



## The effect of input-trade liberalization on farm and non-farm labour participation in rural Vietnam

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In 2012, with support of the UK Department for international Development (DfID or UK Aid) and the International Development Research Centre (IDRC) of Canada, PEP launched a new program to support and build capacities in “Policy Analyses on Growth and Employment” (PAGE) in developing countries.

This brief summarizes the main features and outcomes of one of the projects supported under the 2<sup>nd</sup> round of the PAGE initiative (2014-2015).

*In this study, a team of local researchers in Vietnam investigates the impact of trade liberalization policy on the farm-nonfarm balance of labour in rural Vietnam. Through their analysis of data from the “Vietnam Living Standards Surveys”, the researchers find evidence that the increased use of imported fertilizers – due to trade liberalization – has a direct impact on labour reallocation, including increased participation in agriculture and reduced participation in nonfarm activities. The team uses these findings to outline several recommendations for policy to improve productivity and remain competitive in the international markets, as Vietnam joins the Trans-Pacific Partnership free trade agreement,*

### Trade liberalization and rural labour in Vietnam

The Vietnamese agricultural sector is braced for change as the country enters into the Trans-Pacific Partnership (TPP) free trade agreement. With more than 70% of the population living in rural areas and depending on agriculture for their livelihoods, the impact of a free trade agreement will certainly be felt across country.

The TPP is the next step in Vietnam’s economic reforms, which began with the Doi Moi in the late 1980s, and moved the country from a planned economy to a “socialist-oriented market economy”. These reforms included dividing up what were cooperative lands, allocating the lands to individual households, and relaxing many of the trade restrictions on a range of products, including chemical fertilizers.

Studies show that importing intermediate goods, such as agricultural fertilizer, is beneficial to a country’s economy. This certainly applies in the case of Vietnam, where the 23% drop in fertilizer prices between 1993 and 1998 is attributed to the trade liberalization policies in place during this period (Niimi et al., 2004. Benjamin and Brandt, 2002). As a consequence, the volume of chemical fertilizer imported to Vietnam increased by 27% between 1994 and 1998 (Niimi et al., 2004).



However, previous studies have provided mixed results regarding the relationship between the agricultural and non-agricultural sectors, and little is known about what impact trade liberalization policies have on rural households in terms of employment and productivity. A team of researchers therefore chose to examine the transformations in the agricultural sector to assess whether these changes help or hinder development in both the agricultural and nonfarm sectors of rural Vietnam, as well as how labour is divided between the two sectors.

As fertilizer represents the largest component of farm input expenses (Minot and Goletti, 1998), affecting both agricultural production and household welfare, it provides an excellent variable by which to study the effect of imported intermediate goods on the agricultural sector in rural Vietnam.

## Data and methodology

The panel data used in this study comes from the 1993 and 1998 Vietnam Living Standards Surveys (VLSSs). The decision to use data from these years is due to the unique social and economic situation in Vietnam during the 1990s, which provided two exogenous variables: the price of chemical fertiliser and the land allocation to individual households. This allowed the research team to provide new empirical evidence and to analyze the impact of chemical fertilizers on farm and nonfarm participation.

The VLSSs are nationally representative and provide information at the household and commune levels, including infrastructure and commodity (including food, services, and fertilizer) price information. The research team used data from 3,258 rural households (i.e. all those designated as “rural” in both 1993 and 1998), which they analyzed through mathematical modelling. A regression model was used to estimate the impact of the trade liberalization of chemical fertilizers on nonfarm and farm participation. While testing the results, the researchers undertook two additional investigations to look at the relationship between the volume of chemical fertilizer and other agricultural performances, and the effect of the volume of chemical fertilizers by initial (1993) status and land size.

**Table 1:** Distribution of rural households participating in farm and nonfarm sectors (in %)

|             | Rural households engaged only in farm activities | Rural households engaged only in nonfarm activities | Rural households engaged in both farm and nonfarm activities |
|-------------|--|---|--|
| <b>1993</b> | 66.33  | 12.73   | 20.94  |
| <b>1998</b> | 57.25  | 17.93   | 24.82  |

**Source:** Authors' calculations

## Key findings

Overall, the analysis shows that trade liberalization policies, indicated by the increased use of chemical fertilizers, have significant labour reallocation effects in rural Vietnam. This is highlighted in the main finding that this specific policy measure (i.e. trade liberalization of fertilizers) encourages increased labour (number of people and hours) in the agricultural sector, but a decrease in the non-agricultural sector.

Firstly, the team estimated that the percentage of rural households participating only in farm activities decreased over time, from 66.33% in 1993 to 57.25% in 1998. This is attributed to increased urbanization and industrialization.

However, the percentage of rural households engaged in both farm and nonfarm activities increased during the same period, from 20.94% in 1993 to 24.82% in 1998 (see Table 1), suggesting that rural households are increasingly diversifying their revenue streams.

The researchers found that an increased volume of chemical fertilizers leads to increased involvement of rural households in agriculture.

More specifically, a 10% increase in the volume of chemical fertilizers decreases by 0.021 the number of household members participating in nonfarm activities and reduces the number of nonfarm working hours per week by 1.08.

This demonstrates the transition from nonfarm to farm labour as increased demand for chemical fertilizers (due to the drop in price) creates new incentives for rural households to move into the agricultural sector, to stay in the sector, or to increase their engagement.

Increased use of chemical fertilizers also increases the use of organic fertilizers (a 10% increase in volume of chemical fertilizer correlates with a 5.24% increase in volume of organic fertilizers). The researchers attribute this to the farmers' need to increase agricultural productivity in the short term, with chemical fertilizers, and to increase the long-term fertility of the land using organic fertilizers, counteracting the soil quality exhaustion caused by chemical fertilizers.

The size of the cultivated area and the number of crops grown using chemical fertilizers also both

increase, as do expenses for on-farm hired labour although the ratio of hired labour to total farm expenses decreased. These changes are attributed to increased production and increased productivity.

The price of chemical fertilizers has a greater effect on farm participation in households that moved into agriculture between 1993 and 1998 than in those that were already farming in 1993. This finding suggests that newcomers to farming are more flexible in terms of production and that a greater use of chemical fertilizers pushes

newcomer households to engage to a greater extent in farm activities.

The liberalization of chemical fertilizers provides more on-farm labour opportunities for smallholders than it does for owners of larger farms, because smallholders tend to have a surplus of on-farm family labour. As such, the increased volume of chemical fertilizers has a greater impact on farm participation for households with small landholdings than it does for those with large landholdings.

## Implications for policy

Joining the Trans-Pacific Strategic Economic Partnership Agreement (TPP) means that Vietnam will have to reduce tariffs on imports; and some of these changes are expected to affect the rural sector significantly. With about 70% of the population still living in rural areas, and thus relying on agricultural activities, the potential effects of trade liberalization on labour reallocation should be considered carefully.

While many studies have looked at the relationship between agricultural and non-agricultural sectors, with various and often differing results, this one focuses on a specific “price policy” option, i.e. trade liberalization of chemical fertilizers. Indeed, household data collected in Vietnam in the 1990s – and specifically the exogenous changes in the price of fertilizers which occurred in Vietnam between 1993 and 1998 – provide a unique circumstance to assess the effect of trade liberalization on labour market reallocation, i.e. farm and nonfarm participation.

Twenty years later, the analysis of this data – which shows that a higher volume of chemical fertilisers leads to lower nonfarm participation and higher involvement of rural households in the farm sector – can provide useful evidence to inform and assist in current trade policy decisions.



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Find out more about the research methods and findings through the full [working paper 2016-11](#)