



## Adaptation-based Mitigation (AbM) Potentialities and Challenges in Responding to Climate Change in Central America

### INTRODUCTION

**THE ISSUE** Climate change poses enormous challenges for development in Central America. The region's high vulnerability coupled with increasingly severe impacts from events associated with climate variability and change are further exacerbating its longstanding problems with poverty and exclusion, environmental degradation and territorial governance. These impacts are no longer felt only in the livelihoods of the poorest and most vulnerable, but also in public health, public and private infrastructure, food production and security, economic growth and public finance, among others. Although country strategies and programs are increasingly including objectives on risk and vulnerability reduction, and on climate change mitigation and adaptation, the responses are based on sectoral approaches that limit adaptation, mitigation and development actions.

In the region, adaptation efforts are moving forward on different tracks from its mitigation initiatives; in general, these efforts are taking place in a context devoid of policy frameworks that would give them a strategic boost. In light of this reality, the Adaptation-based Mitigation (AbM) approaches and actions that El Salvador has been using for the past several years represent an alternative with vast potential for Central America's other countries, since they share similar socio-environmental, economic and institutional conditions. From a regional perspective, AbM could also contribute to the development of a more sensible and appropriate policy framework for addressing the climate change and development challenges facing Central America.

**CRITICAL ASPECTS OF AbM** The AbM approach aims to respond to the challenges of integrating mitigation, adaptation and development agendas and responses, transcending the sector-based approaches that are common in Central America. To do so, the AbM approach requires greater interagency coordination, both among governmental bodies and with territorial actors. Similarly, AbM initiatives seek to strengthen local livelihoods, using a landscape-scale approach based on collective action, recognizing their critical role in ensuring locally, regionally and globally important ecosystem services. Following this line of thinking, it is the adaptation needs at local-territorial and national levels that determine the orientation of mitigation strategies. Whether AbM can gain a strong foothold as a viable regional approach in the current context will depend greatly on the development of incentive and compensation schemes, the implementation of innovation and knowledge management processes, and the design of monitoring and evaluation mechanisms.

**POLICY IMPLICATIONS** Innovative efforts such as AbM have tremendous potential for the region. However, they require appropriate policy frameworks and institutions, based on firm commitments sustained over time that simultaneously contribute to reducing climate risk; that coherently integrate adaptation, mitigation and development objectives; that are conducive to mobilizing financing; and that strategically link political positions and commitments under the United Nations Framework Convention on Climate Change (UNFCCC) to national and regional objectives.

