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The Potential of Research on Gradients to Explain the Pattern of Differences in Regional Socio-Economic Development — An Example from the Mai Son District, Northern Vietnam

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Abstract

The spatial diversity of natural conditions, along with ethnic and cultural distinctions within the rural population, contributes to the diversity of farming systems and determines differences in economic development. Particularly in mountainous regions, changes in conditions may be described along transects by models of altitudinal, socio-economic gradients. The potentials of such spatial models for the generalization of findings about successions in development conditions depend on the significance of relations between physical factors of the environment and the social and economic situation of people in the respective locations. Results of a research programme on the interaction between social and elevation gradients in a mountainous district of Northern Vietnam indicated the value of the modelling approach for a spatial gradation for development. Most types of family resources tended to become increasingly disadvantageous along the gradient from the valley, where access to urban structures is provided, up to the remote mountainous areas. Examples for this general tendency are the education level of family members, which decreases along the gradient while family size increases, and land resources, which tend to get larger along this line but show a decrease in soil quality and nutrients. Simultaneously, ethnic compositions change from a majority of Kinh people to a predominance of descendants from the Black Thai and H'mong tribes. The differentiation of the resources combined with the differentiation of infrastructure and services led to respective differences in the economic success of farms and families. Family income, for example, decreased from annually 1536 US\$ for families in the valley (Bac Quang village) down to 534 US\$ for families in high mountainous areas (Pa Dong village). Assessment of further criteria of living standard showed a similar, significant linkage between ascending terrain and descending economic situation of the population. The results support the assumption that altitudinal gradients have a high explanatory value for trends in economic development of mountainous areas in tropical and subtropical countries. Incorporating gradients in spatial analyses and planning of resource use and socio-economic development has thus the potential to reduce the required input for data collection and to improve the prediction of probable impacts from changes.

Keywords: Living standard, socio-altitudinal gradients, spatial modelling, Vietnam