

# Agricultural Productivity Growth and Improvement of Household Food Security in Nepal

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**Introduction:** The discussion concerning the relationship between agricultural growth and poverty alleviation is not new. It remains, however, difficult to establish a typical poverty reduction strategy induced by agricultural development because the factor or the path leading to poverty alleviation depends on the condition where it applies. Nepal is one of the poorest countries in the world and ranked the 157th place on the Human Development Index in 2013. Nepal has the high share of the labor force in agriculture as much as 80% in 2001, although the share of GDP in agriculture is about 40%. This implies that agriculture is still the key economic activity and a source of basic income for the majority of the population in Nepal.

**Aim:** This paper has two aims. First, we identify the Total Factor Productivity (TFP) of agriculture in Nepal as an index of agricultural productivity. Second, we quantify agricultural productivity impact on the household food security as proxy variable of the living standard by environmental zones.

**Methods:** We use the panel datasets of Nepal Living Standards Survey (NLSS) in 1995/96 and 2003/04. Using the panel data enable us to rid of heterogeneity such as consumption pattern characterized by households, land condition in agricultural production, and access to markets for buying inputs and selling outputs commodity. First, we calculate TFP which is the part of output not explained by the amount of inputs used in production. The Fisher ideal TFP index is expressed as the ratio of the aggregate output to the aggregate input. Second, we would clarify how had the changed portion of the food expenditure been effected by each revenue generated through in agriculture, in non-agriculture and wage-employed jobs, and remittance. Then, we try to clarify the input factor for agricultural output changed by using OLS.

**Results and Discussion:** We find following four points in this paper. First, the TFP of agriculture in Nepal had been increasing from 1995 to 2003, although previous surveys have reported the stagnation of agricultural productivity caused by land fragmentation. Second, increases of agricultural output contributed increases of food expenditure per person. However, the degree of impact on food security varies depending on environmental zones. Third, people with lower food consumption level are more positively impacted from enhancement of agricultural production. Fourth, the factor of enhancing agricultural production is land and fertilizer. We can get a sense of decreasing of land holding area. These observations may appear severity of population pressure accelerating land segmentation or scale-down of land holding. Land accumulation is expected to enhance agricultural production. Input fertilizer is significant in the Hill ecological belt or “eastward” regions where markets are relatively well developed. The impact of fertilizer input is the largest among other input goods in the case of significance. It is expected to improve market access and promote proper utilization of fertilizer.

**Key Words:** TFP, food security, agricultural development

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