

# Putting Lionfish on the Menu

Conserving coral reefs in Saint Lucia



**CASE STUDY**

This project harnessed tourism to help address the danger posed to reef ecosystems and local fish stocks by the invasive, non-native Lionfish (*Pterois volitans*).



**Through putting Lionfish on the tourist menu and creating demand, populations are being reduced, and locals who catch the fish are gaining economic benefits. This all helps conserve an important tourism asset for the island: its beautiful coral reefs.**

Lionfish originate from Indonesia, but since being introduced into the Caribbean sea they have multiplied rapidly with devastating results. In some areas this voracious predator has reduced native fish numbers by up to 80%<sup>1</sup>. Lionfish threaten the survival of coral reef ecosystems that are already undermined from other stressors such as overfishing, pollution and climate change.

Saint Lucia is one of the last Caribbean countries to be invaded by lionfish, with the first recorded sighting in 2011, however populations are increasing rapidly. Given the relatively recent invasion of the species, government response efforts are at an earlier stage compared to other countries.

1 <https://www.scientificamerican.com/article/does-eating-lionfish-work/>





## The Situation

There is growing evidence that the most effective way to control lionfish populations is through increasing the demand for its consumption. In Jamaica and Grenada, for example, increased local consumption and harvesting (through educational campaigns and fisher training programmes) has led to lionfish numbers decreasing significantly in shallow coastal areas.

However, in Saint Lucia consumption is low, and this is partly due to the misconception that the fish is poisonous and can't be eaten (although the spines are venomous, with correct handling they can be easily and safely removed).

Taking over the reefs:  
10 times as many  
lionfish were caught in  
2015 than in 2013

(According to the island's  
Department of Fisheries DOF)

