



# Workshop 1: NBS Co-benefits



Variable perspectives on co-benefits.

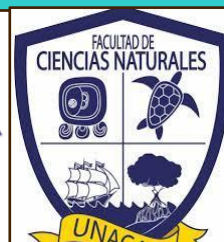
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**UNACAR**  
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An aerial photograph showing a coastal wetland area. A paved road runs diagonally from the bottom left towards the center. To the right of the road is a large, irregularly shaped pond surrounded by dense green vegetation. In the background, there are rugged, brown mountains under a clear blue sky. In the bottom right corner, a small beach area with some buildings and parked cars is visible.

# Content

## What are co-benefits?

Coastal wetlands – blue carbon ecosystems.

Co-benefits of NBS in coastal wetlands: the case of Mexico.

Main challenges in Mexico and perspectives.

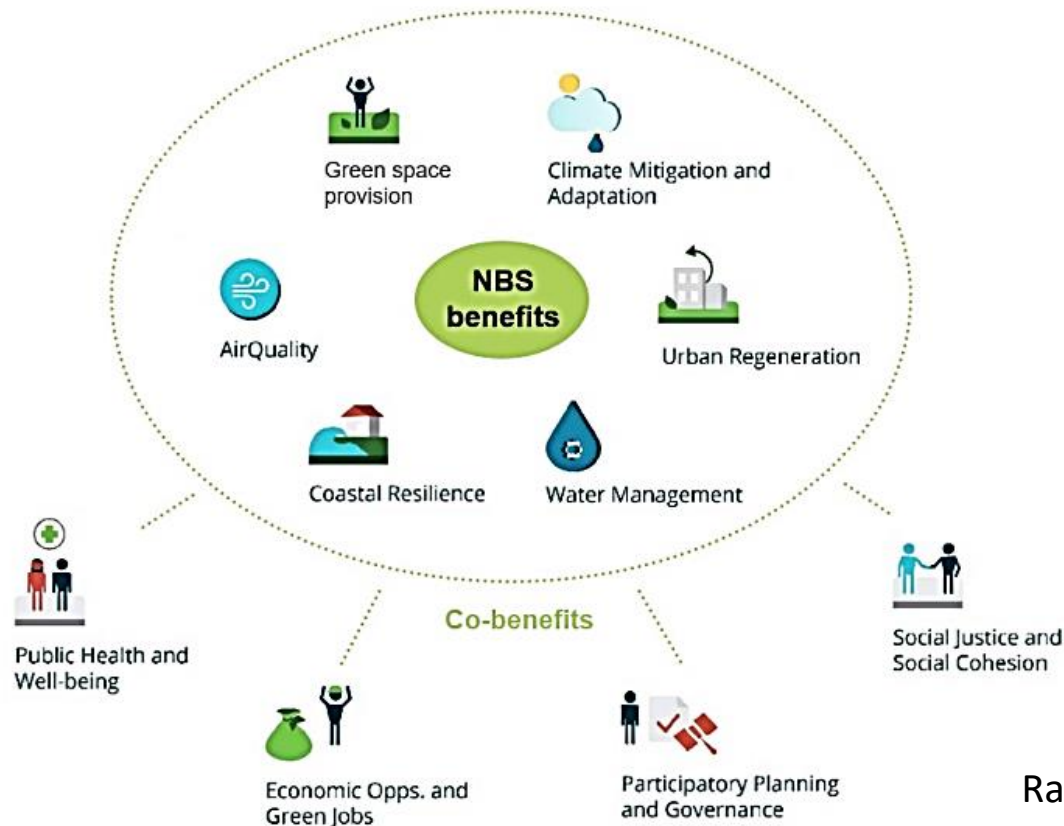
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# Variable perspectives on co-benefits.

