



# SOCIOECONOMIC AND ECOLOGICAL BENEFITS: Evidence from Participatory Guarantee Systems organic vegetable production in Viet Nam and policy implications



## INTRODUCTION

The project (see Box 1) found that vegetable production within organic Participatory Guarantee Systems (PGS, see Box 2) can be more socio-economically viable with better ecological outcomes compared to conventional production. These results can inform future private and public initiatives aimed at promoting PGS organic vegetables based on agroecological principles in the peri-urban areas of Hanoi and other provinces in Viet Nam (Grovermann et al., 2024).

Based on the research findings, the following key policy messages were identified:

- ▶ Upscaling of organic vegetable production, based on agroecological principles, is slowed by high labour requirements and productivity gaps.
- ▶ PGS uptake and innovation require technical support to address labour and productivity challenges and optimize market linkages.
- ▶ Further evidence on policy effectiveness is required to incentivize uptake.

## POLICY RECOMMENDATIONS

Addressing food safety and environmental integrity in vegetable farming systems within Viet Nam and beyond requires a comprehensive approach that considers challenges throughout the entire value chain. This complex task demands commitment, coordination, and investment from both private and public actors alike. We propose the following recommendations for greener policies that can help governments protect the environment and provide populations with safe vegetables.

### RECOMMENDATION #1

**Strengthening local capacity on PGS-certified organic production (based on agroecological principles)**

- ▶ Organic production and agroecological farming are adopted to varying degrees in different local settings within Viet Nam, especially during the transition process from monocultures to more diversified and circular systems. Inclusive local involvement and creative participation in decisions about the transition to eco-farming are essential for the success of any agricultural greening scheme.
- ▶ Higher frequency and quality technical training should be provided by government and stakeholders to farmers. Training courses should cover integration of complementary vegetable growing techniques to mitigate the effects of weed growth, improve soil health and reduce pest infestations. Farmers would benefit from learning how to set-up local nurseries for transplanting or applying mulching, intercropping, and crop rotation effectively within their organic farming systems. These practices work synergistically to create a more resilient and sustainable agricultural environment, reducing the need for intensive manual labour and enhancing crop health.
- ▶ Engaging young people in PGS-certified organic production, based on agroecological principles, is another strategic approach to ensure the long-term sustainability of organic agriculture. Educating young people on the health and environmental benefits as well as the sustainability of profitable organic farming could encourage a new generation of farmers to commit to sustainable practices. Schools, agricultural extension programmes, and community initiatives can play vital roles in promoting agroecological farming as a viable and rewarding career.
- ▶ Establish a nationwide agroecology capacity-building programme tailored to local contexts, combining technical training, knowledge exchange platforms, and farmer-to-farmer. Hands-on and training videos should be leveraged as core mechanisms for building PGS technical skills and social

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capital. Agroecological principles should also be integrated into local development plans, with specific support for marginalized groups such as youth and ethnic minorities.

### RECOMMENDATION #2

#### Support and incentivize organic and agroecological uptake and innovation

- ▶ Investment in agriculture remains low in Viet Nam compared to the rest of the world (FAO and UNDP et al., 2021). In other contexts, subsidy levers have been shown to decisively contribute to overall ecosystem quality and are needed to effectively and sustainably boost the transition of agricultural practices towards agroecology, including production of PGS organic vegetables.
- ▶ More supportive and coordinated agricultural policies are needed to stimulate the uptake of agroecological farming practices, such as soil and water management, crop integration and rotation, the use of biological pest control and the cultivation of new varieties and breeds more resilient to climate change.
- ▶ Other interventions for consideration include planning of suitable production areas for organic development, research and development to diversify and institutionalize inputs and/or system designs for organic agriculture as well as market development and control (including traceability) for organic and agroecological products. The adaptation and expansion of Decree 109 would ensure it applies to smallholders and diversified farming systems, while facilitation of access to credit and grant schemes dedicated to agroecological innovation, optimized infrastructure (processing, cold storage), and technology transfers are also recommended. The promotion of public-private-producer partnerships (PPPPs) to strengthen market access, value addition, and fair pricing for ecological products are also key, while the provision of specific incentives for cooperative formation, product certification, and innovation in ecological pest and soil management are required.

