



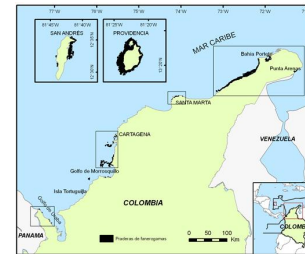
Ecosystem-based Adaptation for Coastal Resilience:
In-depth Workshop on Community Engagement and Strengthening
Partnerships for Coastal EbA

Capacity building in local communities.
Study Case:

COMMUNITY-BASED SEAGRASS RESTORATION AS NATURE-BASED SOLUTION FOR EROSION AND CLIMATE CHANGE MITIGATION

Building local capacity for long-term restoration success

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Bogotá, 22/04/2026

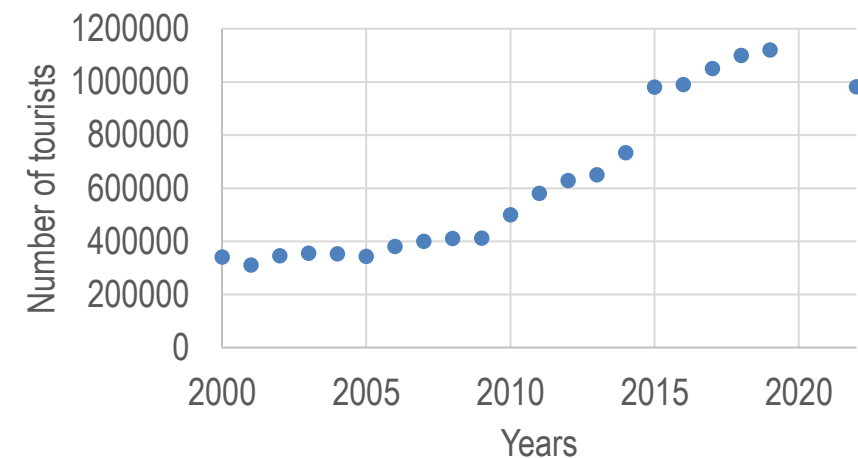
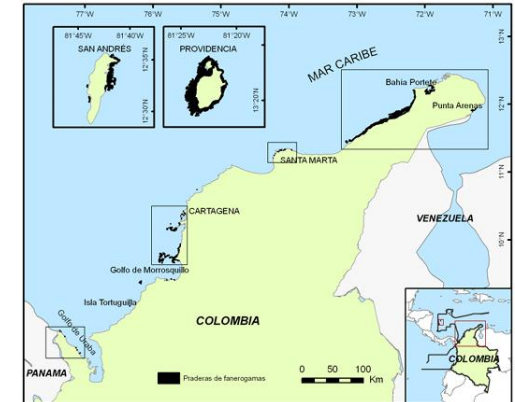
¿Why a project in seagrass meadows?

- **Seagrass meadows are strategic** ecosystems because of the number of ecosystem services (ES) provide to society (Biodiversity, breeding habitat, erosion mitigation, climate change mitigation, recreation and tourism).
- However, it is an ecosystem with multiple threats of both natural and human origin.
- Its **extent** has **decreased** in many places.
- The protection of seagrass beds and their **nature-based restoration** are **strategies** of very high local and **global interest**.
- It has even been suggested that seagrass meadows could serve as a "canary" for climate change.



