQs)

Here are some frequently asked questions that reflect some of the common misunderstandings, myths and misconceptions about Climate Change. It is not a straightforward topic after all! You might be asking yourself some of these questions as we go through the workshop, or someone may ask you similar questions after this activity.

1. What is the difference between climate and weather?
The words ‘climate’ and ‘weather’ are sometimes used as if they are the same, but they are in fact different, though related to each other. Weather refers to short-term, atmospheric conditions, climate to long-term ones.
- Weather is measured by temperature, humidity, wind speed, atmospheric pressure, cloudiness, and precipitation (rain, snow etc.).
- Climate is the average, or typical, weather conditions of a given area observed over a long period of time, usually 30 years or more.

Weather is what we experience on a day to day basis. Weather refers to the conditions at a particular time and place, and can change from hour to hour, day to day, and season to season. Climate, on the other hand, refers to the long-term average pattern of weather in a place. For example, we might say that the tropical climate of Saint Lucia is warm and humid, although the weather on a particular day could be quite different from that. Weather conditions may change quickly-sunny and dry one day and rainy and cool the next. Climate, on the other hand, is slower to change, but the implications of change are far reaching.

There is a popular phrase that says, “Climate is what you expect, weather is what you get.”

2. What is the difference between Climate Change and climate variability?
Climate Change refers to long-term changes in the components of climate (such as temperature, precipitation, atmospheric pressure, or winds). In order to be considered Climate Change, the observed changes have to persist for decades or longer.

We have all experienced periods when the temperature or the rainfall differed from what we had expected at that time of year. An example of climate variability includes long periods of droughts, floods and conditions that result from El Niño (dry) and La Niña (wet) events. Every

5. Source: http://hdgc.epp.cmu.edu/teachersguide/teachersguide.htm
three to seven years we experience El Niño/La Niña, and when this happens, it is a departure from "normal" conditions. The extreme and prolonged drought of an El Niño year is an example of climate variability. Climate variability can take the form of natural hazards, such as floods, drought, cold and heat waves, cyclones and storms.

3. Does the hole in the Ozone contribute to Climate Change?
The Ozone layer protects all life on Earth from the harmful effects of the sun's rays. It has been depleting for many years now. Scientists have said that currently over Antarctica the Ozone hole is three times the size of the United States of America and is growing. As a greenhouse gas, ozone absorbs heat (solar radiation). Ozone depletion in the earth's stratosphere (second major layer of the earth's atmosphere) and increases in the global tropospheric (layer below the stratosphere) ozone that have occurred in recent decades both contribute to Climate Change.5

The chlorofluorocarbon (CFC) and halogen (non metallic elements containing salts, for example, chlorine and iodine) source gases that cause stratospheric ozone depletion play only a minor role in Climate Change. The depletion of the stratospheric ozone layer, including the ozone hole, is a serious environmental problem because it triggers an increase in ultraviolet radiation that can harm people, animals, and plants. But this is a different problem from the problem of Climate Change.

4. Are general pollution and toxic chemicals major contributors to Climate Change?
Most forms of pollution play little or no role in Climate Change. The invisible carbon dioxide released when coal, oil, and gas are burned is the single most important contributor to Climate Change. The burning of fossil fuels, such as coal and oil, to produce energy for electricity, heat and transportation is the primary source of carbon dioxide, which is the most important contributor to global warming. Carbon dioxide does not contribute to general air pollution.7

5. What is the difference between global warming and Climate Change?
The term global warming, which is not considered a technical term, refers to the overall warming of the planet, based on average surface temperature. Climate Change is a broader (technical) term that refers to changes in the components of climate (such as temperature, precipitation, atmospheric pressure, or winds) that persist for decades or longer arising from either natural causes or human activity. The warming of the earth has led to Climate Change.

6. Is it true that Climate Change causes dengue (and other diseases)?
Climate Change does not cause dengue or other diseases. What it does is create conditions that make it possible for certain vector-borne diseases (especially those transmitted by certain animals

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7. Source: http://www.gcrio.org/gwcc/misconceptions.html
and insects) to spread quickly. For example, warmer temperatures in the Caribbean have caused the Aedes Aegypti mosquito that carries dengue fever to breed faster. Higher temperatures alone do not lead to increased dengue outbreaks, but they are a contributing factor. Leptospirosis is another disease where the impacts of Climate Change create conditions for spreading the disease. Floods and heavy rains are favourable for the spread of water borne diseases and diseases associated with water like leptospirosis. Rats carry leptospirosis, but it spreads through water contaminated by their urine.

