## Project Update: October 2015

The gradient of chronic anthropogenic disturbance (CAD) intensity has already been established. Twenty plots have been selected within the Catimbau National Park along a gradient of CAD intensity, based on the selection of human activity indicators from interviews with the Park residents and fieldwork observations and measurements. We concluded that the best indicators of CAD for each plot were: distance to the nearest road, distance to the nearest farm and the area occupied by goat tracks. The CAD index was then based on these three estimators.

We have already started sampling interactions between ants and plants in order to quantify the ecosystem services provide by ants. Particularly, we have already sampled interactions between ants and plants bearing extra-floral nectaries, and between ants and seeds. However, at this time the Catimbau National Park is in its dry season, trees already lost all their leaves, and we must wait until next wet season to finish these samplings.

In the project plan, I also proposed to sample interactions between ants and domatias. We have realised that this kind of interaction is very rare in the study area. So, we have replaced this interaction with another interaction involving ants and plants that we observed it was very important in the Park: interactions between plants, ants and sap-feeding Homoptera (ants provide protection to Homoptera because they feed on honeydew that Homoptera exudates, and in turn ants also protect plants).

We have already collected ant samples of the ants species involved in the interactions measured so far. We are now starting to measure the morphological traits (body size, relative leg length, relative eye position) of these ant species. At field, we have already measured the physiological thermal tolerance of 25 ant species, and more measures for more species will be performed at the next wet season.



Left: A typical landscape of the Catimbau National Park (Pernambuco, northeast Brazil). Middle: An individual of *Dinoponera quadriceps* (Family Formicinae) interacting with a *Jatropha mutabilis* (Family Euphorbiaceae) seed. Right: A worker of *Camponotus* sp. (Family Formicinae) feeding at a floral extra-nectary.