

REINTRODUCTION AND PROMOTION OF PERNAMBUCO TREE PLANTATIONS, Caesalpinia echinata Lam., IN THREE STATES OF NORTHEASTERN BRAZIL

ASSOCIAÇÃO PLANTAS DO NORDESTE (APNE)

CURRENT STATUS OF PERNAMBUCO PLANTATIONS

This is a brief presentation on the current status of all Pernambuco plantations made during the Project in the States of Pernambuco, Rio Grande do Norte and Paraíba.

| | SUMMARY OF THE PLANTATIONS | | | | | | | | | | |
|-------|----------------------------|--------------------------|-------------------------|---------------------|-----------------------|--------------------------|---------------------------------|-------------------------|-------------------------------|--|--|
| State | Period Name | | Place Plantation type | | Purpose of Plantation | Original N° of seedlings | N° of seedlings delivered | N° of planted seedlings | Situation as of 10/2015 | | |
| | Jun/12 | IPA | Goiana | Homogeneous | Commercial | 468 | 468 | 468 | Efficient | | |
| | Jun/14 | Jones Pereira | Abreu e Lima | Agroforestry system | Commercial | 30 | 30 | ? | Not evaluated | | |
| | Jun/14 | Cristina Petrônio | Igarassú | Agroforestry system | Commercial | 50 | 50 | ? | Not evaluated | | |
| | Jun/14 | Luiza Cavalcante Santos | Tracunhaém | Agroforestry system | Commercial | 150 | 150 | 90 | Deficient | | |
| PE | Jun/14 | Maria José da Silva Lima | Barreiros | Agroforestry system | Commercial | 40 | 40 | 40 | Deficient | | |
| | Jun/14 | Pedro José dos Santos | Ribeirão | Agroforestry system | Commercial | 50 | 50 | 50 | Efficient | | |
| | Jun/14 | José Augusto da Silva | Rio Formoso | Agroforestry system | Commercial | 200 | 200 | ? | Not very efficient | | |
| | Jun/14 | Ailton da Paz | Rio Formoso | Agroforestry system | Commercial | 200 | 200 | 38 | Not very efficient | | |



| Jun/14 | Cícera Ataíde | Água Preta | Agroforestry system | Commercial | 50 | 50 | ? | Not very efficient |
|--------|---------------------------------|-------------|-------------------------|--------------|-----|-----|-----|---------------------|
| Jun/14 | Francelí Gomes | Rio Formoso | Agroforestry system | Commercial | 100 | 100 | 40 | Not very efficient |
| Jun/14 | Elizabete Silva de Lima | Rio Formoso | Agroforestry system | Commercial | 20 | 20 | 20 | Efficient |
| Jun/14 | Manoel Luiz Bezerra | Catende | Preservation plantation | Conservation | 150 | 150 | 150 | Deficient (fire) |
| Jun/14 | Joabe Pantaleão | Tamandaré | ? | ? | 20 | 20 | ? | Not very efficient |
| Jun/14 | José Olávio da Silva | Tamandaré | ? | ? | 10 | 10 | ? | Not very efficient |
| Jun/14 | Rubineide Soares de Carvalho | Igarassú | ? | ? | 10 | 10 | ? | Not very efficient |
| Jun/14 | Júlio Araújo | Tamandaré | ? | ? | 6 | 6 | ? | Not very efficient |
| Jun/14 | Erivaldo Maciel Loureiro | Maraial | Reintroduction | Conservation | 500 | 400 | 400 | Deficient |
| Jun/14 | Amara Magalí Tomé | Rio Formoso | Not delivered | by partner | 20 | | | Inefficient |
| Jun/14 | Genival Barbosa de Lima | Passira | Not delivered | by partner | 20 | | | Inefficient |
| Jun/14 | Pedro Silva de Oliveira | Barreiros | Not delivered | by partner | 20 | | | Inefficient |
| Jun/14 | Claudemir Pereira | Barreiros | Not delivered | by partner | 150 | | | Inefficient |
| Jun/14 | Ivanilda Maria Barros | Rio Formoso | Not delivered | by partner | 25 | | | Inefficient |
| Apr/14 | IPA | Goiana | Mixed | Commercial | 412 | 412 | 412 | Efficient |
| Jun/15 | Severino Raimundo - Ubu | Goiana | Agroforestry system | Commercial | 188 | 200 | 200 | Not evaluated |
| Jun/15 | Teresa Maria Fidelis - Ubu | Goiana | Agroforestry system | Commercial | 240 | 300 | 300 | Not evaluated |