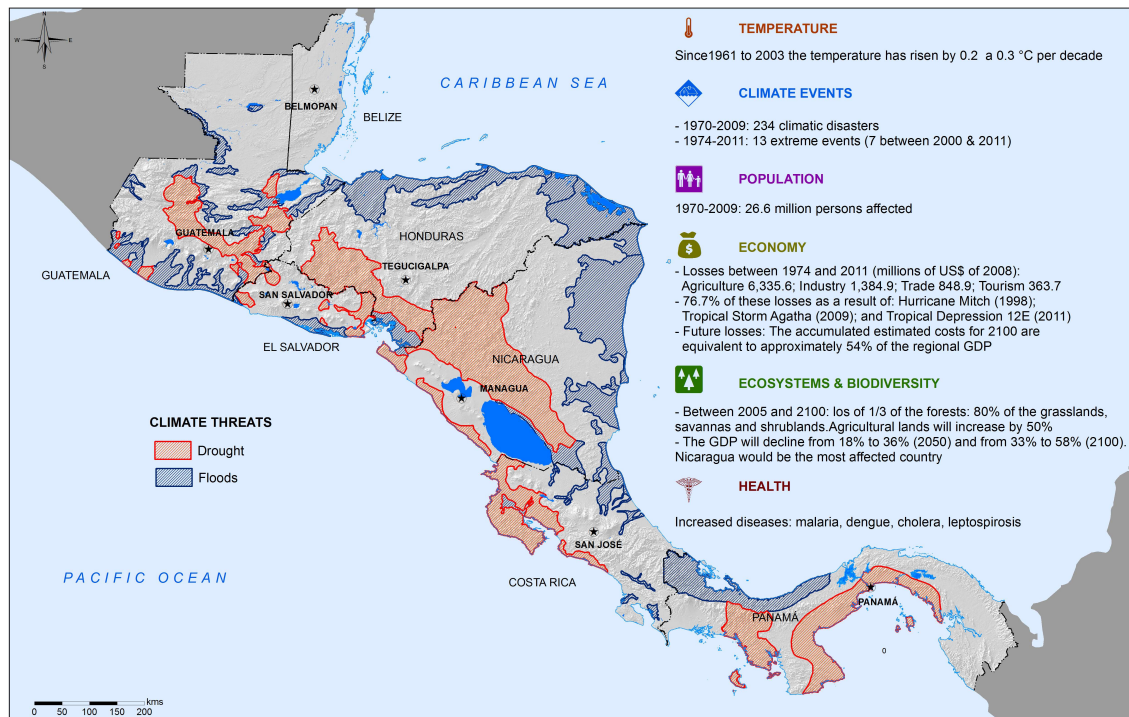
## CONTEXT

Climate risk in Central America is growing, and in addition, rapid, profound economic transformations in the region are causing severe social, environmental and territorial repercussions that are challenging the traditional, yet weakened, institutional frameworks that manage development. Rising temperatures and changing rainfall patterns are already affecting conditions for development in the region; weather events jeopardize life and the economy, while limiting the ability of ecosystems to provide resources and services that are vital to development (CEPAL, 2010). At the same time, countries are pushing ambitious economic growth and diversification strategies based on emerging sectors such as tourism, infrastructure mega-projects linked to logistical services, agrofuels and the agricultural maquila,<sup>1</sup> along with building extractive (mining and hydrocarbons) and other industries. As a result, countries have to regularly deal with complex social conflicts, to the extent that territories—mostly rural—are seen as new frontiers for investment and production. Thus, environmental and territorial impacts end up undermining not only opportunities to strengthen local livelihood strategies and reduce vulnerability, but also conditions for adapting to climate variability and change. Despite a number of important initiatives, disjointed institutional and policy frameworks are inadequate for taking on and coping with the growing challenges from climate change in Central America.

## THE IMPACT

Events associated with climate variability and change have been increasing in frequency in recent decades. The impacts from these events are so severe they are stifling national development, as they harm public and private infrastructure, agriculture and government finances, among other things. Livelihoods in poor, vulnerable communities feel the impact the most, because they are the most dependent on natural resources. Climate change is also affecting the resource base, increasing degradation and depleting the subsistence and development capacity of key ecosystems.

**Map: Examples of impacts and threats from Climate Change in Central America**



Source: PRISMA based on CEPAL (2013), CEPAL (2012); CCAD-SICA (2008) and OXFAM (1999).

<sup>1</sup> Agricultural maquila (in Spanish, maquila agrícola) refers to a set of organizational and technological changes in agricultural production that are characterized by agricultural mechanization and a high level of integration with, or dependence on, agricultural inputs (seeds, equipment, fertilizers, pesticides and credit) as well as post-production supply chains (transportation, marketing) and are associated with highly precarious conditions for workers (low pay, temporary or unstable contracts, health risks, safety hazards, etc.). The similarities of these conditions to industrial maquilas gave rise to the use of this term, though its use and interpretation can vary.

## RESPONSES

Based on country's priorities, their strategies and programs are increasingly including more risk and vulnerability reduction objectives, along with adaptation to climate change. The region has gained recognition in global negotiating bodies of its high vulnerability to climate variability and change. This represents a shift from attempts in the 1990s to leverage financial and technical resources tied to mitigation opportunities. There is now noticeably greater interest in including climate change in national development policy frameworks and instruments, even if efforts still need greater consistency and integration.

### The institutional framework for coping with climate change

The recurring impacts from natural phenomena in Central America have led the region's governments to put climate change on their agendas and to create institutional structures to address the issue, allocating resources for mitigation and adaptation actions. With ratification of the UNFCCC, each country named focal points for addressing the issue, primarily the ministries of environment. In addition to UNFCCC enforcement measures, several countries have created interagency coordination structures, responding to the need to strengthen collaboration among different government bodies. Despite all these efforts, short-term thinking still prevails in sectoral responses detached from territorial development planning. Along these lines, the challenge remains to build a national and regional agenda that integrates a climate change dimension into development efforts.

