

EbA Regional Programme - Ecuador

Ecosystem based Adaptation Strategies to Climate Change in Colombia and Ecuador

Climate change effects in Ecuador

The impacts of climate change are becoming increasingly severe in the coastal region of Ecuador. This is reflected by the increase in the frequency and intensity of extreme climatic events such as heavy rains and droughts.

The province of Manabí is highly vulnerable to the effects of climate change, especially due to the intensity of rainy periods which increase the probability of floods and landslides, as well as due to prolonged periods of drought.¹

In the last decade, an average temperature increase of 0.18°C was registered.² Moreover, 75% of the province's area suffers from processes of soil degradation and 11 cantons (including Santa Ana and Jipijapa) face desertification processes³. These conditions not only negatively affect nature, but also harm human populations that depend on ecosystem services for agricultural production and water availability.

Yet these vital ecosystems of the province of Manabí are under strong pressure due to inadequate land use (especially the high deforestation rates caused by unsustainable agricultural activities), which reduces nature's resilience and its capacity to provide ecosystem services and reduces the climate change vulnerability of human populations.⁴

EbA: a solution in the face of climate change

Ecosystem-based Adaptation (EbA) is an effective option and it is up to a hundred times less expensive than traditional adaptation measures based exclusively on "gray" infrastructure.⁵

EbA focuses on conservation, restoration and sustainable management of ecosystems in order to strengthen the resilience and reduce the vulnerability of communities and ecosystems to climate change. In addition to this, EbA improves the social and economic benefits that ecosystems provide.

Some examples of EbA include the sustainable management of watersheds to maintain or improve the quality and flow of water; landscape reforestation to stabilize slopes and prevent landslides; and agricultural diversification with agroecological and agroforestry techniques to cope with abrupt changes in rainfall and drought periods.

In Ecuador, and particularly in the Province of Manabí, the ecosystems' richness and biodiversity provide an opportunity for the implementation of innovative and successful EbA measures. In effect, the sustainable management of this rich natural heritage can increase the provision of ecosystem services to face the negative impacts of climate change, while also improving the livelihoods of local communities.

Objective of the EbA Regional Programme

The expected outcome of the Programme is that national and local government entities in Colombia and Ecuador integrate the EbA approach into relevant policies, plans or strategies, implement it and thus contribute to the reduction of local communities' vulnerability in coastal regions.

Information about the EbA Regional Programme in Ecuador

The "Ecosystem based Adaptation Strategies to Climate Change in Colombia and Ecuador" (EbA Regional Programme) is part of the International Climate Initiative (IKI) funded by the German Federal Ministry of the Environment, Nature Protection, Building and Nuclear Safety (BMUB). The Programme implements the EbA approach with the objective of reducing the vulnerability and increasing the resilience of populations and ecosystems facing negative impacts of climate change.

In Ecuador, the Ministry of Environment (MAE) through its Undersecretariat of Climate Change and its National Directorate for Climate Change Adaptation, with the support of the German Technical Cooperation (GIZ) and the Regional Office for South America of the International Union for Conservation of Nature (IUCN) implement the programme in the parishes of Honorato Vásquez (Municipality of Santa Ana) and Membrillar (Municipality of Jipijapa), province of Manabí, in coordination with their respective Decentralized Autonomous Governments (GAD).



¹ MAE. 2010. "Análisis de vulnerabilidad futura del Ecuador frente al cambio climático a nivel cantonal". Quito: MAE.

² Proyecto PACC (Proyecto de Adaptación al Cambio Climático a través de una efectiva gobernabilidad del agua en el Ecuador). 2014. PACC project web page, Available at: <http://www.pacc-ecuador.org/> (last accessed jan 2016).

