

Groundcover

Relevance for climate change adaptation



Annual rainfall in Tanzania is showing decreasing trends especially for the south of the country and long dry periods of more than five months are being experienced. Coupled with increasing temperatures one of the main concerns in Tanzanian coffee production is expected to be the lack of soil moisture.

Soil consists of soil particles and pore space. Depending on what fills these pore spaces the soil is either dry, moist or wet. If the pore spaces are filled with gases such as oxygen, carbon dioxide and dinitrogen, the soil is very dry. If the pore spaces are filled with water up to maximum capacity, it is wet. After it has rained, the soil will first be wet, but due to gravity some of the water will drain and moist soil will remain.

Thus measures to conserve soil moisture and regulate soil temperature are highly important adaptation options. Otherwise adverse effects such as wilting or even dying of coffee trees are likely to show.

Groundcover (live mulch)

Planting a leguminous groundcover below the coffee trees or between the lines of the coffee trees helps to control erosion, conserves soil moisture, slows down the development of weeds, reduces water and mineral infiltration and regulates soil temperature. Groundcover can serve as an undertree mulch (*see also Adaptation Option Different Levels of Mulch*) and can also be used as livestock feed, for example in the case of Kikuyu grass. It is important to choose a plant that does not enter into fierce competition for nutrients or water with the coffee trees. In Tanzania vetiver or kikuyu grass are recommendable for use as groundcover. Opting for fodder or subsistence crops such as beans also support the diversification of income sources or enhance the producer family's diet.



Planting the groundcover between the coffee rows and ensuring regular slashing of the cover crop is essential to avoid seeding and to prevent the groundcover from growing on or enclosing the coffee trees. Extra fertilizer may be necessary while the groundcover is being set-up. Once it is established the nutrients in the slashings are likely to reduce extra fertilizer requirements.

Local agronomists or the Tanzania Coffee Research Institute (TaCRI) can provide further advice on how to best set up and manage groundcover. Additional information is available at www.coffeandclimate.org.

Version: April 2013 | References: Baker 2013, ICP Tanzania 2008; Pictures: Ambrose 2012, Google Images