

# BRAZIL

## CONNECTING THE ATLANTIC FOREST THROUGH WILDLIFE CORRIDORS

November 2016 Report



HECTARES FINANCED

402



TREES FINANCED

806,502



CO<sub>2</sub> SEQUESTERED<sup>1</sup>

127,927



BENEFICIARIES

177

**A total of 806,502 trees have been financed thanks to the support of donors and sponsors**

## THE PROJECT

The project takes a landscape approach to restore the landscape of the Pontal do Paranapanema region, creating forest corridors between two important remnants of the Atlantic Forest, the Morro do Diabo State Park and the Iguaçu National park. The Atlantic Forest has been cleared to such an extent that only 7% remains today. In partnership with IPÊ, community-based nurseries and members of the Landless Workers' Movement, WeForest is working to restore and reconnect the Atlantic Forest in the region, where only 3% of the forest remains. WeForest has been working here since 2014 to restore the landscape, increase habitat connectivity for native fauna, empower rural families and combat climate change.



### KEY DETAILS:

**Location:** Pontal do Paranapanema

**GPS:** 22.29.134S/52.34.115W

**Restoration approach:** Framework planting and assisted natural regeneration

**Partners:** Departments of the University of São Paulo, Federal University of São Carlos, University of São Paulo Leste, and partner Instituto de Pesquisas Ecológicas

<sup>1</sup>This carbon figure is based on research conducted in the region of Pontal do Paranapanema. The total above-ground and below-ground biomass can store an average of 317.24 tons of CO<sub>2</sub> per hectare over a period of 30 years. Ditt, E.H. et al. 2007.

# PLANTING UPDATE

## KEY PLANTING FACTS

- 402 ha identified for restoration; 243 ha restored
- 4 planting areas
- 10 community-based nurseries
- 115 native species
- Main species<sup>2</sup>: *Gochnatia polymorpha*, *Guarea guidonea*, *Tapirira guianensis*, *Inga striata*
- Tree survival rate: 95.7%
- Simpson's index of diversity:  $C=0.947^3$  (1= maximum biodiversity)

Planting has been completed at all sites except Rosanela Farm. Maintenance of the completed areas has been effective thanks to proper capacity building and education and the control of leaf cutter ants to promote seedling survival. At Rosanela Farm, planting and assisted natural regeneration has been completed in 108 hectares (ha) and land preparation is underway in the remaining 159 ha. To avoid high mortality of seedlings and optimize water availability given the recent droughts, the first planting season in May was shortened and the second was pushed back to November. With a total of 403 ha identified for restoration, we are making progress towards the project dream map (Figure 2).

## MAY - OCTOBER 2016:

- 101 ha restored in Rosanela Farm
- 160 ha of land preparation underway in Rosanela Farm
- 420,000 seedlings produced in nurseries



Figure 1. The team plants saplings in rows to speed up the natural regeneration of the forest at Rosanela Farm

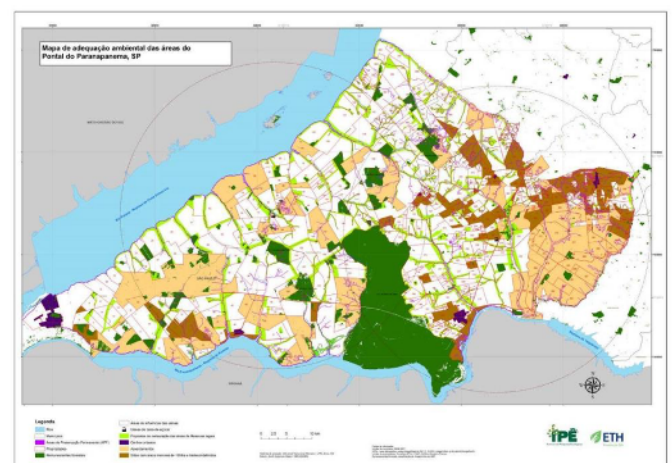


Figure 2. The dream map

<sup>2</sup> Species that are planted to speed up the natural succession of the forest.

<sup>3</sup> Value's lie between 0 and 1, with 1 being equal proportion of species across the area. That means there is a high level of diversity.



# MAPPING

## AREAS RESTORED:

- Arco Iris: 20 ha
- Santo Antonio: 84 ha
- Rosanela Conservation Area: 31 ha
- Rosanela Farm: 108 ha

## ARCO IRIS



Figure 3. Arco Iris site in 2014

Figure 4. Arco Iris site in 2016

## SANTO ANTONIO



Figure 5. Santo Antonio site in 2014

Figure 6. Santo Antonio site in 2016

## SOCIO-ECONOMIC UPDATE

### KEY SOCIO-ECONOMIC FACTS:

- 177 directly engaged
- 115 nursery workers (23 families)
- 62 restoration contractors (15 families)
- Average monthly family income of \$529 from the nurseries
- Average monthly family income of \$644 from planting contracts
- Families earn ~2.5x the minimum wage and ~2x their existing income

The project partners with community-based nurseries to supply the project with seedlings and contracts members of the Landless Workers' Movement to carry out the planting and restoration activities. The project supports the establishment of autonomous nursery businesses, empowering community members to become self-reliant entrepreneurs with a secure income source. The nurseries are able to sell seedlings to other focal groups as well, such as local farmer and private owners that are restoring their legal reserves and gallery forests as well.