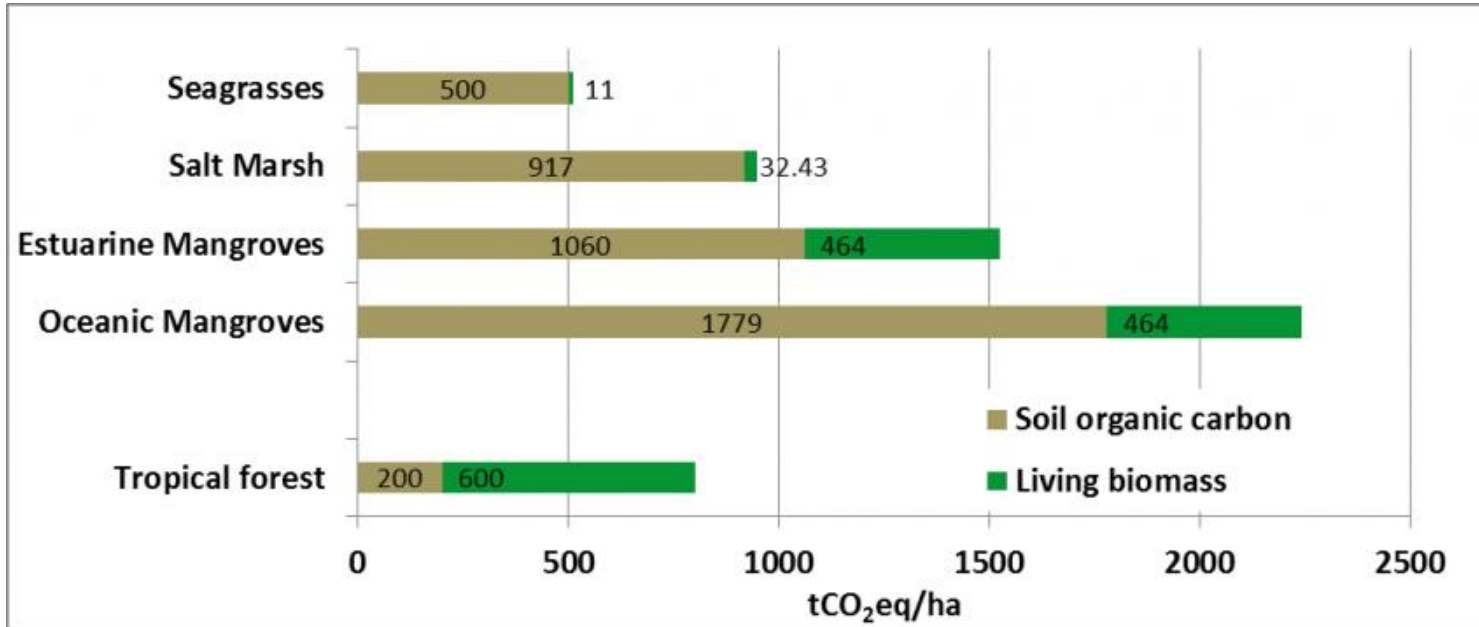
## What are co-benefits?

- Benefits in addition to those originally intended, generated by the implementation of a policy, program, project or action (Helgenberg et al. 2019).
- Secondary or unintended goals of a NBS intervention that are additional to the project's primary function, but complementary to its objective of increasing the resilience of **coastal communities**.

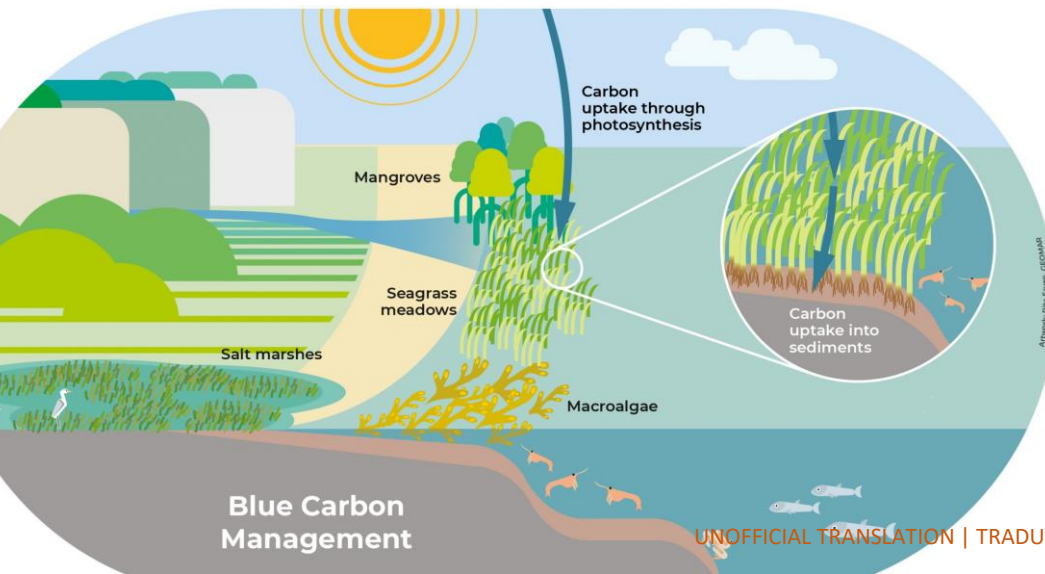


Raymond et al. 2017

# Coastal wetlands: blue carbon ecosystems



<https://www.iucn.org/resources/issues-briefs/blue-carbon>



- Highly productive ecosystems
- Carbon storage and sequestration
- Multiple ecosystem services