| | Jun/15 | Gildo - Ubu | Goiana | Agroforestry system | Commercial | 80 | 100 | 100 | Not evaluated |
|----|--------|--------------------------------------|--------------|-------------------------|--------------|-----|-----|-----------------|--------------------|
| | Jun/15 | Sueli - Ubu | Goiana | Agroforestry system | Commercial | 248 | 260 | 260 | Not evaluated |
| | Jun/15 | José Mendes - Ubu | Goiana | Agroforestry system | Commercial | 160 | 200 | 200 | Not evaluated |
| | Jun/15 | José Reginaldo da Silva - Ubu | Goiana | Agroforestry system | Commercial | 170 | 190 | 190 | Not evaluated |
| | Jun/15 | José Carlos Salustiano - Mussumbú | Goiana | Agroforestry system | Commercial | 200 | 200 | Only in 2016 | Not evaluated |
| | Jun/15 | José Gerônimo - Mussumbú | Goiana | Agroforestry system | Commercial | 200 | 200 | 200 | Not evaluated |
| | Jun/15 | José Canuto - Mussumbú | Goiana | Agroforestry system | Commercial | 100 | 100 | 30 | Not very efficient |
| | Jun/15 | Leni - Mussumbú | Goiana | Agroforestry system | Commercial | 350 | 350 | 30 | Not very efficient |
| | Jun/15 | Luiz Leonardo (Sula) - Mussumbú | Goiana | Agroforestry system | Commercial | 50 | 50 | 50 | Not evaluated |
| | Sep/15 | Gutemberg - Sirigi | Aliança | Agroforestry system | Commercial | 600 | 600 | 500 | Not evaluated |
| | | Gutemberg - Sirigi | Aliança | Preservation plantation | Conservation | 300 | 300 | Only in 2016 | Not evaluated |
| | May/13 | UFRN | Jundiaí | Homogeneous | Commercial | 625 | 625 | 625 | Efficient |
| | May/13 | UFRN | Jundiaí | Mixed | Commercial | 120 | 120 | 120 | Deficient |
| RN | Jun/14 | Axel | S. J. Mipibú | Homogeneous | Commercial | 715 | 715 | 715 | Deficient |
| | Jun/14 | Axel | S. J. Mipibú | Reintroduction | Conservation | 100 | 100 | 100 | Deficient |



| | Aug/14 Aug/14 | Usina Miriri Usina Miriri | Santa Rita Santa Rita | Mixed Reintroduction | Conservation Conservation | 300 200 | 300 200 | 300 200 | Deficient Deficient |
|-------|------------------|------------------------------|--------------------------|--------------------------------|---------------------------|-------------------|------------|--------------------|-------------------------------|
| | May/13 Aug/14 | Usina Miriri Usina Miriri | Santa Rita Santa Rita | plantation Homogeneous Mixed | Conservation Conservation | 600 673 300 | 673 300 | 2016 673 300 | evaluated Deficient Deficient |
| | Aug/14 | Usina Miriri | Santa Rita | Reintroduction | Conservation | 200 | 200 | 200 | Deficient |
| | Sep/15 | Sérgio | Mamanguap e | Homogeneous | Commercial | 380 | 380 | Only in 2016 | Not very efficient |
| РВ | Jul/15 | Genilson | Marcação | Homogeneous | Commercial | 200 | 200 | 200 | Not evaluated |
| | Jul/15 | Vlaminck | Pedra de Fogo | Reintroduction | Conservation | 170 | 170 | 170 | Not evaluated |
| | Jul/15 | Rebio Guaribas | Mamanguap e | Reintroduction | Conservation | 2.000 | 2.000 | 2.000 | Deficient |
| TOTAL | | | | | | | 12.899 | | |

| Efficient | Plantation with normal development |
|--------------------|--|
| Deficient | Plantation implemented but not very successful |
| Not very efficient | Seedlings delivered but only few have been planted |
| Inefficient | Seedlings delivered but not planted. Partner did not deliver the seedlings |
| Not evaluated | Recent plantation – too early to evaluate |





Assessment of Project impact:

The tables below present a careful and objective assessment of the outreach of Project plantations until today.

| Classification | N° of seedlings delivered | N° of seedlings planted | % of delivered | % of planted total |
|--------------------|------------------------------|----------------------------|-------------------|--------------------|
| Efficient | 1.575 | 1.575 | 100% | 14% |
| Deficient | 4.698 | 4.638 | 99% | 42% |
| Deficient (fire) | 150 | 150 | 100% | 1% |
| Not very efficient | 1.506 | 138 | 9% | 1% |
| Inefficient | 235 | 0 | 0% | 0% |
| Not evaluated | 4.970 | 4.670 | 94% | 42% |
| Total | 13.134 | 11.171 | 85% | 100% |

