



## *Plecostomus*: alternative family income and livelihood

### Keywords

Community resilience, family income, fishing techniques, livelihood, *Plecostomus*.

### Summary

The communities in the municipality of Jonuta (Tabasco, Mexico), have been coached in how to use the *Plecostomus* as a food source. The money generated in wages and from sales of *Plecostomus* have increased family incomes and improved local subsistence practices.

- Traditional subsistence practices have been abandoned. Livestock farming, for example, has been neglected.
- Infestations of invasive species have harmed fishing.

To increase the resilience of communities in Jonuta, two actions appeared essential: encourage basic subsistence practices and make use of local resources.

### The problem

Floods undermine subsistence and harm productive local practices including farming and fishing. In Tabasco, almost half of the population (49.6 percent) earns very little. Unemployment is high and traditional subsistence activities are in decline. Household incomes therefore depend on a small number of enterprises.

Having conducted a capacities and vulnerabilities analysis, the project diagnosed the following issues:

- In the municipality of Jonuta, there are few employment opportunities.
- Adults leave their local communities to look for work in other states across Mexico.



Figure 1. *Plecostomus* workshop.



Figure 2. *Plecostomus* preparation.

## How

Fishing was one activity discussed during the community analysis. It is a major source of local income and provides both subsistence and revenue. However, bream, tilapia and sea bass, the most popular and valued local fish, are predated by *Plecostomus*, an invasive species known locally as 'devil fish'.

To respond to this problem, the Flood Resilience Programme proposed a project to control the spread of *Plecostomus*, thereby encouraging species diversity in the rivers, and at the same transform the 'devil fish' into a product for sale and consumption.

The non-governmental organization Humedales del Usumacinta (Humus A. C.), which has expertise in this area, was invited to make recommendations on how to reduce the infestation of *Plecostomus* and use it as a food source.

18 communities subsequently received training in:

- The definition of an invasive species.
- The problems that invasive species, especially *Plecostomus*, cause in the region.
- How to consume and prepare *Plecostomus* (commercially and for local consumption).

- Characteristics of *Plecostomus* (origin, life cycle, features, uses).
- Fishing techniques (nets, capture management, conservation).
- How to cut and prepare *Plecostomus*.
- How to conserve and pack *Plecostomus*.
- Commercialization (marketing, pricing, advertising).
- Waste management.

## How the project has promoted resilience: case-study

The *Plecostomus* project brought a number of benefits to the community.

- People now know that the *Plecostomus* is an invasive species and have the training and know-how to control it.
- *Plecostomus* is used for local consumption and sold at local markets.
- *Plecostomus* management training can be replicated for other fish species.
- The community has produced recipe books for sale in the region.

The project has also increased the community's resilience across several of the programme's sources of resilience capital:

- **Human.** Communities are now aware that *Plecostomus* is an invasive species and also a source of food. Their perception of the 'devil fish' has changed because they now consider it a resource.
- **Social.** The training workshops increased social cohesion by convening groups from different communities to share their experiences of managing the species. The project also enhanced equity of participation because people of different ages and genders attended.
- **Natural.** Communities are more aware that *Plecostomus* control prevents riverbank erosion and protects other fish species.
- **Financial.** The community and individual families stand to gain from commercial sale of *Plecostomus*.



## Cost

Five facilitators were trained to replicate the workshops in their communities. Altogether, 286 people were trained and have the capacity to pass on what they learned. In addition, people from 18 of the 21 communities included in the programme participated in workshops on *Plecostomus* farming. Altogether, around one in ten of the population was trained directly.

- Number of communities: 18
- Trainings: 19
- Direct beneficiary population: 286
- Indirect beneficiaries: 901

## Return on investment

Humedales del Usumacinta calculated the income that can be obtained from *Plecostomus* fishing, based on the current price per kilogram (USD 2.10) and the weight of fish that a fisherman can expect to catch per day (15 kg).

Weekly catch (fish)	750
Kilos	75
Days of work	5
Wages (USD 3.70 per day)	18.50
Value (USD 2.10 /kg)	157.50
Weekly income (5 days) (USD)	139.00
Monthly income (20 working days) (USD)	556.00



Figure 3. *Plecostomus*.

## How we work

Strategy 2020 voices the collective determination of the International Federation of Red Cross and Red Crescent Societies (IFRC) to move forward in tackling the major challenges that confront humanity in the next decade. Informed by the needs and vulnerabilities of the diverse communities with whom we work, as well as the basic rights and freedoms to which all are entitled, this strategy seeks to benefit all who look to Red Cross Red Crescent to help to build a more humane, dignified, and peaceful world.

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1. Save lives, protect livelihoods, and strengthen recovery from disasters and crises.
2. Enable healthy and safe living.
3. Promote social inclusion and a culture of non-violence and peace.

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