

# Fish Forever

Report on Lessons Learned 2015-2017



## RARE BRASIL

Local innovation for the sustainability of small-scale fishing through the adoption of new behaviors



*“Our source of income comes from the waters of the sea and the river. I feel privileged. I am proud to be a fisher. My life is fishing. I wouldn’t trade fishing for anything. I am free, I work and fish the day I want. I’m taking my life slowly the way God tells me to.”*

**Jerry Araújo Gaspar**, fisher at Resex Delta do Parnaíba.

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João Barba and Sacha Gilbert  
at Resex Canavieiras | Bahia.

## CHAPTER 1

# Overview of Small-Scale Fisheries and the Fish Forever Program in Brazil

Rare arrived in Brazil determined to contribute to the construction of a more productive, profitable and sustainable small-scale fisheries model. Its commitment was, and continues to be, to support coastal communities of traditional fishers, motivating them to better manage their activity, conserving coastal and marine environments and also protecting the fishing species that guarantee the livelihood of thousands of families.

In 2014 when Rare arrived in the country with one of the most extensive coastlines in the world - with 8,400 km in length, and whose biodiversity supports millions of people, the scenario in the fishing sector was complex and ambivalent. The combination of factors such as disorderly occupation of the coast, migration of fishers to urban environments, loss of marine habitats, lack of regulation in the country's fisheries and overall development, lack of planning and consistent public policies, and the consequent overfishing - practiced both by the industrial as well as artisanal fisheries sector - has put strong pressure on coastal ecosystems, threatening marine biodiversity and stimulating risk in a sector that provides food security for more than two million inhabitants. The disordered capture of these resources has led to a potential depletion of stocks of numerous target species in fisheries.



Artisanal sailboats and small-scale fishers in the Marine Resex Prainha do Canto Verde | Ceará.

In terms of management, between 1962 and 2017, the fishing sector in Brazil was managed by several institutions of the federal government (Figure 1), which brought this productive activity a characteristic of political instability, especially because there was no guarantee for the effective implementation of programs for sustainable management of fisheries resources, monitoring of production and maintenance of the rights of professionals in the long term. From 2011 to 2017, among the instruments of recognition of fishing professionals, the provision of the general fisheries registry (RGP), the recognition of fishers' spouses in the social security system, government assistance for seasonal closures (*seguro defeso*), national fisheries statistics, as well as public investments in food security programs that presented themselves as an alternative connection between artisanal fishers and the formal market.

The Chico Mendes Institute for Biodiversity Conservation (ICMBio) is the body responsible for the creation and management of Brazilian protected areas, which in the 'sustainable use' category admit the presence of residents and aim to make nature conservation compatible with the sustainable use of natural resources. Attentive to the gravity of the fishing context in the country and tied to the constant struggle of Brazilian artisanal fishers for the protection of their territories and rights, the Brazilian government launched a movement in favor of reforms in the sector. The creation and implementation of Marine Extractive Reserves (Resex), as well as the implementation of Permanent Committees for the Management and Sustainable Use of Fisheries Resources (CPGs) are some examples. A Resex can be designated only at the request of local communities, and once the federal government designates it, the community has an exclusive concession on the rights to use the territory.

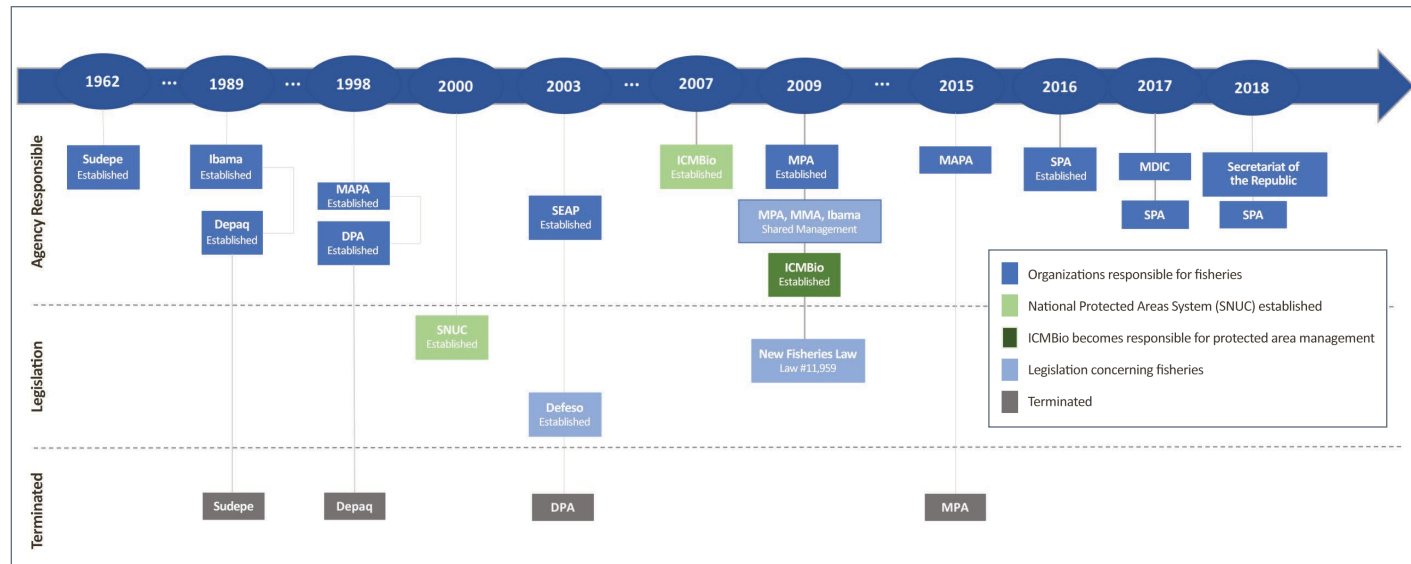


Figure 1: Timeline of the political management of fisheries in Brazil — 1962–2018. Sources: ICMBio, MMA, SAP/ MAPA.



Small-scale fishers — Resex Prainha do Canto Verde | Ceará.

In this scenario the challenges faced by Rare Brazil and its partners in the effort to improve fisheries management on the national coast and to combat excessive and predatory coastal fishing were, and still are, huge. Rare's decision to focus its efforts on small-scale fishing in Brazil - one of the oldest economic activities in the country and in the world - was a natural path that comes from the experience accumulated by the organization over decades of work focused on mobilizing local communities to adopt sustainable practices. Thus, in light of such challenges, the organization's determination to work so that Brazilian coastal communities can benefit from a healthier and more profitable fishing system is even greater.



Snook fishing using a fishing net — Resex Delta do Parnaíba | PI-MA.

## Rare and the Fish Forever Program

Rare is an environmental organization with 40 years of experience, whose mission is to inspire change so that people and nature thrive. The organization believes that human behavior can be interpreted beyond just being part of the problem, becoming a centerpiece in the search for solutions for a healthy and balanced environment. To this end, it developed a social technology that incorporates emotions and motivation in the definition of processes of transformation and the adoption of sustainable and more sustainable environmental behaviors. The organization has already worked in more than 50 countries using its experience in behavioral science with traditional communities that depend on nature for their livelihood, supporting the development of local solutions to face the challenges of global conservation.

Rare, through the Fish Forever program, proposes a collaborative fisheries management process and trains local leaders to encourage the engagement of fishers in actions that seek to recover fishery productivity, favor a more sustainable and profitable practice activity, and reduce social vulnerability.



Resident of the Valha-Me Deus community brining fish — Resex Cururupu | Maranhão.