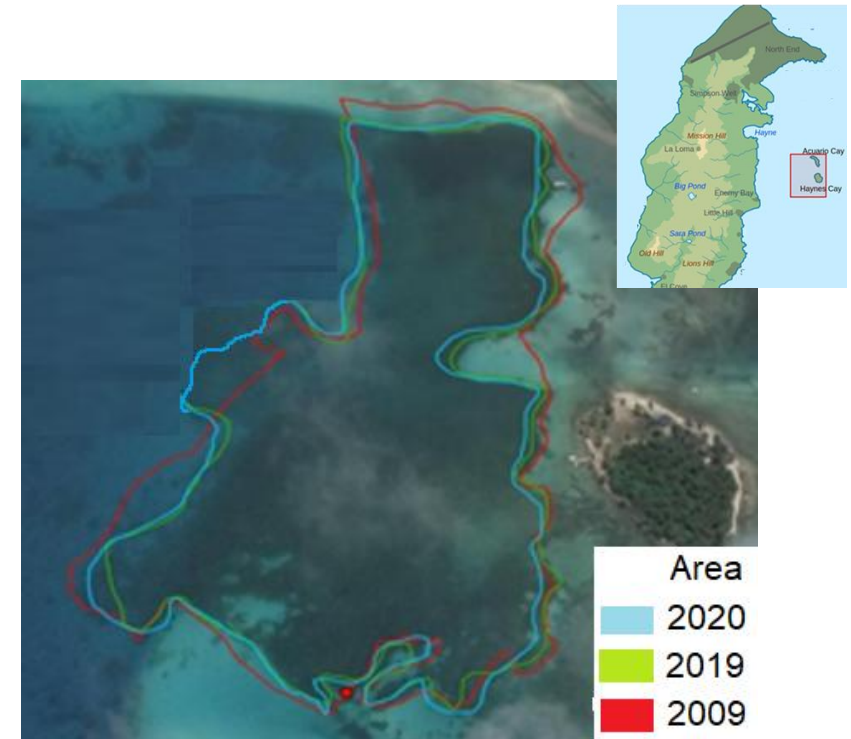
Study Case Context: Seagrasses ES vs Disturbances

- The archipelago (San Andrés and Providence) made up of small islands, is an International Biosphere Reserve (Seaflower) (UNESCO 2000) (80.000 km², one of the largest BRs in the world).
- High population density (2.600 ha./km²).
- Multicultural configuration, 38% ethnic group (“Raizal”) with its own language and customs, different from the rest of the country.
- The impacts of climate change significantly affect small oceanic islands.
- The increase in sea level could compromise 17% of San Andrés in the next 50 years.
- High vulnerability to extreme weather events (Hurricanes).
- As in much of the Caribbean, the development model based on tourism displaced the agricultural and fishing sectors.



The specific problem

- Due to erosion generated by the interaction of anthropogenic and natural effects, at Haynes Cay, a highly touristic site on San Andrés Island (called the aquarium), about 620 m² of seagrass meadow have been lost in the last 20 years.
- The loss of seagrasses has had a significant impact on the decrease in biodiversity and the provision of ecosystem services for the island community.
- If the problem continues, it will **affect one of the main tourist attractions** in the area (sighting of marine fauna), and the vulnerability of the island would increase (affecting resilience), **and therefore the economy of the local community**.



The aim

Develop a pilot technique, co-designed by different stakeholders, to mitigate the erosion of seagrasses, in San Andrés, main island of the International Biosphere Reserve and marine protected area – Seaflower, in the Colombian Caribbean.

Seagrass meadows are socio-ecological systems (SES)



Community-Based Restoration must be:

SES means:

Complex adaptive systems formed by the reciprocal interaction between:

social components (communities, institutions, economy, culture) and **ecological components** (organisms, resources, regulators).

