

# Using fast growing trees of high commercial value to promote forest restoration

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Traditional Restoration in the Atlantic Forest



Eucalyptus intercropped with native trees to serve as a commercial nurse crop

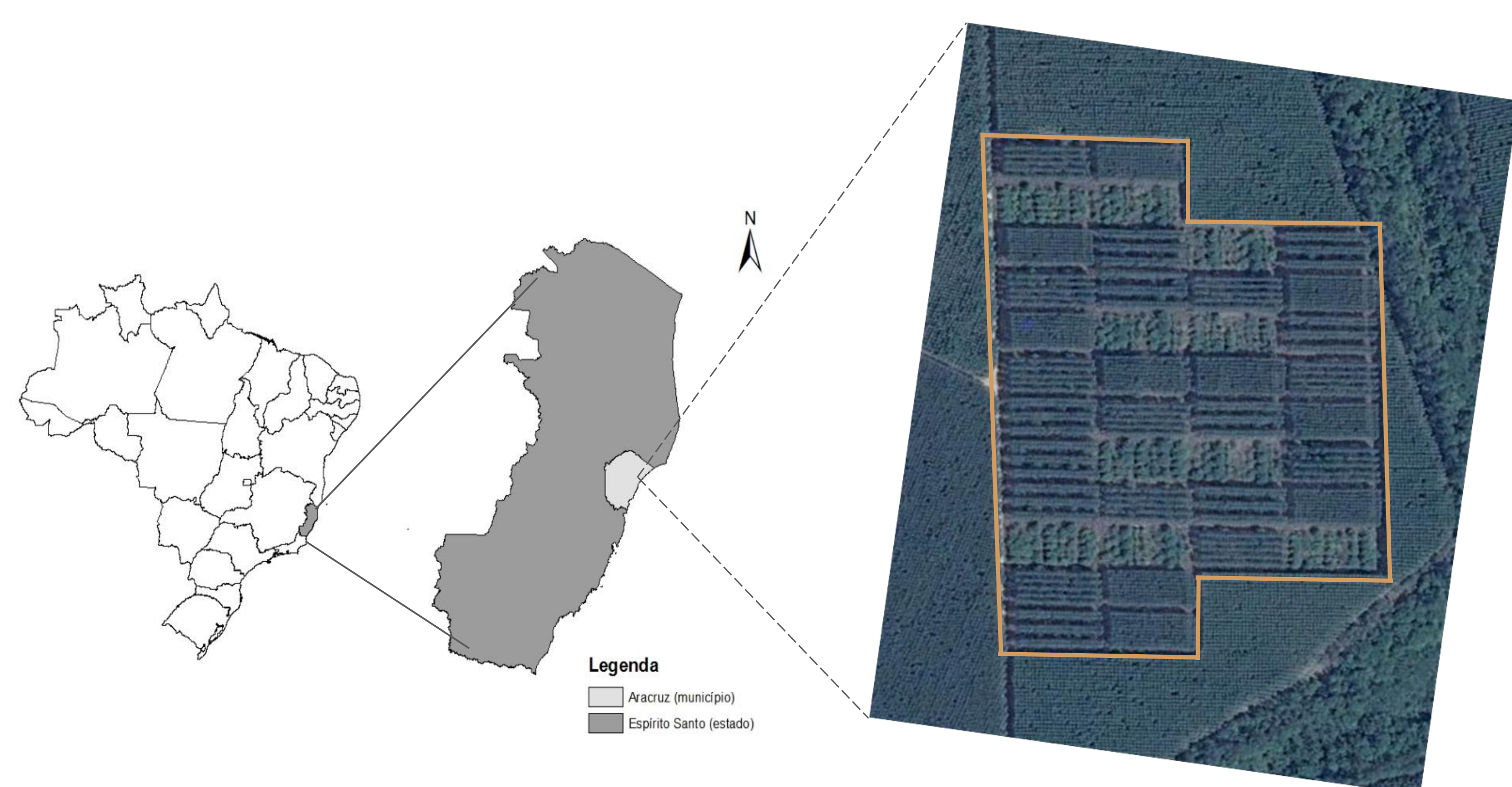
Establishment



30 months



Eucalyptus intercropped with native trees to serve as a commercial nurse crop, planted in Igrapiúna-BA, Brazil. There is also one experimental site in Mucuri-BA, Brazil.