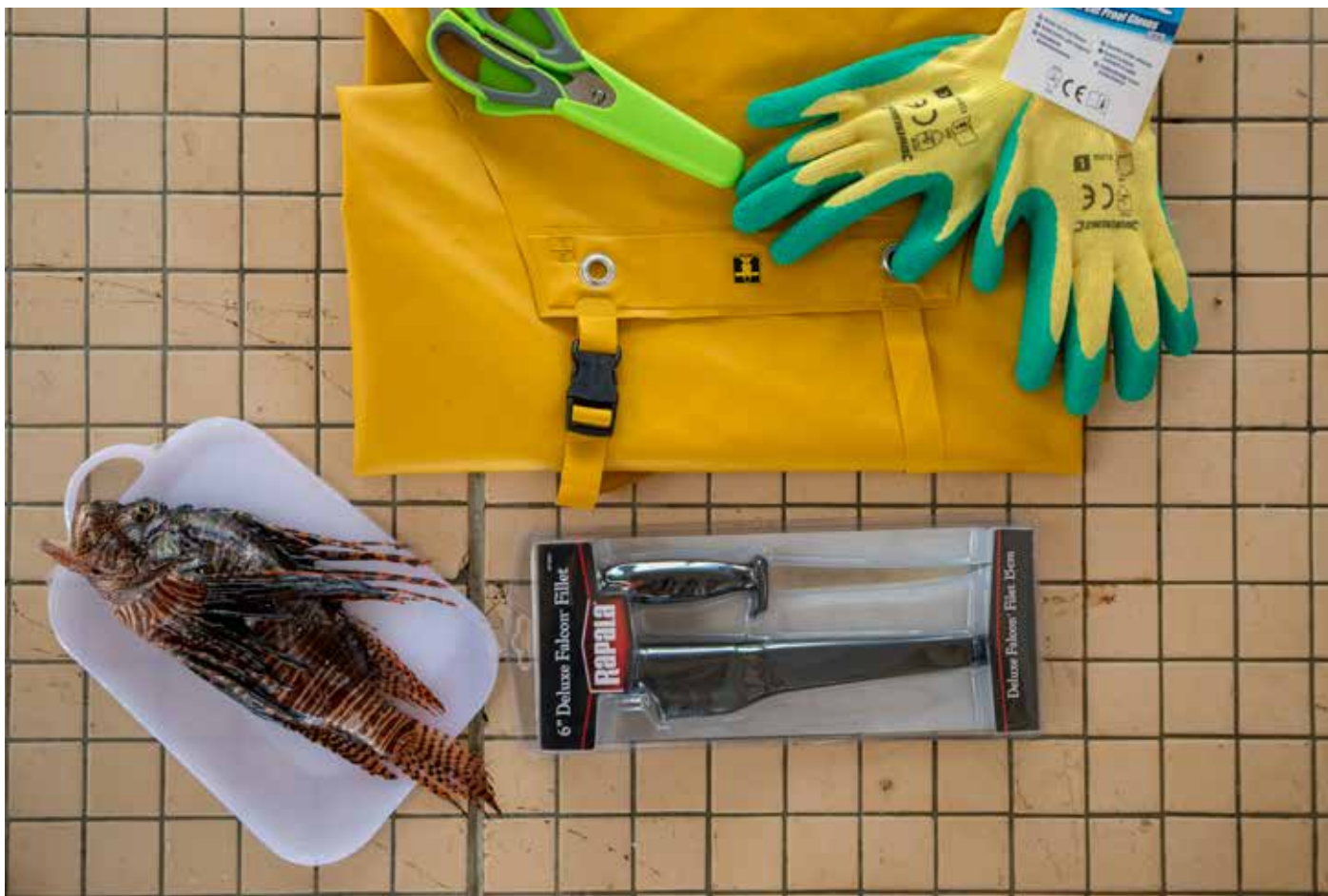
## Our Approach

We worked with fishers, wholesalers, hotels and restaurants to develop the supply chain and to encourage demand for lionfish among tourists as a tasty local delicacy.

Because the initiative would make it more viable for fishers to

catch and sell lionfish, it was also expected to contribute directly to the sustainability of local fishers' livelihoods, and indirectly to a more sustainable tourism industry (by helping to conserve one of the island's main assets - the reef), upon which Saint Lucia's economy depends.





## What we did

### Data collection

Initially we established a baseline for the number of lionfish currently caught and the income generated for fishers. We also researched the potential for sales of lionfish to hotels and restaurants, revealing significant opportunities, and mapped the current (often informal) supply arrangements from fisher to fork.

### Training for fishers

We trained 58 fishers from four communities (Soufriere, Canaries, Choiseul, and Vieux Fort) in how to catch, handle and process lionfish, and in the procurement

requirements of hotels and restaurants.

### Provision of equipment

In addition to training, we provided fishers with basic equipment to enable them to safely clean, process and transport lionfish. This enabled them to better meet the needs of hotels and restaurants (eg by providing filleted fish, stored in ice).

### Training for hotel chefs and purchasing managers

With support from the Saint Lucia Hotel and Tourism Association, we delivered a training workshop to 24 chefs and purchasing managers from 10 businesses to encourage chefs to put lionfish on the menu,

### Post-training surveys with 53 fishers revealed the following:

85% reported an increase in their understanding of lionfish procurement requirements of hotels and restaurants

96% had applied their knowledge and skills post-training by catching, cleaning and processing lionfish



including recipe ideas and safe handling and processing techniques. The workshop was followed by the inclusion of lionfish as a mystery ingredient for Saint Lucia's high profile Chefs in Schools culinary competition.

## Changing perceptions and increasing demand

To stimulate demand from hotels and restaurants, we focused on raising awareness of the commercial and sustainability benefits of purchasing lionfish. We also supported businesses in developing marketing and communications materials and messages for their customers.

Two lionfish derbies (competitions to see how many lionfish can be caught in one day) were held during the project timeframe, with support from project implementation partners.