Campaign Manager Josenilde Ferreira (Mocinha) during a meeting with fishers in the Guajerutua community — Resex Cururupu | Maranhão.

The organization also works to promote public policies, training and equipping fishers in order to promote the sustainability of small-scale fishing through the adoption of behavior and the incorporation of values. Its objective is to make the different social actors involved in this activity - especially artisanal fishers and their communities - change their practices and the way they look at fish resources, occupying decision making platforms and effectively getting involved in the fisheries management process. In this way, they work in the present and guarantee the legacy for future generations.

Rare believes that the ways to solve the sector's problems must emerge from the diversity of knowledge and the collective construction of solutions. This involves listening to and engaging, in a positive and inclusive attitude, local communities, their networks, universities, other NGOs and governments (municipal, state and federal), seeking to integrate quality technical (behavioral and fishing) information. Only then can the seeds of a new way of looking at fishing germinate vigorously. And, for that, Rare is willing to commit the best efforts and capacities, aiming to consolidate a collaborative and sustainable management proposal of small-scale fishing that aggregates its values, concepts and tools, and to execute effective demonstrative projects that allow the multiplication of successful cases on the Brazilian coast.

The program's approach is based on a combination of 8 elements for recovering stocks and preserving the rights of communities. Among this macro approach, two guidelines



João Barba uses a cast net to fish in the Resex Canavieiras | Bahia.



Mangroves in the coast of the Amazon in a Baía do Capim — Resex Cururuçu | Maranhão.

steer the activities: 1) promoting the delimitation of areas for exclusive access, which in Brazil can be interpreted by fishers who are beneficiaries of a specific protected area of sustainable use; and 2) the definition of no-take zones, which are areas of high ecological relevance where the target species of fishing activity can reproduce freely, without the pressure of fishing. The latter is called Fish Stock Conservation and Recovery Areas (Acres for its acronym in Portuguese).

Rare also fosters market demand for sustainable fish and coordinates the adoption of conservation strategies with governments and partners, encouraging public policies for fisheries. The initiative seeks to strengthen and engage the community in the adoption of best fishing management practices through the methodology known as Pride Campaigns. A Pride Campaign lasts an average of 2 to 3 years, designed to work intensively with local communities, generating public awareness and social mobilization for the practice of sustainable fisheries management. The Pride Campaigns are conducted by local organizations, trained and supported by the Fish Forever program through leadership training and technical assistance in the design and implementation of the project and/or campaign. The Pride Campaigns are aimed at communities, with messages centered on belonging and pride related to the conservation of local natural resources as well as viable alternatives to modify behaviors that threaten or degrade natural resources. The Fish Forever program seeks local partners interested in promoting the development of the following elements to achieve sustainable fisheries management:



Campaign managers (Vanessa Santos, Fabrício Gonçalves, Daniel Andrade, Josenilde Ferreira) with Flávio Lontro (Confrem) in the Guanabara Bay during training in Rio de Janeiro | RJ.

## The 8 Elements of the Fish Forever Program

- 1. COMMUNITY SUPPORT:** By signing the Rare Pride Campaign methodology, we seek to engage the community and enable them to adopt and adapt sustainable management measures where the community has exclusive use of the territory for fishing. This type of approach accelerates the acceptance of the community and increases the sustainability of the areas of managed access with shared rights for the communities over the management of the territory, as it generates the feeling of responsibility and capacity to implement and manage their own fishing area over the long term.
- 2. EXCLUSIVE ACCESS:** Communities are granted privileges of exclusive access to local fishing areas, based on systems of legal or traditional possessions. Exclusive access to these areas helps to ensure that fishers can reap the benefits of being responsible guardians of their resources. Brazil, unlike other countries, has a legal basis that promotes the recognition of the rights of traditional coastal populations, as well as sharing the opportunity for decision making.

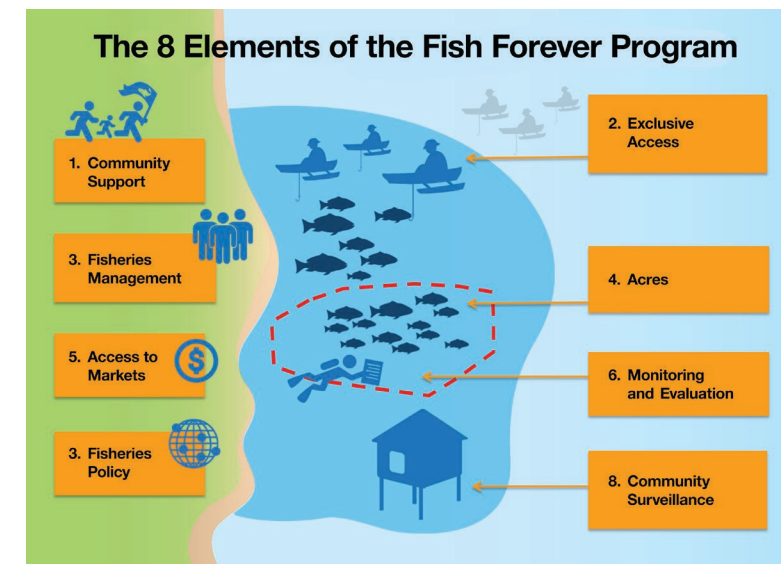


Figure 3: Fish Forever elements of success.

- 3. FISHERIES MANAGEMENT:** Using data collected on their fisheries, local managers and leaders will be able to determine appropriate regulations and adapted to fisheries management, ensuring their long-term sustainability.
- 4. NO-TAKE ZONES:** These are delimited areas within the exclusive access zone, where fishing is prohibited, and the coastal habitat is protected. The target species develops in these areas, protected from fishing pressures and eventually “overflows” to populate adjacent fishing zones. Fishery breeding zones may also be known as marine reserves, or no-fishing zones.
- 5. ACCESS TO MARKETS:** Coastal fishers develop the skills and networks necessary to add value to their fisheries. Examples of how fishers can work within the supply chain include cooperatives, investments in freezers and in processing units, creation of products with greater added value, ways of transporting products directly to the market.
- 6. MONITORING AND EVALUATION:** By developing the capacity to study the biological impact and fisheries recovery, communities validate the results of their efforts and adapt them to the ways of managing their fisheries in light of new challenges or threats. This creates a positive reinforcement, as it allows communities to notice the tangible evidence that the sustainable management of their fisheries is working and, consequently, generates more pride in the achievements attained. Proof of the increase in the fish population in the unit worked, raises requests for

replication by neighboring communities. The monitoring and evaluation activities of the Fish Forever program were carried out by Rare and its partners: Institute of Marine Sciences (Labomar), Federal University of Ceará (UFC), State University of Maranhão (UEMA), Federal University of Santa Catarina (UFSC), Federal University of Piauí (UFPI), Federal University of Recôncavo da Bahia (UFRB). In addition, the University of California, Santa Barbara (UCSB), Environmental Defense Fund (EDF) and the University of Texas of El Paso (UTEP) participated.

- 7. FISHERIES POLICY:** Partners work to ensure that the principles of the Fish Forever program are incorporated into the philosophy of official coastal fisheries management at national, regional and local levels, as well as integrated into economic development plans. A comprehensive approach to the program will be adopted on a large scale within the first five countries and then in others.
- 8. COMMUNITY SURVEILLANCE:** The vigilant community and the demarcation of exclusive areas of fishery production areas ensure that fishers and their families are benefited by better management of fishing activities. Improving the task management capacity, the feeling of pride and local responsibility is reinforced, which can increase the social pressure for the fishing rules to be fulfilled. Rare has been building partnerships with the Ministry of the Environment (MMA/ICMbio) and with Confrem (National Commission for Coastal and Marine Strengthening Extractive Reserves and Extractive Peoples), represented by artisanal fishers present in Coastal and Marine Resex in Brazil.

