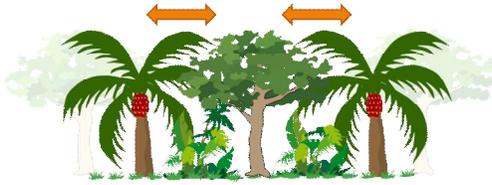


# Towards sustainable oil palm: is agroforestry a solution?



Oil palm monoculture leads to dramatic loss of biodiversity but provides income for local populations. Planting native tree species in oil palm landscape (agroforestry) has been suggested as a solution to the oil palm debate. But we still don't know: What is the impact of agroforestry on biodiversity and oil palm productivity?



View of the experiment 3 yrs after planting.

We established an agroforestry experiment in 2013:



- In 150 ha oil palm plantation.
- 6'354 trees were planted every 2 m
- 6 local tree species that farmers like
- 40% oil palms were removed to give light and space for the planted trees.

We measured oil palm productivity:



- We found that oil palm yield does not decrease in agroforestry compared to oil palm monoculture.
- But the total productivity in the plantation decreases because oil palms were removed.

We measured biodiversity:



We found more species of flying insects, seeds and trees in agroforestry compared to oil palm. But no effect on soil fungi, bats and birds.

## Conclusion

- Agroforestry has some positive impact on biodiversity in oil palm, but reduces oil palm productivity.
- More research is needed on economic benefits of the planted trees (fruits, wood or latex) and effect on ecosystem services (water storage, climate regulation ...).
- Sustainable oil palm should find the balance between economic benefits and conservation of biodiversity in the landscape.



## Designing sustainable oil-palm landscape:

Agroforestry does not replace intact forests that need to be preserved. Agroforestry can create buffer zones, or ecological corridors in the landscape.



Koh et al. 2009 *TRENDS in Ecology & Evolution*

