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Rubber Cultivation in Mainland Southeast Asia: Dimension and Potential Consequences for Crop Production

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Abstract

One of the major natural resources needed by emerging world markets and economies, especially in Asia, is natural rubber (*Hevea brasiliensis*), used for high quality products, mainly for vehicle and airplane tires (68% of world production). At present, more than half (57%) of the global natural rubber is produced in the Greater Mekong Subregion (GMS), a geographical region and an economical association of the Mekong-bordering states (China, Cambodia, Laos, Myanmar, Thailand, and Vietnam). China is projected to use 30% of the world rubber production by 2020. Cultivation of rubber is strongly increasing in the GMS countries and is accompanied by major problems and threats, including a reduction of the natural forest cover and changes in land use, as well as changes in important ecosystem services and functions. Furthermore, rubber monocultures reduce agrobiodiversity of traditional land use systems and affect pollinator services for relevant food crops. Rubber cultivation represents a profitable opportunity for smallholders, but the abandonment of traditional land use systems in favour of a single tree crop implies a higher liability to climatic, disease and economic risks without flexibility for rapid adaptations. The loss of traditional systems is accompanied by a strong reduction in crop diversity, and smallholder rubber producers have meanwhile suffered livelihood vulnerability from excessive rubber cultivation. Rubber plantations in Yunnan have also eroded the capacity of farmers to manage ecologically diverse landscapes and to participate in market networks. Solutions to reduce such effects are addressed in the BMBF-funded project SURUMER (Sustainable rubber cultivation in the Mekong region) with the development of alternative mixed cropping rubber cultivation systems with crop plants generating added value to the farmers and access to new markets. Problem statement, concepts and approaches of the project are presented in detail.

Keywords: China, crop production, ecosystem services, rubber cultivation, Yunnan