7. Is it true that one of the effects of Climate Change is an increase in the number and intensity of earthquakes?

There is no proven (established) connection between warming and seismic (earthquake) activity, although some scientists have not ruled out the possibility that melting glaciers and rising sea levels shift the distribution of huge amounts of water, which release and increase pressures through the ground. There is, however, no definitive evidence to support the claim that Climate Change is causing an increase in the number and frequency of earthquakes, and in fact, no increase in the global incidence of either seismic or volcanic activity has been identified to date.

8. Isn’t mitigation the same thing as adaptation?

The word ‘mitigation’ is used by the Climate Change and Disaster Risk Reduction communities to mean two different things. In the Disaster Risk Reduction community the word mitigation is used to mean the lessening or limiting of the adverse impacts of hazards and related disasters. This is similar to what is called ‘adaptation’ by the Climate Change community. When people in the Climate Change community talk about ‘mitigation’ what they mean is the reduction of greenhouse gas emissions by limiting activities or mechanisms that release the gases and/or enhancing activities or mechanisms that remove them from the earth’s atmosphere.

In the DRR community the word mitigation is used when we take actions (long term or short term) in advance to reduce the degree of risk associated with a hazard. For example, strengthening of the sea defence in Guyana, building houses on stilts, and developing and implementing a National Disaster Management Plan. This is similar to what is called ‘adaptation’ by the Climate Change community.

So what the DRR community calls ‘mitigation’ is similar to what the Climate Change community calls ‘adaptation’ but what the Climate Change community calls mitigation is different from what the Disaster Risk Reduction community calls mitigation.
Additional Reading

Unit 2

CLIMATE CHANGE

For a general overview of scientific evidence of Climate Change and projected impacts, see:
- Climate change 101: Understanding and responding to global climate change
- Climate change 101: Science and impacts

To read more about the latest Climate Change projections, see:
- UNEP. 2009. Climate change science compendium. Nairobi : UNEP.

For information about Climate Change and small island states, see:
  - Available for download from: http://www.tyndall.ac.uk/sites/default/files/surviving.pdf

For a guide to engaging communities around Climate Change, see:

This toolkit includes an easy to understand explanation of Climate Change, its causes, and impacts, as well as some community mobilisation and communication tools (some of the communications tools are included in this toolbox.)

Available on request from:
Christian Aid (Caribbean) in English, Kweyol and Spanish.
Tel: (876) 754 8384,
Fax: (876) 754 8808
Email: rholder@christian-aid.org
CLIMATE CHANGE AND DISASTER RISK REDUCTION

For more information about the linkages between Climate Change and Disaster Risk Reduction, and the difference and similarities between the two agendas, see:


INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC) AND UN FRAMEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC)

For a basic summary of the 2007 Synthesis Report of the Intergovernmental Panel on Climate Change in simplified language see:


Available for download from: http://www.grida.no/publications/climate-in-peril/

For a general overview of the UN Framework Convention on Climate Change see:


VIDEOS

✧ Climate Change Let’s All Adapt!. DVD. CDEMA 2011 (30 minutes)
✧ In Hot Water. DVD. Buccoo Reef Trust/Owen Day 2007 (20 minutes)
✧ Islands on the Edge. DVD. Buccoo Reef Trust/Owen Day 2008 (22 minutes)
✧ The Burning Agenda. DVD. Buccoo Reef Trust/Owen Day 2009 (30 minutes)
✧ These videos can also be viewed on the Buccoo Reef Trust’s YouTube channel http://www.youtube.com/user/buccooreef.
✧ The Global Climate is Changing series. Four to six minute videos about Climate Change in the Caribbean produced by the Caribbean Red Cross Societies (Antigua and Barbuda, the Bahamas, Cayman and St. Kitts and Nevis) Available on the YouTube ProVention channel. http://www.youtube.com/provention
✧ Also see also the Sandwatch Foundation’s channel. http://www.youtube.com/user/SandwatchFoundation and
✧ The International Federation of Red Cross and Red Crescent Societies’ Climate Centre website http://www.climatecentre.org/
The ProVention YouTube channel http://www.youtube.com/provention has several videos of community Climate Change Adaptation and Disaster Risk Reduction. The videos tell stories from all over the world and include productions in English, Spanish and French.

National Geographic has produced general Climate Change videos that show global impacts of Climate Change http://video.nationalgeographic.com/video/

Unit 4


Unit 5


Available on request from:
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Morne Fortune
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Telephone: (758) 455 6327
Fax: (754) 453 1628
Email: oesec@oeecs.org


For a communication plan template and sample communication plans, see the W.K. Kellogg Foundation’s web site at http://www.wkkf.org. Go to Publications and Resources and select communication from the list of issues.