

Extended Abstract

Paper/Poster Title	Better together? The impact of VietGAP and PGS certification on farmers' income: Evidence from panel data in Vietnam
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Abstract	<i>200 words max</i>
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Food safety in domestic value chains in low- and middle-income countries, which is often associated with the misuse of synthetic pesticides, is a growing concern. Third-party certification schemes that may be used to tackle the issue are often costly and complex, and therefore tend to exclude poor small-scale farmers and consumers. In contrast, participatory guarantee systems (PGS) have been promoted as an inclusive certification mechanism in local value chains. However, evidence on the implications of PGS is scarce. In this study, we take a case-study approach and investigate two domestic certification schemes in Vietnam: VietGAP, a simplified version of GlobalGAP certified by a third-party organisation, and PGS, based on agro-ecological requirements controlled internally. We provide a quantitative impact evaluation of both certification schemes on farmers' income and pesticide use. We use micro-economic data from a two-round panel survey conducted in 2018 and 2022 among 300 vegetable farmers in northern-Vietnam. Using fixed and random effects models, we find that certification in general and VietGAP certification alone are linked to an increase in farmers' income from vegetables, while PGS certification alone is not. Synthetic pesticide quantities applied by farmers on vegetables does not seem to be significantly impacted by either certification scheme.

Keywords	Certification, participatory guarantee systems, farmers' income, synthetic pesticides, panel data, Vietnam
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JEL Code	Micro Analysis of Farm Firms, Farm Households, and Farm Input Markets Q12
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Introduction	<i>100 – 250 words</i>
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Assuring the transfer of reliable information on food safety in local value chains in low- and middle-income countries represents a daunting challenge. In Vietnam, where consumers and policy makers are increasingly concerned about domestic food safety, two certification schemes have recently been put in place: VietGAP, a less demanding version of GlobalGAP certified by a third-party organisation, and participatory guarantee systems (PGS), based on agro-ecological standards that are jointly defined and controlled by intergroups of farmers, traders, consumers, and local institutions. While both schemes impose restrictions on the use of synthetic pesticides, certification through PGS is generally believed to be more inclusive and feasible for small-scale farmers than third-party certification. Although PGS are actively promoted by NGOs and other development institutions in several countries, the few scientific studies on PGS remain essentially descriptive. Moreover, to date, the relation between third-party and PGS certification, and how they are embedded in the value chain, has not been investigated. We contribute to the literature by providing a quantitative evaluation of the impact of VietGAP and PGS certification on farmers' income and pesticide use, separately and combined. Furthermore,

we examine value chain aspects that may influence how and to what extent farmers may benefit from them. Our results are of direct relevance to the different stakeholders promoting VietGAP and PGS in Vietnam, but are also applicable to many other low- and middle-income countries facing similar challenges in building inclusive and safe local food value chains.

Methodology

100 – 250 words

We perform an econometric analysis of micro-economic data. We use panel data from a survey conducted among 300 vegetable farmers implemented in 2018 and 2022 in three peri-urban districts of Hanoi, in northern Vietnam. The survey questionnaire collected extensive data on farm-household characteristics, income sources, vegetable production and marketing, synthetic pesticide use, cooperative membership, and participation in certification schemes. In the baseline of 2018, some sampled farmers were already VietGAP certified. On the contrary, none of the farmers were PGS-certified in 2018, while in 2022, a share of them had become PGS-certified. Thus, these panel data represent a unique case of *ex ante* and *ex post* treatment observations. To estimate the impact of VietGAP and PGS certification (separately and combined) on farmers' income, we apply fixed and random effects models. To unravel the mechanisms behind the impact, we investigate production costs, output prices, sales volumes and marketing channels used by certified and non-certified farmers. Furthermore, we collected precise information on the quantity of pesticides used by farmers in the second survey round. To analyse these data and assess whether certification is associated with lower synthetic pesticide use, we estimate cross-sectional models. Finally, we use additional qualitative data from semi-structured interviews with farmers and cooperative leaders before and after the surveys, as well as observations along the value chain, to better interpret our results.

Results

100 – 250 words

Preliminary results indicate that the share of certified vegetable farmers in our sample has increased between 2018 and 2022 (from 15 to 24%), mostly through VietGAP certification. Certification through PGS remains uncommon and is most often obtained in combination with VietGAP certification. Our econometric estimations suggest that certification in general (either through VietGAP and/or PGS) and VietGAP certification alone, are associated with an increase in farmers' income from vegetable production and marketing. We do not find such a significant impact associated with PGS certification alone. The impact of the two analysed certification schemes on farmers' total income seems insignificant. Regarding synthetic pesticide quantities applied by farmers on vegetables, we do not find proof that VietGAP or PGS certification has a significant impact on these.

Discussion and Conclusion

100 – 250 words

The fact that certification in general and through VietGAP alone seems to have a positive impact on farmers' income from vegetable production and marketing, but not on total household income is most probably due to the average low share of income from vegetables in total household income. Not finding a significant impact of PGS certification on farmers' income (from vegetables and total income) may be due to the very limited size of our treated sample with this scheme (n=25). Still, this raises the question of why so few farmers have achieved PGS certification, even though the scheme has been promoted and supported by many local stakeholders. Finally, concerning synthetic pesticide quantities used by farmers depending on their certification status, our results are slightly surprising. Yet, other studies have similarly shown that certification does not always lead to a decrease in synthetic input use.