# Main Partners

Rare does not directly run the Fish Forever campaigns in each of the locations where the Pride Campaign methodology is applied. It is the local partner organization, supported by Rare's training and mentoring, which develops all the planning and implementation of the campaign. This ensures an adequate adaptation and implementation of the methodology, given the greater degree of knowledge of the context and conditions of the community by the local partner organization. During Cycle 1 of Rare's operations in Brazil, the partners below were involved with the program.

## NATIONAL



## LOCAL



## UNIVERSITY PARTNERS



# Monitoring and Evaluation

The Fish Forever program seeks to improve the health of the oceans, improving the way that coastal communities manage their fisheries. The program can be considered a success when the ecosystem, fishing species and human beings become significantly better, and there are institutional structures that will help them to stay that way. Although small-scale fisheries reform is a deliberate, complex and uncertain process, and improvements in fish stocks can take many years to happen, Rare collects monitoring data to:

1. Determine if any progress has been made, and if not, if something needs to be changed; and
2. Provide much richer data for future assessments, when the impact of the work becomes more evident.

In order to be effective, we need critical information about the biology (for example: population parameters, reproductive and genetic biology) and the ecology (for example: area of life, use of habitats, distribution and abundance), as well as fish landing data of the target species. The lack of such data can result in the program's inability to assess the impact of management interventions and, ultimately, the effectiveness of the campaign to achieve biological goals. Brazil, like many countries, faces a general lack of biological data and the landing of species that are important for artisanal fishing. To solve this problem, the monitoring program had to be adapted to fill the gaps in the knowledge of the basic biology and ecology of the target species. Continuing to generate data on the biology and ecology of the target species should also be one of the objectives of future program cycles.



Felipe Carvalho monitors fisheries in Resex Cururupu | Maranhão.



physical, human, social, political and financial) that play a critical role in determining human well-being. Within each of these types of capital are elements that have been identified as relevant to the interventions of the Fish Forever program and which have been assessed using a set of metrics and indicators.

While KAP points to the short-term social impact and the way of life approach measures the long-term social impact, in fact, social marketing campaigns have the potential to quickly impact metrics for negative human behavior on fishing, and the consequences on families, communities, society and the environment. The campaigns are designed to change the way people relate fundamentally to the environment and among themselves, and therefore it is not surprising that they can also influence the perceptions of others about the cohesion and well-being they experience in their communities. This social spillover effect of campaigns is particularly stimulating because it helps create positive changes that further drive the adoption of behaviors. Overall, although Rare is working to improve research methods, the use of large samples in various locations and contexts, as well as control locations whenever possible, demonstrates the construction of a solid foundation for participatory fisheries management in Brazil.



*Josenilde Ferreira monitors fisheries in Resex Cururupu | Maranhão.*

Although social marketing campaigns aim to drive this long-term change in fisheries management and stocks, their more immediate impact can be seen throughout the campaigns. To measure the effectiveness with which campaigns increase people's knowledge, change their attitudes and influence their behavior in relation to fishing, the widely applied Knowledge, Attitude and Practice (KAP) survey was used. This survey (questionnaire) is applied at the beginning and at the end of the campaigns. In order to measure the long-term impact of the program on the lives of community members, the widely used Sustainable Livelihoods Framework was adapted, which identifies the 6 types of capital, (natural,



*Guajerutia — Resex Cururupu | Maranhão.*

## CHAPTER 2

# Experience Implementing “Pescar Conservar Prosperar” Campaigns

## Building Capacity and Engagement for Community-Based Fisheries Management

To start its work in Brazil, Rare defined focused its activities on Extractive Reserves (Resex), a protected area category that aims to protect the livelihoods of traditional populations and conserve nature through the sustainable use of its natural resources. In this first cycle, the organization worked in six Marine Resex, indicated in Figure 3. Rare implemented the Pride Campaigns in these six areas with the support of partners and local leaders. The effort was led by the Campaign Managers, local leaders who received training to conduct the campaigns. Together with their communities, they developed a plan that combined behavior adoption components and sustainable fisheries management strategies, aiming to contribute to improving the living conditions of the local population. The Pride Campaigns identified one or more target species, which were the focus of activities in each Resex and were represented by mascots in actions to raise awareness and community mobilization.





Figura 3: Location of the Resex contemplated by the 2015-2017 Fish Forever program, target species, and the respective campaign coordinators.

The six areas of Cycle 1 were chosen through a rigorous selection process based on ecological, fisheries and socioeconomic requirements. The final decision to choose the areas and institutional partners for this cycle was based on:

1. Adequacy of the location (ecological, fishing and social dynamics);
2. Potential to strengthen the implementation of Marine Protected Areas and the creation and implementation of Acres;
3. Regional experiences and lessons learned in selecting sites and identifying promising partners;
4. Funding opportunities;
5. Government priorities (ICMBio) and partners, including opportunities for expansion; and
6. Analysis of potential threats to the development of an Acres (such as upstream dams, pollution, among others).

The six areas of action are spread from south to north of Brazil and chose to test the Fish Forever program approach under different conditions, such as local culture, target species, ecosystems and local governance level. It is important to note that all the locations selected for Cycle 1 are already protected marine areas at different levels of implementation, with incipient management plans, more or less active deliberative councils, solid or more fragile regulations and all with weak enforcement and surveillance systems.

One of the goals of Cycle 1 was a 50% reduction in violations of fisheries regulations by members of Marine Protected Areas at each location (including no-take zones where Acres exists). Behavior change in three stages involves:

1. Fishers participating and engaged in management meetings of Marine Extractive Reserves through deliberative councils
2. Fishers participating in the creation and implementation of new fisheries management practices
3. Fishers approving the establishment of fishing agreements or management plans that consider restrictions on fishing gear, fishing areas and the establishment of Acres.

### RESEX CURURUPU | MARANHÃO



### RESEX DELTA DO PARNAÍBA | MARANHÃO-PIAÚ



### RESEX PRAINHA DO CANTO VERDE | CEARÁ



### RESEX BAÍA DE IGUAPE | BAHIA



### RESEX CANAVIEIRAS | BAHIA



### RESEX PIRAJUBÁ | SANTA CATARINA





Sunset — Resex Cururupu | Maranhão.



Mangroves — Resex Baía de Iguape | Bahia.



Thick lucine — Resex Baía de Iguape | Bahia.



Cast net fishing in the Canárias community — Resex Delta do Parnaíba | Maranhão.

### CHAPTER 3

## Main Accomplishments

The main results of Cycle 1 are presented below by means of highlights and success stories that include the elements of the Fish Forever program. Each area of operation, according to its particularities, incorporated specific elements to improve the management of artisanal fisheries.

The results of Cycle 1 included:

1. Communities in a better situation of food security and/or income, and reduction of conflict between communities and government, resulting in greater interest on the part of the government in scaling up the Fish Forever program
2. Critical habitats in the initial recovery process
3. Ecosystems and communities more resilient to climate change
4. Key actors and partners endorsing Rare and the Fish Forever program strategies at the local level through statements.



Deliberative Council Meeting — Resex Cururupu | Maranhão.

