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MARKET-DRIVEN REGENERATION: TRANSFORMING VEGETABLE PRODUCTION IN HAM YEN DISTRICT, TUYEN QUANG PROVINCE

HIGHLIGHTS

- **Market incentives drive adoption:** Financial tools like premium pricing and forward contracts, along with stable market linkages, encourage farmers to adopt regenerative agriculture by ensuring predictable returns.
- **Collective action strengthens farmers:** Forming Vegetable Production Groups (VPGs) and aggregating produce improves bargaining power, reduces costs, and enhances access to formal markets.
- **Consumer trust is key:** Traceability systems (e.g., farmer-led Participatory Guarantee System) and labeling build consumer confidence in regenerative products, increasing demand and justifying premium prices.
- **Holistic support is critical:** Tailored training and inclusive business models address challenges like price instability and limited access to resources, ensuring long-term sustainability.

CONTEXT

Ham Yen district in Tuyen Quang province, northern Vietnam, benefits from diverse ecological conditions that support year-round vegetable cultivation. With approximately 1,200 hectares under production, vegetable farming generates annual revenues of VND 180–216 billion (USD 7.35–8.82 million), accounting for 60–80% of the district's total budget revenue in 2022 and 2023. Farmers in the district earn an average of 150–180 million VND per hectare annually, with each vegetable-producing household cultivating roughly 1.2–1.5 hectares and generating an estimated annual income of 18–27 million VND per household.

Expanding Regenerative Vegetable Markets through Improved Production and Distribution

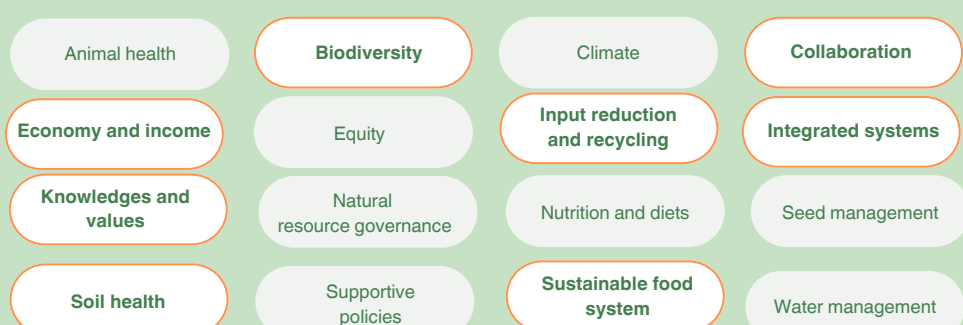
📍 Location: Ham Yen, Tuyen Quang, Viet Nam 🇻🇳
📅 Duration: March 2024 - May 2025
👤 Implemented by: Rikolto & the Tuyen Quang Provincial Agricultural Extension Center and local partners

- 🌻 Agricultural system: Horticultural system
- 🌻 Altitude: 100 -1500 meters above sea level
- 🌻 Rainfall & temperature: 1,500 - 2,300 mm/ year (May to October)
Hottest Month: June, ~ 34.2°C
Coldest Month: January, ~ 13.9°C

Agroecology Principles:



ALiSEA Knowledge Product Categories:



The vegetable value chain includes small-scale farmers, agricultural cooperatives, local traders and retailers. Markets play a central role in connecting producers to consumers, as most farmers rely on local markets and intermediary traders to sell their produce. These traders then distribute the vegetables to retailers and consumers both within and beyond the district. However, market dynamics are significantly influenced by several factors, including the inherent variability of seasonal supply, which lead to periods of oversupply or scarcity; unpredictable price that makes financial and investment challenging for farmers; changing consumer demand and preferences, requiring farmers to adapt production; intense competition from imported vegetables entering the local market. All of which affect the stability and level of farmers' incomes and livelihoods.

Challenges of Agriculture in Ham Yen, Tuyen Quang



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Figure 1: Cucumbers, tomatoes, kohlrabi, cabbage, and cauliflower are commonly grown in Ham Yen.