**How to safely prepare your Lionfish**

**Lionfish**

**Useful equipment**

- Puncture-proof gloves (nylon or leather)
- Long flexible saws (for the spine & scales)
- Very sharp fillet knife
- Wetted sponges or plastic plates

1. Put on some puncture-proof gloves. Slip off the venomous spines in the three areas shown above using strong scissors or shears. Dispose of them carefully.

2. Using your sharp knife, make a cut behind the gill, and then slice all the way down the fish's back to fillet it. The skin should come off easily.

This is easier to do if the fish is chilled.

**cook eat enjoy!**



# What were the benefits?

## Improved local livelihoods

As a result of the project, fishers have been able to sell more lionfish than ever before. The volume of lionfish sales went from 405lbs per week to 1419lbs per week among all of the fishers which is a 250% increase in volume of sales. This is a direct result of the project's supply and demand-related activities.

Of the 33 fishers selling their lionfish catch, 39% reported that their sales of lionfish to hotels and restaurants had increased during the project timeframe (either directly or through middlemen).

At the start of the project, the average weekly income from lionfish sales of target fishers was XCD 84. By the end, this had risen to XCD 171.4 - more than double their previous income (104% increase) and significantly higher than the 10% target set.

## Healthier coral reefs

Although it is difficult to assess changes in fish populations over a short timeframe, reef surveys, as well as reports from fishers, indicate that the populations of lionfish at shallow depths have decreased. Fishers and divers report that large lionfish are now only found

at deeper sites, as the shallow reef areas have been 'fished out', enabling other marine life to recover.

## A new taste for lionfish

An additional six hotels and restaurants are now reported to be serving lionfish compared to the beginning of the project, primarily due to increased demand from customers, which also demonstrates the impact and effectiveness of awareness-raising materials.

Although the project targeted the tourism sector, the communications materials we produced may also have influenced resident attitudes and behaviours. Prior to the project, few Saint Lucian residents ate lionfish, as it was believed to be poisonous, however public consumption of lionfish has now reportedly increased and lionfish has become a sought-after commodity (82% of fishers reported increased sales to residents over the past 12 months).

"I feel very, very confident about handling and processing lionfish now... training was excellent"

- Training participant







## Looking Ahead

Thanks to changes in national legislation, it is now easier for fishers to target lionfish. Previously spearfishing was illegal as a commercial activity, however, since the project and the perceived efficacy in control of the lionfish population, the Department of Fisheries (DOF) has started renewing spear fishing licenses for registered fishers. Dive shops may also use spears within protected areas for the hunting of lionfish.

In future, the government's ability to monitor and manage lionfish populations will be improved thanks to better data collection. Previously data was collected only by the DOF, but now fishers are collaborating in the collection and reporting of figures for lionfish catch and sales.

Linking lionfish control to tourism should be more of a long-term solution than alternatives such as promoting derbies, since tourism in Saint Lucia is set to increase<sup>2</sup>.

<sup>2</sup> Stayover visitor numbers have grown steadily each year with nearly a 38% increase over the course of the last decade, peaking at a record 423,736 in 2019.



The fishers and hotels we engaged will continue to catch and cook lionfish now there is more demand and economic incentive.

can be harnessed creatively to do something useful for a destination.

## Wider impact

This project demonstrates that results can be achieved over a very short time frame, including upskilling fishers and the creation of demand for lionfish among tourists and locals. It is hoped that other Caribbean islands will use it as a model for reducing their own lionfish populations and improving coral reef ecosystems in the area.

More broadly, it shows that tourism - particularly the demand for local, authentic tastes and experiences -

## Partners included

CLEAR Caribbean

Saint Lucia  
Department of Fisheries

Saint Lucia Hotel  
and Tourism  
Association (SLHTA)

## In Numbers



**57%**

increase in the number of hotels/  
restaurants purchasing lionfish



**104%**

increase in  
income of target  
fishers from  
selling lionfish



Decrease in lionfish populations  
across 4 (out of 7) target sites



**250%** increase  
in the volume and  
value of lionfish sales





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