

Transitions towards sustainable livelihoods through local innovations in upland-lowland integration

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A transition denotes a long-term change in an encompassing system that serves a basic societal function (Elzen and Wieczorek, 2005). In a transition, both the technical and the social-cultural dimensions of such a system change drastically. Farming communities thriving in the upland and lowland environments towards sustainable livelihoods are managing agricultural resources so as to achieve a better balance between economic, ecological and social performances (Limnirankul *et al.*, 2004). In Northern Thailand, agriculture and livelihood practices undergo trajectories of recent change that have ties to governmental policies, increased levels of private interventions, rural-urban migration, communications and technological innovations, etc. Diversification of household economic activities, as commonly practiced by smallholder farmers, is a multifaceted process that is not only economic in nature but also involves the combination of cultural beliefs and values along the role of social relations and networks in making of economic decisions (Zimmerer, 2007; Velasquez Runk *et al.*, 2007).

In this paper, we discuss our understanding on land use dynamics embedded with biodiverse systems, and resource flows between upland and lowland ecosystems in the Northern Thai context, and innovation and processes that induce and stimulate the occurrence of transitions. The study explores the extent to which local innovation and processes that combine social organizations, technological intervention, and production-marketing integration have led to transitions and land use change, and aims to give insights into the ways organizational social cohesion have on agricultural resource management.

The case study was conducted at Ban Huak, a Thai-Lao trans-boarder village in Phayao

province of Northern Thailand, where physical environment is dominated by contiguous features of mountains and undulating uplands interrupted with lowland paddy fields. The community action research approach was employed to develop common understanding between the research team and the community on integrative utilization of the upland and lowland landscapes, and to generate knowledge with anticipating the possibility of positive intervention.

Ban Huak, which was a resettlement village inhabiting by local residents and former communist insurgents in the early 80s, has led by devoted and visionary leaders since 1980s. Community collectively develops and makes use of village development plans as guidelines for action. Local initiatives are implemented through village meeting, interaction and coordination. The endogenous development initiatives forming partnership with state authorities include construction of water reservoirs, small irrigation schemes, road transportation, and co-management of community forest and protected forests. Other local initiatives managed and owned by community are establishing village saving funds, and resource sharing such as labor exchange systems.

Local innovations that make full use of upland and lowland ecosystems include: arranging diverse land use practices to achieve economic benefits and resource conservation based on collective decision, selecting locally adapted crop species and varieties which have comparative advantage such as hybrid maize, large-seeded groundnut, etc. rehabilitating land use on sloping lands with rubber in response to government's rubber promotion scheme, establishing community rice seed production to meet local need and developing into seed rural

enterprise, adopting green manure crops in rice farming to reduce agro-chemical use, coordinating agricultural production groups, and arranging contract farming with the Laotian partner.

The community has also worked out certain solutions through collective action such as achieving rice sufficiency and marketing the surplus, developing market security by organizing group trading with local collectors and Laotian partner, accessing to individual land use rights and community forest by collaborating with local forest natural park authorities in protecting forest resources, meeting daily food consumption need of local vegetables by establishing homegardens.

The paper concludes that transitions in upland-lowland landscape of Northern Thailand is characterized by a range of production technologies and farming alternatives, infrastructures, patterns of endogenous development, leadership and social relations, and policies, etc. The innovation processes involving a range of actors including village leaders, farmers, group leaders, traders, governmental offices, etc. have provided incremental change towards sustainability. The challenge towards sustainability is for the community to continue maintain the resource flows between upland and lowland environments with conservation measures. The coordination mechanism within community to ensure fair benefit sharing extended to all members especially socially disadvantaged groups is vital for implementing effectively village development plan.

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