Editorial
Land Degradation and Poverty

STEFFANIE SCOTT[1]* and ARTHUR CONACHER[2]
[1]*Department of Geography, Faculty of Environmental Studies, University of Waterloo, 200 University Avenue West, Waterloo, Ontario, N2J 1V5 Canada.*
[2]*School of Earth and Geographical Sciences, University of Western Australia, 35 Stirling Highway, Crawley, WA 6009, Australia.*
**Guest Editor and corresponding author. Email: sdscott@fesmail.uwaterloo.ca*

Land Degradation and Poverty was the theme of a ten-day study tour and workshop held in February 2006 in north central Vietnam's Nghe An Province, about 300 km south of Hanoi. The study tour was organised jointly by the International Geographical Union's Commission on Land Degradation (COMLAND), Vinh University, and the Vietnam Academy of Social Sciences' Institute for Environment and Sustainable Development. Bringing together 14 foreign participants from Australia, South Africa, Israel, Spain, the UK, Iceland, Canada, the United States, and Japan, plus a number of Vietnamese participants from Hanoi and Nghe An, the event led participants through areas of upland forests and tea-growing to lowland rice paddies and industrial crops, and to sandy coastal and shrimp-raising areas, in order to examine the interfaces of poverty and land degradation. The connections between environmental and livelihood vulnerability were highlighted, for example, by the extensive conversion of rice paddies and coastal mangroves to ponds for shrimp aquaculture, which often leads to water and soil contamination.

Some of the impressions from the study tour have relevance beyond Vietnam. Top-down decision-making by officials and State extension services too often displaces environmental priorities in favour of maximising agricultural production. Farmers' ability to decide what to grow is still constrained in some areas, and their participation in agricultural research is limited. Despite considerable international research attention to these concerns, there has yet to be a clear shift in practice away from a modernist and expert-driven model towards an approach which facilitates communication and knowledge sharing. Too often, female and male farmers are alienated from the work of agricultural researchers, planners and ecologists, who continue to perceive farmers as ignorant or backwards.

The promotion of modern seed varieties, with their associated chemical inputs – which are often misapplied – has perpetuated soil and water contamination in many parts of the world. This trend has often been accompanied by deforestation and expanded cultivation on hillslopes and other fragile areas. Deforestation in turn has exacerbated floods and droughts. Soil fertility is further depleted by growing monocultures of cash crops. Overuse of agri-chemicals has affected the water supply and food safety, and threatened the health of farmers and consumers. The intensification of land use has been linked to growing income inequalities, persistent poverty, landlessness, and urban migration. None of these trends is conducive to long-term poverty reduction or appropriate land stewardship.

Local-level land-use planning needs to involve more input from, and communication with, local residents, as opposed to relying on blueprint models and a large-scale production orientation. Zoning for appropriate land use, for example, should not permit a cassava processing factory to be situated in the middle of a rice paddy. Environmental impact assessments for land-use planning and better risk management in economic planning would help to ameliorate local impacts. More consideration needs to be given to rotations, mulching and cover crops. The fact that soil nutrient depletion and soil acidification are often more important than erosion should encourage researchers to broaden conventional perceptions of land degradation.

Geographical Research • March 2008 • 46(1):1–3
doi: 10.1111/j.1745-5871.2007.00486.x

Plantation farming often promotes monoculture production, and State farms and State forestry enterprises tend to plant fast-growing trees such as eucalypts instead of less-degrading local species. To address these problems, local planners need to be made aware of best practices in land-use planning from elsewhere. Non-farm income-generating opportunities are increasingly important to alleviate pressure on degraded lands. In addition to seeking a better balance between environmental and economic considerations, social and human health issues demand more attention. These include hygiene, waste disposal, use of fuel (for example, burning wood) for cooking, and water and air pollution (for example, from brick works).

Three of the papers that address the topic of land degradation and poverty in this special issue of *Geographical Research* (Nguyen Dai Trung *et al*., Rowntree and Fox, and Konstadakopulos) were presented at a workshop as part of the study tour mentioned above. Other contributions are from those who were unable to attend or were solicited subsequently. Held at Vinh University (in Vinh City, the capital of Nghe An Province), the workshop provided a venue for Vietnamese scholars as well as provincial government representatives to share their knowledge and to profile local conditions in a poor province of Vietnam's north central coast. It was also helpful in allowing foreign scholars to offer suggestions to local scholars for further research in the area. Below we outline some of the highlights of the papers included in this special issue.