**The economic valuation of wetland ecosystem services on a global scale is \$47 trillion USD per year.**

Valuing wetlands. *Nat. Geosci.* **14**, 111 (2021).  
<https://doi.org/10.1038/s41561-021-00713-4>



# NATURE'S **SUPERHEROES** IN THE FIGHT AGAINST **CLIMATE CHANGE**



Explore





# Coastal wetlands: blue carbon ecosystems.

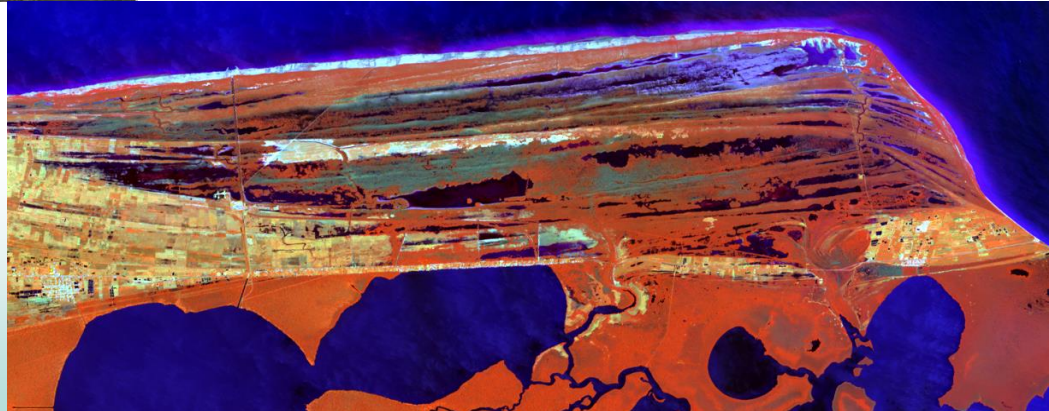
## Status and trends, opportunities for NBS.



- Mexico has lost approximately 62% of its coastal wetlands (Langrave and Moreno-Casasola, 2011) and the rest are exposed to degradation processes.
- Lack of integrated management of coastal watersheds. Disarticulation of public policies (Acosta-Velázquez and Ochoa-Gómez 2021).

PEMEX evades recommendations for cutting mangroves in the construction of the Dos Bocas Refinery - Source:

<https://www.cydnoticias.mx/>





# Environmental, economic and social heterogeneity of Mexico's coasts.





# NBS on a national scale?



The three Blue Carbon Ecosystems (BCEs) coexist in three Natural Protected Areas (NPAs):

