

# Climate and Development Outlook

Stories of change from CDKN

## Caribbean Special Edition

### REGIONAL RESEARCH AND PLANNING FOR CLIMATE COMPATIBLE DEVELOPMENT

Patricia Leon and Maria Jose Pacha, CDKN

This year, CDKN celebrates seven years of working to support research, planning and climate risk management in the Caribbean region, in partnership with the Caribbean Community Climate Change Centre (5Cs) and others. Our goal has been to support the common regional agenda for climate action by strengthening: the evidence base for climate compatible development, regional leadership on climate issues, the application of risk-based decision support tools and, ultimately, the climate-proofing of infrastructure investments.

Collaboration with the 5Cs has been fundamental to our work programme, as this Belize-based institution is mandated to provide climate related policy advice to the

Caribbean Community (CARICOM) member states and the UK's Caribbean Overseas Territories. The 5Cs is also a clearing house for regional climate change information.

The foundation for the regional approach to climate action adopted by Caribbean countries lies in the Regional Framework for Achieving Development Resilient to Climate Change, which was agreed in 2009. A far reaching and cutting edge Implementation Plan (IP), completed in 2012 with CDKN support, aims to put the framework into practice. The IP identifies priorities for low carbon and climate resilient actions. The IP also provides an important reference point for donors to coordinate climate finance flows to the region.

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### Climate and Development Knowledge Network

Helping developing countries to design and deliver climate compatible development

### The Caribbean's climate and development

The small island nations of the Caribbean are diverse, ranging from extremely poor countries such as Haiti to middle income countries such as Jamaica. However, they all share the challenge of addressing climate related threats like increasing frequency and intensity of storms, the risk of coastal submergence and severe flooding. Dealing with the negative impacts of climate change is currently estimated to cost 11.3% of the annual gross domestic product (GDP) of Caribbean countries according to the Caribbean Community Climate Change Centre (5Cs). This could double to 22% of GDP by mid-century.

Vulnerability is exacerbated because 60% of the Caribbean's population lives within 1.5 km of the coast. The ability to enhance resilience is constrained by economic growth rates that have slowed dramatically. Climate-related impacts, coupled with already vulnerable economies, are detrimental to the sustained growth and stability of the Caribbean region.

Despite these challenges, the governments of the region are committed to building climate resilient, low carbon economies. This 'Outlook' edition is dedicated to showcasing how Caribbean nations are taking action to address climate change and what partners such as CDKN are doing to support them.

#### INSIDE »

- Designing and applying tools for risk-based decision-making
- Improving water management
- Training local communities





## Strengthening regional leadership

The 5Cs has a strong political mandate from the CARICOM heads of state as a regional centre of excellence on climate change. For this reason, several CDKN projects have aimed to increase the capabilities and visibility of this key regional institution.

The process of consulting stakeholders to develop the Implementation Plan (IP) helped to strengthen the 5Cs' visibility because it allowed the agency to reconnect with many national, and regional stakeholders throughout the Caribbean. CDKN project support in the region introduced international expertise, which brought new insights to the 5Cs' work programme. CDKN also helped the 5Cs to create a communications strategy in order to strengthen its visibility and capacity to participate in international events.

As part of its negotiations support programme (<https://cdkn.org/themes/theme-climate-negotiations>), CDKN also supported the efforts of Caribbean governments to provide climate leadership during global climate negotiations. It did so by facilitating strategic planning and consensus building around CARICOM's negotiations strategy and its regional policy positions, and assisting states to foster domestic support for an ambitious global climate deal.

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The IP was endorsed by CARICOM heads of state and became the business plan for the 5Cs. The Plan has guided new initiatives ever since, including:

- the creation of a Regional Coordinating Committee on Climate Change
- monitoring and evaluation instruments in ten countries to track delivery of the IP, plus a regional M&E instrument that consolidates these national results for reporting to the Regional Coordinating Committee
- a help desk set up by the Caribbean Development Bank to assist CARICOM members in identifying climate funding sources and preparing projects for submission
- a Caribbean Development Bank programme to develop climate resilient development strategies
- Global Climate Change Alliance (GCCA) support to sector-specific

impact assessments and adaptation strategies in ten countries

- integration of climate measures in the work plans of regional agencies, thanks to IP guidance.