### RECOMMENDATION #3

#### Policy reform through evidence-based decision support

- ▶ Implementation of organic and agroecological policies must be accompanied by appropriate assessments of agroecological system performance to ensure continuous adaptation to local conditions, including farmers' needs, external changes, and stakeholders' capacity to effectively mitigate and cope with changes. The FAO-developed Tool for Agroecology Performance Evaluation (TAPE)<sup>1</sup> can be readily applied to such agroecological assessments.
- ▶ The establishment of a multi-stakeholder Technical Working Group (TWG) to guide actions and monitor progress can help ensure effective implementation and continuous improvement of agroecological policies. Strengthening data collection systems and piloting context-specific action plans in selected provinces can provide critical evidence for scaling. Regular participatory impact assessments involving farmers, businesses, and local authorities would ensure that policies remain grounded in local realities and are adjusted accordingly.
- ▶ Improving legal regulation for detailed lists of input materials permitted for use in organic production,

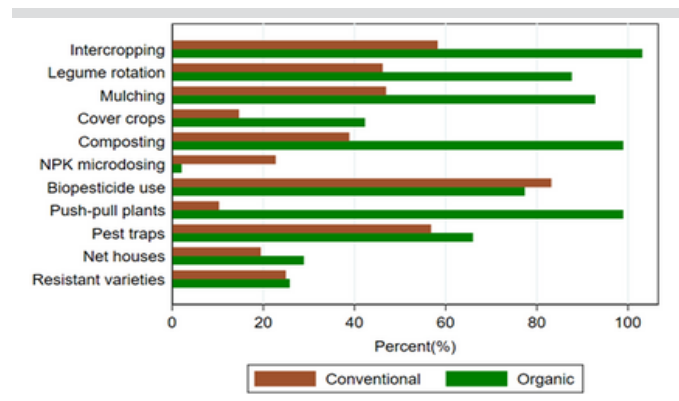
including fertilizers, biological plant protection products, and microbial preparations.

## RESEARCH RESULTS

### SOCIOECONOMIC & ECOLOGICAL BENEFITS OF PGS ORGANIC VEGETABLE FARMING

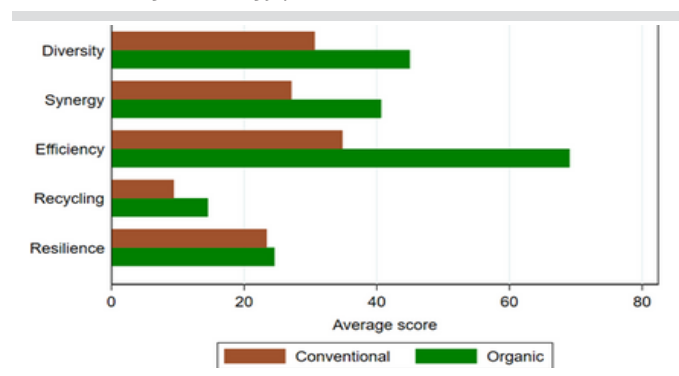
- ▶ Impact evaluation results show that PGS membership significantly improves farm profitability (+117 percent), agroecological performance (+40 percent), and provides farmers with a greater variety of sales channels (+23 percent).
- ▶ Although PGS membership had no significant effect on labour returns or reducing average crop yields, it enabled farm households to effectively utilize available family labour, including that of elder family members.
- ▶ Farmers' social relationships and positive attitudes towards farming and the environment also drive the adoption of organic PGS.