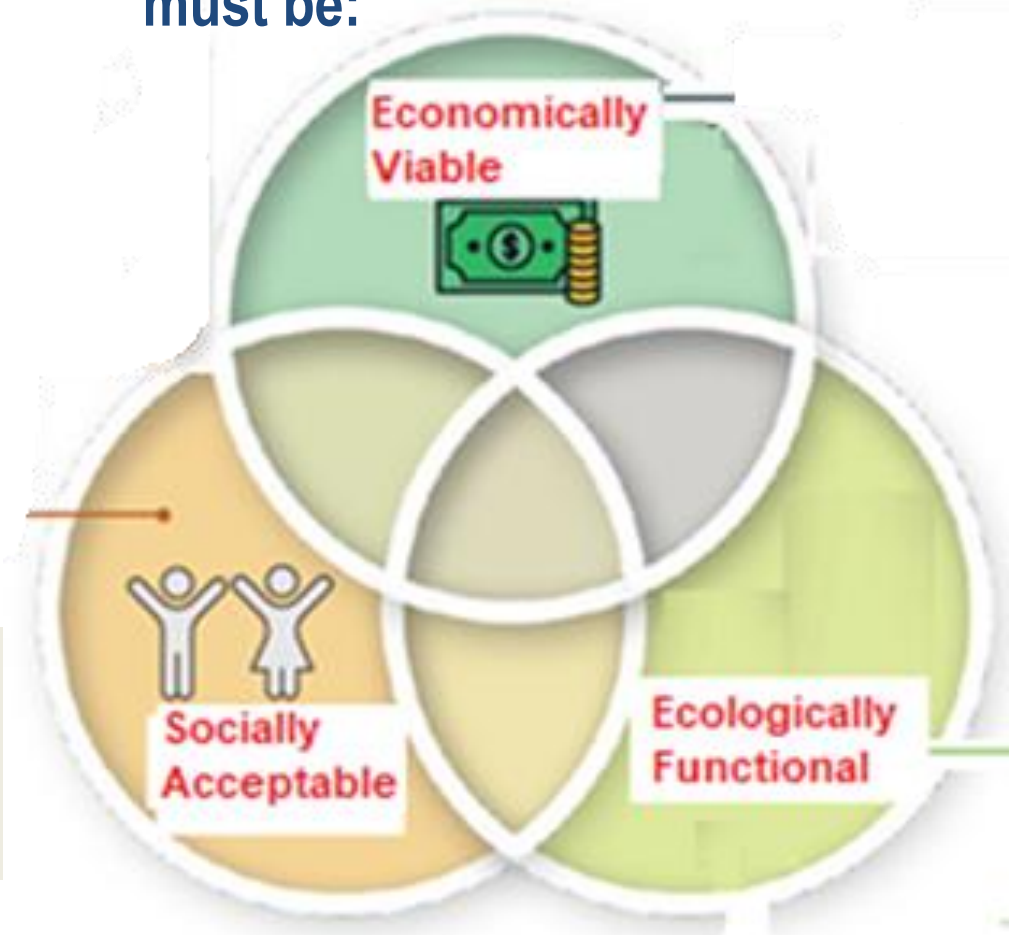
Their structure, functioning, and resilience depend on these interactions.

To:

Reduce: the limitations of hierarchical approaches

Increase: local management, long-term maintenance

Leverage: traditional knowledge



Restoring SES is not just about planting seagrass.

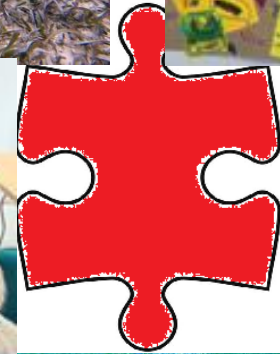
It's also about **strengthening human relationships** and **nature-culture connections** at the same time.

This implies that the social dimension of ecological restoration is a fundamental component for the success of Nature-based Solutions (NbS).

The Social Dimension of Nature-based Solutions
Guidance Report

Vanessa Haines-Matos, Irina Kozban, Nour Bassil, Sunita Chaudhary, Carine Ghassibe, Nicole Hynek, N'Golo Abdoulaye Koné, José Ernesto Mancera Pineda, André Mascarenhas, Günther Schreder, Kolotchéléma Simon Silué, Salma N. Talhouk and Lisa Biber-Freudenberger

BfN Schriften
757
2025



Stakeholders

Engagement Reasons

Public Policy Instruments

Environmental Authorities



Academy



Local Communities

Raizal leaders; Schools

Private Sector

Touristic Operators; NGOs

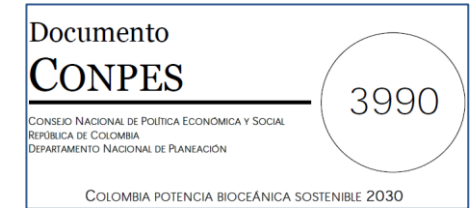


- Application of public policy instruments
- Territory management
- Compliance with International Agreements

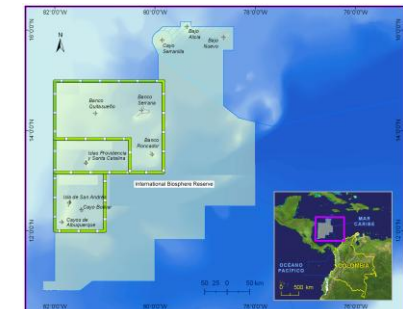
- Technical support
- Capacity building
- Credibility and trust among stakeholders

- Cultural knowledge and local perception
- Job offer, Increase in financial resources