| Plantation type | Classification | Efficient | Deficient | Deficient (fire) | Not very efficient | Inefficient | Not evaluated | Total |
|-----------------|---------------------|-----------|-----------|---------------------|--------------------|--------------|------------------|--------|
| Tiumuution type | Delivered seedlings | | | (| 46 | - Incincione | Craidatea | 46 |
| Ş | Planted seedlings | | | | | | | |
| | Delivered seedlings | 412 | 420 | | | | | 832 |
| Mixed | Planted seedlings | 412 | 420 | | | | | 832 |
| | Delivered seedlings | 1093 | 1.388 | | 380 | | 1.800 | 4.661 |
| Homogeneous | Planted seedlings | 1.093 | 1.388 | | | | 1.800 | 4.281 |
| | Delivered seedlings | | | | | 235 | | 235 |
| Not delivered | Planted seedlings | | | | | | | |
| Preservation | Delivered seedlings | | | 150 | | | 300 | 450 |
| plantation | Planted seedlings | | | 150 | | | 300 | 450 |
| Agroforestry | Delivered seedlings | 70 | 190 | | 1.080 | | 2.300 | 3.640 |
| system | Planted seedlings | 70 | 130 | | 138 | | 2.000 | 2.338 |
| | Delivered seedlings | | 2.700 | | | | 570 | 3.270 |
| Reintroduction | Planted seedlings | | 2.700 | | | | 570 | 3.270 |
| Delivered | | | | | | | | |
| seedlings | | 1.575 | 4.698 | 150 | 1.506 | 235 | 4.970 | 13.134 |
| Planted | | | | | | | | |
| seedlings | | 1.575 | 4.638 | 150 | 138 | | 4.670 | 11.171 |

Conclusions:

- the efficiency of the plantation effort can be considered high (85% of delivered seedlings are planted);
- plantation success, however, is variable: even if it is too early to evaluate a large part of the plantations, more than half (57%) show several problems (low



survival, low growth rate). Efficient plantations represent about 19% of the total of distributed seedlings (without considering 2015 plantations);

- the efficiency of the commercial plantations (homogeneous or mixed) is quite higher than that of conservation plantations (protection or reintroduction);
- seedling distribution in small quantities (< 100) amongst a high number of farmers causes high difficulty of monitoring and, up to a certain point, doubts on plantation quality (that, in spite of its social and inclusion of small farmers' appeal).

This evaluation should reorient Project strategies in order to achieve higher impact of implemented activities, on one hand, and in terms of demonstration potential of Pernambuco plantations, on the other.

Proposal of improved Project strategy:

To concentrate efforts only in commercial plantations, preferably mixed and at least of 0,5 to 1,0 hectare (> 200 seedlings).

Farmer selection should highlight the compromise with the conservation and plantation of Pernambuco, or, guarantee minimum conditions to maintain the plantations.

We should dedicate efforts and invest in the quality of the plantations, both in terms of high-quality seedlings and high-level plantation protocols (terrain preparation, plant hole preparation, high quality sites (soil type), maintenance and clearing, pruning and technical monitoring by the project team. This means a higher cost per hectare but probably with higher success rate.

This strategy presents two major challenges:

- The compromise of the farmers with the plantations;
- The guarantee of regular technical assistance (especially in the initial phase) by the project team.

These kinds of plantations should receive most of the project's attention. Other plantation types, due to their social and promotional importance and inclusion of the bigger society, should continue to receive support but with less efforts and resources from the project. These plantations can be better promoted by means of other initiatives (for instance Anne Fontaine Foundation) and partnerships (Municipalities, environmental restoration projects).

Below we present some pictures on the situation of most of the plantations in 2015.

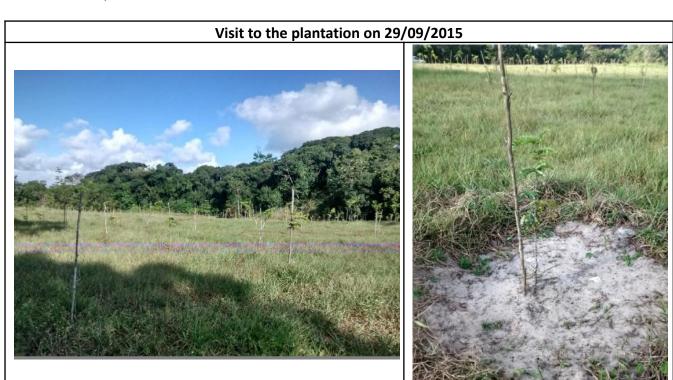


PERNAMBUCO

• Experimental Station of Itapirema – IPA (Goiana/PE)

