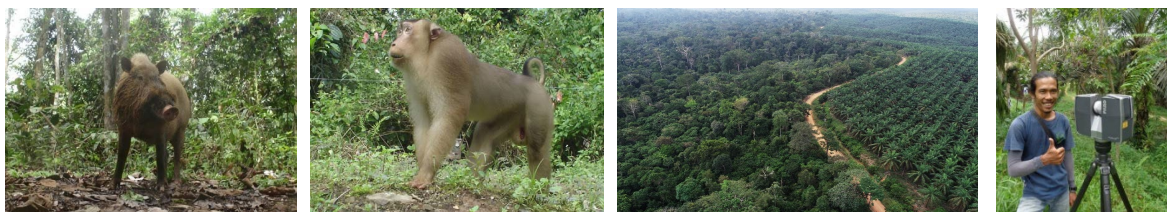# Enriching biodiversity in an oil palm landscape in Sumatra, Indonesia

Background: Tropical land-use change is one of the main drivers of the current biodiversity crisis. Land conversion occurs due to the increasing production of cash crops such as rubber, palm oil, and soy. Forests converted into monocultures lead to a significant decline in plant and animal species richness and abundance. Consequently, ecosystem functions and services are reduced, compromising the equilibrium of ecosystems and nature's contribution to people. However, it is possible to enhance biodiversity in transformed landscapes, for example, by planting multiple tree species in existing cash-crop plantations (e.g., agroforestry systems). The hypothesis to be tested is if tree diversity increases habitat heterogeneity and niche space for associated biodiversity.

Research: We are looking for motivated master's students interested in biodiversity conservation, tropical forest ecology, landscape ecology, remote sensing, field work and data analysis. The student will integrate an existing research project in the long-term biodiversity enrichment experiment in Sumatra, Indonesia (EFForTS-BEE). In this experiment, different native trees have been planted in an oil palm plantation to study the potential of restoration practices to enrich biodiversity in cash-crop dominated landscapes.

We offer the possibility of working on different topics, among them:

- **Measure a new facet of tree diversity** in the field through leaf-level spectral signatures. You will compare it with existing data from tree inventories and airborne hyperspectral images.
- **Survey small and big mammals** (shrew-mouse, monkeys, wild boars etc.) in the field using camera traps, living traps and footprint tunnels. You will then compare the community in the biodiversity enrichment experiment and in nearby intact rainforests.
- If you are interested in improving your data analysis and modelling skills, we offer the **possibility to work with the existing project database**. The data includes remote sensing data such as airborne and terrestrial LiDAR , tree inventory data, multi-taxa diversity data (from bacteria to bats), hyperspectral images, and data on the environment and ecosystem functioning.

If you are interested, please contact:
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For more information about the project: 1) https://www.uni-goettingen.de/en/310995.html
 2) https://treedivnet.ugent.be/ExpEFForTSBEE.html