In addition, the IP consultation process played a role in the creation of Surinam's office for climate compatible development and the designation of an individual in every Jamaican ministry with a responsibility for mainstreaming climate action.

CDKN's Caribbean Programme has been built around the priorities identified in the IP. We believe that the Programme has strong results, which demonstrate how regional policy frameworks can drive effective national action on climate resilience and related benefits. The IP has given rise to several national climate policy initiatives, which we describe further in these pages.

GUEST COLUMN

# Rising to a common challenge

**SAM BICKERSTETH, CHIEF EXECUTIVE OFFICER, CDKN**

The sixteen states of the Caribbean have distinctive contexts but common challenges. One of the most pressing challenges is how to adapt to climate change. CDKN’s response over the past six years has been to support the development and implementation of a common regional agenda for climate compatible development. We have done so by strengthening regional leadership and strategic planning at national, regional and international levels – including the voice of the Caribbean in international climate negotiations; building a one-stop mechanism for coordinating climate finance; improving the evidence base on climate compatible development solutions through research projects; and the application of risk-based investment decision support tools. Partnership with the 5Cs has been at the heart of the CDKN Caribbean programme, with the Implementation Plan (IP) as the key building block. The IP is founded upon the principle of using risk management processes and tools to aid decision-making, and hence we went on to support the 5Cs in the development of CCORAL - the Caribbean Online Risk Management Tool.

The partnership led to the application of the CCORAL tool to the climate-vulnerable water sector. Ultimately, the improved knowledge about climate resilience was applied to upgrading a water supply scheme in St Vincent. The political mandate from CARICOM coupled with effective regional leadership by the 5Cs has led to the integration of climate change considerations into

national policy and planning across departments. This strong institutional environment has been a vital element of success and enabled CDKN’s Caribbean Programme to build the capability of the key actors including the regional research community. This provides a promising base for the next steps of investment in climate resilient growth and development in the region.



## Developing a risk management ethic in the Caribbean

*“Decision-making that is based on subjective value judgements, without using the information and the expert advice and guidance that is available, will compromise resilience. Risk management assists in the selection of optimal cost-effective strategies for reducing vulnerability, using a systematic and transparent process. Policies or initiatives that aim to reduce this vulnerability can be designed to complement and support the goals of poverty reduction, sustainable development, disaster preparedness and environmental protection.”*

**IMPLEMENTATION PLAN FOR THE REGIONAL FRAMEWORK FOR ACHIEVING DEVELOPMENT RESILIENT TO CLIMATE CHANGE**

## GUEST COLUMN

# Aligning planning horizons with climate change

**DR ULRIC TROTZ,**  
DEPUTY DIRECTOR AND  
SCIENCE ADVISOR, CARIBBEAN  
COMMUNITY CLIMATE CHANGE  
CENTRE

In our quest to forge a climate resilient development pathway, the Caribbean has been tackling the primary challenge of aligning the comparatively distant time horizons of climate projections with more immediate development objectives and political considerations in a multi-country policy-making context. The Heads of Government of CARICOM approved a Regional Framework for Achieving Development Resilient to Climate Change. The Regional Framework and its associated Implementation Plan (approved in March 2012), prepared by the 5Cs with support from CDKN, specifies actions and timeframes that complement some of the political time horizons and specific development objectives.

The development of the Caribbean Climate Risk Management Framework and its associated Caribbean Climate Online Risk Assessment Tool (CCORAL) is a direct response to one of the actions defined in the Regional Framework. Climate risk management tools like CCORAL with cross-sectorial applicability are crucial elements of the region's emerging strong early action framework for building climate resilience and advancing our development objectives.

