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"Challenges to Organic Farming and Sustainable Land Use in the Tropics and Subtropics"

Enset (*Ensete ventricosum* (Welw.) Cheesm.) in Subsistence Farming Systems in Ethiopia

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Abstract

Enset (*Ensete ventricosum*, family *Musaceae*) is widely distributed in eastern and southern Africa but cultivated only in southern and southwestern Ethiopia as staple food for about 15 million people in mixed subsistence farming systems. The main product is starch extracted from the underneath corm and the leaf sheaths. Moreover, all parts of the plant are used in household, agriculture and traditional medicine. Several landraces are grown for different uses and site requirements. Propagation is done vegetatively. It is cultivated in areas extending from 1700 to 3300 meter altitude with annual average temperatures between 8° C and 22° C and annual precipitation between 900 and 1500 mm. Dry periods lasts from 3 to 8 months.

Farming systems in 10 regions in southwestern Ethiopia are compared with regard to enset cultivation, arable crops, horticultural crops, animal husbandry and climate.

Enset cultivation and processing requires a very high seasonal labour input. In each region very specific techniques in enset cultivation were developed but others were found in all regions. Only slight differences are observed in the diverse use of enset. Few landraces were found in all regions, some in a very limited area and most landraces in a wider area with slow export to neighbouring regions. A mixture of different cereals, pulses, vegetables and fruits is cultivated according to the climatic conditions, some of them within the enset plantation. Animals are kept to provide manure. As a forage crop enset is used only in few regions depending on the availability of further forage crops or grazing areas.

Enset is cultivated in subsistence farming systems with little connection of the producer with the market, low prices, and production mainly for personal use. Due to intense soil tillage enset has a positive impact on soil fertility and micro climate, and shows soil preserving capabilities. Systems with enset are integrated production systems, whose different production lines correspond with each other. These systems respond much better to ecological or structural changes than systems which have only one or very few production lines.

Keywords: Climate, cultivation, cultivation systems, enset, *Ensete ventricosum*, landrace, processing, Southwestern Ethiopia, subsistence farming, sustainable agriculture

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