### Target Audience



# Highlights of the Program Activities

## Resex Baía de Iguape | BA

- Implementation of family oyster farming units in two communities
- Adoption of sustainable management practices
- Training of 30 shellfish gatherers on topics such as solidarity economy and entrepreneurship, production and marketing management, which left the group strengthened and with high self-esteem
- Creation of the Shellfish Collector's and Quilombola Association (Mariquilombo)
- Direct sale of production to the market, without intermediaries, which increased the income of shellfish gatherers
- Shellfish gatherers were contemplated by the Consulado da Mulher award for Female Entrepreneurship, 2017 edition, in recognition of entrepreneurship and the results obtained by the group. The amount received, of BRL 10,000, was used to structure the association Mariquilombo
- High visibility of women in fishing.



Elizabete Soares, shellfish collector from Baixão do Guai — Resex Baía de Iguape | Bahia.



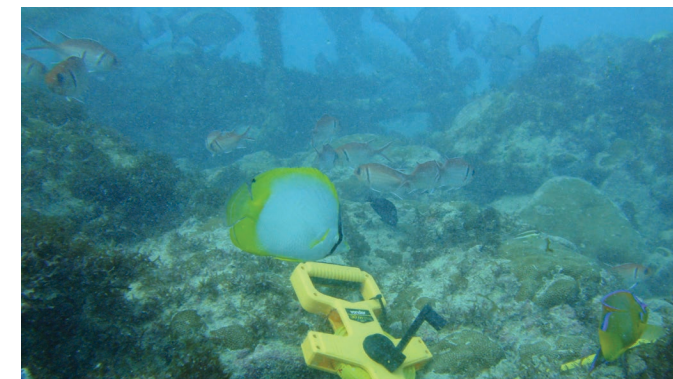
Capanema community working in sustainable oyster farming — Resex Baía de Iguape | Bahia.



Fisher raft (jangada) and fishers — Resex Prainha do Canto Verde | Ceará.



Fisher — Resex Prainha do Canto Verde | Ceará.



Submarine biological monitoring - Resex Prainha do Canto Verde | Ceará (Photo: UFC/Labomar).

## Resex Prainha do Canto Verde | CE

- Demarcation of the Resex area so that external fishers can recognize their limits and respect the fishing territory
- Creation and adoption of a community surveillance protocol, with joint action with ICMBio to curb the practice of illegal fishers in the reserve
- Conducting participatory mapping to identify artificial reefs - culturally used by Prainha fishers to increase fishing productivity - in order to regularize them with IBAMA and to subsidize, in partnership with UFPE and the National Center for Research and Conservation of Marine Biodiversity in Northeastern Brazil (Cepene), future research projects that will contribute to the promotion of fisheries planning in the area, based on the licensing of artificial reefs
- Implementation of a fishing landing monitoring routine, through which fishers regularly report their catch data.



Fisher hut and boat landing acoupa weakfish in the Guajerutua community — Resex Cururupu | Maranhão.



Campaign launch with the snook mascot at the renovated fisher's association in Canárias.

## Resex Cururupu | MA

- Establishment, in the Guajerutua Bay - one of the campaign's focus areas, of fisheries management areas in nine acoupa weakfish spawning grounds mapped by the program, totaling 1,370 ha where, during the most important months of the species' reproduction, fishing is prohibited, according to a pre-established rotation schedule that the Acres define
- Generation of scalability - the campaign was implemented in four other Resex communities (replication areas), boosting conservation efforts for the acoupa weakfish, a species of great economic importance for the local population
- The campaign manager will also participate in the implementation of a new campaign in the city of Carutapera, in the state of Maranhão, where Resex Arapiranga-Tromai was decreed in April 2018
- Improvement of communication and relationship between communities, management body, and researchers
- Community intention to monitor participatory production over the long term.



Map of the spawning grounds for the acoupa weakfish defined as Acres.

## Resex Delta do Parnaíba | MA-PI

- Creation of a model area for the management of snook fishing in Barra de Canárias - the focus area of the campaign, which will serve as a reference for the other spawning areas in the region, identified during the program
- Proposal to create eight fishing gear restriction areas, totaling 4,800 m<sup>2</sup>, where fishing with more selective gear is allowed
- Renovation of the headquarters of the Canárias Residents' and Fishers' Associations, made possible with the support of Rare and ICMBio
- Assistance in preparing a proposal to expand the Resex borders, forwarded to ICMBio, through fishing monitoring in partnership with the Federal University of Piauí
- Replication of the campaign in five communities in the Delta do Parnaíba Environmental Protection Area (APA), expanding the program's coverage in the region.



Sign informing fishing gear restrictions and a artisanal sailboat regatta in Barra de Canárias - Resex Delta do Parnaíba | MA-PI. (Photos: Tatiana Rehder).



Children in the Campinho community — Resex Baía de Iguape | Bahia.

## Resex Canavieiras | BA

- Increase in the minimum catch size for the target species, agreed through a fishers' voting during the Management Agreement meeting, updating an old local regulation
- Identification, by the communities, of five priority areas for the creation of Acres, whose implementation were discussed during the activities planned for the preparation of the Resex Management Plan
- Valuing and strengthening the role of women fishers at the Resex. Through the Women's Network, they played an important role in communicating with communities, clarifying doubts about threats to re-categorize the protected area and creating social cohesion to face a governance crisis. Also highlighted was the role of women as leaders in fishing communities, integrating them into efforts to adopt and fill in logbooks. Furthermore, the group established by-laws for the network, defining the activities needed to help build a prosperous future for their families.



João Barba in the Campinho community — Resex Canavieiras | Bahia.



Resex Pirajubaé in the Southern bay of Florianópolis and meeting on scientific monitoring of the berbigão shellfish | Santa Catarina (Photos: Larissa Stoner).

## Resex Pirajubaé | SC

- Formation of a scientific committee, integrating local research and extension agencies, to develop a network that gathers several specialists in order to discuss the mass mortality of the berbigão shellfish. The findings were shared with the scientific community via articles
- Strengthening of the management plan discussions due to the participation of local leaders
- Results of scientific monitoring, carried out by the program in areas of Resex that were closed to investigate the hypothesis of extractivists that the excess of gravel above the natural substrate could be one of the causes of the species' mortality, clarified doubts of the local communities, showing that there is no direct relationship between the amount of berbigão shellfish seeds found and the presence of gravel.





Josenilde Ferreira (Mocinha) engaging fishers in the Guajerutiua community — Resex Cururupu | Maranhão.



Acoupa weakfish landings — Resex Cururupu | Maranhão.



Laura Reis (ICMBio) during biological monitoring — Resex Cururupu | Maranhão (Photo: ICMBio).

## CHAPTER 4

# Success Stories

### I. Develop Sustainability in Small-Scale Fishing through Ecosystem Conservation and Fisheries Productivity

#### RESEX CURURUPU | MA

Until the end of 2017, Resex Cururupu, located on the coast of Maranhão, was the largest in the country, covering more than 186 thousand hectares. The territorial vastness of this unit creates significant management challenges for fisheries, either due to the difficulty of access, but also due to the overlapping of fishing territories used by different communities. During Rare's work cycle 1 in Brazil, Resex Cururupu was one of the six selected work areas, and the target species chosen for the program was the acoupa weakfish (*Cynoscion acoupa*), as it is one of the species with greater economic importance in the region. The species is one of the most abundant in the state and is popularly known as the "Maranhão gold". Its high commercial value is due to both its meat and its swimming bladder, which is exported, without regulation, for the manufacture of items such as surgical glues and cosmetics.