## DESIGNING AND APPLYING TOOLS FOR RISK-BASED DECISION-MAKING: THE CCORAL TOOL

The IP is founded upon the principle of using risk-based management processes and tools to aid decision-making. CDKN has focused on helping Caribbean countries to do so, especially in climate-vulnerable sectors such as water.

The Caribbean Online Risk Management Tool (CCORAL) – developed with CDKN support – provides a support system and screening tool for climate resilient decision-making. CCORAL guides governments and businesses through key vulnerabilities they could face when investing in projects and programmes in a changing climate. CCORAL helps answer questions such as: “How could sea level rise or freshwater scarcity affect the bridge I am building? Or the health programme I want to start?”

CCORAL is intended to be an active, dynamic decision support system that leads users through several steps to help them identify whether their project is likely to be impacted by climate change, to understand the risks and take action to increase climate resilience. The online tool, which can be found here – [ccoral.caribbeanclimate.bz](http://ccoral.caribbeanclimate.bz) – provides countries with a user-friendly tool for non-climate experts that allows ministries of finance, planning and others to rapidly climate-screen key development programmes.

Major donor agencies in the region have recognised the value of CCORAL, leading them to co-fund a training programme on the tool in 14 CARICOM States. Funding sources included the UK Department for International

Development (DFID), the European Union through the Global Climate Change Alliance project, the Caribbean Development Bank, and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). The first round of training was completed in 2015. Participants in that training gave presentations to senior policy-makers, creating understanding and support for risk management decision tools across different levels of government. The Caribbean Development Bank also supported further outreach to senior policy-makers in St. Lucia, St. Vincent and the Grenadines, St. Kitts and Nevis, and Antigua and Barbuda.

The latest round of training – funded through the USAID Climate Change Adaptation Programme – will be rolled out in ten countries, during the first quarter of 2017. Learning from the sessions with policy-makers described above, the training now includes a final day in which trainees present what they have learned to senior decision-makers. The first of these sessions, in St. Kitts and Nevis, led to the creation of a national team to advance the adoption of CCORAL in the country.

Building on CDKN's initial investment in the tool, CCORAL's recognition and uptake have continued to grow and flourish. “CCORAL has been used by many individuals in many member states, who continue to report on their use in analysing climate risk for specific activities,” said Keith Nichols, Senior Programme Manager at the 5Cs. “CCORAL has developed traction and is rapidly becoming a fixture in the language of many of the regional institutions and governments”. For example, Grenada has integrated CCORAL into decision-making since 2014, requiring its use in screening all capital projects. The use of CCORAL is

an integral part of the implementation of Grenada's recently-released Draft National Adaptation Plan.

## Decision-making tool improves water management

CCORAL-Water is a new tool that builds on the original CCORAL tool to provide development planners with a detailed appraisal of climate risks in the water sector. The IP highlighted the water sector as the single most important cross-cutting issue for climate compatible development in the Caribbean. CDKN supported the development of CCORAL-Water in collaboration with the Global Water Partnership-Caribbean (GWP-C) as part of their Water, Climate and Development Programme.