### Regional strategies

The Central American Commission on Environment and Development (CCAD) is the region's reference authority on the issue. The Regional Strategy on Climate Change, which links climate change challenges to development targets, is an example of the progress that has been made in developing regional strategies to address climate issues. The Regional Disaster Reduction Plans (2000-2004 and 2006-2015), and more recently, the Comprehensive Disaster Risk Management Policy for Central America (2010), are other policy instruments that provide guidance frameworks for promoting intersectoral risk management. However, these regional policy frameworks have limited impact within countries, meaning that one of their primary challenges is to achieve greater consistency with national policies and their linkage with sector developments and local initiatives.

### Risk management and vulnerability reduction

The focus on risk management, as a concept and strategy for interventions, started gaining ground in the region following Hurricane Mitch in 1998 (CEPREDENAC, 2003; Gellert et al., 2003). Since then, a considerable number of initiatives have been implemented involving different stakeholders (central and local governments, social movements, non-governmental organizations, etc.), and progress has been made in areas such as public policy-making and reforms in the formal institutional framework, hazard and risk monitoring, social organization and capacity building for disaster response, among others. However, risk management initiatives have proved inadequate for reducing vulnerability in its broadest sense, as a result of having used an approach focused on emergencies and infrastructure fixes. This highlights the need to promote an approach that includes the economic and socio-environmental aspects that exacerbate risk conditions (Gellert et al., 2003; CRGR, 2011).

### Food security

With the impact on crops from events related to climate variability and change and with the constant rise in food prices, agriculture and climate change agendas are beginning to align in an effort to ensure the food security of Central America. This situation puts concern for subsistence agriculture at the center of the discussion. As part of the response, the region has been developing policy instruments, including the Special Program for Food Security (SPFS) and the Central

American Agricultural Policy (PACA). These initiatives are linked at the national level with a number of government programs focused on stimulating domestic food production, based on stimulus for family farms. However, these efforts are limited to production and productivity, and in general, do not include other crucial aspects such as innovation and transformation of practices, collective action and a landscape scale, among others, which are essential to adaptation and resilience..

#### Mitigation and REDD+

Central America's interest in mitigation began in the late 1990s, through a number of efforts to leverage Kyoto Protocol mechanisms: Joint Implementation and the Clean Development Mechanism (CDM). Since then, mitigation initiatives have involved sectors such as energy (renewables, energy efficiency), emissions reduction from land use and land-use change, and transportation. At present, all the region's countries are involved in REDD+<sup>2</sup> readiness processes, characterized by their speed and by their promotion of heterogeneous approaches, which range from a carbon neutral approach in Costa Rica, to El Salvador's emphasis on adaptation (PRISMA, 2013a). At the territorial level, these readiness processes have not been without conflict and dilemmas, particularly when addressing issues such as sustainable resource management, historical claims by indigenous peoples to their lands (where most of the region's forests are located), and carbon ownership rights. If natural resource governance and local-livelihood strengthening are not addressed in dealing with these issues, then any possible REDD+ mechanism could become a source of additional pressure on rural areas.

#### Adaptation

Even though the entire Central American isthmus shares high vulnerability, responses to climate change differ markedly (PRISMA, 2013b). On national agendas, adaptation mainly responds to risk-reduction focused reasoning, which includes interventions in priority sectors that are considered strategic, such as agriculture, water resources, tourism and others. The measures taken offer a wide range of options, from the use of technologies to broader strategies aimed at building the resilience of rural livelihoods. However, these actions are immersed in a setting rife with negative territorial dynamics, which may compromise and limit their results. Thus, the main challenge is to create the conditions necessary for ensuring the sustainability of adaptation processes and their integration into more comprehensive policy frameworks and development strategies.