³ CEPAL / BID / IICA. 2005. *Sistemas de indicadores socio económicos sobre los impactos de la desertificación para el combate contra la desertificación Bolivia - Ecuador y Perú - Informe Final*. Quito: CEPAL

⁴ Fundación Carolina. 2011. "Impacto del cambio climático en la agricultura de subsistencia en el Ecuador" Quito: Fundación Carolina and MAE. 2014. Sinergias entre la degradación

⁵ de la tierra y cambio climático en los paisajes agrarios del Ecuador, Quito: MAE.
Munang, R., Thiaw, I., Alverson, K., Mumba, M., Liu, J., & Rivington, M. 2013. *Climate change and Ecosystem-based Adaptation: a new pragmatic approach to buffering climate change impacts*. Current Opinion in Environmental Sustainability, 5(1), 67-71.

Programme information in Ecuador

Commissioned by	German Federal Ministry of Environment, Nature Protection, Building and Nuclear Safety (BMUB), as part of the International Climate Initiative (IKI)
Counterpart and political partner	Ministry of Environment of Ecuador
Strategic Partners	Municipalities of Santa Ana and Jipijapa, Province of Manabí
Overall coordination and responsible for the programme on behalf of BMUB	German Technical Cooperation (GIZ)
Implementing partner in Ecuador	International Union for Conservation of Nature (IUCN)
Programme intervention areas in Ecuador	Honorato Vásquez (Santa Ana) and Membrillal (Jipijapa)
Duration	June 2016 - February 2018*

*with a possible extension of 5 months

Components

The programme has four components:

- 1) Ecosystem based Adaptation in practice:** Plan and implement EbA measures jointly with Programme partners based on the analysis of climatic risks and vulnerabilities, so that these measures are best adapted to local conditions.
- 2) Capacity building:** Train national and local authorities, communities and other actors to strengthen their knowledge and understanding of climate risks and reinforce their ability to deploy the EbA approach to improve their resilience.
- 3) Mainstreaming and scaling-up of the EbA approach:** Foster the integration and implementation of EbA in the planning instruments of national and local governments.
- 4) Communication and knowledge management:** Systematize and disseminate the progress, results and experiences of the Programme at national and international levels.



Parish of Membrillal in the Jipijapa canton

Expected results of the EbA Programme

- Increase the resilience of communities through political processes that enable ecosystem's sustainable management, restoration and conservation.
- Strengthen climate change adaptation capacity by implementing measures that reduce vulnerability and increase the resilience of ecosystems and communities.
- Improve economic, social and ecological conditions by fostering the sustainable management of ecosystem services and strengthening local capacities and livelihoods.
- Conserve and protect biological diversity by reducing pressures on ecosystems and establishing models for their sustainable management.
- Create a multiplier effect and promote the long-term sustainability of the Programme by integrating the EbA approach into public planning and policy instruments.

Resilience: *The capacity of social, economic, and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation.*

Adaptation: *The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects.*

Vulnerability: *The propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt.*

Ecosystem services: *Ecological processes or functions having monetary or non-monetary value to individuals or society at large. These are frequently classified as (1) supporting services such as productivity or biodiversity maintenance, (2) provisioning services such as food, fiber, or fish, (3) regulating services such as climate regulation or carbon sequestration, and (4) cultural services such as tourism or spiritual and aesthetic appreciation.*

Source: IPCC (Intergovernmental Panel on Climate Change). 2014. Climate Change 2014: Impacts, Adaptation and Vulnerability, annex II: Available online: http://www.ipcc.ch/pdf/assessment-report/ar5/wg2/WGIIAR5-AnnexII_FINAL.pdf (last accessed Jun 2016).

For more information:

Anna Beatrix Willingshofer, Ecosystem based Adaptation Strategies to Climate Change in Colombia and Ecuador, GIZ Colombia
anna.willingshofer@giz.de

Diego Guzmán, National Climate Change Adaptation Director, MAE
diego.guzman@ambiente.gob.ec

Karen Podvin, Programme Officer- Ecosystem-based Adaptation, IUCN
karen.podvin@iucn.org

Aracely Salazar Antón, Programme Focal Point in GIZ Ecuador
aracely.salazar@giz.de

Lourdes Chele, Risk Management Unit Director, Municipality of Jipijapa
chelelourdes@hotmail.com

Ramón Zambrano, Director of the Planning Secretariat, Municipality of Santa Ana
ramonz31@hotmail.com