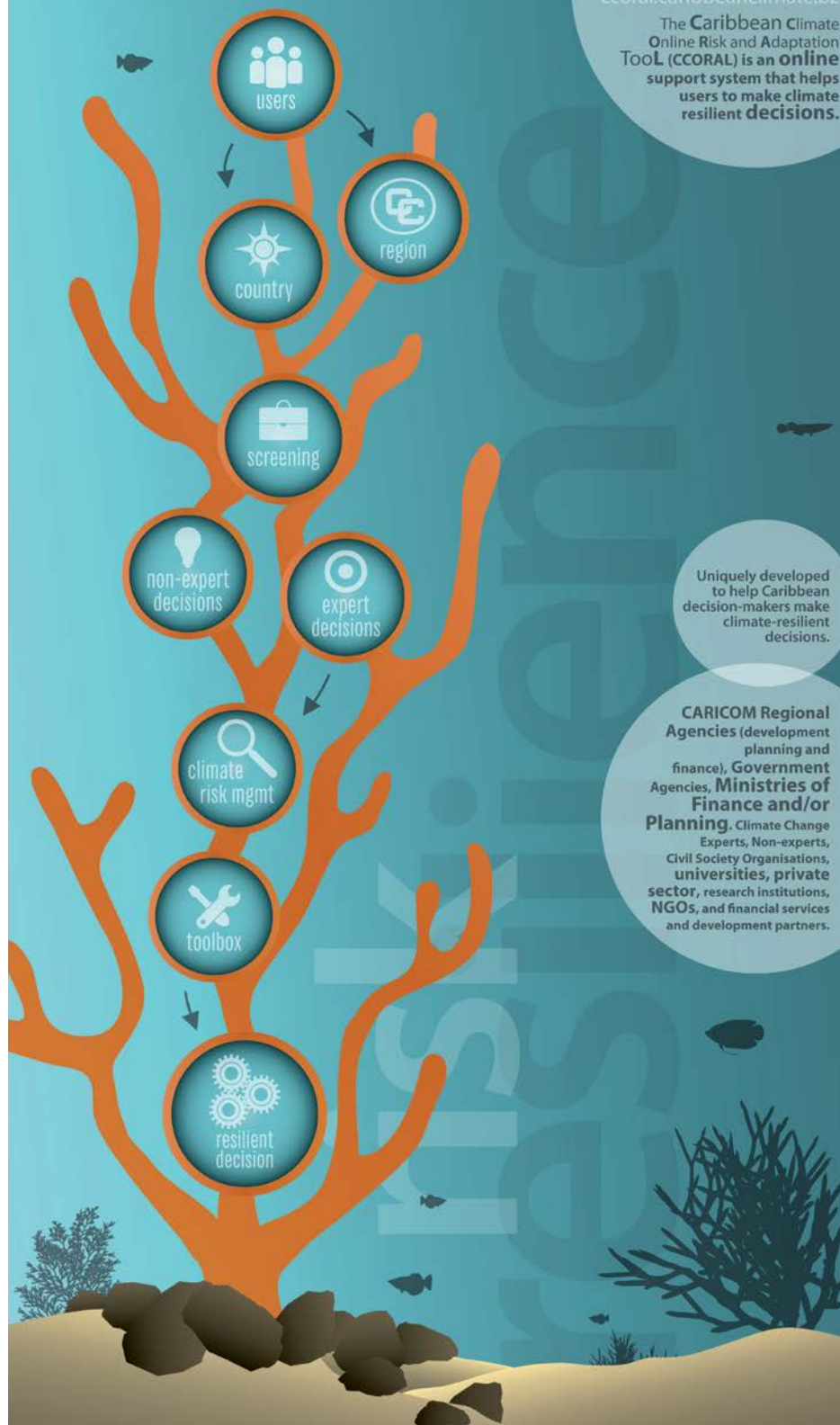
CCORAL-Water adapts and adopts the water security framework that was developed – with CDKN's support – by the Global Water Partnership in Africa and the African Council of Ministers for Water. It provides a sourcebook and toolkit for screening water projects for climate resilience. The sourcebook emphasises the promotion of 'no regret' and 'low regret' investment strategies to address water security and resilience. It urges planners to:

- review opportunities to advance climate adaptation and mitigation in investment projects and programmes
- integrate climate investments into organisational budgets, plans and work programmes at all levels.

The rollout of CCORAL-Water to relevant water management agencies in the Caribbean region focuses on tackling climate concerns in project feasibility studies and designs. Considering climate

change at an early stage is a way of securing better access to climate finance. The ultimate objective is to achieve low carbon innovation, water infrastructure resilience, reduced vulnerability and improved access

to freshwater for the Caribbean's poorest and most climate-vulnerable populations.