During the implementation of the monitoring program carried out in the years 2016 and 2017 by the multidisciplinary team from the State University of Maranhão (UEMA) and the Federal University of Maranhão (UFMA), important information was collected to support the technical recommendations for the management of the acoupa weakfish. The results referring to the main parameters of the reproductive biology of the acoupa weakfish, such as the size of the first maturation, fertility and spawning period were fundamental to strengthen collective decision making, aiming to build of a new perspective on the use and conservation of the species.



Monitoring of the acopa weakfish — Resex Cururupu | Maranhão.

In parallel to the scientific research, participatory monitoring of fishing was carried out with fishers. With the help of a local monitor, acopa weakfish landing records were gathered in the community of Guajerutua, the first location to be benefited by the campaign. More than 40 vessels from the *malhão* net fleet (a technique used to capture the species) are participating in the monitoring program, regularly providing data on the landed production such as quantity, size and weight of the fish. This information forms a fundamental database for monitoring fisheries in the Resex, and also for proving fishers's production, thus being able to guarantee their access to social benefits and retirement, for example.

The information generated by the biological research of the acopa weakfish, combined with data from participatory monitoring with fishers, were decisive for the elaboration of management proposals for the species.



Signs indicating spawning areas and Acres in Baía de Guajerutua — Resex Cururupu | Maranhão.

Based on research information complimented with local ecological knowledge (LEK), such as production, location of spawning grounds with the highest occurrence of the species, reproductive period of the acopa weakfish and the fishing importance of these areas in the different months of the year, fishers were able to build a management proposal that establishes the closure of spawning grounds throughout the year in a rotation system, aiming to reconcile the conservation of the species with the fishing activity in the region. A rotation proposal was defined for the 9 areas mapped in Guajerutua Bay, totaling an area of approximately 1,370 hectares managed. The spawning areas are the deepest places on the seabed where species use to spawn and thus constitute priority areas for the conservation of the species.

According to preliminary research data from the State University of Maranhão (UEMA) and local ecological knowledge, the months of May/June and November/

Laura Reis (ICMBio) and Josenilde Ferreira (Mocinha) — Resex Cururupu | Maranhão.



December represent the spawning peaks of the acopa weakfish. With this information, the fishers defined a rotation for the closing of the fishing in the spawning grounds as follows: May/June (Barra Velha and 2 other areas) and November/December (Muricitua and 2 other areas). The other spawning areas would be used in rotation throughout the rest of the year. The proposal was built and endorsed by the Guajerutua community, which represents Resex's largest *malhão* fisher community. This management proposal was submitted and approved by the Unit's Deliberative Council.

*“The efficiency of the process of participatory management in building proposals for the management of the acopa weakfish based on science is thanks to the socioenvironmental work being developed throughout the Fish Forever program. Without the engagement of the community, none of this would have been possible.”*

**Laura Reis,**  
Environmental analyst at Resex Cururupu.

Laura adds that “fishers were able to understand a vision of the future of how the closure of these spawning areas will positively affect the increase in the number of fish, decrease the fishing effort and, consequently, increase income from fishing activity.”



Malhão net fishing boats — Resex Cururupu | Maranhão.



Campaign launch with the acoupa weakfish mascot — Resex Cururupu | Maranhão.

## II. i. Strengthen Platforms and Groups for Fisheries Management

### RESEX CURURUPU | MA

Although the Cururupu Extractive Reserve has management instruments, such as the management plan and management agreement, Rare identified a scenario with low social organization and little or no community participation at the site. The standards were not met and there was no biological monitoring of the species. In this scenario, predatory fishing of the acoupa weakfish was observed in the spawning grounds. In addition, there were no regulations for the spawning period, nor were there defined breeding areas and breeding grounds for the acoupa weakfish.

To positively impact this negative scenario, the Pride Campaign needed to encourage the participation of fishers in the conservation of the acoupa weakfish and fisheries management. Only with effective community participation would it be possible to implement management actions and collect production data. At the beginning of the campaign, the activities were not successful. Fishers did not attend and refused to offer information on fishing landings. They felt unsafe about different subjects, did not trust what the fishing landing data would be used for, and lacked knowledge of management instruments. This significantly reduced the fishers' buy-in to the Pride and monitoring actions. In this way, the campaign sought to strengthen spaces and groups for fisheries management, initiating work to raise awareness and engage fishers, promoting exchanges, community meetings and mapping, exchange of experiences and training workshops to

discuss the importance of participatory management and management of the acoupa weakfish for the region.

The launch of the campaign and the different social marketing strategies also helped to bring the community closer to the spaces for discussion and biological monitoring actions. Fishers began filling in logbooks and providing information on fishing landings. Thus, the data collected together with traditional knowledge were used to foster discussions about the need for management strategies for the acoupa weakfish in the Resex Cururupu.

The appreciation of traditional knowledge strengthened the group and brought self-esteem that helped to change

*“The Fish Forever Program arrived in our community not only to bring biological results and to recover the stocks of our acoupa weakfish, the Pride Campaign came to bring our community together.”*

**Roberto Wagner Ferreira (Waguinho)**, representative of the Guajerutiua community in the Deliberative Council of the Unit

community practices towards the theme of sustainable fishing and species conservation. Together with the entire technical team, campaign manager and local leaders, the community identified the spawning areas with the highest occurrence of the species, the reproductive period and the fishing importance of these areas in the different months of the year. Furthermore, the strengthened community discussed the implementation of the rotational system for the management of the Conservation and Stock Recovery Areas (Acres). After the process of defining the rotation of the spawning areas, the Guajerutiua community displayed a posture of co-responsibility for the management of its territory.

*“The Pride Campaign made me reflect that in life we must build collectively, reconcile and plan implementation actions, meet the desires of communities, look clearly at barriers and identify opportunities to achieve our goals. The campaign is a fundamental tool to transform [a person’s] way of thinking when worked in a transparent and coherent way.”*

**Josenilde Ferreira,**  
Campaign Manager.



Josenilde Ferreira (Mocinha) and Roberto Wagner Ferreira (Waguinho) in Guajerutiua — Resex Cururupu | Maranhão.



Campaign Manager Josenilde Ferreira (Mocinha) in a meeting with fishers in Guajerutiua — Resex Cururupu | Maranhão.

Today, the fishers' house, an area that has been renovated and reframed with the campaign's actions, is the main place where the community gathers to discuss community agendas on a monthly basis. Also, as a legacy of the campaign, there were sessions of environmental cinema that encourage discussion in relation to the environment with the participation of youth and children.

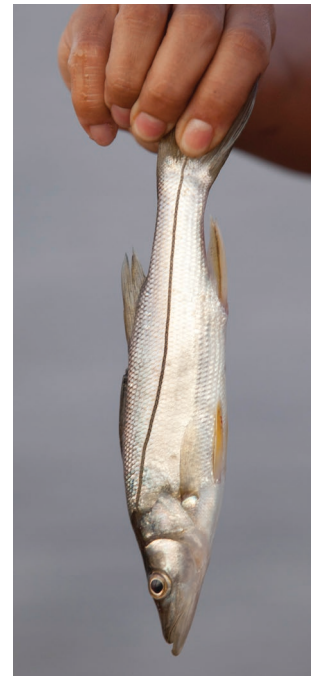
*“The implementation of the Pride Campaign was a transformative instrument, it came to rescue the pride of fishers towards their territory and their resources, the community learned to work collectively in favor of a common goal that is to preserve our acoupa weakfish.”*

**Josenilde Ferreira,**  
Campaign Manager.

The campaign was a success from the point of view of all the actors. By promoting group strengthening activities and discussion platforms for the unit's fisheries management, the community was able to elaborate the proposal for the management of the acoupa weakfish, which resulted in a reduction in pressure on the stock. These actions had repercussions in other communities of Resex Cururupu, mainly among those that share the same fishing areas. The campaign was replicated in 5 Resex locations, further increasing the potential for sustainable management of the target species.



