Deutscher Tropentag, October 11-13, 2005, Hohenheim

"The Global Food & Product Chain—
Dynamics, Innovations, Conflicts, Strategies"

Sustainable Management of the Montane Rainforests with Wild Coffee (*Coffea arabica*) at Bonga (SW Ethiopia)

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Abstract

Originally, *Coffea arabica* L. (Rubiaceae) comes from the montane rainforests of Southwest Ethiopia where it is a natural component of the undergrowth. These rainforests, however, are already highly fragmented and are decreasing at a rapid rate because of their conversion into settlements and agricultural land.

Coffee is economically and culturally important to Ethiopia and one of the most treasured beverages worldwide. In the past, wild coffee was mainly traded on the local markets, but recently international companies have shown an increasing interest in coffee harvested from the wild. As the productivity of wild coffee is low, local people manage coffee forests to improve yields.

This study has the objective to assess how much wild coffee can actually be harvested from the forest and to evaluate the influence of wild coffee management on the floristic diversity and structure of the forest.

Vegetation surveys were conducted in four forest fragments in the vicinity of Bonga (SW Ethiopia). In the study plots, all woody (trees, shrubs, lianas) and herbaceous species (herbs, ferns, grasses) were identified and the forest structure was recorded. Before the harvest, the ripe cherries per coffee tree were counted to assess the coffee productivity. The coverage of the forest vegetation was estimated and the intensity of coffee and forest management was noted. The data were analysed statistically with multivariate methods.

Coffee forest management was found to have a positive impact on coffee yields. High management intensities, though, led to a disturbance of the natural forest structure, to a loss of typical forest species and to an increase in the abundance of ruderal and pioneer species. Selling wild coffee on the international market can increase farmers' incomes, but it is crucial to conform to production limits, which guarantee the protection of the floristic composition and the structure of the wild coffee forests.

Keywords: Coffee yield, forest biodiversity, forest structure, conservation

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