ALiSEA
AGROECOLOGY LEARNING ALLIANCE IN SOUTH EAST ASIA

CISDOMA

**ALiSEA Practice Brief**
ALiSEA Small Grant Facility 2024

# COMPOSTING: IMPROVING THE PERCEPTIONS AND PRACTICES OF ETHNIC MINORITY FARMERS IN NORTHERN VIETNAM'S MOUNTAINOUS REGIONS

## KEY TAKEAWAYS

- To facilitate agroecological transition, it's essential to assess local farmers' status and capacity, enabling the identification of suitable practices and transition levels.
- Economic gains are essential for farmers to adopt new techniques; therefore, agroecological practices should provide economic incentives to ensure adoption.
- Farmer engagement in analysis, decision-making, and implementation ensures sustainable results. Therefore, actions should use appropriate tools and approaches to facilitate and mobilize farmer participation throughout the process.
- Close monitoring and coaching during the early stages are essential for the action's success.

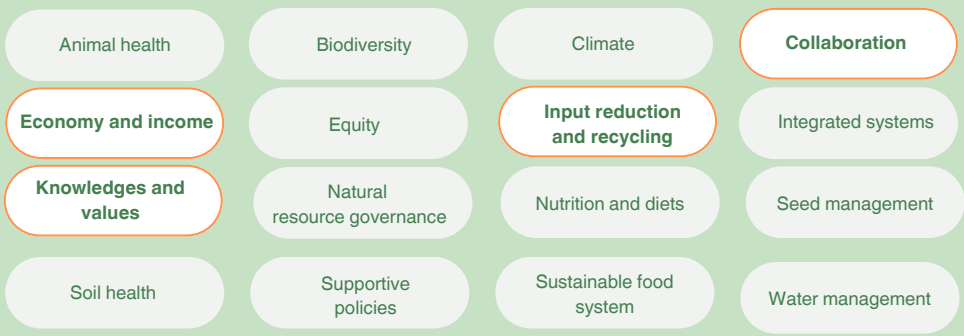
**Adaptive livelihoods to ensure food security and climate change adaptation for vulnerable communities in Vietnam**

- Location: Viet Nam
- Duration: 2019-2023
- Implemented by: CISDOMA & CIRAD

- Agricultural system: sloping land, forestry combined with crop cultivation.
- Altitude: 1800 m
- Rainfall & temperature: Very cold in winter ; up to 40°C in summer

Agroecology Principles:


ALiSEA Knowledge Product Categories:




## CONTEXT

Chu Kheo Cao hamlet, a H'mong village in Khun Ha commune, Tam Duong district, Lai Chau province, is located on a high mountain with a complex terrain of hills, mountains, and small water channels. Situated at an altitude of 1800-2000m above sea level, the village experiences a tropical monsoon climate with cold winters and hot summers, where temperatures can reach up to 40°C. Climate change has led to more frequent cold spells and frost in winter, severely damaging crops and livestock. Increased heavy rainfall also raises the risk of landslides.

The average annual income per capita is only 28 million VND, and the poverty rate exceeds 30%. The typical agricultural system utilizes sloping land for a mix of forestry and crop cultivation. Chemical fertilizers, pesticides, and herbicides are used intensively, while organic livestock manure is often left unused.

Traditionally, villagers keep cattle and poultry near their homes, allowing them to roam freely, and their waste is often left untreated. While some livestock waste is treated, the primary method is open-air drying. This practice results in significant environmental pollution and an increased risk of disease.

## OBJECTIVE

This case study demonstrates an approach to drive the adoption of agroecological practices, including composting, by fostering farmers' active engagement in problem analysis, decision-making, and collective action.

*Fig.1. Famers' participation - making the map of environmental pollution sources*

## METHODOLOGY

At the beginning of the project, a climate change **Participatory Vulnerability and Capacity Analysis (PVCA)** was conducted using mixed methods, including participatory tools and household interviews, to gather information on climate change phenomena, damages, and potential risks. The PVCA process also facilitated farmer analysis of issues, current capacities, and potential solutions to minimize climate change impacts.

Based on the PVCA results, composting was identified as a potential solution. Farmers were then facilitated using the **TerriStories** (http://www.terristories.org) tool to conduct their own analysis of the opportunities, conditions, and challenges in applying the suggested techniques, and to identify solutions to overcome the challenges. Following a thorough analysis of the options, Farmers Field Schools (FFS) on the selected topics were offered to farmers who expressed interest in applying the techniques. Technical guidance and material support were also provided during implementation.

*Fig. 2 . Composting*

### About the PVCA

Participatory Vulnerability and Capacity Assessment (PVCA) is a method that actively involves communities in identifying their vulnerabilities and capacities related to climate change and disaster risks. It uses participatory tools such as mapping and group discussions to gather local knowledge and insights. The method helps communities assess both their vulnerabilities and strengths across environmental, social, and economic factors. The findings are used to develop action plans that enhance resilience and address key challenges. PVCA promotes a bottom-up approach, ensuring that local voices are central in decision-making and strategy development.