APFF Laguna Madre, Tamaulipas

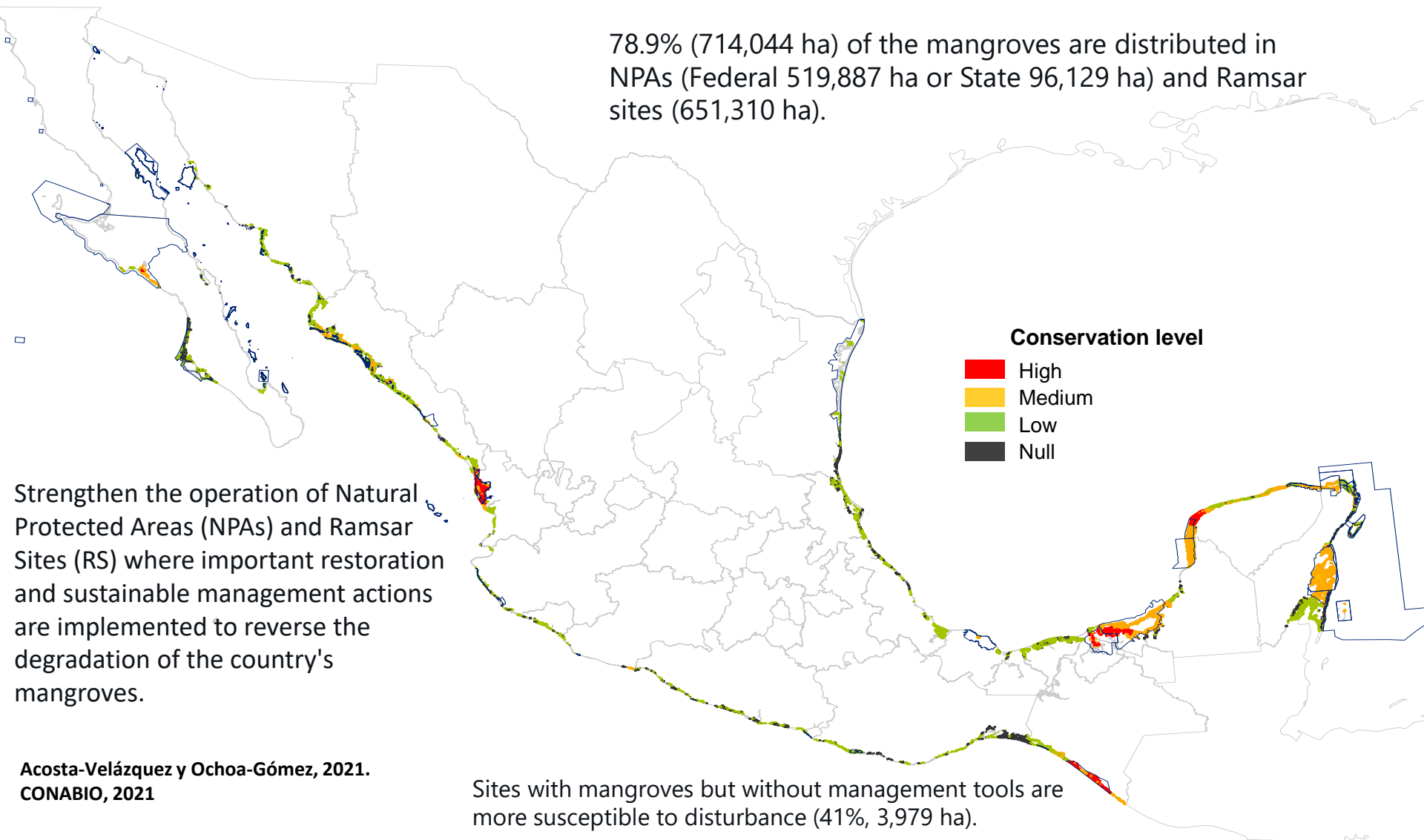
APFF Laguna de Términos, Campeche

RB Los Petenes, Campeche

**47 federal NPAs  
territorially related  
to 68 Ramsar  
sites**

33 RSs with  
management  
plans

78.9% (714,044 ha) of the mangroves are distributed in NPAs (Federal 519,887 ha or State 96,129 ha) and Ramsar sites (651,310 ha).



Strengthen the operation of Natural Protected Areas (NPAs) and Ramsar Sites (RS) where important restoration and sustainable management actions are implemented to reverse the degradation of the country's mangroves.

Acosta-Velázquez y Ochoa-Gómez, 2021.  
CONABIO, 2021

Sites with mangroves but without management tools are more susceptible to disturbance (41%, 3,979 ha).



NBS in Mexico	Co-benefits		
	Economic	Environmental	Social
Natural Protected Areas/Ramsar Sites			
<ul style="list-style-type: none"> <li>Payment for ecosystem services</li> </ul>	Jobs, ecotourism, local supply chains, impacts of floods avoided.	Resilience to the effects of climate change, biodiversity, carbon capture and sequestration, disaster reduction, water quality, sediment retention.	Positive impacts on human health, inclusion of women in productive projects, improvement of the social fabric, reduction of community vulnerability.
<ul style="list-style-type: none"> <li>Fishing preserves</li> </ul>	Improvement of production chains, fair trade, sustainable labels, increase in the value of fishery products.	Biodiversity conservation, food chain recovery.	Inclusion of women, youth and the elderly in fishing production chains.
Ecosystem design/restoration projects	Temporary jobs, real estate value (nurseries, boats), ecotourism.	Carbon capture and sequestration, avoided emissions from degradation, erosion prevention, sediment retention, increased accretion rate.	Empowerment of communities, improvement of local governance, inclusion of vulnerable groups (women, elderly, youth).
Management - restoration of urban wetlands			
Artificial wetlands	Job creation, tax collection.	Wastewater remediation, carbon sequestration, flood control.	Impacts on human health.
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# Risks of NBS in coastal wetlands.



