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“Development on the margin”

## Relevance of Agricultural Research for the Development of Sustainable Land Use Based on Agroforestry Systems in Semi Arid Areas of Bolivia

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### Abstract

In contrast to mono-culture agricultural practice, agroforestry systems combine trees and other crops in integrated production systems for home consumption as well as for sale. There is evidence from both research and field experience, that agroforestry systems can be an economically as well as environmentally sustainable option especially for small-scale farmers to sustain productivity of their enterprise. In Bolivia, agroforestry land use practices are getting more and more emphasis due to the long-term benefits in the conservation of soil and protection of water resources and its capacity to buffer against climate related impacts. To maintain agriculturally productive zones in arid and semi-arid ecological areas in Bolivia is a challenge in the light of negative effects of climate change and increasing population. There is raising interest to test and promote more resilient agricultural production systems than those currently practised.

Over many years, a team of international and national experts of the GIZ (former German Development Service) has supported local initiatives (farmers organisations, NGO) and facilitated the creation of a network to develop economic opportunities for rural areas and to support the implementation and sustainable management of agroforestry systems in tropical areas in Bolivia.

In order to support small farmers in mountainous semi-arid regions to adapt to effects of climate change, a joint learning approach through investigation is called for. This needs to involve people from local communities, farmers' organisations, municipalities, NGO and extension services. Added to that knowledge from outside, the local situation should also be drawn in. Universities, research institutions and development organisations can provide such know how. In rural areas one of the big challenges for small farmers and one of the bottle necks for rule development is the insufficient exchange and flow of information and knowledge. Key elements of successful sustainable land use approaches therefore are joint technology development and joint monitoring that involve local knowledge and scientific expertise.

**Keywords:** Agroforestry, local knowledge, sustainable land use