



Tropentag, September 15-17, 2021, hybrid conference

“Towards shifting paradigms in agriculture
for a healthy and sustainable future”

Timber from Organic Cacao Agroforestry Systems, an Additional Source of Income for Farmers in Bolivia

MATTHIAS BAUMANN¹, LUKAS BRÖNNIMANN², ULF SCHNEIDEWIND³, LAURA ARMENGOT¹,
JOACHIM MILZ³, JOHANNA RÜEGG¹, MONIKA SCHNEIDER¹

¹Research Institute of Organic Agriculture (FiBL), International Cooperation, Switzerland

²Bern University of Applied Sciences (BFH), School of Agricultural, Forest and Food Sciences (HAFL),

³Ecotop, Bolivia

Abstract

Unlike cacao monocultures, cacao agroforestry systems offer a wide range of additional ecosystem services and values to the farmers, such as (i.a. regulating pests and diseases, balancing the understory climate and carbon sequestration) and enable a higher independence from the main crop by generating a potential additional income. To assess the standing timber volume and value, a tree inventory was conducted in 2017 in 16 smallholder cacao agroforestry plots in Alto Beni, Bolivia. Farmers and experts were interviewed to identify the challenges for the timber production in these agroforestry systems. The timber trees on the plots had mainly an age of about 10–20 years (mean 15.5 years) but some trees were also in the range between 2–40 years. A total number of 2'941 trees were counted on all the plots and 20 % of it were *Swietenia macrophylla*, which makes it the most popular timber species. Other very common species were *Myroxylon balsamum* (12 %), *Amburana cearensis* (11 %) and *Centrolobium ochroxylum* (10 %). The average timber tree density was 230 trees ha⁻¹ and the standing timber volume was 46 m³ ha⁻¹. The standing timber per plot had an estimated average value of 12 947 USD ha⁻¹ at the time. Because of lack of professional timber processing, such as timber transportation and sawmill, the loss in timber volume is estimated around 40 %. Additionally, farmers are challenged with trimming and pruning of trees as well as with the legal requirements. With the aim to increase farmer's income from timber trees we suggest the following measures at three levels: (1) improving plantation layout (density, layout, species) and tree management (criteria for selection for cut off trees, trimming and pruning); (2) to support a more professional timber logging and processing to decrease losses and (3) to create service providers such as farmer owned cooperatives for logging, sawing, registration of trees and logging permits.

More information on the project can be found here: <https://systems-comparison.fibl.org>

Keywords: Bolivia, income, organic cocoa-agroforestry, timber, tree inventory