Several factors limited the adoption of sustainable farming practices in Ham Yen. Price instability creates uncertainty for farmers, complicating their ability to plan and invest in

improved farming practices that may entail higher initial costs.

Farmers face difficulties in establishing stable connections with buyers and formal supply chains, which limits their ability to secure better prices and demand for their produce.

The transition to sustainable farming practices often involves higher costs for eco-friendly inputs like organic fertilisers, and certification processes. This creates financial barriers for small-scale farmers without sufficient support.

Many farmers, particularly those from ethnic minority communities, lack access to the tailored training and technical assistance to effectively implement improved farming practices.

Additionally, the vegetable value chain in Ham Yen is fragmented, with limited coordination among farmers, cooperatives, and traders, resulting in inefficiencies in production and distribution.

METHODOLOGY

REGENERATIVE AGRICULTURE AND ITS RELEVANCE TO VEGETABLE PRODUCTION

Regenerative agriculture is a holistic farming approach focused on restoring soil health, biodiversity and ecosystem balance through practices like crop rotation, cover cropping, reduced tillage, and organic amendments (World Economic Forum, 2022; Morning Ag Clips, 2025). This method is particularly beneficial for vegetable production, as it enhances soil structure, increases water retention, and reduces reliance on chemicals, resulting in healthier crops and sustainable yields (NRDC, 2021; Discover Sustainability, 2024).

Researchers such as Séverin Hatt (2024), Berend J. Stofferis (2025), and Sandeep Kumar (2024) highlight the socio-ecological and economic benefits, including improved soil health, increased biodiversity, and better water retention, all of which contribute to more resilient farming systems (Farm Progress, 2024; AgAmerica, 2020).

Studies from the Yale Center for Business and the Environment (2024) and the Rodale Institute (2020) show that regenerative practices increase soil organic matter and sequester carbon, helping mitigate climate change (Yale Center for Business and the Environment, 2024; Rodale Institute, 2020). Publications like Regenerative Agriculture for Sustainable Food Systems (2024) and reports by the Food and Land Use Coalition (2019) offer comprehensive insights on the impacts of regenerative agriculture, including improved soil health, enhanced biodiversity, better water

retention, and reduced greenhouse gas emissions (Food and Land Use Coalition, 2019; Discover Sustainability, 2024).

Regenerative agriculture is gaining traction in Vietnam, with early adopters showing its benefits despite limited research. In the Central Highlands, coffee farmers are shifting to organic shade-grown systems, improving soil health and biodiversity despite challenges like Roya fungus (Frontiers, 2021). Initiatives like "Keep Vietnam Clean" in Gia Lam (Hanoi) and regenerative farming using organic manure and livestock integration highlight practical applications (Keep Vietnam Clean, 2023). Smaller-scale efforts, such as erosion control with "Pinto peanut," further underscore its potential (Rainforest Alliance, 2023).



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Figure 2: Thanh Long Cooperative members were composting organic fertilizer using microbial inoculants.

However, in Ham Yen, several barriers hinder broader adoption. Price instability undermines farmers' confidence to invest in new practices. Limited access to formal supply chains and consistent buyers restricts incentives for quality improvements.

The higher costs of organic inputs and certification are especially challenging for smallholders without financial support. A lack of training and technical assistance, particularly among ethnic minority farmers, further limits their capacity to transition. Moreover, the fragmented value chain, with weak coordination among farmers, cooperatives, and traders, results in inefficiencies that discourage systemic change. These challenges collectively illustrate why the large-scale adoption of regenerative agriculture remains difficult in Ham Yen.

PROJECT INTERVENTIONS & RESULTS

The approach has been implemented in 4 communes of Ham Yen District, Tuyen Quang Province (Thai Ninh, Thanh Long, Duc Ninh, Thai Son) from March 2024 to May 2025. It aims to integrate around 200 small-scale vegetable farmers into inclusive value chains by establishing connections with buyers and formal supply chains in local and surrounding markets. This integration is designed to enhance farmer's market access, availability and quality of vegetables, to secure better pricing and mitigate risks associated with local market volatility. It may enhance incomes and livelihoods of all actors in the value chain, especially small-scale farmers.