FIGURE 1. Adoption levels in both groups



Source: Grovermann, C., Hoi, P. V., Yen, N. T. B., Schreinemachers, P., Hai, M. N., and Ferrand, P. (2024). Impact of participatory guarantee systems on sustainability outcomes: the case of vegetable farming in Vietnam. *International Journal of Agricultural Sustainability*, 22(1), 2338028

FIGURE 2. Agroecology performance score (TAPE)



Source: Grovermann, C., Hoi, P. V., Yen, N. T. B., Schreinemachers, P., Hai, M. N., and Ferrand, P. (2024). Impact of participatory guarantee systems on sustainability outcomes: the case of vegetable farming in Vietnam. *International Journal of Agricultural Sustainability*, 22(1), 2338028

### CONSTRAINT #1

#### Lack of PGS organic certification awareness and technical knowledge

- ▶ In-depth interviews revealed that, despite prolonged advocacy efforts by multiple organizations and the media, only a small proportion of conventional vegetable farmers in studied provinces were aware of organic PGS farming.

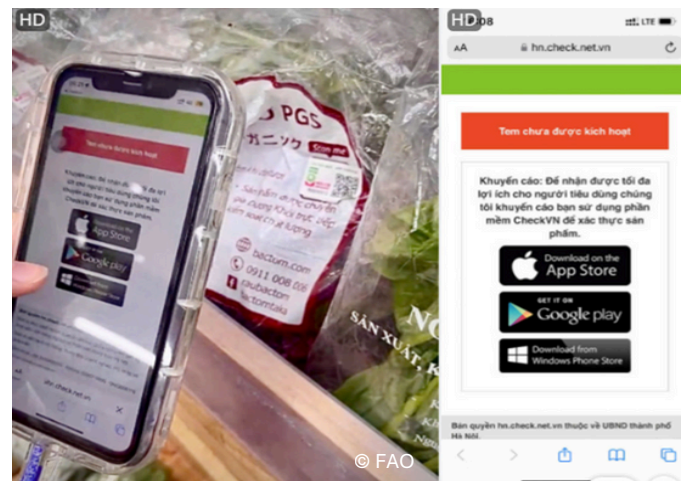
<sup>1</sup> See: <https://www.fao.org/agroecology/tools-tape/en/>

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- ▶ Farmers sometimes struggled to identify relationships between daily farming practices and critical issues, such as soil degradation, pest outbreaks and crop failure risks. This impedes a full understanding of current agricultural practices, the ability to make decisions about suitable techniques, and effective implementation. For instance, the head of the farmers' group in Trac Van commune, Ha Nam province, reported that: "We started PGS organic production in 2013, using only organic inputs, but our soil is still compacted causing crop failures, especially in hot, rainy summers."
- ▶ In focus group discussions with farmers, the research found that some popular vegetables – such as bok choy, Chinese cabbage, Chinese broccoli, and summer cucumber – cannot be produced effectively using organic methods as because they are easily damaged by yellow margined leaf beetles. Similarly, farmers found it challenging to meet the high market demand for organic cucumbers as they are highly susceptible to pests, particularly during the early growth stage.

**CONSTRAINT #2****Lack of stable markets for organic produce**

- ▶ Whilst the high-end market for certified vegetables is growing in the capital Hanoi, PGS organic farmers reported difficulties selling all produce through organic channels due to its less appealing appearance, perceived reduced freshness, and limited variety.
- ▶ To develop sustainable and scalable markets, a substantial volume and diversity of organic vegetables must be produced. Only then will it be viable for traders and shops to collect vegetables and pay premium prices. These results highlight the importance of collective organization in establishing trade partnerships and demonstrating the potential of PGS in facilitating collective action.
- ▶ Trust in retailers remains the most important driver of consumer purchases of PGS organic vegetables, with consumers perceiving retailer branding as a guarantee of authenticity. Tracking technology, such as QR codes containing information about the origin of produce (pictured below), is important in helping consumers to trust retail brands. Despite some technical issues, Viet Nam has tremendous potential to become a world leader in developing such technologies. However, efforts by governments and other market stakeholders, including certification bodies, to control the market have yet to be successful (Truong, Lang & Conroy, 2022; Hoi, Mol, & Oosterveer, 2009).

