ECUADOR LEADS SUSTAINABLE FISHING WITH ECOFADS BIODEGRADABLE, NON POLLUTING, NON ENTANGLING

November 2025

In an article published in 2025 promoting the use of bamboo in fisheries and aquaculture, the INBAR International Network of Bamboo and Rattan highlights that Manabí Province in Ecuador plays a pivotal role in the tuna supply chain, utilizing Fish Aggregating Devices (FADs) bamboo structures designed to attract fish.

These FADs, biodegradable, non-polluting, and non-entangling, implemented by the Tunacons Foundation, represent a revolution in tuna fishing, with full respect for marine biodiversity. Ecuador's tuna industry, generating over $2.2 billion annually in exports, is taking a historic step toward sustainability thanks to the Tunacons Foundation. Today, they work with abacá fiber, guadua bamboo, balsa wood, and organic rubber, all produced in Ecuador, to create FADs designed to:

- be 100% biodegradable
- not entangle non-target species
- generate zero long-term marine pollution.

The use of drifting Fish Aggregator Devices (FADs) is a common practice in industrial tuna purse seine fishing worldwide. While these devices are effective in attracting large concentrations of pelagic fish, they can also be a significant threat to marine ecosystems when they move uncontrollably into marine protected areas. This problem is not unique to the Galapagos Islands, but is also seen in other oceans. In these regions, the FAD can run aground on coral reefs, tourist beaches or areas of high biodiversity, generating negative impacts such as the physical destruction of habitats, plastic pollution and alterations in local ecological dynamics.

Since the 1980s, fishermen discovered that tuna naturally gathers around floating objects like logs or even whales. This led to the development of FADs (Fish Aggregating Devices), which today account for 80% of tuna catches. However, traditional FADs used non-degradable materials, sometimes trapping sharks and turtles and polluting the sea. It was urgent to change the materials. To find a solution for these problems, the Tunacons Foundation based in Ecuador launched a pioneering project. The Tuna Conservation Group of Tunacons has made a strategic alliance with the Inter-American Tropical Tuna Commission (IATTC), signing a Memorandum of Understanding, for scientific and technical cooperation in projects that strengthen the sustainable management of tuna populations and for the implementation of a pilot test project of FADs built with degradable materials.

This initiative was neither simple nor improvised. It took years of research, more than two million dollars in investment, numerous at-sea trials, and strong cooperation with fishing captains. The process culminated in the development of an efficient, eco-friendly, and viable prototype that is now being produced at scale.

As a result of these activities, in 2025 in Guayaquil, the Ecuador's tuna industry, a source of national pride and a benchmark in the Eastern Pacific, is now at the forefront of sustainability thanks to the work of the Tunacons Foundation. Under the leadership of the president Guillermo Morán, Tunacons has deployed over 5,000 biodegradable ECOfads, eco-friendly fish aggregating devices (FADs) that are transforming tuna fishing by minimizing environmental impact and promoting responsible practices.

FADs are floating structures that attract tuna, which tend to gather around objects drifting at sea, such as logs or even marine animals. Over 20 years ago, captains discovered that tuna would gather around floating objects and they began experimenting with artificial prototypes. However, early versions used non-degradable materials, contributing to ocean pollution and threatening species like sharks and turtles. Tunacons revolutionized this practice with ECOfads, FADs made from 100% biodegradable, plant-based materials such as Ecuadorian abacá fiber, bamboo-like caña guadua, balsa wood, and organic rubber.

Tunacons organises technical workshops with crew members and captains to elaborate prototypes of EcoFADs. Then the companies that are members of the initiative assemble them and proceed to use them. Eighty-one percent of Tunacons vessels have tested biodegradable FADs.

The 5,000 ECOfads, measuring 2 to 3 meters, are deployed from vessels in Ecuador, Panama, and the United States, covering waters from the Galápagos to the Central Pacific. Equipped with sonar, these FADs allow captains to detect tuna schools in real time, optimizing operations and reducing fuel consumption, a key advantage after fuel subsidy removals.

Tunacons' sustainability initiatives also include:

- Releasing sharks, turtles, and manta rays caught incidentally, with trained crews ensuring their safe return to the sea.
- Recycling tuna fishing nets, sending over 600 tons annually to Chile for processing.
- Cleaning coastal mangroves, in partnership with artisanal fishers, removing up to 30 tons of plastic in areas near Guayaquil.

Starting in 2026, the use of these FADs will be mandatory for the entire tuna fleet operating in the eastern Pacific, thanks to a resolution by the Inter-American Tropical Tuna Commission (IATTC). This has been acknowledged in international forums, where captains and experts from Asia, Europe, and North America agree they're on the right track.

In 2017, a group of visionary tuna entrepreneurs from Ecuador, Panama, and the United States, with the support of WWF Ecuador, created the Tunacons Foundation to work on the sustainability of the tuna sector in the Eastern Pacific.

Tunacons achieved the world's most recognized certification of the Marine Stewardship Council MSC, for all three species of tropical tuna, making the Tunacons member fleet one of the largest in the world in sustainable fishing. The 10 companies that make up the Tunacons Foundation represent 58 tuna vessels, with an average annual catch of more than 130,000 tons of tuna caught in the Eastern Pacific Ocean.

To know more

INBAR brochure Bamboo in fisheries and aquaculture

INBAR Article Harnessing bamboo for marine conservation and coastal livelihoods

ECOFADs in Tunacons website

Tunacons Foundation

Ecuador leads sustainable fishing with ECOFADS

ECOFADs article in Tunacons.org

FADs Management Plan

Tunacons in Facebook

ECOFADs en Instagram.com

ECOFADs in ecoticias.com

Tunacons 2024 Archives

Tunacons-Memoria de sostenibilidad Informe 2025

Article in camaradepesqueris.ec

Article in friendsofthesea.org

Article in Paytonenergy.com

FADs in icm.csic.es

Biodegradable FADs in International seafood Sustainability Foundation

ECOFADs in iattc.org website