



Tropentag, September 16-18, 2015, Berlin, Germany

“Management of land use systems for enhanced food security:
conflicts, controversies and resolutions”

Farmers’ Local Knowledge of Shade Tree Species in Cocoa Agroforestry of Western Ghana

KATJA CHAUVETTE¹, ISSAKA ABDULAI², LAURENCE JASSOGNE³, RICHARD ASARE⁴, PHILIPPE
VAAST⁵, SOPHIE GRAEFE¹

¹Georg-August-Universität Göttingen, Tropical Silviculture and Forest Ecology, Germany

²Georg-August-Universität Göttingen, Crop Production Systems in the Tropics, Germany

³International Institute of Tropical Agriculture (IITA), Uganda

⁴International Institute of Tropical Agriculture (IITA), Ghana

⁵CIRAD Montpellier, France & ICRAF Nairobi, Kenya

Abstract

Cocoa (*Theobroma cocoa* L.) is one of the most important perennial cash crops for the economy of Ghana. Growing as an understory tree, it needs high annual rainfall and temperatures between 18°C to 32°C. Due to its climatic requirements cocoa cultivation is highly vulnerable to climate change, which may cause reduction in production. Predictions for Ghana show that some regions will become less suitable for cocoa cultivation.

The present study assessed farmers’ perception of shade trees species, which are not only an essential part of cocoa farming, but also play a key role for climate change mitigation.

In the region of Asankragua in Western Ghana, 45 cocoa farmers were chosen randomly and interviewed about their general opinion on shade trees. Moreover, they also responded to a detailed questionnaire covering major advantages and disadvantages of shade tree species, including ten pre-selected species as well as the eight most common species on their respective farms.

In total 105 tree species were found to be associated as shade trees on cocoa farms. Both female and male farmers’ generally perceived shade trees as beneficial for cocoa farming. However, some shade tree species were regarded as harmful (e.g. *Cola nitida*), as it is attracting mistletoe amongst other things. Other species were highly appreciated, because they provide fruits or timber as supplementary income (e.g. *Persea americana*, *Petersianthus marcocarpus*) despite having negative impacts, such as causing black pod (*Phytophthora palmivora* and *megakarya*) and harboring rodents. Female cocoa farmers were found to have fewer shade trees on their farms compared to male farmers (on average 21 vs. 38 trees ha⁻¹). Anyhow, a slightly higher percentage of male respondents (67%) than females (53%) wished to increase the number of trees on their farms. This points towards the estimation that female farmers expect additional trees as less beneficial. Further research should make use of the detailed knowledge of farmers, especially regarding attributes and characteristics of uncommon shade tree species. Nevertheless, best practices for cocoa farming, including agroforestry, still need to be promoted, especially among female farmers.

Keywords: Cocoa agroforestry, local knowledge, shade tree species, western Ghana