2 ha to restore

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# Risks of NBS in coastal wetlands.



2,011m of linear channels

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# Risks of NBS in coastal wetlands.



11.2 ha of dead/degraded mangroves

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# Risks of NBS in coastal wetlands.

Dam management, respect for ecological flow and specific management of coastal watersheds are vital to ensure sediment balance and the long-term success of the NBS. (Liu et al. 2021, Nature)





# Main challenges in Mexico

- The process of understanding which approaches would be most effective in the long term. Indicator monitoring. Economic valuations, data!
- Socio-economic reality of the country's coasts.
- Implementation of effective NBS is not specifically documented in the legal framework, tools and requirements are unknown.
- Socialization/communication of NBS results to engage private sector investment.
- Practical strategies to plan, design and implement NBS, generate knowledge on methods for monitoring co-benefits, practical knowledge, demonstrate the advantages (cost-benefit) of NBS compared to conventional gray infrastructure approaches.



## Local strategies

- Diagnosis of the current status of blue carbon stocks. Co-management projects for blue carbon credits.
- Investment portfolio for Nature-based solutions.
- Update of land management plans
  - Natural disaster risk
  - Climate action plan
  - Provision and demand for ecosystem services.
- Community groups - surveillance and monitoring.
- Productive projects - bee honey, ecotourism, guided tours to observe biodiversity, blue carbon projects.
- Blue infrastructure to reduce vulnerability to the effects of climate change.



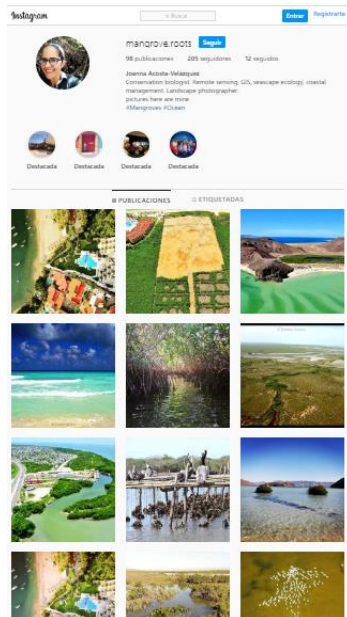
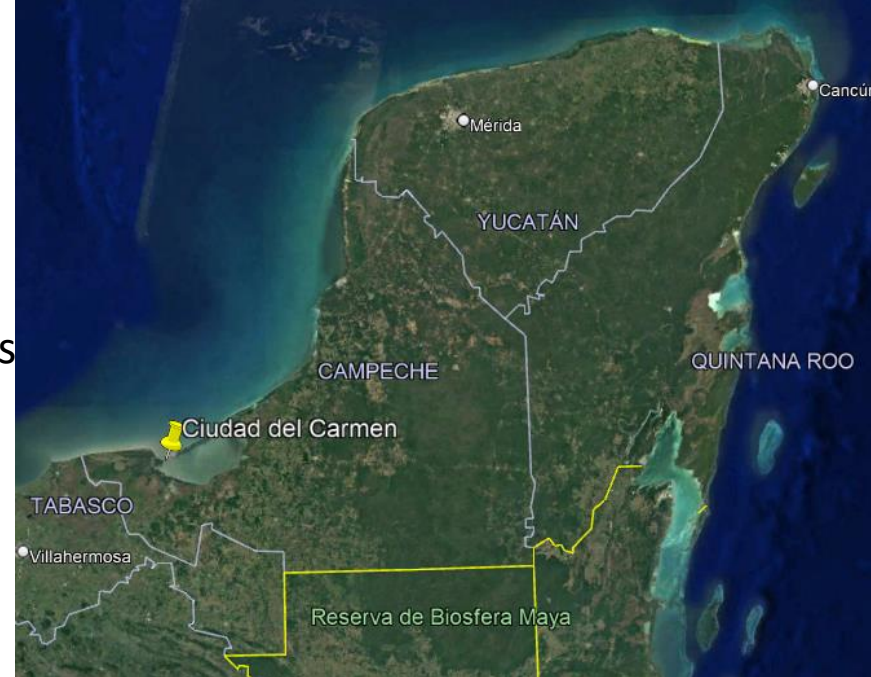
**Government - Partnerships with industry-private sector, research and decision makers/community leaders.** Ensure the involvement of all.





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<https://www.facebook.com/LABHUC-101929002409717>



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