### MAY - OCTOBER 2016:

- US \$93,000 (\$15,500 a month) in income from nurseries
- 51 families involved in capacity and training
- Income data collection and analysis



Figure 7. Iracy Lopez Duveza has been running her nursery for the last 15 years



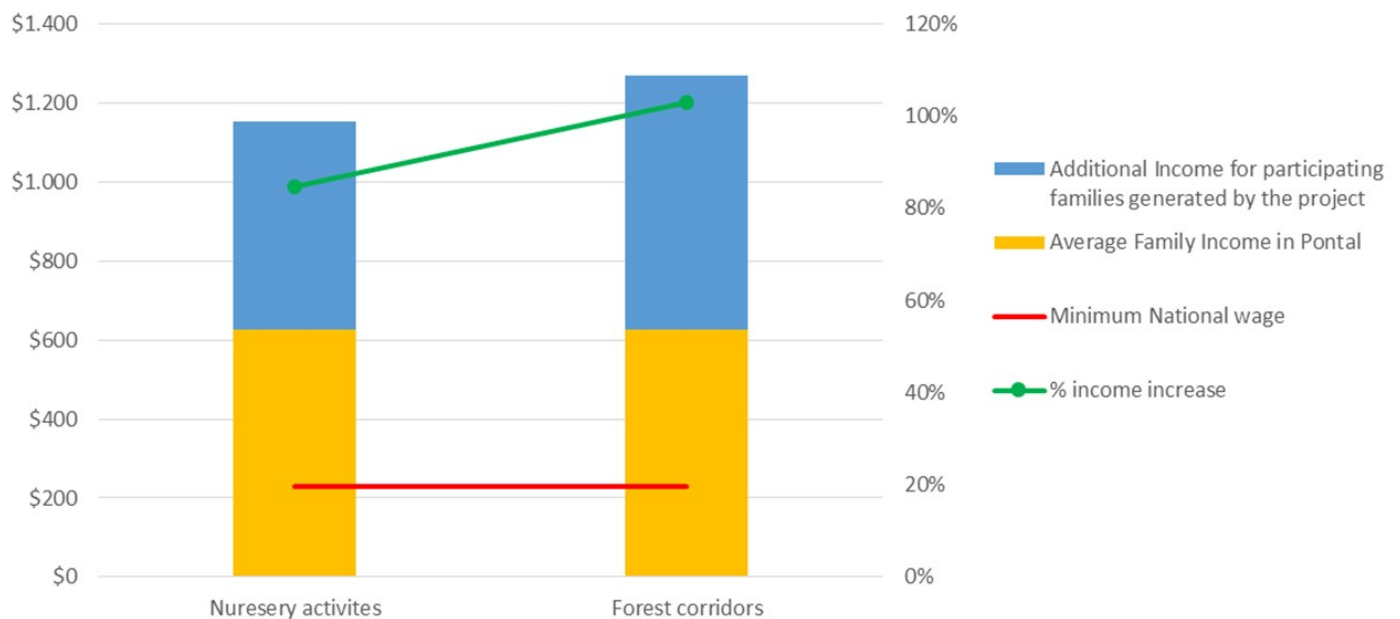
Figure 8. Children from the local communities benefit from the increased income of their mothers



## THE INCOME OF PARTICIPATING FAMILIES

- To monitor the impact of the project on rural families, the team recently collected data on the average income of families and compared it to the average wage and minimum wage in Brazil
- The family unit was chosen as the most appropriate parameter because income in the region is often earned by the family unit
- The results demonstrated that the nursery and planting contracts provide families an average extra income of US \$529 a month and US \$644 a month, respectively. This is around 2.5 times the minimum wage in Brazil
- The average family income was compared with the average monthly income for rural families in Pontal do Paranapanema. Families earn US \$625 from other sources (e.g. crops and cattle). This means that the project has the potential to roughly double the income of participating families

**Income increase recorded for families participating in the project**



Graph 1. The income and extra income of participating families compared with the region average and national minimum wage.

# MONITORING UPDATE

## Measuring forest growth with remote sensing technology

The project is in the process of developing a new approach to measure biomass accumulation, and by extension, carbon sequestration in forests through remote sensing. With airborne LiDAR equipment, restored areas are scanned with laser light pulses, which will indicate height of the trees and other growth parameters and generate a 3D map. The use of LiDAR technology is being developed in partnership with the Laboratory of Quantitative Methods within the Forestry Department of the University of Sao Paulo. The data will bolster on-site forest inventories of growth and biomass. In July 2016, the team finished the field data collection to assess carbon stock and baseline information in the areas restored in Rosanela. Preliminary findings of the LiDAR technology indicate that a newly planted forest (planted in 2005) is already storing 50% of the carbon stored by a mature forest, such as that located within the Morro do Diabo State Park. Besides indicating the degree of forest growth, these data can demonstrate the value and efficiency of the project.

## Developing a validation framework

In partnership with departments from the University of São Paulo, the Federal University of São Carlos, University of São Paulo Leste and IPÊ, WeForest has set up the first stages of a research project that explores the ecological impact of the forest restoration efforts in Pontal do Paranapanema. The research will explore 1) the ecological improvement achieved in relation to pre-restoration conditions and the original forest; 2) the extent to which restoration at site level is improving landscape function (e.g. how are forest fragments benefiting from connectivity?); and 3) the impact of restoration activities on carbon sequestration. These data will be collected by two postgraduate students.

## Launch of the “Selfies in the Forest” Web Platform

In September of this year, the project launched the “Selfies in the Forest” GIS Web platform, which shows footage of wildlife using the forest corridors captured on camera traps and their location. This site will be updated on a weekly basis. These observations provide strong evidence of the effectiveness of corridors and forest landscape restoration for biodiversity conservation. [Click here](#) to view.







THANK YOU