## CLIMATE-PROOFING INFRASTRUCTURE INVESTMENTS

A recent CDKN initiative supports the GWP-C and the 5Cs' efforts to mainstream climate compatible development into core decision-making and project delivery in the Caribbean's water sector by:

- identifying key opportunities and gaps for climate compatible investment via a regional Climate Resilience and Water Security Investment Plan (CReWSIP)
- climate proofing a specific water infrastructure project to increase its 'fundability' and provide broader lessons around the drivers, barriers, costs and institutional framework necessary for climate proofing investment projects.

The CReWSIP identifies and prioritises investment opportunities and their costs, outlines key institutional arrangements and identifies suitable funding sources. It highlights short,

medium and long term investment opportunities, focusing on no regret and low regrets options. It also focuses on the priority thematic areas identified in the IP and references the application of CCORAL-Water in certain sectors. Ultimately, the plan aims to help create the enabling conditions for the development of fundable initiatives in the water sector that incorporate risk, resilience and low carbon innovation.

Following the development of the CReWSIP, CDKN funded the 'Climate-proofing the Sandy Bay Water Service Improvement Project' in St Vincent. Extreme rainfall events have reduced the reliability and quality of the potable water supply for the residents of the Sandy Bay Village, which is served by a distribution system consisting of a river intake, treatment plant and distribution network. The St. Vincent Central Water and Sewerage Authority (CWSA) identified the need to address this challenge and to enhance the resilience of the system to current and future climate variability and change.

The project aims to demonstrate the business case for investing in climate change adaptation.

So far, the project has supported the CWSA to develop a proposal for climate proofing a water supply system in a highly vulnerable rural community. The proposal identifies adaptation measures and is based on an analysis of climate change impacts and extensive stakeholder consultation. It expands on an initial infrastructure upgrade and includes catchment management and community level disaster risk reduction measures. The proposal takes a holistic approach and involves multiple partners, in order to strengthen the overall resilience of the catchment, community and water system.

The project partners are currently finalising the proposal, with a view to seeking funding. The process of climate risk assessment and project preparation has given the CWSA and other national stakeholders a chance to build their institutional capacity.

## Risk management on the ground: Training local communities to collect data on extreme weather events

The CDKN-supported project 'Climate Change and Inland Flooding in Jamaica: Risk and Adaptation Measures for Vulnerable Communities' aimed to address the potential impacts of climate variability by analysing changes in the flood risk in two watersheds in Jamaica. This included developing an island-wide riverine flood hazard map, creating flood risk models for the selected watersheds and collating the knowledge, attitudes and practices of the communities living there (for more on the project's lessons, see the CDKN Inside Story on Climate Compatible Development, [www.cdkn.org/resources](http://www.cdkn.org/resources)).

Meaningful and reliable data is necessary for developing models, making informed decisions and planning for storms. Local governments in Jamaica lack detailed data and the capacity to collect it. Hence, the University of the West Indies organised training on simple and inexpensive approaches to data collection in workshops for staff from local government agencies, parish coordinators and community representatives. The government staff were taught to programme a freely available data collection application to suit their departments' needs and to upload collected data. Data on this online platform can be viewed, altered and downloaded to create hazard risk maps. Community representatives were taught to collect natural disaster data and upload it to an online platform, making it easier for government staff to produce accurate maps.

Partners in Jamaica are considering scaling out these workshops to other actors to help local governments create meaningful maps that highlight the risk of extreme weather events across the country and revise and develop contingency plans to safeguard to safeguard people and assets from the impacts of climate change..





## RESEARCH FOR DECISION-MAKING

CDKN supported the Caribbean research community in producing accurate and tailored data and information to underpin climate resilient decision-making. CDKN also supports the creation of strategic knowledge products to communicate the research results in a format that is useful for decision-makers.

CDKN has invested around GBP 1.5 million to fund research in the Caribbean that is tailored to meet the information demands of the IP. This was done through three main projects.