## ADAPTATION-BASED MITIGATION (AbM)

Initiatives that promote integrated mitigation, adaptation and development approaches represent attempts to link agendas and processes that are currently moving forward separately. The adaptation-based mitigation (AbM) approach, currently under development, is emerging in El Salvador as an innovative effort to meet the challenges of climate change. The primary objective of AbM is to exploit mitigation co-benefits that can be produced by adaptation actions. For example, interventions to reduce environmental degradation and vulnerability have a direct impact on carbon capture and storage. The AbM approach also favors a landscape-scale approach and planning, where the adaptation logic is what determines the location and extent of mitigation efforts. This logic formed the basis for the design and implementation of the Program for Ecosystem and Landscape Restoration (PREP) in El Salvador (MARN 2012; Gobierno de El Salvador, 2012; PRISMA-CDKN, 2012).

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<sup>2</sup> REDD+: Reducing emissions from deforestation and forest degradation, plus conservation, sustainable management of forests and enhancement of forest carbon stocks.

<sup>3</sup> These initiatives include climate-compatible development, ecosystem-based adaptation, climate-smart agriculture and community-based adaptation. Despite differences in emphasis, these approaches all agree on the multiple roles of ecosystems, both in the provision of goods and services that affect adaptation capacity and development potential and in their contribution to mitigation objectives.



## CRITICAL ASPECTS OF AbM

The viability of AbM strategies will depend heavily on a number of socioeconomic and governance factors, including i) equitable benefit-sharing systems; ii) clear definition of property rights and of access to land and to natural resources; and iii) adequate levels of social engagement and ownership of the process.

### It puts rural livelihoods at the center

We already know that adaptation is an eminently local-territorial process, which in turn entails building resilience and carrying out actions that ensure the viability of rural livelihood strategies in the face of changing conditions. This raises the need to promote a new way of looking at the role of rural territories, one that recognizes and revalues the critical role that rural communities play in responding to climate change, not only by ensuring a wide range of ecosystem services key to their own livelihoods, but also by contributing to broader mitigation, adaptation and development objectives at different scales.

### It is based on territorial and national contexts and needs

Development in Central America is becoming more challenging and complex in the context of climate change, because its impact is going to increasingly affect economic developments in the region, the main productive activities and people's quality of life. Prioritizing an institutional approach to climate change involves moving beyond a search for mitigation opportunities, to favoring the development of policy frameworks and an institutional structure that are conducive to adaptation conditions and capabilities, vulnerability reduction and resilience building.

### Mitigation actions are determined by adaptation needs

Desired activities and outcomes should respond to the need to increase and diversify vegetative cover, protect the soil and strengthen capacity for providing ecosystem services. Therefore, the logic and priorities of adaptation should determine the scope and content of mitigation actions and the places where they would be initiated. Thus, an increase in carbon stocks would not be a goal in itself, but rather would be recognized as a co-benefit of adaptation. AbM would happen within a logic of ecosystem and landscape restoration, aimed at generating social and environmental benefits in the broadest sense.

### Actions that have landscape-level outcomes

Moving toward adaptation and obtaining co-benefits from mitigation require approaches and action frameworks in territorial terms. This involves a change in perspective, from the farm and the individual producer to a landscape perspective, which enables the scaling-up that is necessary with regard not only to adaptation, but also to mitigation, biodiversity and development. In this way, elements of a social, environmental and political nature become important, since collective action, a massive transformation in practices and the sustainable management of natural resources should be promoted with the different groups that shape the landscape. This requires fostering the development of standards, agreements, incentives and regulations, as well as strategies for monitoring their implementation.

### Territorial coordination

Territorial coordination refers to both coordination among territorial actors and between them and non-local actors. It means evolving towards new forms of resource management, transfer and use, with more complex institutional arrangements and a greater transfer of rights and responsibilities to local municipal and community organizations. In addition to more efficient and effective incentives, this requires complex systems to be designed for negotiating interests and resolving conflicts, capable of harmonizing the differing viewpoints on territorial use and control. Therefore, innovation is crucial in developing participatory planning processes that strengthen territorial governance and the promotion of an institutional structure capable of backing up local agreements, integrating them into national plans and policies, and facilitating communication between local decision-making bodies and national and global ones.