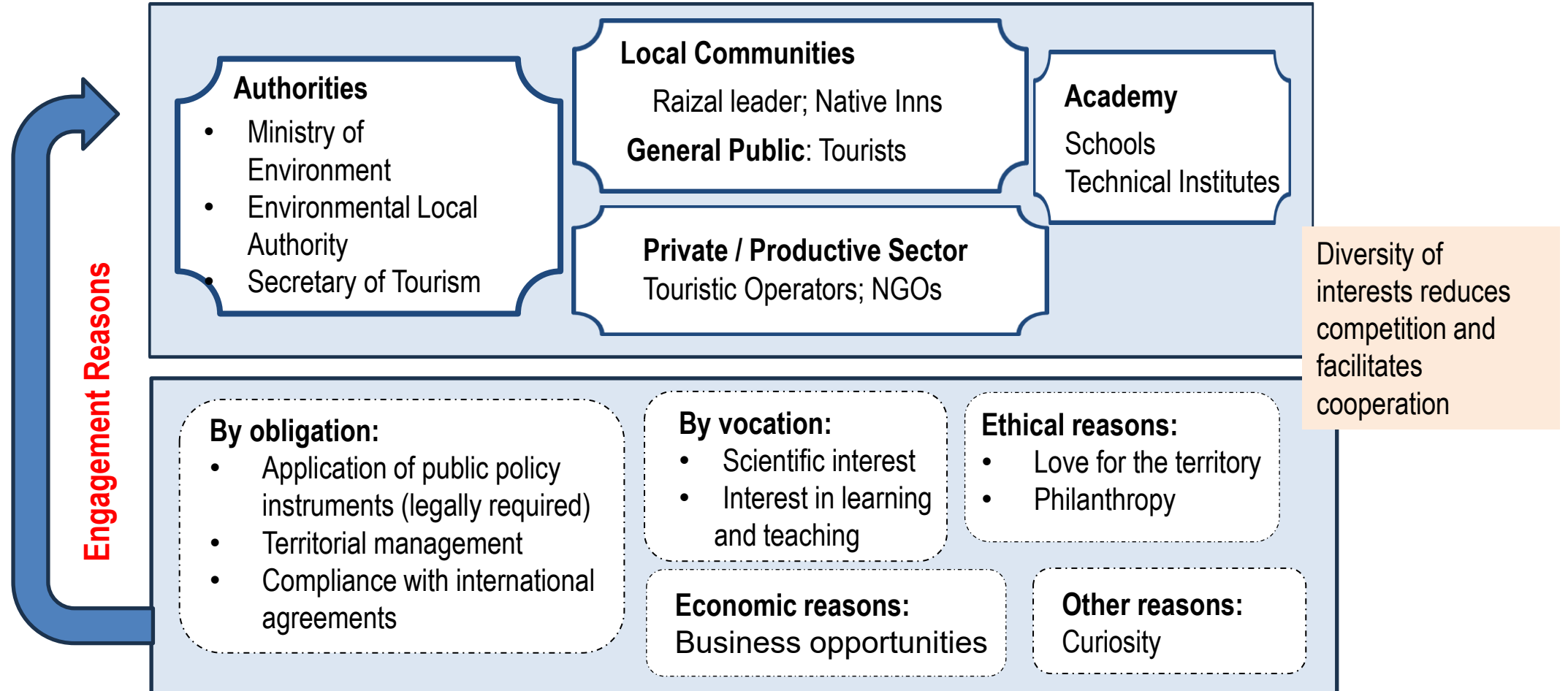
National Council of Economic and Social Policy



International Biosphere Reserve - Seaflower



Challenges: Stakeholders Specific characteristics



Challenges

Type of ecosystem

Seagrass meadows are a **cryptic** (hidden, unknown, mysterious) ecosystem

- Different perception of stakeholders on “the same problem”.
- Multiple social imaginaries (collective ideas that guide the way people think and act in the society)
- Less knowledge of local communities

Seagrasses are a public good, not marketable, so its management does not generate distrust between stakeholders



Pilot technique

There are technical uncertainties.
Seagrasses are vulnerable to natural threats such as extreme weather events.

Potential loss of credibility

Activities

Motivational workshops with different stakeholders for knowledge exchange.



