

**96. THE MULTIPLE LAND DEGRADATION EFFECTS OF LAND-USE
INTENSIFICATION IN A STEEP CATCHMENT
THE CASE OF PAKHA SUKCAI, NORTHERN THAILAND**

F. Turkelboom¹, J. Poesen² and G. Trébuil³

¹*ICARDA, P.O. Box 5466, Aleppo, Syria*

²*Physical and Regional Geography Research Group, K.U. Leuven, Celestijnenlaan 200 E, BE-3001
Leuven, Belgium*

³*Systems agronomist, CIRAD, BP 5035, 34032 Montpellier Cedex 1, France*

**Corresponding author: F.Turkelboom@cgiar.org*

The landscape in the hills of Northern Thailand has changed dramatically during the last few decades due to increased population pressure and due to a switch from traditional subsistence farming to more cash-oriented land use. The traditional shifting cultivation with fallow periods of 7 years and longer was gradually replaced by 1-4 year fallow periods. As a result, in high population areas the landscape became dominated by dryland fields, wetland terraces, secondary fallow vegetation and patches of original forest.

The objective of this research was to assess the multiple effects of land-use change in a high populated steepland environment on land degradation processes and farmers' coping strategies. A case study was conducted at Pakha Sukcay village (located in Thailand's northern most Chiang Rai province). Erosion processes were monitored during a period of 3 years, and informal interviews were conducted to elucidate farmers' opinions.

In Pakha Sukcay, land-use was originally dominated by upland rice, maize and some beans. The first change was the construction of paddy fields on suitable locations where there was enough irrigation water. The second change was the cultivation of cash crops (mainly common cabbage), which was made possible by the connection of Pakha to the national road network. These rapid land-use changes in a steepland environment resulted in severe and accelerated land degradation, including tillage erosion, water erosion and landslides.

The recent land-use changes are clearly the driving force of the on-going land degradation processes. In addition, different land degradation processes are linked to each other via feedback loops (e.g. tillage erosion with water erosion, gullies with landslides). Despite intensive promotion by a local NGO, soil conservation is practised at a limited scale and there is limited appetite for vegetation buffer strips. The more common response of farmers on resource degradation is to switch to more sustainable and economic promising fruit orchards and higher dependence to off-farm wage labour, which in the long-run will have favourable effects on the status of the land. This study indicates the necessity to look at steepland land degradation processes in a holistic way.