### Interagency coordination

Adaptation, vulnerability reduction and resilience building require effective coordination and the harmonization of policies, projects and programs, which would entail a shift in the government's mode of action, promoting consistency among sector strategies (economic, social, agricultural, environmental, etc.). It must be ensured that these changes have an effect at different levels: in broader policy frameworks, at intermediate operational levels, in territorial work and in monitoring, reporting and verification. Political support at the highest level is essential, and sufficient funds must be allocated to enable the internal reorganization of the government and capacity building.

### Knowledge, technology and innovation

Climate vulnerability has been a part of the region's reality for several years. Therefore, the stage must be set to promote technological, social and institutional innovation at the national and regional scales, and in particular at the local-territorial level. Efforts can go in several directions, endeavoring to i) improve understanding and knowledge of events due to climate variability and change; ii) guide the transformation of natural resource practices and management; and iii) promote the use of clean and renewable technologies, among other aspects, all of which should enable more appropriately informing policy-making and implementation. Furthermore, innovation is needed for knowledge generation and in education, decentralizing educational opportunities and adapting them to local priorities, while ensuring that groups of young people, women, native peoples, persons with disabilities, etc. have access to them.

### It is monitorable, reportable and verifiable

The new processes and mechanisms for interagency coordination and public and territorial management, as well as new incentive and compensation schemes based on collective action and sustainable natural resource management, require mechanisms for monitoring, reporting and verifying progress and difficulties with these processes. The instruments should be flexible and should not involve setting up bureaucratic controls other than those currently in place. The development of multi-stakeholder platforms or territorial roundtables, along with the current consultation and participation structures in the territories, are good options for supporting these functions, provided they have the human resources and skills necessary to do so

## POLICY IMPLICATIONS

The challenges from climate change demand new policy frameworks in Central America. To reduce vulnerability, to build resilience and to advance toward adaptation to climate change, innovative efforts such as AbM represent important potentialities for the region. However, they also require an appropriate policy and institutional framework, based on firm commitments (at different scales) and sustained over time. To deploy its potential and to reach a significant critical mass, AbM should not be reduced to orphan policy initiatives, or stifled by economic, social and territorial contexts. This involves a number of policy implications that must be addressed in Central America, and which are unavoidable, even in the absence of AbM actions.

### Policies that reduce climate risk

Serious efforts at adaptation to climate change in Central America require greater consistency among different policy areas. In many of the region's highly vulnerable territories, local-territorial initiatives have been severely trampled as a result of policies and incentives that facilitate expedited investments in tourism, logistical services infrastructure, extractive industries and mono-crops such as oil palm, among others, the environmental and social impacts of which are undermining conditions for territorial adaptation and governance.

Policies that integrate adaptation, mitigation and development

The countries of Central America cannot sensibly cope with the challenges posed by climate change based on sectoral, inconsistent and even contradictory policy frameworks. To reduce climate risk and vulnerability, and to build capacity for resilience and adaptation to climate variability and change require coordinated public policy frameworks that the region must begin to develop on social, policy and institutional foundations that lend them support, legitimacy and continuity.

Policies that are conducive to mobilization of funding

Impacts from climate vulnerability and change have affected the fiscal situation in the countries of Central America, with considerable repercussions for economic growth, particularly in fragile sectors such as agriculture. These conditions are worsening, reinforcing the need to mobilize external financial resources. Innovative schemes that link adaptation and mitigation, as well as emerging mechanisms such as those that could come out of the Work Program on Loss and Damage, might provide new opportunities for the mobilization of resources, to fund adaptation and development actions in the region.

Policies that link global negotiations to national and regional objectives

All of the region's nations continue to play a more or less active role in UNFCCC negotiations and will continue to do so. Although experience has shown that the countries of Central America have failed to forge a common agenda to bring the region together in dealing with different UNFCCC issues, innovative approaches such as AbM do have the potential to contribute to the development of a regional agenda with major areas of agreement among the countries. This in turn could lay the groundwork for defining shared positions regarding the UNFCCC, which could also be more closely linked to national adaptation, mitigation and development objectives, reflecting each country's emphases and nuances.

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