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Conservation and Use of Wild *Coffea arabica* Populations in the Montane Rainforests of Ethiopia

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Abstract

Coffea arabica originates from southwest and southeast Ethiopia where wild Arabica coffee grows as a small tree in the understory of the montane rainforests. The wild coffee populations are highly endangered by deforestation due to the demand for agricultural land and settlement areas. This development is alarming as wild coffee is not only consumed by local people, but it is also an important cash crop on local markets as well as the international specialty market. Above all, it is an invaluable genetic resource for national and international coffee breeding in the future.

Floristic and molecular-genetic studies show the high species diversity of the montane rainforest and the high genetic diversity of the wild coffee populations, respectively. Eco-physiological studies indicate site-specific differences in the water-use efficiency and drought-stress tolerance of wild coffee populations. Research on fungal pathogens, such as coffee leaf rust and coffee berry disease, reveals disease-tolerant wild coffee plants. Wild coffee collection by local people is based on traditional use rights rather than on governmental regulations for forest access. The global potential economic value of the Ethiopian coffee-genetic resource for breeding was estimated between US\$ 0.5 and 1.5 billion. For transferring the research findings into practice, the Ethiopian Coffee Forest Forum was established. In collaboration with scientists on the one hand, and policy makers, politicians, the authorities and local people on the other, it develops approaches for the conservation and use of wild *Coffea arabica* in the montane rainforests.

An overview of the research approaches and the possibilities for the implementation of research-based conservation and use concepts for wild coffee in its forest habitat will be given.

Keywords: Biodiversity, deforestation, economic value, genetic diversity, non-governmental organisation, protected area, species diversity