A socio-economic analysis of rice production systems in the uplands of northern Vietnam

Sushil Pandey¹, Dang Van Minh²

¹Social Sciences Division, International Rice Research Institute, P.O. Box 933, Manila, Philippines
²College of Agriculture and Forestry, Thai Nguyen University, Thai Nguyen City, Vietnam

Abstract

Production of upland rice under shifting cultivation system is an important economic activity in the mountainous areas of northern Vietnam. A comparative study of two districts with differential market access and population pressure was conducted to highlight the effect of these variables on upland rice systems in northern Vietnam. Farmers in the district with a greater population pressure have a shorter cropping and a shorter fallowing cycle than in the district with lower population pressure. Farmers reported a high incidence of food shortage in both districts. Income from livestock and wages are important for food purchases, especially in the district with a better access to market. Even in these upland districts, access to lowland fields is a critical determinant of food security. © 1998 Elsevier Science B.V. All rights reserved.

Keywords: Upland rice; Slash-and-burn; Food security; Market access; Population pressure; Northern Vietnam

1. Introduction

Upland rice is a major food crop in the humid areas of the forest zone of Vietnam. In 1991, the areas under upland rice was 0.5 million ha comprising eight percent of the total areas planted to rice in Vietnam. Upland rice is a major subsistence crop of about 52 ethnic minority groups in Vietnam. Most upland rice farmers practice shifting cultivation based on slash-and-burn. The actual areas under upland rice is much larger because a part of the land remains as fallow. The broader characteristics of the upland production systems in Vietnam are discussed elsewhere (Hong et al., 1996; Sam, 1996, Cuc, 1996).

Upland systems in Vietnam as well as in other countries of south-east Asia are undergoing major changes with an increase in population pressure and improved market access (Pandey, 1996). When population pressure is low and market access is poor, an extensive land use strategy is generally adopted. Shifting cultivation based on slash-and-burn and long fallow (fallow period of more than 20 years) is such a strategy. Traditional slash-and-burn systems are considered to be sustainable as the land is fallowed for a long period after 1 or 2 years of cropping. The fallow period helps restore the productivity of land. With the closure of the land frontier in recent years and continuing increase in population pressure, farmers are forced to intensify land use by reducing the fallow period. As a result, crop yields have declined providing incentives for further encroachment of forested areas. A cycle of intensified land use and resource degradation has thus ensued. Although shifting cultivation may be an efficient system of land use under low population density, the practice is unlikely to be sustainable in the face of increased population pressure. The long-term effect of population pressure on land use intensity has been well documented (Boserup, 1965, 1981; Harwood, 1996; Giampietro, 1997).

Market access is another major determinant of land use pattern. Limited access to market restricts interaction between upland and lowland economies in two ways. Firstly, upland farmers cannot access food from the lowland because of high costs of transport. This forces upland farmers to grow subsistence crops even though they may have a comparative advantage in producing cash crops. Secondly, high transportation costs also limit opportunities for enhancing income by growing cash crops which are in demand in the lowlands. With improved market access, upland farmers are able to generate income from the production and sale of cash crops such as vegetables and fruits which is then used for purchasing food crops from the lowland. In both the Philippines and Thailand, the area under upland rice declined dramatically over the last three decades as farmers switched to the production of annual and perennial cash crops to exploit the opportunity provided by improved market access (Pandey, 1996). The effects of such changes in land use on food security and environmental degradation depend on the policy and institutional arrangements that are in place. The objective in this paper is to document the nature of the upland rice production system in the mountainous areas of northern Vietnam as well as to assess the nature of changes occurring in these systems in response to increased population pressure and improved access to market. Technological, policy and institutional interventions to improve the sustainability of upland systems are likely to be successful if they are based on good understanding of the structure of the upland economy and the likely pattern of its change.