Caçoeira net in Barra de Canárias — Resex Delta do Parnaíba | MA-PI.



Juvenile specimen of snook caught before the appropriate size using a cast net — Resex Delta do Parnaíba | MA-PI.

### III. Improve Fisheries Management Capacity

#### RESEX DELTA DO PARNAÍBA | MA-PI

The Marine Extractive Reserve of the Delta do Parnaíba, more precisely the Canárias community located in the state of Maranhão, embarked on the Fish Forever program in 2015. The Canárias community, the largest among the five communities in the protected area, faced a scenario of recurrent distrust in local institutions and an embryonic process of community strengthening, resulting from the process of reducing fishing resources observed by the community. In addition, as is common in fishing areas across the Brazilian coast, there was no research on the health of fish stocks. Within the scope of the Pride Campaign, we carried out community strengthening actions, the identification and mapping of breeding areas of the target species, the snook (*Centropomus undecimalis*), and supported the definition of fishing areas with fishing gear restrictions.

Fishing of snook using a caçoeira net in Barra de Canárias — Resex Delta do Parnaíba | MA-PI.



**Jerry Araújo Gaspar,**  
fisher at Resex Delta do Parnaíba.

"I, Jerry Araújo Gaspar, a native of the Canárias Island, Resex Delta do Parnaíba, was raised fishing. At the age of five I fished using a line and at the age of 12 I fished using a net. Life for the community started to improve with the arrival of electricity, as we were able to store our fish. However, over the years we have begun to feel the decline in fish in the area, especially snook and acoupa weakfish, the two main commercial species for our community.

I always had an idea, the creation of a fishing boat where I could only fish using line, despite the fact that the main fishing gear used by most fishers in the community was the fishing net. However, I believed that this measure was important, as we would protect our fish, allowing us to reach the ideal size for fishing. In addition, over the years, our community has grown and introduced many fishers with the most diverse types of fishing gears in few fishing areas.

I took the initiative to talk to the managing agency, ICMBio, and call my companions to discuss the proposal for the implementation of fishing gear restrictions in some fisheries and thus try to conserve the two main species of economic importance for our community.

At first, I was criticized for the idea, but after many conversations and discussions, today I am recognized for leading the process. However, all I did was contact ICMBio. The campaign manager and the area manager embraced the idea and supported us in

discussions, information, documentation and placing of signs. The Robalo Campaign [Pride Campaign] was very important to help mobilize the community to participate in the discussions and strengthen us. Many had lost interest in community issues and are now actively participating.

Snook is a very attractive fish in our region, widely consumed and it is not uncommon to witness the fishing of very small animals from the riverbed. Five years ago we didn't find acoupa weakfish in Barra de Canárias, or when we found them, they were very small fish. Now, after a short period, just one winter, we are already seeing fish larger than 3 to 5 kilos. On dark nights with a turbid tide, we catch 30 to 40 kilos of acoupa weakfish a week and in the rainy season, snook is also beginning to be abundant. In a good week, we catch up to 100 kilos of fish.

I fight for a better life and today I watch the community's fishers trained to protect what we build together. Mapping, signaling and creating restrictions on fishing contributed to the preservation of nurseries and the spawning period. The community is reaping the rewards with increased production. The measure was so successful that we are discussing the expansion of another 150 meters in addition to the created area. We are respecting the rules and observing benefits. I heard that other fisheries management measures are being discussed in other communities across the Resex."



Canoe made of solid wood in Capanema — Resex Baía de Iguape | Bahia.

#### IV. Establish Fisheries as a Viable Economic Activity

##### RESEX BAÍA DE IGUAPE | BA

Like many shellfish gatherers in Maragogipe, Bahia, Elizabete Soares, known as Bete, learned to collect oysters in the mangrove by watching her mother. Although the traditional methods adopted by Beth and her mother have not changed, the health and resilience of the mangroves has declined dramatically since Beth was a child. She remembers what it was like to see her mother collect oysters. "She could collect about three kilos," she says. "Today, there are tides where I can't get even a kilo of oyster. And oysters are much smaller than back in the day." Shellfish gatherers correlate the drop in stocks of mangrove oysters (*Crassostrea brasiliana*) to the intense and disordered use of fishing territory, in addition to the environmental impacts of the region.

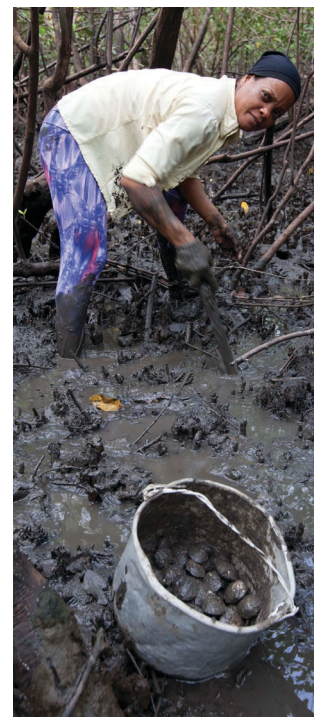
At the end of 2014, Rare established a partnership with Fundação Vovó do Mangue, a local NGO, to develop the campaign at the Resex Baía de Iguape. Daniel Andrade, local coordinator, started the Pride Campaign with Rare in the communities of Capanema and Baixão do Guai, with the aim of promoting the sustainable management of oyster and shellfish fisheries and promoting the conservation of mangroves that shelter them. His objective was to awaken in the shellfish gatherers a community leadership that could inspire the population of Capanema and Baixão do Guai to adopt the sustainable management of oysters and

promote positive social and professional changes in their own lives. The campaign was dedicated initially to benefit a group of 30 shellfish gatherers and their families.

Throughout the campaign, Daniel focused on providing autonomy for shellfish gatherers, creating a campaign "with them" and not just "for them", he says. He had to be aware of all facets of the identity of the shellfish collectors, including their quilombola ancestry. The shellfish gatherers of Maragogipe are descendants of Afro-Brazilian slaves who escaped the slave plantations that existed in Brazil until abolition in 1888.

The rules for collecting oysters established by the Resex agreements stipulate that shellfish gatherers must respect the minimum size of 5 cm for the capture of oysters in the mangrove and thus guarantee the reproduction cycle of the species. Promoting the adoption of behaviors respecting these rules of sustainable management of oyster was one of the focuses of the campaign, as the resource was already overexploited in the region.

The shellfish collectors normally had to work with intermediaries and receive a low price for the first commercialization. "The middleman comes to our door to pick up the oysters," recalled Bete. "It is a lot of work, the merchant buys the product for 15 reais, but he certainly sells it for 20 to 25



Shellfish collector Elizabete Soares collecting lambreta shellfish in the mangroves of Baixão do Guai — Resex Baía de Iguape | Bahia.



Campaign Manager Daniel Andrade monitors the oyster farming installations — Resex Baía de Iguape | Bahia.



Oyster farming installations in the Capanema community — Resex Baía de Iguape | Bahia. (Photos: Associação Mariquilombo – all).

reais." Most of the profit remained with the middleman and this logic had to be changed so that they could receive higher values for their production.

