**Project Update: October 2018**

In April 2018 we began our collection of data for the project in the tropical dry forest of Costa Rica in Santa Rosa National Park (10°50' N, 85° 40' W). We installed our equipment from 26th to 29th April 2018. Measurements began on 30th April 2018. We measure soil greenhouse gas emissions at three different land covers in the park. One plot was established in a grassland which was burned in March 2018, another plot in a forest with an early stage of succession and another plot in a forest with an advance stage of succession.

Multiple manual chambers where installed at each plot, to collect greenhouse gas emissions daily in the morning and twice a week in the early morning, noon and evening. Gas samples were shipped and analysed in Germany by our collaborators form the KIT IMK-IFU institute in Germany.

Figure 1. Manual chambers used in the grassland (left) and the forest (right) to measure Greenhouse Gas Emissions in the soil.

Also multiple rings were installed in the plots to collect greenhouse gas emissions using an automatic portable chamber with soil moisture and temperature sensors. Measurements using the automatic chamber where taken continuously from morning to night to see the daily variability on the soil fluxes linked to soil temperature and soil moisture changes.

Figure 2. Automatic portable chamber used to measure Greenhouse Gas Emissions in the soil.

Measurements of soil volumetric water content and soil temperature where collected at the same sites where gas samples were collected.

Soil samples were collected at each position where manual chambers where installed. Samples were analyzed for soil chemistry and texture. Also, analysis of microbial biomass, nitrate and ammonium were conducted in the dry season (beginning of May), the transition to wet season (June- July) and wet season (middle of September).

Local people and workers from the park where trained to continue collecting the data during the wet season and until the dry season which will begin in December 2018.

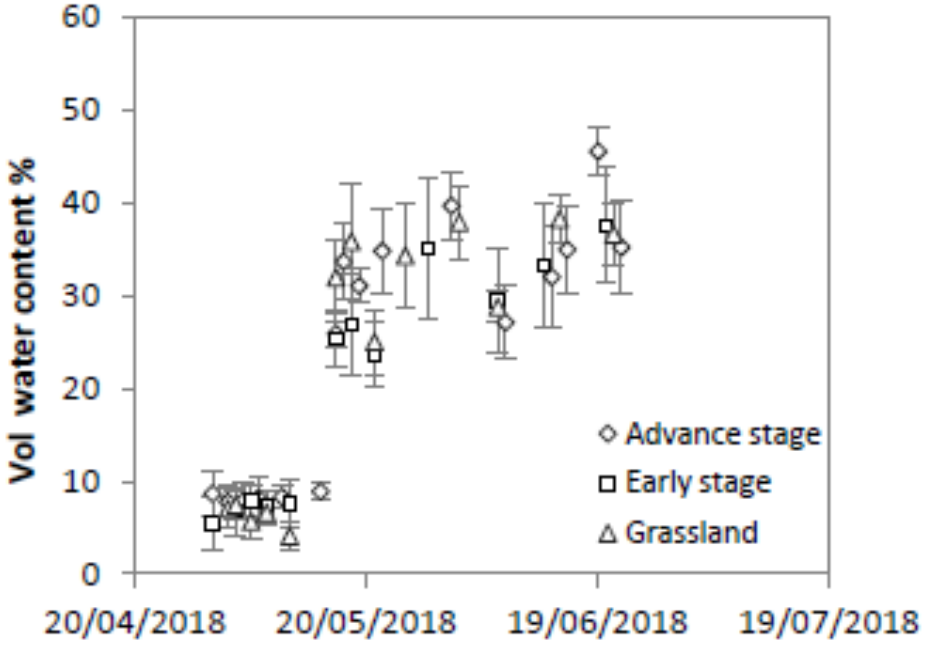


Figure 3. Volumetric water content during the dry season and transitions to wet season in the plots where gas samples were collected.

Figure 4. Assistants of the project collecting gas samples and data from soil sensors.