### Caribbean Weather Impacts Group (CARIWIG)

The CARIWIG project provided locally relevant climate data and information to help decision-makers evaluate climate change and its impacts across a range of timescales. It generated a web portal with climate information at a scale that is relevant to policy-makers across the Caribbean. The web portal ([www.cariwig.org](http://www.cariwig.org)) provides information and datasets concerning: the observed climate of the present day; regional climate model projections; future scenarios of weather downscaled from the regional projections; and weather scenarios derived from hypothetical tropical cyclone events.

The portal provides three data simulation tools:

- A Weather Generator provides synthetic scenarios of daily weather,

such as temperature and rainfall, for meteorological stations across the region.

- A Tropical Storm Model based on past memorable and notable storms across the region. Outputs can be viewed as graphs and downloaded from the simulation page.
- A Threshold Detector that can be downloaded and used to investigate a particular weather event.

### The Global Islands' Vulnerability Research, Adaptation Policy and Development (GIVRAPD) Project

The GIVRAPD research project focused on community adaptation to climate change in Saint Lucia and Jamaica. The aim of GIVRAPD was to understand the multiscale socioeconomic, governance and environmental conditions that shape vulnerability and capacity to adapt to climate change within and between small and medium sized coastal communities. The project was a comparative study of small coastal communities facing similar challenges and contexts. It has wide applicability to the adaptive capacity and vulnerability of Small Island Developing States. GIVRAPD produced twenty-four project outputs organised according to the project's four main themes: climate science; community-based vulnerability assessment; governance; and microinsurance.

### Caribbean Research Call

CDKN supported – through a competitive research call – five projects in Belize, Jamaica, St. Lucia and Trinidad and Tobago: (1) 'Participatory Research to Enhance Climate Change Policy and Institutions in the Caribbean: ARIA Tool Pilot'; (2) 'Assessing the Potential Impacts of Climate Change on Belize's Water Resources'; (3) 'Climate Change and Inland Flooding in Jamaica: Risk and Adaptation Measures for Vulnerable Communities'; (4) 'Identifying Opportunities for Climate Compatible Tourism Development in Belize'; (5) 'Climate Impacts and Resilience in Caribbean Agriculture: Assessing the Consequences of Climate Change on Cocoa and Tomato Production in Trinidad and Tobago and Jamaica'.

Together, the CDKN-funded research projects produced almost 70 outputs, including research papers, policy briefs, information briefs, and web portals, which have contributed to widening the evidence base in the Caribbean. This research has provided many important lessons for national governments to help them build climate change resilience. CDKN is working with Acclimatise to

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The 5Cs is providing training and support on how to use CARIWIG outputs. Meanwhile, the CARIWIG tools are being trialled in several real world case studies: these range from analysing the effect of climate change on water availability in Saint Lucia, to coastal zone management in Barbados, to climate impacts on agriculture in Belize. What these case studies have in common is that they combine the data from CARIWIG with additional data and impact models in order to build a picture of climate risk. In Saint Lucia, for example, researchers studied potential river flows by combining the monthly change factors from the CARIWIG regional climate projections with a specially designed hydrological model. A CDKN policy brief details this experience: [www.cdkn.org/caribbean](http://www.cdkn.org/caribbean)

**The Climate and Development Knowledge Network (CDKN)** aims to help decision-makers in developing countries design and deliver climate compatible development. We do this by providing demand-led research and technical assistance, and channeling the best available knowledge on climate change and development to support policy processes at the country and international levels. CDKN is managed by an alliance of five organisations that brings together a wide range of expertise and experience.

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gather these products and package them in a meaningful way for policy-makers and practitioners in the Caribbean through videos, infographics and policy briefs. Four knowledge packages are now available on topics that are considered key to moving forward on climate change adaptation in the region: the role of the national government in promoting good governance systems;

the need to raise awareness on climate change impacts and sharing results on how the agriculture and tourism sectors could be affected; climate data, gathering relevant climate scenarios and modeling; and community engagement as a key contributor to adaptation and resilience building. Visit CDKN's website to explore the knowledge packages.

[www.cdkn.org/caribbean](http://www.cdkn.org/caribbean)

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