



## BRAZIL



### 2014 Statistics

- » **Life expectancy: 73.3 years**
- » **Population: 202.7 million (est.)**
- » **GDP per capita: US\$12,100 (2012 est.)**
- » **Mobile penetration: 134.9% (est.)**

Sources: CIA World Factbook (<https://www.cia.gov/library/publications/the-world-factbook/>); Internet and mobile penetration from the International Telecommunication Union.

**Years ago, I didn't know if I was making a profit or a loss from fishing. With this project, I can check quantities and costs on my mobile phone before returning to land. And with the 3G network, I can talk to lots of clients about how much fish I have, and later email the price and ask if they want to buy my catch.**

— **Adeildo da Conceição Lacerda, a fisherman in Cabrália**

## Pescando com Redes 3G (Fishing with 3G Nets): Promoting Sustainable Fishing and Entrepreneurship Through Digital & Social Inclusion

Pescando com Redes 3G project was created in 2010 to promote sustainable social and economic development in fishing communities in the city of Santa Cruz Cabrália, in southern Bahia, through digital and social inclusion. Fishing is one of the main economic activities in the region and provides a living for families who have been in the business for years using techniques inherited from their ancestors. Overfishing, coupled with a lack of investment, has resulted in diminishing opportunities, reducing the income of the fishing communities and resulting in the emigration of young people to other cities in search of jobs. Fishing with 3G Nets aims to support the implementation of new economic activities through the use of 3G-connected smartphone and tablet applications.

### Challenge

- » Poverty, overfishing and potential depletion of fishery resources constitute a real threat to many coastal communities.<sup>1</sup>
- » Many developing countries still lack adequate infrastructure, including hygienic landing areas, access to electricity, drinking water and roads. Long food product supply chains require ice, cold storage, and refrigerated transport. When these are not available, it causes a loss of commercial fish and a deterioration in quality, which decreases sales and potentially puts consumer health at risk.<sup>2</sup>
- » Almost half of the people employed in food processing or production activities associated with small-scale fisheries are women. More than 95 percent of small-scale fishermen and related workers dedicated to post-harvest activities live in developing countries. These small-scale fishing communities often face precarious and vulnerable living and working conditions.<sup>3</sup>
- » Despite Brazil's extensive coastline, current per capita fish consumption is low at only 6.8 kg/year, and fisheries and aquaculture account for only 0.4 percent of Brazil's Gross National Product.<sup>4</sup> Modernized fishing activities could potentially help this industry grow.

### Solution

#### Phase I

- » 3G Connection: Telefonica Vivo installed a tower in the community of Guiau, providing 3G HSUPA connectivity to the fishing communities. A community computer lab and a floating classroom on a boat were established.
- » Members from the fishing community were provided with communications and Internet technology training, environmental education, and sustainable fishing techniques.
- » Mobile devices with customized applications were provided to fishermen. The apps give real-time weather information and navigation assistance. A revenue tracking app enables fishermen to enter fishing expenses, such as fuel, ice and hired helpers, before they leave on a fishing trip. During the trip, they use the application to track their income by entering the quality and quantity of fish caught. Because the application has real-time market data, it automatically calculates their revenue.
- » Information about the total trip is sent via the 3G network to the fish processing unit. The online marketplace administrator uses the information to update the product available for sale. The fishermen drop off the entire trip's catch at the unit where workers clean, package and store the fish. Local business owners place their orders online and, a few hours later, fish are delivered to their doorsteps. This new product management system increases sales and provides business owners with fresh fish.

#### Phase II

- » Diversification of activities: An oyster farm was created in San Antonio so that locals could be taught alternative economic activities to traditional fishing, thereby contributing to job creation and income generation for families in the region.
- » A customized application was developed for the mariculturists (oyster cultivators) to monitor water conditions — such as pH levels, salinity and temperature — which enable the healthy growing of oysters. Another application allows them to track their inventory. Most mariculturists caring for the oyster farm are women and they teach others about the importance of keeping the environment free of pollution.

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## Phase III

- » Mobile Education and Technology Innovation: On March 15, 2013, the Center for Education and Innovation - Fishing with 3G Nets (CEIT-PR3G) was inaugurated. The center serves as an incubator for localized mobile application ideas. CEIT-PR3G offers technical training workshops on innovation and creativity, digital content development, programming techniques, and entrepreneurship skills.

## Impact

### Phase I

- » Close to 60 fishermen in seven communities directly benefitted from the project and more than 1,500 members of the community and local business benefitted indirectly.
- » In the community of Coroa Vermelha, where the fish processing unit is located, revenue increased to almost 170,000 Brazilian real (approximately US\$85,000) in the 15-month period following the launch of the project.
- » Additionally, the use of mobile phones grew by 16.1 percent among those participating in the project, compared with those who did not.

### Phase II

- » Today, the oyster farm produces about 3,000 units per month, with the potential to produce 10,000 units per month.
- » In only two months, a participating restaurant sold 2,000 oysters, which generated approximately 2,500 Brazilian real (US\$1,286) in additional monthly income for the community of mariculturists.
- » To help increase socio-environmental awareness and promote the sale of oysters, an Augmented Reality application was developed using the Qualcomm® Vuforia™ augmented reality platform, a product of Qualcomm Connected Experiences, Inc., to provide informational text, photos, videos and a game via a 3G-connected tablet.

### Phase III

- » The first group participating at CEIT-PR3G is comprised of 50 youth from Guiau and Santo Antonio, of which more than half are female and/or do not have access to a computer at home.
- » The students were introduced to mobile technology at CEIT and then participated in an outdoor excursion where they used 3G-connected devices to geo-tag dozens of new locations on Google Earth. CEIT-PR3G is estimated to impact more than 4,000 people in Santa Cruz Cabralia and an additional 5,000 people in surrounding communities.

## Project Stakeholders

- » Editacuja Publishing shares their expertise in technology and education and assists with on the ground project implementation.
- » Municipality of Santa Cruz Cabralia is a community advocate for local fisherman and mariculturists embracing technology. They provide support for local coordinators and overall project guidance.
- » The Qualcomm Wireless Reach initiative is one of the principal funders and provides technical and managerial support.
- » Sustainable Brazil Environmental Institute (IABS) is an implementing partner who helps provide insight in to the fishing sector in Brazil and offers guidance and training on sustainable fishing techniques.
- » Telefônica Vivo Foundation is one of the principal funders and also installed a tower in the community of Guiau, providing 3G HSUPA connectivity to the fishing communities.
- » United States Agency for International Development (USAID) provided early funding to the pilot and continues to provide institutional support and visibility.



<sup>1</sup> "2010 WORLD REVIEW OF FISHERIES AND AQUACULTURE: PART I." UNITED NATIONS FOOD AND AGRICULTURAL ORGANIZATION. [HTTP://WWW.FAO.ORG/DOCREP/013/1820E/1820E01.PDF](http://www.fao.org/docrep/013/1820e/1820e01.pdf).

<sup>2</sup> *IBID.*

<sup>3</sup> *IBID.*

<sup>4</sup> FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS WEBSITE: [HTTP://WWW.FAO.ORG/FISHERY/COUNTRYSECTOR/NASO\\_BRAZIL/EN#TCN9017D](http://www.fao.org/fishery/countrysector/naso_brazil/en#tcN9017D).

## Qualcomm® Wireless Reach™

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