

SCALING UP INVESTMENTS IN WATERSHED SERVICES

MARISMAS NACIONALES

Connecting People and Nature from Ridge to Reef

THE CHALLENGE

Marismas Nacionales, the largest mangrove complex on the Pacific coast of Mexico, is disappearing at an alarming rate. Recent die-offs of large portions of the mangrove stands have been linked to man-made changes to the fresh and salt water balance in the coastal zones, and expanding agriculture upstream and large infrastructure projects continue to alter critical freshwater and sediment flows into Marismas Nacionales.

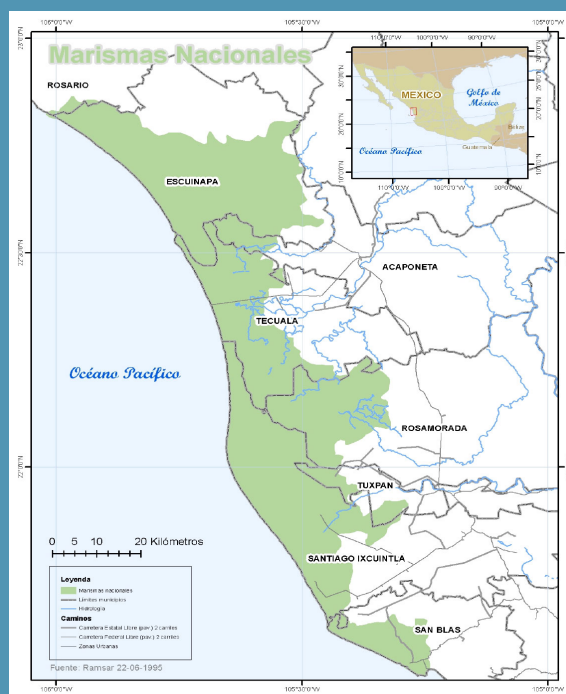
Marismas Nacionales provides vital ecosystem services to the region, with an influence reaching beyond the Gulf of California. The mangrove complex provides nurseries for fish, crabs, and shrimp that are caught in the Gulf of California by an industry worth over \$30 million per year, providing the majority of seafood consumed in Mexico. Moreover, large-scale, export-oriented agriculture upstream of the Marismas Nacionales benefits from the mangroves as a barrier to saline ocean water and through shoreline stabilization. Marismas Nacionales also supports community-based, small-scale economic activities organized through cooperatives and community-held land.

While there is a direct biophysical connection between the mangroves, and social and economic benefits, no financial incentives exist to support mangrove conservation. As a result, these ecosystems, communities, and industries are at risk from changing environmental conditions and human behaviors in the region. Increasing salinity levels around the mangroves are causing stretches of mangroves to die off. Poor aquaculture and agricultural practices introduce excess nutrients and saltwater into the watershed and throw off the delicate flow of nutrients, water, and silt downriver into lagoons where mangroves grow.

THE RESPONSE

Local organizations Pronatura Noroeste, SuMAR, and Centro para el Desarrollo Social y la Sustentabilidad Nuiwari (Nuiwari) are leading work to design an equitable

Location: Sinaloa and Nayarit, Mexico



PARTNERS: Pronatura Noroeste, SuMAR, Nuiwari, Deltares, Center for Research on Nutrition and Development, National Commission on Protected Areas, National Forestry Commission, and National Water Commission.

and sustainable response to the threats to the Marismas Nacionales. The focus of this collaboration has been on the Acaponeta River, with plans to expand to the San Pedro Mezquital and Baluarte rivers in the coming year. With the support and coordination of Forest Trends, this work has concentrated in four areas:

- Increasing the local and scientific understanding of drivers and benefits of mangrove health – including complex interactions with upstream land and water

use, water quality, and fishery productivity — through monitoring activities, executed in partnership with local communities and hydrological monitoring, to design science-based interventions for mangrove conservation and restoration;

- Creating a common vision and theory of change for ensuring the health of the Marismas Nacionales with upstream and downstream communities, non-governmental organizations, and government agencies, with explicit consideration of biophysical, social, and economic connections to conserve the mangrove stands;
- Identifying new financing sources to support conservation of the Marismas Nacionales, by leveraging the benefits provided by healthy mangroves to local communities, fishery supply chains, and upstream agricultural producers;
- Identifying possible public-private partnerships using innovative policy tools, such as a recently approved guarantee of water for regional ecological flows, through the Reservas de Agua program, and new opportunities with national governmental agencies, such as through the Fondo Concurrentes, or concurrent funds, program.

THE MODEL

The model that Forest Trends and our partners are developing in Marismas Nacionales explicitly recognizes and values the connections between upland, coastal, and marine socio-ecological systems.

Marismas Nacionales at a Glance

Size of Marismas Nacionales	248,000 ha
Hectares of degraded mangroves and wetlands in Marismas	10,000 ha
Population of Marismas Nacionales	278,715 (in 342 communities)
Principal economic activities upstream	Ranching, Agriculture, Forestry
Principal economic activities downstream	Fisheries, Aquaculture
Size of fishing and aquaculture industry in Marismas	US \$33 million

Marismas Nacionales provides an opportunity to financially connect actors that haven't been linked until now: upstream forestry and agriculture and downstream commercial fishing. This connection parallels the ecological flows across the landscape and recognizes the mangroves as the nexus of these two systems. Expanding knowledge of the biophysical aspects and strengthening the financial connection between the land (watersheds and mangroves) and the sea (fisheries) helps all actors make informed management decisions and develop a shared ownership for watershed resources. An understanding of the multiple benefits offered by a specific ecosystem service, in this case, the mangroves, helps everyone understand linkages and opportunities across the landscape.

Current ecosystem services



Forest Trends' Water Initiative merges a holistic, "ridges to reefs" outlook on water management and conservation with a strong belief in the power of markets and incentives to address the global water crisis. Primarily funded by the Swiss Agency for Development and Cooperation, the Scaling Up Investments in Watershed Services Program supports local partners piloting innovative investment in watershed services projects in seven countries and engages a diverse community of experts to create new tools and analytics and share best practices.

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