



Credit: Anthony-Into

Bamboo in fisheries and aquaculture

Cases from Ecuador, Peru and Ghana

Fishing gear is usually made of plastic polymers that pollute and/or endanger navigation when lost or discarded at sea. Fishing vessels, traps, and other crafts made from bamboo and rattan, owing to their lightweight, strong, affordable, and eco-friendly nature, offer a sustainable solution to plastic pollution. This helps small-scale fishers and fish farmers make the transition to more ocean-safe materials.

Reducing Plastics in the Tuna Trade – Ecuador

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 floating or anchored rafts, with bamboo frames, hanging nets, and a bait-filled container, are equipped with satellite buoys that transmit data to fishing vessels on fish quantity and size. This approach boosts catch rates, reduces operational costs, and minimizes the time of vessels at sea.

FADs offer a strategic alternative to tracking tuna migration routes, combining the ecological benefits of bamboo with advanced tracking technology while reducing plastic use. They also create local bamboo jobs in the province, creating biodegradable products for fishers.



Building bamboo frames for FADs. Credit: INBAR

Hoisting Sails High with Bamboo Masts – Peru

On the coast of Piura, Peru, artisanal fishermen are using bamboo culms as masts to hoist the sails on rustic balsa boats and small wooden vessels. These lightweight yet sturdy masts not only facilitate seaborne navigation but are also essential in emergencies, allowing fishermen to deploy sails in the event of mechanical failures. Over 4000 bamboo masts are being used in Piura today.

Bamboo masts have several advantages over ones made of metal or plastic. (1) They are lighter and more resistant to corrosion from the salty environment. (2) They are strong and durable, able to endure the demanding conditions. And, (3) they are biodegradable, with a lower carbon footprint.

Due to its renewability and rapid growth, bamboo is an eco-friendly material—a real “green gold”. Using sails over fuel reduces fossil fuel consumption, cutting greenhouse gases and operational costs. Bamboo masts also support artisanal fishers, whose practices are less harmful to marine biodiversity.



Bamboo masts offer many advantages over metal or plastic ones. Credit: INBAR

Sourced with local materials, bamboo can be used to make aqua cages or buckets for fish farming, which helps lowering our reliance on plastics and metals while fostering economic resilience and environmental stewardship in impacted communities.

Fish Farming with Bamboo Cages – Ghana

Corrosion of metal pipes can pollute waters. However, at Ghana’s Volta Lake, locals are replacing hundreds of metal pipes with bamboo poles. These not only reduce the cost of constructing cages, keeping more money into the pockets of local fishers, but also safeguard the water quality and environment.



Bamboo fishing cages protect the environment—and fishers’ income. Credit: INBAR

Fishing with Bamboo Buckets – Ghana

At Volta Lake, plastic buckets have also been used for fishing. Many discarded buckets are now trapped on the lake floor, polluting the environment and causing “ghost fishing”, where abandoned fishing gear continues to trap and kill wildlife. To fight this, over 1000 bamboo pole traps have replaced buckets at the lake. These eco-friendly bamboo items do not threaten the water quality, while helping phase out the use of plastics in the local fishing industry and creating bamboo processing jobs for over 100 youth.



Bamboo pole traps being made (left, middle) and used on the lake (right). Credit: INBAR

Rattan is also in use for cage trapping in Ghana. Credit: INBAR



Credit: Michael Edwards

The International Bamboo and Rattan Organization (INBAR) promotes the use of bamboo and rattan for sustainable development.

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