**CONSTRAINT #3****Lack of institutional enablers for local innovation**

- ▶ Interviews with stakeholders by this study revealed that the Ministry of Agriculture and Rural Development, now named the Ministry of Agriculture and Environment, has yet to issue a list of permitted inputs for organic production, such as bio-composts and biopesticides. Provincial government units currently rely on certification bodies to determine which inputs are allowed in organic agriculture. The absence of reliable information on permitted inputs not only poses a serious challenge to organic farmers, it also hinders local governments in providing them with support, as well as to farmers transitioning to organic and agroecological production.
- ▶ A shortage of resources has led to a lack of infrastructure, hindering efforts to encourage farmers to switch to organic production. Local agricultural officials and extension workers reported that training courses on organic agriculture mainly focused on raising awareness and understanding regulations, rather than providing practical training in farming techniques or encouraging innovative ideas, particularly those adapted to local contexts.
- ▶ Many constraints to effective organic farming were identified in small and dispersed farming areas. Pollution remains a key challenge in farming environments across Viet Nam, including polluted water (penetration or spillover) and pesticide drift. Provincial extension centres lack land and financial resources required to conduct trials on organic or other (innovative) forms of vegetable production.
- ▶ Organic farmers reported low motivation to grow "difficult" vegetables, herbs, or spices, relating this to how they are paid. For example, major retailers such as Bac Tom company, typically pay a fixed price per kilogramme for vegetable groups. Farmers, thus, optimize income by cultivating vegetables less costly and challenging to grow, yielding high quantities of roots and stems, rather than herbs, spices, or leafy vegetables which are riskier and more difficult to grow.

**RESEARCH METHODOLOGY**

Before examining the social and ecological outcomes and impacts of production practices and the potential for upscaling, the AgroEconvert research project adopted an approach that

differentiated between individual and systematic drivers of farmer behaviour.

After identifying three major bottlenecks hindering the production of PGS organic vegetables (also relevant to common practices in conventional vegetable farming in Viet Nam) using qualitative and quantitative research methods, we explored (with CGIAR's support) the underlying reasons for these bottlenecks by applying the Theory of Change (Taplin & Clark, 2012) and the Most Significant Change (Davies & Dart, 2005) approaches.

To gain an overview of the incumbent system, multiple stakeholders who play direct or indirect roles in promoting development of the PGS organic vegetable value chain were interviewed in 2023. These interviews were supplemented by a randomized control trial using survey data from 119 PGS organic farmers and 301 conventional cabbage farmers in three provinces: Hanoi, Ha Nam, and Hoa Binh.

The systemic and individual enablers and barriers identified in 2023 were explored further in 2024.

### BOX 1. AgroEconvert project

The "AgroEconvert" research project was implemented by CARES (Centre for Agricultural Research and Ecological Studies), FiBL (Research Institute of Organic Agriculture) and FAO (Food and Agriculture Organization) with financial support from NAFOSTED and the Swiss National Science Foundation. The project – implemented from 2021 to 2025 in Hanoi, Ha Nam and Hoa Binh provinces – aimed to systematically investigate the enablers and barriers of producing organic vegetables in Viet Nam and to identify potential support measures to promote organic vegetable cultivation based on agroecological practices. A further research initiative supported by CGIAR (Consultative Group on International Agricultural Research) is being implemented by CARES from 2023 to 2026 to explore in more depth the underlying reasons for the bottlenecks identified in the AgroEconvert project.

### BOX 2. PGS principles

According to IFOAM – Organics International: "Participatory Guarantee Systems (PGS) are locally focused quality assurance systems. They certify producers based on active participation of stakeholders and are built on a foundation of trust, social networks and knowledge exchange" (official definition, 2008). In this low-cost, locally-based system with a strong emphasis on social control and knowledge building, the farmers, consumers, rural advisors and local authorities come together in order to make decisions, visit farms, support each other and check that farmers are producing according to an Organic Standard.

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