Conozcamos los pastos marinos
Son las únicas plantas que viven completamente sumergidas en el mar. Forman algas, corales, hongos, flores y semillas.
Existen en las áreas más oscuras de los ecosistemas costeros.

¡Descubramos juntos, con Walwin y Thalasia, qué son los pastos marinos! Importancia y problemas

¿Qué son los pastos marinos?
Es una tarde soleada en San Andrés y Walwin y Thalasia conversan de descanso por playa.

¡Hola! Soy Thalasia, un pasto marino.

¡Hola! ¿Qué es esto? Parece una hierba, pero está en el agua.

¡Hola! Soy Thalasia, un pasto marino. ¿Puedes hablar conmigo una planta que habita en el agua?

¡Hola! Soy Thalasia, un pasto marino. Thalasia: Los pastos marinos, como un grupo de organismos marinos, como algas, plantas con flores y plantas submarinas, donde viven algas y muchos animales.

¿Qué son los pastos marinos?
Son plantas angiospermas que viven bajo el agua. Habitan planicies arenosas poco profundas.

Son hábitats, refugio y protección de especies.

Pasan: hojas, flores, raíces y rizomas.

Capturan dióxido de carbono (CO₂).

Producen oxígeno (O₂).

@pastos_marinos

ALGAE
BLADE, STEM, RHIZOME, POLYPLAST

SEAGRASS
CHLOROPLAST, CARBON DIOXIDE, OXYGEN, BUBBLE, LEAF, FLOWER, SEED, ROOT, RHIZOME, STEM

Co-design and monitoring workshops.

- Training activities in: Monitoring techniques; Transplant methods
 - Empowerment: Participation in decision-making
- The results of the first four years show a general survival being more effective in the shallowest station (70% \pm 25 SD), both the core method (71%) and the hook method (68%). At the other depths less than 10% (\pm 25 SD) has been reached.
 - Our projections indicate that, if the pace of plant development continues, from the eighth year of planting the first restored hectare could be reached, which would be occurring at a faster rate than that recorded in other areas with similar techniques.
 - These results have generated trust and greater credibility among stakeholders..



- Rotation of trained participants
 - Institutional connection
 - Balancing scientific versus local knowledge
 - Financing search

Opportunities: What have we learned in the social dimension of seagrass restoration on San Andrés island, Colombian Caribbean?

- Interact with different stakeholders through assertive communication.
- Assertive communication is a way of exchanging ideas, feelings, needs, and proposals in an empathetic, clear, direct, and respectful manner, without subordinating anyone or being subordinated.
- Assertive communication has been a fundamental mechanism for:
 - ✓ Fostering trust with stakeholders
 - ✓ Motivating community participation
 - ✓ Strengthening governance



Activities

Participation at national, local events & Dissemination through mass media

Climate Finance

Organized at the national level by the National Planning Department Preparation for COP30



Bogotá, September 30/2025

Documentary on German TV - ZDF Plan B, dedicated to constructive journalism



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Local newspaper of San Andrés island



'Sostener lo que nos sustenta': ONU



'Maravillas oceánicas: sostener lo que nos sustenta' es el tema del Día Mundial de los Océanos, impulsado por la Organización de las Naciones Unidas (ONU) este 2025, para recordarnos, como cada 8 de junio, nuestra conexión profunda con el mar y para instarnos a su protección. [\(Leer más...\)](#)

New Pre-approved project

Fund for Life and Biodiversity, Ministry of Environment and Territorial Development



Community Restoration of Seagrass Meadows and Conservation of their Ecosystem Services in the Seaflower Reserve

Objectives

1. Increase community-based restoration, conservation, and monitoring efforts for seagrass beds in the Seaflower Reserve.
2. Develop a community-based tourism business model based on seagrass restoration and the conservation of its ecosystem services.
3. Strengthen environmental governance in the territory.

Opportunities

- Scaling through community and institutional networks
- Integration with educational programs.
- Citizen science
- Linking restoration with livelihoods (tourism)

Take-Home Message

- Seagrass restoration is not only an ecological process, but a social one—long-term success depends on sustained investment in local capacity and ownership.
- Capacity building drives community ownership, which is essential for sustaining long-term seagrass restoration.



Thank you

Ecosystem recover when people are empowered to care for them!