

Evento Paralelo

Adaptación Basada en Ecosistemas: un vínculo entre biodiversidad conservación y adaptación al cambio climático



INECC
INSTITUTO NACIONAL DE ECOLOGÍA Y CAMBIO CLIMÁTICO

Conferencia de las Partes
Convención sobre Diversidad Biológica

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Margarita Caso Ph. D.
Directora de Vulnerabilidad y Adaptación Ecológica



INECC
NATIONAL INSTITUTE OF ECOLOGY AND CLIMATE CHANGE MEXICO


SIDE EVENT
Ecosystem based Adaptation: a link between biodiversity conservation and adaptation to climate change

CASE STUDIES:
Adaptation to climate change: impacts on the coastal wetlands in the Gulf of Mexico

Conservation of coastal watersheds in the context of climate change

Thursday 4 December 2016
13:15 – 14:45

Hotel Bolinas, near Riva Margarita Hotel, near Riva Moon Palace Golf & Spa Resort



"Adaptation to climate change in coastal wetlands of the Gulf of Mexico"

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1. Introduction - Objective

To design and implement adaptation measures in coastal wetlands of the Gulf of Mexico

Alvarado lagoon in the state of Veracruz

The lagoon system "Carmen-Pajonal-Machona" in the state of Tabasco

Punta Allen wetland in the state of Quintana Roo, located in the Caribbean Sea

3 pilot sites

1. Introduction – Project approaches

México is a megadiverse country. It comprises 1.7% of the terrestrial territory of the planet and contains 10% of the known biodiversity.

Ecosystem conservation is a priority for Mexico, and has resulted in several public policies.

The **Ecosystem-based adaptation** is the conservation of the biodiversity and ecosystem services as an integral adaptation measure to help human communities adapt to the negative effects of climate change.

The system approach allows a holistic conceptualization of the problematic

EbA promotes the synergy between mitigation and adaptation to climate change

Social and gender approach

- Include communities in identifying impacts and problems
- Involve communities in designing adaptation measures
- Work on the appropriation of the measures
- Train people in the use and maintenance of facilities and equipment

✓ Engage and empower women in every stage of the project

In alignment with:

- National legislation (General Law on CC, National Strategy on CC and the Special Program on CC)
- International commitments (NDC) – adaptation component

1. Introduction – Project approaches

Vulnerability = Exposure + Sensitivity – Adaptive Capacity

Sensitivity analysis

- Considering current environmental and social assessments

Modified from IPCC

Exposure analysis

- Current observed climate - considering climate variability,
- temperature trend analysis
- Extreme events
- Quality Control of the observed data.
- CC scenarios

Adaptive capacity

- Current awareness and understanding of the system
- Human and financial resources
- Institutional structure
- Planning instruments.

1. Introduction – Pilot sites

Avarado Lagoon
Water pollution
Productive activities with conflictive interests (ranchiers, farmers, fishermen, tourism)
Strong impacts from productive activities upstream
Sea level rise, salt wedge intrusion

Carmen Pajonal Machona lagoon system
Water pollution
Seawater intrusion - sea level rise + subduction zone
Frequent floods - heavy precipitations - no drinking water
Poor marginalized communities

Punta Allen wetland, NPA, Caribbean Sea
Coral reef strongly affected - high sea water temperatures
Mangrove ecosystem (100 ha) affected by the construction of a road that divided the ecosystem and disrupted water flow

2. EbA measures - ecosystem restoration

Reforestation - Veracruz and Tabasco

- ✓ 50 ha mangrove + 10 ha riparian vegetation

✓ **Water flow restoration in the wetland channels**
Veracruz, Tabasco
through manual cleaning

✓ **Hydrological rehabilitation** – Quintana Roo
Topographic survey, channel dredging and installation of a sewer system to allow the natural recovery of mangrove (100 ha wetland).


✓ **Coral reef re-population - Quintana Roo**
(Caribbean sea)
Mesoamerican reef system (2nd largest in the world)
Acropora palmata fragments resistant to high temperatures

Contribution to ecosystem conservation, restoration and rehabilitation - to increase resilience to CC impacts.

