

## **Sustainable Agro-resources Management in the Mountainous Region of Mainland Southeast Asia**

### **Preface**

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In recent years sustainable rural development has become a primary objective of the governments of all Southeast Asian countries. In the case of agriculture, which is still the main source of livelihood for most people in the region, a farming system is ecologically sustainable when the rate at which resources are used in production does not exceed the rate at which they are regenerated in the farmers' fields. Sustainability, therefore, is determined by the demands of the production system and the inherent capability of the natural environment to meet these demands.

The natural environment of the mountainous region of mainland Southeast Asia represents an especially severe challenge for sustainable development because of its relatively limited capability to support agricultural production. Much of the land is only marginally suitable for agriculture. Traditional subsistence-oriented farming systems tended to be well-adapted to these marginal conditions and were sustainable as long as human needs remained relatively small. However, systems of agricultural production are changing and the load that they place on agro-resources is in most cases increasing. This change is occurring as the result of both internal factors, such as population growth and the declining land-population ratio, and external factors including greater integration into the global economy and enforcement of government policies regulating use of land and natural resources. Farmers trying to adjust their mode of production to these new circumstances must take into account various considerations including their need for higher economic returns, their desire to maintain cultural and social traditions, and the necessity of protecting the local environment. However, the smaller capacity of the natural environment of the mountainous region to support agricultural production limits their freedom of choice and makes achievement of sustainability more difficult.

The papers in this special issue highlight some of the critical problems of agro-resources management in the mountainous region of Mainland Southeast Asia including Vietnam, Laos and Thailand (Fig. 1). The region consists of high mountains with elevations

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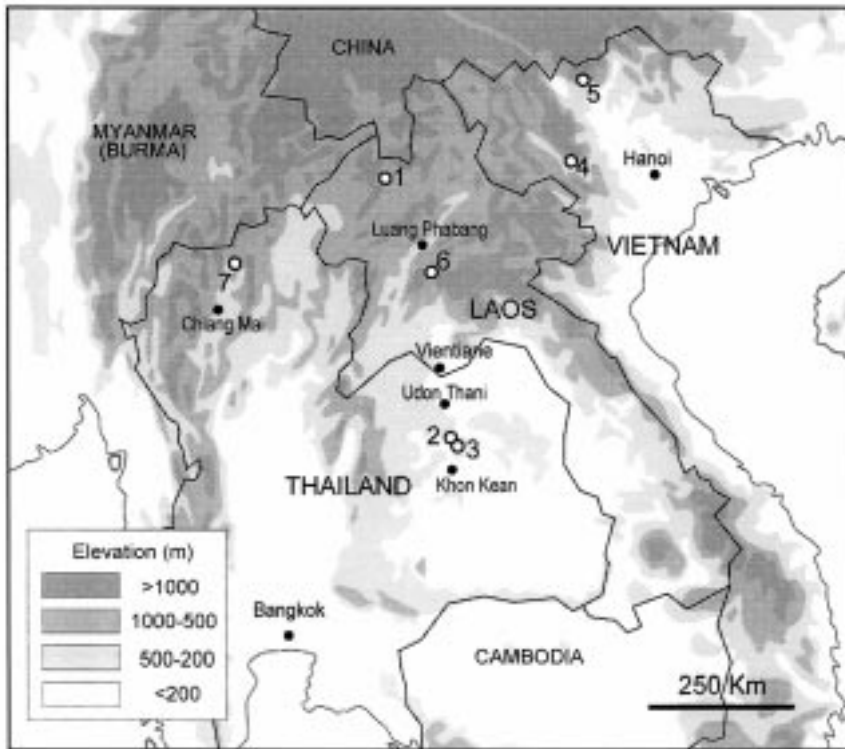


Fig. 1 Location of the Study Sites

1 : Yamada *et al.* 2 : Vityakon *et al.* 3 : Trelo-ges *et al.* 4 : Tran Duc Vien *et al.*  
 5 : Sakurai *et al.* 6 : Watanabe *et al.* 7 : Ongprasert and Prinz

of more than 3,000 meters above mean sea level, narrow valleys, broad intermountain basins, and large plateaus. Many different minority ethnic groups inhabit this region. They have traditionally practiced shifting cultivation on sloplands as well as lowland paddy cultivation. They have evolved their own sophisticated indigenous knowledge of agriculture and nature which has permitted their survival in an environment which places severe constraints on their agricultural activities. Despite intensive development efforts by national governments, augmented by recent inflows of overseas development assistance funding, the mountainous region remains economically and socially marginal as a result of its difficult natural conditions and distinctive ethnic composition.

In the on-going process of national integration and economic development in the mountainous region, harmonization of agricultural production with environmental conservation is a pressing issue. Growing population pressure and increased involvement in the market system are placing natural resources, especially land and forests, under ever greater pressures. Existing forms of subsistence-oriented agriculture can no longer meet people's needs in a sustainable manner. Ensuring food security is an ever more pressing problem. Policies

designed to protect resources may have negative impacts on the food production activity of upland peoples but allowing continued free access to resources can result in irreversible environmental deterioration. Intensification of commercially-oriented agriculture on suitable lands may offer one solution to this development dilemma. Implementing such a development strategy requires clear identification of the potentialities of sloping lands to sustain intensified commercially-oriented agriculture.

In order to explore the possibilities of implementing this strategy we organized an "International Workshop on the Development of Sloping Land Agriculture in Mainland Southeast Asia" that was held at Chiang Mai, Thailand, in March 2002. Nearly 50 scholars from Vietnam, Laos, Thailand, the United States and Japan took part. The aim of this workshop was to reexamine sloping land agriculture in Mainland Southeast Asia based on reports of field studies in Laos, Thailand, and Vietnam. This special issue includes several revised papers from this workshop. In addition we later invited two Thai scholars to contribute papers describing some of the sustainability problems that have occurred as a result of intensification of commercially-oriented agriculture in the Khorat Plateau in Northeastern Thailand where this process has advanced further than in other parts of the mountainous region.

Spatially, the papers in this issue cover Northern Vietnam, Northern Laos, Northern Thailand and Northeastern Thailand. Each area has its own natural environment, ethnic composition, and degree of intrusion of the market economy, and each has been subject to different development policies. Consequently they display wide variation in the types of problems which farmers are facing and the character of their responses to them. Farming systems described in the papers include shifting cultivation as well as wet rice farming, cultivation of dryland cash crops, and agroforestry. Livelihood strategies include subsistence production of food, commercially-oriented growing of cash crops, collection of forest products, and wage labor. Although no purely subsistence farming system is included among the case studies, subsistence-oriented production remains an important aspect of farmer livelihood strategies in all of the cases, even in Northeastern Thailand where integration into the market economy has been underway for more than half a century. We expect that by taking this diversity into account we will deepen our understanding of agro-resources management in the mountainous region of Southeast Asia.