The Indo-Pacific lionfish (Pterois volitans) is a major threat to Caribbean reefs. First sighted in Belize in 2008, the invader is known to significantly reduce native fish biomass, threatening the ecological integrity of Belize’s world heritage-listed barrier reef. The lionfish invasion thereby undermines fishing and marine tourism industries alike, which support 15,400 livelihoods and contribute 25 per cent to Belize’s gross domestic product (GDP).

Blue Ventures is initiating efforts to build Belize’s lionfish fishery as an economic alternative for fishers and tasty option for consumers. This creates economic incentives to systematically remove the predator, whilst diversifying fisheries and local livelihoods within coastal communities, ultimately reducing pressure on traditionally-targeted native species.

Targeted lionfish fishing is now evolving in Belize, offering ecological and economic benefits. New sources of income for fishing households, e.g. women manufacturing jewellery from discards or new dishes appearing on restaurant menus, further develop the emerging market and help suppress the lionfish population.

Pablito and Aracely own the restaurant Estrella del Mar. As a direct result of Blue Ventures’ regular workshops and taster events in «Estrella del Mar», in 2013 the keen entrepreneurial couple began serving lionfish prepared in diverse ways. Lionfish is now Pablito’s most popular dish, proudly standing at the top of his menu, with the name hand-painted on his small restaurant’s display. Since 2014, lionfish has been their bestselling dish. They buy 30kg of fillet per week, which is roughly 190 lionfish. Since this February, they process 45 kg of fillet – 300 lionfish – per week!

Fishermen have benefitted immensely from the couple’s ability to consistently buy lionfish and market it to Belizeans and tourists alike. Their reliability as a sales point is key to entrenching the lionfish fishery at the community level. A modest online presence attracts new customers: «With tourists coming and their growing appetite for lionfish, we may be able to send our daughter all the way through college and university,» Pablito cheers.

Emergent lionfish fishery
To build a new market for the fishery, all actors across the supply chain are supported, incentivising fishers to consistently target lionfish. Fishers are trained in lionfish safe-handling and first aid for stings. Buyers are linked to fishers and receive marketing support through posters and menu inserts. A social marketing campaign informs consumers and increases demand and willingness to pay.

Value-added lionfish products
Training women in coastal communities to manufacture jewellery using lionfish spines and fins can add up to 40 per cent of value to catches, and resulting products may access international markets. Other locally processed goods (e.g. lionfish burgers, frozen fillets and animal feed) can generate new skills and alternative employment for community members.

Lionfish catch targets
Extensive stock assessments enable development of site-specific threshold densities for lionfish control activities. Exploitation strategies and management implementation plans establish catch targets to optimize nation-wide removal efforts. A combination of commercial harvesting, culling by SCUBA and employing deep-water traps is necessary for long-term population suppression.