2. EbA measures – Adaptive capacities

- ✓ Organization and establishment of **Environmental Management Units** for the sustainable use of mangroves (legal figure under the Mex. Law.) Any use of mangrove is forbidden except under this legal figure which authorizes a sustainable rate of use based on periodic assessments.
- ✓ **Rainwater harvesting system with a water purifying system** - to reduce the problems related to water scarcity in the communities of Tabasco.
- ✓ **Construction of 4 houses on stilts in a community of Tabasco** - to safeguard movable assets (documents, grains, outboard motors) in case of floods. Local materials and hand labour – demonstrative measure to teach environmental friendly constructive techniques

Strengthening the adaptive capacity of communities



2. EbA measures - risk reduction

Installation of **radio communication equipment** – as a start for an early warning system (meteorological or sanitary alerts). Linked to the Civil Protection Institute of Tab.


3 schools – communities of Tabasco.

Gauge stations connected to the National Gauge Network managed by the National University (UNAM)

Multi-parameter probe and Doppler current profiler - Marine conditions monitoring – Natural protected area of Sian Ka'an (Caribbean Sea)

Land use planning instruments including a CC approach for the first time in Mexico

Anticipate and prevent risk disaster, reduce exposure and danger to CC impacts




3. SOCIAL PARTICIPATION – Key component of EbA

- Project dissemination – objectives, benefits, climate change concepts
- Vulnerability assessment
- Adaptation measures proposal
- Training
- Committee formation and support
- Land use planning workshops
- Participatory evaluations of each component
- Drills and emergency plans
- Community risk maps

Adaptive capacity

- Local capacities strengthening
- Climate change impacts awareness
- Appropriation of adaptation measures
- Strengthening and build-up of social structures



4. Biodiversity conservation and adaptation to climate change

Strategic Goal D: Enhance the benefits from biodiversity + ecosystem services

- 14 Ecosystem restoration taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.
- 15 Contribution to mitigation and adaptation to CC through carbon sequestration.

Strategic Goal A: Address causes of biodiversity loss

- 14 Make people aware about the values of biodiversity

Strategic Goal B: Reduce the direct pressure on BD + promote sustainable use

- 14 Reduce the rate of natural habitat loss + forest loss
- 14 Reduce pollution
- 14 Minimize the anthropogenic pressures on coral reefs

This project, which was conducted under the EbA approach, contributes

- To reforest with native species the upper, middle and lower parts of watersheds with special attention to riparian zones
- Increase ecological connectivity and carbon sequestration through conservation and restoration practices
- Increase carbon sequestration and strengthen coastal protection through coastal conservation practices.


Aichi Targets

ADAPTACION

NDC – adaptation component

EbA

SDGs



A NUEVOS TIEMPOS, NUEVAS ACCIONES



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INECC
Amparo Martínez, Ph.D.
General Director
Cecilia Conde, Ph.D.
General Coordinator for Adaptation to Climate Change
Margarita Caso, Ph.D.
Director of Vulnerability and Ecological Adaptation
Karina Santos del Prado
Deputy Director of Species Conservation
Lic. Arann Rodríguez
Department of Institutional Management

INECC
Mtra. Patricia Arendar
Mtra. Alejandra Tenorio
Mtra. Karla Priego
Mtra. Julieta Romero
Mtro. Miguel Martínez

• ADAPTÉMONOS •

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*Thank you for
your attention*

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SECRETARÍA DE AMBIENTE Y RECURSOS NATURALES

margarita.caso@inecc.gob.mx

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CG CUENCAS COSTERAS y cambio climático

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Conservación de humedales costeros en el contexto de cambio climático

Caso de estudio

M en C, Daniel Luna González Terrazas
Director de Manejo de Cuencas y Adaptación
Coordinación General de Adaptación al Cambio Climático



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Región Golfo de California

- Plaxitia
- Presidío
- Baluartte
- Acaponeta
- San Pedro
- Cuale
- Ameca
- Los Juntas
- Pitillal
- El Tuito

1,000,000

Región Golfo de México

- Tuxpan
- Antigua
- Jamapa
- Huaztlan
- Temilolapa
- Usimacinta

Impacta una superficie de **3,810,825** ha

CG.org.mx

Coastal watersheds conservation in the context of climate change



conectando Cuencas Costeras y cambio climático



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The objective is to promote integrated management of the coastal watershed to preserve biodiversity as well as adaptation and mitigation to climate change

It operates with resources from the Global Environment Facility (GEF) managed by the World Bank



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?Why watershed approach for territorial planning?



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- Water resources impacted by human activities and climate change will increase the vulnerability of human activities and ecosystems. (IPCC, MA, CONAGUA)
- Water resource management schemes must integrate the projections of climate change in the design and operation of investments and programs

Integrated management of the watersheds will increase the potential for adaptation to climate change considering the supply and demand of essential **environmental services**