Application of regenerative farming techniques: Farmers were introduced to techniques in on-site composting using locally sourced materials, e.g., vegetable residues and manure, and Effective Microorganisms (EM). This method enabled them to reduce fertiliser costs, enrich soil, and apply BasicGAP standards. Additionally, regenerative practices were adopted, leveraging by-products as organic fertilisers, minimising agrochemical usage and promoting integrated livestock management.

Practical training was delivered in groups, featuring hands-on demonstrations at selected farms. Participants received step-by-step guidance on implementing composting techniques. Notably, 100% of farmers in Thanh Long Cooperative adopted the method, resulting in an estimated 16.7 to 27.8 tons of compost per hectare annually across three crop cycles. Farmers were provided with EM starter kits and technical resources, enabling them to continue composting independently. Follow-up visits were conducted by the Cooperatives and project partners to monitor implementation progress and provide ongoing support.

Agricultural practices such as crop rotation (e.g., vegetables–rice) and intercropping spices were promoted to enhance soil quality management and optimise input utilisation.

ENHANCING VEGETABLE CULTIVATION WITH REGENERATIVE PRACTICES

Integrated Pest Management (IPM) is a sustainable farming approach that combines different methods to control pests in a way that is safe for people, crops, and the environment. Instead of relying only on chemical pesticides, IPM encourages farmers to use a mix of techniques to prevent and manage pest problems effectively. The goal of IPM is to reduce the use of harmful chemicals, lower production costs, and protect the health of farmers, consumers, and the environment while maintaining good crop yields and quality.

Sustainable agricultural training: To reduce input costs and diversify incomes, the project trained 175 vegetable farmers, especially women and youth, in soil improvement, crop diversification and regenerative practices. The training combined theoretical sessions with practical, on-field

The "**Basic GAP**" approach, in the context of developing inclusive business models with small-scale farmers, refers to a simplified version of Good Agricultural Practices (GAP) designed to be more accessible and achievable for Vietnamese smallholder farmers. This approach focuses on ensuring safe product production through basic cultivation standards, proper input management, and record-keeping, without requiring significant upfront investment or complex procedures, thereby helping farmers produce safer, traceable products and gradually transition towards more stringent certifications.



Figure 3: A farmer harvests freshly ripened tomatoes during the new crop season in Ham Yen.

activities, such as composting techniques and field visits to observe ecological farming models, providing farmers with hands-on experience to reinforce their learning.

Integrated Pest Management (IPM): To improve product quality and marketability, training sessions were implemented, focusing on IPM methods, enabling pest control without chemical use. The training was designed based on practical field applications, facilitating exchanges among farmers on pest management practices. Farmers were then guided through best practices, including field inspection techniques for pest detection and safe fertiliser and pesticide application. To reinforce learning, participants received printed training materials and engaged in small-group centralized sessions, complemented by field demonstrations on select sample plots. In Thanh Long, farmers were encouraged to adopt biological-origin pesticides. Cooperatives monitored fields weekly and collaborated with agricultural extension centers for expert advice in case of pest outbreaks. A support system enabled farmers to report pest issues via social media platform like Zalo or direct calls to technical staff for same-day guidance, with on-site visits for complex cases.

Zalo is a messaging and social networking application popular in Vietnam that allows users to message and make calls to other users on both mobile and computer platforms. Zalo's core feature is its messaging service, supporting text, voice, and video calls.

Community mobilisation and knowledge sharing: The project fostered community engagement and the dissemination of best practices through partnerships with the local Women's Union and the Farmers' Association. The Women's Union actively mobilized its members and contributed expertise in sustainable vegetable cultivation.