The other important approach of the project that helped to recover the economic activity of shellfish gatherers was the initiative of sustainable cultivation of oysters in the community of Capanema and Baixão do Guai, promoting the conservation of oysters in the mangrove as it helps to avoid excessive extraction of native oysters. The campaign managed to attract new partners to add complementary financial resources, necessary for the purchase of mariculture equipment and the installation of two oyster cultivation units, one in Capanema and the other in Baixão do Guai. The campaign held monthly meetings and activities, including a nine-month course offered by the State Secretariat for Policies for Women (SPM), in which all women from the project from both communities participated. The women learned about oyster farming in an exchange with the communities of Kaonge and Dendê, where oyster mariculture has been a practice for over 15 years.

During the project, 30 families of shellfish gatherers - chosen by criteria defined by themselves - managed the oyster farms. The structure is made of bamboo, the seed collectors are produced with plastic bottles and management is shared. The venture promotes the autonomy of shellfish collectors while ensuring sustainability: the method can be used by all fishers and the use of bottles in cultivation reduces the impact of plastic waste on the community.

In 2017, the oyster farm was awarded the *Consulado da Mulher* Award by Brazilian appliance company Consul, earning BRL 10,000 to be used to purchase the land for the headquarters of Associação Mariquilombo. Throughout the campaign, shellfish gatherers decided to create and build a local association to further boost sustainable management in Maragogipe. This association intends to work with the production of oyster cultivation to supply regional markets that are undergoing a purification process to guarantee the quality of production.

"They already know how to handle the cultivation, they know when and how to clean the oysters, change the beds and remove the seeds. They already dominate all stages and do everything for themselves", says Daniel. Combined, the Capanema and Baixão do Guai farms today have more than 25 cultivation stands with the capacity to produce up to six thousand oysters every 3 months. Shellfish gatherers are preparing to structure their sales of cultivated oysters.

Today, when shellfish gatherers go to mangrove banks, they wear caps, neoprene boots and UV protection shirts, acquired with resources from the campaign. They changed the way they trade their oysters, selling by the dozen and no longer the unit, now dealing directly with end customers instead of middlemen. And when they speak to the community, they express themselves as leaders. "They feel more confident and prouder of what they do," notes Daniel. "Many are no longer afraid or ashamed to speak in public or to express their opinions."



Shellfish collector gathers oysters in the mangrove — Resex Canavieiras | Bahia.

## V. Protecting Traditional Territories through Women

### RESEX CANAVIEIRAS | BA

Covering approximately 100 thousand hectares, Resex Canavieiras, located in the state of Bahia, is a protected area with high importance in the protection of mangroves, marine life, culture and ways of life of traditional local communities. The area contains almost two thousand families that depend on fishing or agriculture for their livelihood and is well known in Brazil, especially for having one of the most important social fishing organizations in the region.

The fishers of Canavieiras were the pioneers in asking the federal government to guarantee and preserve their rights, means of subsistence, and territory. These communities struggled for years and, today, even after reaching their goals, they share their knowledge with other regions of Brazil, supporting fishing communities in the implementation of the Resex model.

In March 2017, the Pride Campaign in Canavieiras supported one of the most critical moments faced by these communities. The federal government decided to vote in favor of a bill to reclassify the protected area from the Extractive Reserve category, which offers fishers the opportunity to manage their territory, to the Environmental Protection Area (APA) category, characterized by having open and less restrictive access. In this case, there is a specific interest from the private sector in the implementation of shrimp farms in mangrove areas, a historic socioeconomic threat to mangroves and communities, which reduces local power in protecting the environment and the rights of fishers. Due to all these events that took place together, the fishers felt unmotivated to continue participating in the activities of the Pride Campaign and, consequently, to provide capture data through logbooks, for example. Collective trust was low, and communities

were not receiving clear information from reliable sources about the process conducted by the federal government.

All of this changed through the strength, hope, and confidence that came from a group of traditional women, shellfish gatherers. The social organization called *Rede de Mulheres* (Women's Network) was created in 2009, and helped to think and design strategies for removing barriers to leverage the objectives of the Pride Campaign, emphasizing the importance of fishers continuing to respect the rules of the Resex, as a way to conserve the target species, using logbooks as a tool to guarantee their rights regardless of receiving financial assistance from the government.

These women, motivated by Rare coordinators, Pedrina Reis and Vanessa Marley, held 12 workshops in 8 communities, in order to inform the population about the threats to their territory and offer fishers alternatives to overcome them through collective work, collaboration, and confidence. The coordinators sought to involve the fishers' spouses in the use of logbooks, ensuring the benefits of this tool for families to better manage their income and expenses and monitor their activities and fishery production.

In order to streamline the process and create ownership, 12 women were chosen as representatives in order to increase the number of fishers using the logbooks and, in

front of each of their houses, they placed a sign indicating the correct location to pick up a new logbook and displaying messages addressed to promote the respective behavior change. These women improved their communication by adding social marketing materials during their meetings and receiving support from their communities. In addition, the workshops were a space to discuss gender rights. Since its creation, the Women's Network has been working to articulate public policies to guarantee and create gender opportunities to improve the quality of life in fishing, mainly related to the struggle to guarantee basic social rights, such as social security benefits, maternity leave, insurance, among others.

After 24 days of meetings, these leaders who left home carrying a warm heart and tons of material in small boats along rivers and mangroves (in days with good weather and some bad weather, too) ended their journey at a Gender Conference. The Conference received more than 200 women to jointly discuss "the future they would like to have" and devised strategies to achieve women's empowerment in fishing. In a pink setting symbolizing the empowerment of women, theater, music, food, photos and speeches were part of this moment of celebration. This specific group took an idea that just on paper and, in less than a month, made it a reality, teaching us how women's groups and movements have an invisible power to reinvent their history and are essential for working with small-scale fishing.



Meeting of the Women's Network — Resex Canavieiras. (Photos: Pedrina Reis).

Small-scale fishers  
— Resex Delta do  
Parnaíba | MA-PI.



## CHAPTER 5

# Final Considerations

The lack of confidence of the fishing communities in the State's management capacity and poor community participation in the management forums on resources and fishing territories were the main barriers the program had to overcome by during Cycle 1.

In 2015, all Cycle 1 Extractive Reserves had not yet implemented or started the process of planning the management plan for their areas due to the lack of resources from the federal government. Although the areas have a legal framework for the management of natural resources and fisheries regulation, it was common to find communities of fishers who were not aware of their roles, and lived with some discomfort due to the limits of their areas not being respected by outsiders.

At the end of 2017, a different scenario was seen, most of these areas were in the process of developing or implementing management plans. The Pride Campaigns influenced or supported many activities with communities to discuss regulations, or fisheries agreements that will be included in these management plans for fisheries sustainability. The communication between the Resex communities and the ICMBio managers was improved during the process, recovering the participation of local communities in the management council meetings.



Costal community — Resex Cururupu | Maranhão.



Resex Prainha do Canto Verde | Ceará.

## CHAPTER 6

# Next Steps for Rare Brazil and the Fish Forever Program

There were several lessons learned from Rare's Cycle 1 in Brazil. Among them, the central issue was the reassessment of cost/benefit in relation to the distribution of the areas in which Rare operates. In order to optimize costs, enhance impact, expand the range of fishing realities and scalability, Rare opted to concentrate its actions on marine protected areas in the north and northeast of Brazil - states of Pará, Maranhão, Piauí and Pernambuco. Considering the peculiarities converging to the ambitions and purposes of the Fish Forever program in Brazil, the team assessed that the state of Pará had a set of extremely favorable characteristics for the construction of the main work territory. Rare will concentrate its actions in 5 of the 12 Marine Extractive Reserves existing in the state.

