

## Minor Field Study:

Level: Basic or advanced

Subject: Environmental Science, Soil Science or Forest Science

Credits: 15 or 30 hp

## Indigenous tree species in Ethiopia, and their role for soil properties

### Background

Trees strongly interact with the soil. Factors of importance are e.g. amount of litterfall and root litter, litter quality, stand climate, root distribution etc. The tree species therefore interact with soils in different ways. Some species may have a beneficial soil improving impact in terms of building up soil organic matter, fixing N and improving soil structure relatively to other tree species and land uses. For some plantation species, mainly exotics, there are rather extensive data available whereas data are lacking for a number of species, and in particular indigenous species. The aim with this project is to study tree impact on soil properties for some selected indigenous species in Ethiopia. Churches, monasteries and some other public land in Ethiopia are providing good possibilities for such studies since they since long are refuges for indigenous tree species and soil properties have been affected with a long-term perspective. Moreover, the species occur within a limited area and often with comparable site conditions such as climate and soil texture and therefore provide possibilities to discern the tree impact, without variation caused by other site factors.

### Work plan

Some selected church, monastery and public land areas around the town of Bahir Dar in Ethiopia will be selected for the study. The first task would be to perform a brief inventory of species, and based on that, select some species for the study. Along with a literature review concerning known impact of the selected species the student has to describe the stands and analyse soil conditions, such as nutrient level, soil organic matter content and soil acidity. Finally, interpret results and draw conclusions.

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*Map of Ethiopia with Bahir Dar*



*The Blue Nile & the Laka Tana at Bahir Dar*