The paper by Nguyen Van De *et al*. reveals the impacts of migration and intensification of farming practices on soil erosion and nutrient loss in southern Vietnam. The data were used to map land cover changes over time and develop methods for improved land management, in consideration of the agricultural livelihoods of residents. In a related study, Dao Kim Nguyen Thuy Binh *et al*. emphasise the links between the economic imperatives of migrant farmers, their local knowledge with respect to soil management, and the outcomes in terms of land degradation. These dynamics are particularly striking in a country such as Vietnam, which has experienced such dramatic institutional and policy changes in the past few decades. As highlighted by these authors, 'the land regime that has evolved since [the 1980s] has elements of free market, socialist, community and especially family-farming features'. The paper by Dao Kim Nguyen Thuy Binh *et al*. provides further evidence of the context-specific nature of 'local knowledge' and the inappropriate practices that can result from migrant farmers settling in a different ecological context. Both this and Nguyen Van De *et al*.'s paper emphasise the key role of communication and collaboration between local residents (in this case, farmers) and researchers to better understand people's land-use practices and livelihood priorities, and to develop strategies for curbing processes of land degradation.

The analysis by Nguyen Dai Trung *et al*. also underscores the need for better collaboration, and participatory and multidisciplinary research, for sustainable land use in diverse ecosystems. Noting that past studies of indigenous knowledge have tended to overlook knowledge of soils, the authors document the indigenous soil classification system of Muong farmers in a karstic mountainous area of northern Vietnam. These data are compared with scientific analyses of soil samples, confirming the validity of local people's assessments of soil types and soil properties. The paper is nicely 'illustrated' by the inclusion of local expressions that reflect people's knowledge about soils. For example, 'if the water level reaches the belly of the buffaloes, this is boggy soil suitable for paddy rice two seasons'.

In the spirit of active learning, Rowntree and Fox evaluate two active learning techniques as tools for exploring the relationships between land degradation and poverty through an evaluation of participants' experiences in southern Africa. They make extensive use of quotations from the undergraduate student participants to interpret students' reflections on the outcomes of their decision-making in the face of various economic and biophysical constraints. Such experiential learning is expected to better prepare development professionals for the complex realities and priorities of farmers and other stakeholders shaping development-environment interactions.

A key source of poverty reduction in Vietnam's Red River Delta in the past two decades has been the expansion of village-based handicraft clusters producing ceramics, silks and other goods. Konstadakopulos examines the environmental impacts of, and constraints for, this booming economic activity. He reviews the role of technology adoption to alleviate the air, water and soil-related contamination resulting from the activities of handicraft clusters, and outlines existing and potential changes in the regulatory framework and institutional environment for such production.

Le Hue and Scott document another booming economic sector in Vietnam – aquaculture – and the consequences that the environmental

degradation associated with changes in mangrove forest cover and aquaculture disease have had for local livelihoods and incomes. They present a detailed case study from central Vietnam, outlining the role of various actors – local government, farmers and fishers, migrants, and a State-owned enterprise – in the development of this industry, and the changing access to and control over mangrove resources and shrimp ponds in different periods. The case underscores the uneven benefits of Vietnam's economic reforms, and the uneven impacts of natural resource degradation on different socioeconomic groups.

In the final contribution to this special issue, Fisher and Hirsch offer a commentary that reinterprets forest livelihoods to better account for agrarian-forest interactions in debates over the connections between poverty and deforestation. Drawing on experiences in Thailand, they advocate more careful consideration of agrarian change in explaining transformations in the natural resource base.

Globally, much degraded agricultural land continues to be farmed, albeit with much lower than optimum fertility and productivity. Poor quality soils require careful management to maintain production and avoid problems of soil erosion, compaction, water-logging and contamination of cropland, and nutrient runoff and leaching. Degradation can stem from water and wind erosion, chemical degradation, and physical degradation. These problems are often the outcome of poorly planned economic development strategies, and have important implications for the livelihoods of poor people, and for all of human society, to the extent that we collectively rely on the natural resource base for our well-being and for food security. This underscores the interconnections between biophysical and socioeconomic dynamics, and the challenges of environmental governance to establish new networks, infrastructures, and institutional arrangements to meet a range of objectives. Change and innovation are critical elements for constructing more sustainable paths for our collective future. We hope that the collection of papers presented here will offer some insights on how these complex dynamics can best be understood and addressed.