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"Filling gaps and removing traps
for sustainable resource management"

The Spatial and Land-Use Dimension of Food Systems in Transition: The Case of Northern Vietnam

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Abstract

In Vietnam, production choices on crop cultivation, fertiliser use, pesticide use and water use affect the landscape and the availability of food. Choices on pesticide use also affect production and the safety of food and the health of people in the region. Earlier studies in Vietnam have shown that pesticides end up in surface water which is then used for drinking water, irrigation or in fish tanks. In fact, pesticide use also affect landscape characteristics. Hence we explore the interactions between food production, food consumption and the landscape. The research question was how do landscape elements, incorporating environmental aspects affecting health, affect food consumption. We estimated the relationship between several household level characteristics, as well as spatial features of the locations where these households reside, on the consumption value and caloric value of six food groups: cereals (including rice), fruit and vegetables, meat, fish and seafood, eggs and milk, and food away from home. With the Vietnam Household Living Standard Survey (VHLSS) for 2013/14, we analysed the diets for different groups of consumers. Spatial information on the share of surface water and the share of urban area was measured at district level and added to the VHLSS data. Households in districts with higher shares of surface water were estimated to have a higher share of fish consumption and a lower share of meat consumption. From an environmental and health perspective, when surface water would be contaminated, households in water-rich areas thus would have a higher probability of being affected by pesticides due to higher fish consumption. In districts with higher shares of urban areas, households consumed higher shares of fruit and vegetables as well as fish. These households consumed lower shares of meat and cereals. From an environmental and health perspective, households in these areas are more prone to health hazards related to higher levels of pollution from water though higher levels of fish consumption and through consumption of irrigation fruit and vegetable.

Keywords: Environmental pollution, food consumption, landscape indicators, northern Vietnam

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