Homogeneous plantation

Plantation period: June 2012





Mixed plantation

Plantation period: April 2014

Visit to the plantation on 29/09/2015







• Settlement Ubu (Goiana/PE) Agroforestry System

Plantation of Mr. Reginaldo

Plantation period: June 2015



Plantation of Ms. Tereza

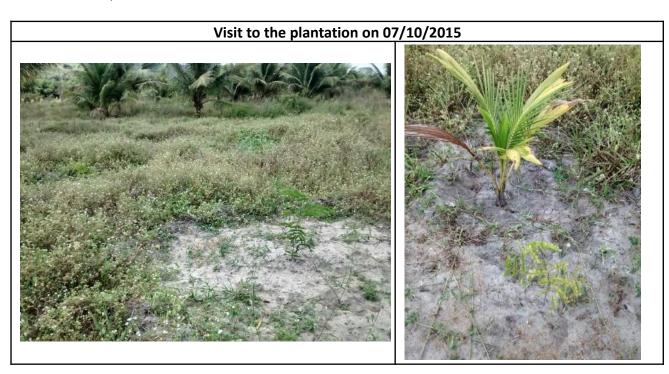
Plantation period: June 2015





Plantation of Ms. Sueli

Plantation period: June 2015



Plantation of Mr. Gildo

Plantation period: June 2015

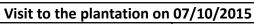






Plantation of Mr. Mendes

Plantation period: June 2015





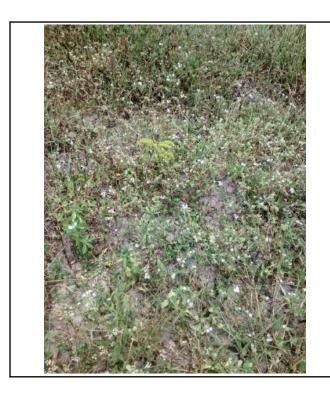


Plantation of Mr. Severino

Plantation period: June 2015

Visit to the plantation on 07/10/2015







 Partnership with NGO Centro Agroecológico Sabiá Tracunhaém/PE Agroforestry Systems

Plantation of Ms. Luiza

Plantation period: April – July 2014









Settlement Mussumbú Goiana/PE Agroforestry System

<u>Plantation of Mr. José Gerônimo</u> (consortium with pineapple)

Plantation period: June 2015







Plantation of Ms. Leni

Plantation period: June 2015 (not all seedlings are planted yet) (plantation along fence)

Visit to the plantation on 13/10/2015







 Settlement Sirigi Aliança/PE Agroforestry system

Plantation of Mr. Gutemberg

Plantation period: September 2015 (not all seedlings are planted yet)





• Botanical Garden of Recife Recife/PE

Conservation plantation

Plantation period: June 2014

Visit to the plantation on 17/06/2015







Rio Grande do Norte

• Escola Agrícola de Jundiaí – UFRN Jundiaí/RN

Homogeneous plantation

Plantation period: May 2013







Mixed plantation (Pernambuco in eucalypt plantation)

Plantation period: May 2013

Visit to the plantation on 08/07/2015

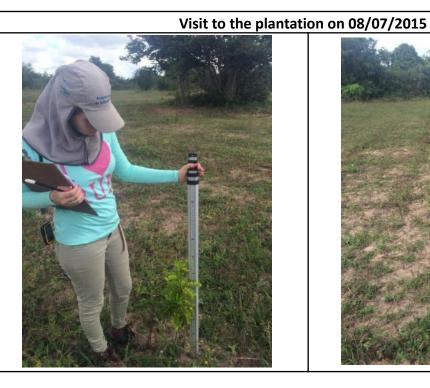






Plantation of Mr. Axel São José do Mipibú/RN

Homogeneous plantation Plantation period: June 2014





Plantation of Mr. Marcos Lopes Nísia Foresta/RN

Homogeneous plantation

Plantation period: April - June/2015

Visit to the plantation on 29/09/2015



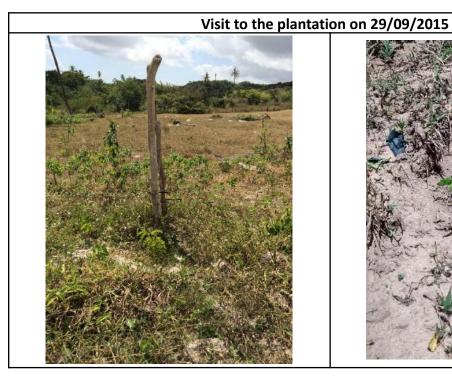




• Plantation of Mr. Alexandre Nísia Floresta/RN

Agroforestry System

Plantation period: April 2015







PARAÍBA

Plantation of Mr. Vlaminck Pedra de Fogo/PB

Reintroduction plantation

Plantation period: July 2015





• Plantation at Miriri Santa Rita/PB

Homogeneous plantation

Plantation period: May 2013







• Plantation of Mr. Genilson Marcação/PB

Agroforestry system

Plantation period: July 2015





Plantation of Mr. Sérgio Mamanguape/PB

Homogeneous plantation

Plantation period: September 2015 (not all seedlings are planted yet)

Visit to the plantation on 28/09/2015







Plantation at Botanical Garden of João Pessoa João Pessoa/PB

Reintroduction plantation

Plantation period: April 2015