**WHY PARÁ?** The state is the second largest producer of extractive fish in the country, and the first in terms of artisanal fishing. It concentrates a mosaic of contiguous protected areas of 162 thousand hectares of mangroves, composed of 12 Resex which, added to the areas of the state of Maranhão, make up the largest continuous and pristine mangrove area in the world - the 790 thousand hectares of the Amazonian mangrove, currently recognized as a Ramsar Site.

Also according to the lessons of Cycle 1, and based on experiences in the Philippines, Rare sought to reduce the time and costs of a Pride Campaign, together with gaining scalability, and then testing what were called Replication Areas. This proposal is nothing more than replicating the knowledge and experience of Cycle 1 Campaign Managers, now called Senior Coordinators, through mentoring to new Campaign Managers, thus speeding up the process of training, building and implementing campaigns with other communities within the same and/or contiguous areas (for example: Resex and Environmental Protection Area of the Delta do Parnaíba, both in the state of Piauí; Resex Cururupu and Resex Arapiranga-Tromai in the state of Maranhão).



Amazon coast — Resex São João da Ponta | Pará.



Coastal reefs in Tamararé — APA Costa dos Corais | Pernambuco.

Still in relation to the choice of new areas, Rare joined the interest in testing the methodology of the Fish Forever program in another reality of management use, i.e., in another protected area category, other than Resex. Given an long-time demand from the state of Pernambuco, the team decided to work in the Environmental Protection Areas (APA) of Costa dos Corais, which is managed at the federal level, and APA do Rio Formoso, under state management. With this experience, Rare will be able to consolidate its work in Brazil and adapt the program's methodology to the two management realities of marine conservation units in force in the country.

Finally, with regard to partnerships, Rare highlights the importance of this cycle for closer work with the Chico Mendes Institute for Biodiversity Conservation - ICMBio. The approximation took place during the process of jointly building the minimum protocol for the *Monitors* Program, created and coordinated by ICMBio, which will subsidize the fisheries monitoring project in the federal Resex. Rare, together with other institutions, participated in a series of workshops, discussing and defining the minimum parameters to be measured. It should be noted that ICMBio used the fishing monitoring protocol adopted by Rare in Cycle 1, as a starting point for discussions and the construction of this national fisheries monitoring program.



Meeting with partners at Rare's headquarters in Belém | Pará.



## ACKNOWLEDGEMENTS

The implementation of this pioneering initiative on the Brazilian coast was made possible only through countless partnerships and support from leaders, fishers, civil society organizations, associations, universities and government agencies. Because so many people and entities believe in the same mission with us, we were able to establish the first cycle of the Fish Forever program in the country. For all the collaboration and sharing of ideals for more sustainable fishing, Rare thanks all individuals and institutions that helped to build this path for the improvement of small-scale fishing in the country. A special recognition goes to Confrem and ICMBio, essential partners that have made it possible to continue the program along the coast of Brazil.

## LIST OF ACRONYMS

<b>Acres</b>	Conservation and Stock Recovery Areas
<b>APA</b>	Environmental Protection Area
<b>Cepene</b>	National Center for Research and Conservation of Marine Biodiversity in the Northeast
<b>CI</b>	Conservation International
<b>Confrem</b>	National Commission for Strengthening Extractive Reserves and Coastal and Marine Extractive Peoples
<b>CPG</b>	Permanent Committees for the Management and Sustainable Use of Fisheries Resources
<b>CPP</b>	Fishers's Pastoral Council
<b>Depaq</b>	Department of Fisheries and Aquiculture
<b>DPA</b>	Department of Fisheries and Aquiculture
<b>EDF</b>	Environmental Defense Fund
<b>Ibama</b>	Brazilian Institute of the Environment and Renewable Natural Resources
<b>ICMBio</b>	Chico Mendes Institute for Biodiversity Conservation
<b>KAP</b>	Knowledge, Attitude and Practice
<b>Labomar</b>	Ocean Sciences Institute
<b>LEK</b>	Local Ecological Knowledge
<b>M&amp;E</b>	Monitoring and Evaluation
<b>MAPA</b>	Ministry of Agriculture, Livestock, and Supply
<b>Marine Resex</b>	Marine Extractive Reserve
<b>MDIC</b>	Ministry of Industry, Foreign Trade, and Services
<b>MMA</b>	Ministry of Environment
<b>MPA</b>	Ministry of Fisheries and Aquaculture
<b>MPP</b>	Artisanal Fishers' Movement
<b>NGO</b>	Non-Governmental Organization
<b>PUC-Rio</b>	Pontifical Catholic University of Rio de Janeiro
<b>Ramsar Site</b>	Wetlands of International Importance/Unesco
<b>Resex</b>	Extractive Reserve
<b>RGP</b>	General Fisheries Registry
<b>SEAP</b>	Special Secretariat for Aquaculture and Fisheries
<b>SNUC</b>	National Protected Areas System
<b>SPA</b>	Secretariat of Aquiculture and Fisheries
<b>SPM</b>	Bahia State Secretariat for Women's Policies
<b>Sudepe</b>	Fisheries Development Superintendency
<b>UC</b>	Nature Conservation Unit
<b>UCSB</b>	University of California Santa Barbara
<b>UEMA</b>	State University of Maranhão
<b>UFC</b>	Federal University of Ceará
<b>UFMA</b>	Federal University of Maranhão
<b>UFPE</b>	Federal University of Pernambuco
<b>UFPI</b>	Federal University of Piauí
<b>UFRB</b>	Federal University of the Reconcavo Baiano region
<b>UFSC</b>	Federal University of Santa Catarina
<b>Unesco</b>	United Nations Educational, Scientific and Cultural Organization
<b>UTEP</b>	University of Texas El Paso

# OUR TEAM

## RARE BRAZIL TEAM

- Betina Toledo** — Implementation Coordinator
- Cláudia Quintanilla** — Training Director
- Enrico Marone** — Program Implementation Manager
- Felipe Carvalho** — Senior Fisheries Specialist
- Georgia Pessoa** — Rare Brazil Executive Director
- Gabriel Vianna** — Fisheries and Marine Sciences Manager
- Guillermo Bedoya** — Administrative Manager
- José Policarpo** — Program Implementation Manager
- Keith Alger** — Regional Vice-President
- Larissa Stoner** — Program Implementation Manager
- Lorena Braga** — Administrative Assistant
- Luís Lima** — Rare Brazil Senior Manager
- Márcia Cota** — Strategy and Development Manager
- Natali Piccolo** — Program Implementation Manager
- Nathalia Guedes** — Administrative Assistant
- Sacha Gilbert** — Program Coordinator
- Simone Madalosso** — Executive Coordinator
- Tjerk van Rooij** — Implementatio Director



## 2015-2017 REPORT DRAFTED BY

- Enrico Marone** — Communication and Marketing Manager
- Monique Galvão** — Rare Brazil Vice-President
- Natali Piccolo** — Senior Program Implementation Manager
- Simone Madalosso** — Governance and Development Analyst

Enrico Marone — Photos

## CAMPAIGN MANAGERS

- Daniel Andrade** — Resex Baía de Iguape | BA
- Fabrizio Gonçalves** — Resex Pirajubaé | SC
- Josenilde Ferreira** — Resex Cururupu | MA
- Lindomar Lima** — Resex Prainha do Canto Verde | CE
- Luciano Galeno** — Resex Delta do Parnaíba | MA-PI
- Pedrina Reis** — Resex Canavieiras | BA
- Vanessa Santos** — Resex Canavieiras | BA

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Marine Extractive Reserve | Bahia.





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