FORMATION OF REGENERATIVE VEGETABLE PRODUCTION GROUPS AND CAPACITY BUILDING

The project facilitated four vegetable production groups (VPGs) with 175 small-scale farmers, including women and ethnic minorities, to foster collaboration and collective action. Farmers received tailored training on operational management, business planning and marketing, covering topics such as farm management, resource use and record-keeping. The project also guided participants in developing tailored business plans and building skills in market analysis, branding, and customer engagement to enhance their competitiveness.

SUPPORT FOR BUSINESS PLAN DEVELOPMENT AND IMPLEMENTATION

The project supported VPGs in developing business plans for regenerative vegetables. This support included conducting market research to identify demand, competition, and pricing strategies. Financial planning assistance helped VPGs create feasible plans that ensure profitability and sustainability. Guidance was provided to formulate strategies for production, distribution, and marketing.

VPGs were coached through joint planning sessions between buyers and producers to align on production areas, schedules, and input supply. Group leaders received training in quality control, inspection, and reporting using practical tools like Excel templates and on-field demonstrations. The project also coached the groups in implementing their business plans by offering ongoing technical support, ensuring access to resources such as seeds, fertilizers, and equipment, and establishing systems to monitor progress and evaluate outcomes.

Special Highlight / Empowering Small Farmers, Enriching Lives Through Regenerative Agriculture



Figure 4: Market support encourage farmers to adopt regenerative practices for healthier produce and sustainable livelihoods.

175 small-scale farmers, mostly women and ethnic minorities from Ham Yen district, are sowing seeds of prosperity through regenerative agriculture. By forming community-based Vegetable Production Groups and forging direct market ties, they're reaping the rewards of eco-friendly farming - higher incomes and a promising, sustainable future. With farmer-led traceability systems and inclusive business models, trust and resilience are growing alongside their crops.

CONCLUSION

The project demonstrated several key strengths, including its holistic approach to promoting regenerative agriculture through market incentives, capacity building, and community engagement. By forming Vegetable Production Groups (VPGs), it enhanced farmers' collective bargaining power and market access, while tailored training in sustainable practices (e.g., composting, IPM) improved soil health and reduced input costs. Partnerships with local organizations like the Women's Union and Farmers' Association ensured inclusive participation, particularly among women and ethnic minorities, and the integration of traceability systems bolstered consumer trust in regeneratively grown produce.

Besides, the project faced several challenges. Seasonal-based vegetable production presents significant limitations in terms of product diversity and volume, which hinders the ability to meet consistent market demand. This seasonal dependency restricts year-round supply, making it difficult for producers to maintain stable market relationships and revenue streams.

Many farmers prefer informal retail practices, avoiding formal contracts and structured market engagement. This is compounded by the limited business and customer development capabilities of the VPGs, which lack the strategic planning and market orientation necessary to scale operations and build trust with larger buyers.

To address these challenges, it is essential to equip farmers with comprehensive crop rotation calendars and introduce off-season and intercropping techniques, such as integrating vegetables with rice, to ensure continuous production and supply. Simultaneously, capacity-building programs should be implemented to strengthen the management and business planning skills of VPGs. These should include training in production forecasting, customer engagement, and contract negotiation. Furthermore, developing product branding, traceability systems, and professional capability profiles for each VPG will enhance product visibility and consumer trust, ultimately fostering stronger market linkages and supporting the long-term sustainability of the vegetable sector in the district.

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The project was carried out in partnership with the Tuyen Quang Provincial Agricultural Extension Centre, the Ham Yen District Agricultural Services Centre, agricultural cooperatives, and local community organisations.



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Authors:

- **Mr. Dam Trong Tuan**, Good Food for Cities Programme Manager, Representative, Rikolto in Vietnam, <tuan.dam@rikolto.org>
- **Mrs. Nguyen Thi Den**, Good Food for Cities Programme Officer, Rikolto in Vietnam, <den.nguyen@rikolto.org>

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 www.ali-sea.org

ALiSEA Team

- Regional Coordinator: **Lucie Renaud** <reynaud@gret.org>
- National Secretary in Vietnam: **Nguyen Thi Trang** <trang9099.vn@gmail.com>

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