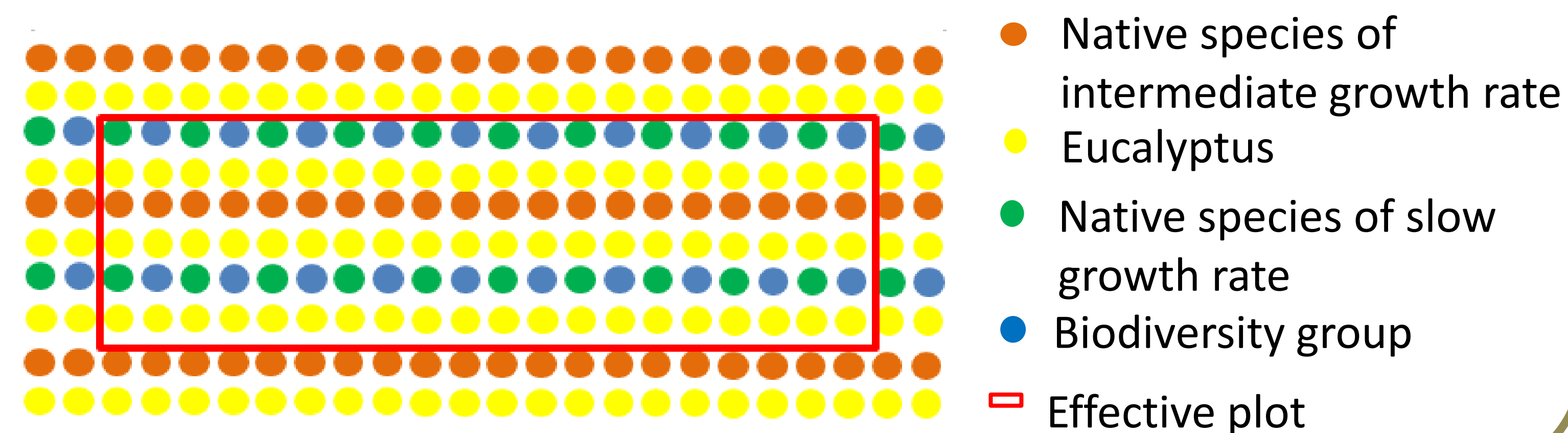


➔ **Location:** Aracruz-ES, Brazil

➔ **Design:** Native trees intercropped with Eucalyptus (1:1 proportion)

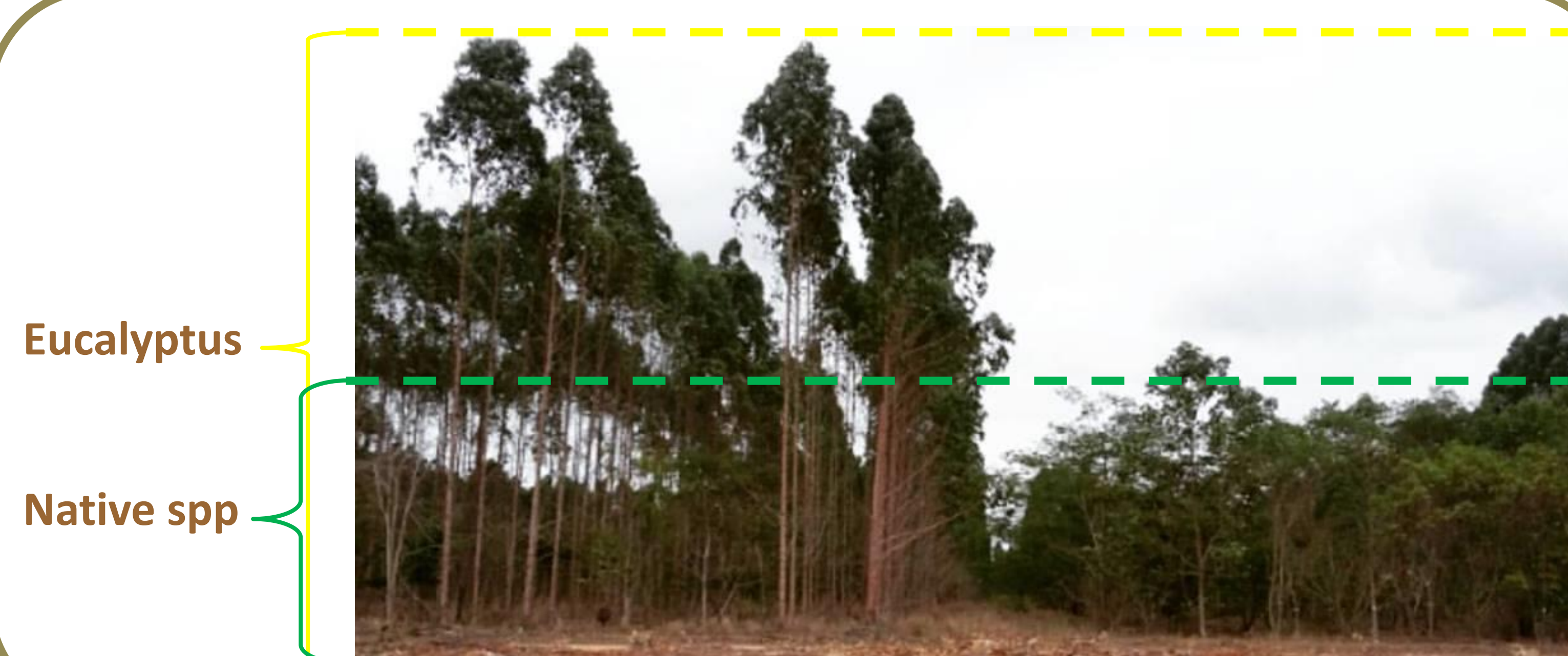
➔ **Forest age:** 5 years

➔ **Number of species:** 30 native species + Eucalyptus



Eucalyptus being harvested in between native trees at the end of the first rotation (left). Aerial view of experimental plots (right). From left to right: Traditional restoration intact, Eucalyptus monoculture harvested, Mixed plantation intact, Eucalyptus monoculture harvested, Mixed plantation harvested.

Using real volume data from the first harvest and 10% decrease for the following rotations, we simulated different scenarios considering local market prices, the Net Present Value, the number of rotations and levels of natural regeneration. We found that the income from Eucalyptus exploitation can pay for as much as 51-92% of restoration costs. The best scenario consists of three rotations of Eucalyptus and abundant natural regeneration to replace the gaps after the last harvest.



## Lessons learned about the mixed plantation:

- ☺ Eucalyptus does not affect the survival rate of native trees
- ☺ Eucalyptus' diameter growth increases in mixture
- ☺ Design can be improved to facilitate harvesting
- ☹ The mixture reduces the diameter growth of native trees
- ☺ Different designs may alleviate competition between native trees and Eucalyptus
- ☹ Replanting of native species may be necessary to fill the gaps created by harvesting of pioneer species
- ☺ The use of fast-growing species can pay for restoration costs