### About the TerriStories

TerriStories is a participatory simulation game designed to support collective decision-making in land use and environmental management. With a flexible system of territorial boards and open rules, TerriStories reflects spatial and social diversity while encouraging creativity, interaction, and the integration of uncertain elements such as climate change or economic shifts. Since 2000, TerriStories have been developed widely applied worldwide and in Vietnam, simulation games have been used by CISDOMA since 2017 to help communities to express their opinions. Unlike traditional methods, this game encourages free thinking and unrestricted discussion. Therefore, it is not only a participatory tool but also a way to build local solutions, promote open dialogue, foster collaboration, and mutual understanding, while also helping to create practical action plans.

### About the Famer Field School

Farmer Field Schools (FFS) are participatory learning programs that improve farmers' knowledge and practices in sustainable agriculture. These schools offer hands-on training on real farms, focusing on sustainable methods, pest management, and soil health. FFS empowers farmers by involving them in experimentation, observation, and decision-making, which leads to better farming choices. The approach promotes group learning and peer support, helping farmers share experiences and solve problems collectively. Originating from Asia in the 1980s, FFS has expanded globally and is recognized as an effective tool for sustainable agricultural education.

# RESULTS

## ACTIVE ENGAGEMENT OF FARMERS THROUGHOUT THE PROCESS

During this PVCA exercise, farmers, with expert guidance, analyzed changing weather patterns, the impacts of climate change, and associated risks and damages (Fig. 1). They also identified practices to reduce climate hazard impacts. Among these practices, they learned that proper animal waste treatment could not only reduce pollution but also prevent animal diseases, and that compost use could enhance crop drought tolerance. Following the PVCA, 35 farmers who expressed interest in composting were facilitated to participate in simulation game sessions (Fig. 2)

*Fig. 3. Simulation game*

The project supported the construction of three composting tanks, evenly distributed throughout the village, with labor contributions from local residents. Participating households collected animal manure, organic waste, and straw, layering them in the composting pits with project-provided probiotics.

Throughout the implementation of the composting models, project staff conducted regular field visits, facilitated community meetings, mobilized youth participation, and provided guidance on proper composting techniques (Fig. 3) either individually at their homes or collectively in groups, to ensure the adoption of appropriate practices.During the sessions, participants could freely discuss their problems without shame or hesitation, leading to lively competition and debate on relevant issues. Through these exercises, farmers were able to analyze issues related to animal husbandry, including improper waste treatment, required conditions, potential difficulties , and challenges associated with applying new techniques, and to identify solutions to overcome these challenges.

By the end of the sessions, farmers were well-informed and prepared, enabling them to make sound decisions. Subsequently, these farmers were supported in applying composting techniques.

## APPROPRIATION BY THE FARMERS

The composting model began in early with the participation of 20 households and was gradually scaled up. Following two years of implementation, 81 households in the village have adopted the practice, achieving 100% participation.

Villagers were producing approximately 20 cubic meters of compost each month, selling it at a price of 250,000 VND per cubic meter. Over two years, the village generated around 35 million VND from compost sales. This revenue was used to establish a community fund to purchase bio-productsfor future composting cycles and to provide loans to 20 households to expand production.
In addition to selling compost, some households use it to fertilize their home gardens, achieving high-yield harvests without the use of chemical fertilizers. These safe vegetables are used for both family consumption and to serve tourists visiting the village.

Environmentally, the village has seen significant improvements in sanitation, as livestock waste is no longer discarded along the roadsides. Notably, with the increasing number of tourists visiting Lao Chai and Chu Kheo Cao in recent years, the availability of safe vegetables and the clean environment have become important attractions for visitors.

### How to upscale from 20 to 81 households

- Since 2019, after technical training on composting, CISDOMA collaborated with Head of village to establish communal waste collection areas and treatment tanks. The youth union of village was mobilized to help households collect and transport livestock waste to the common area, where it was composted using bio-products. The compost was then sold to fruit orchards . The budget gained  was managed by the Women's Union as a community loan fund.

- Between 2020 and 2021, women union of the village received training from CISDOMA on community saving fund management. Using the initial 35 million VND from compost sales, the Women's Union purchased bio-compost primers and provided loans to 20 households to begin composting at home. The fund was then rotated to support other households in the village.

- By 2022, all 81 households in the village had adopted the model, using compost to grow vegetables for both household use and sale to visitors.

- In 2023, CISDOMA and Tam Duong district authorities provided training for homestay development to serve community-based tourism. This has diversified household incomes and turned the village into a model learning site for other communities.

## RECOMMENDATION

- Facilitation of agroecological transition should consider the status of the local farmers and level of capacity, to identify suitable practices and level of transition.

- The economic gain is essential for farmers to adopt a new technique, the introduction of agroecological practices should produce economic incentive for the farmers to ensure the adoption of the techniques.

- Farmers engagement in the process of analysis, decision making, and implementation of the new practices ensure the sustainability of the results. Therefore, actions facilitating agroecology transition should apply appropriate tool and approach to facilitate and mobilise farmers participation throughout the process; besides, close monitoring and coaching during the early stage is essential to ensure the success of the action.

## LESSONS LEARNED

Strengths and Weaknesses of the Composting Model:

- From a technical perspective, the composting model demonstrated clear ecological and agricultural benefits. The application of composting not only improved soil health and restored field ecosystems but also increased crop yields by promoting a closed-loop nutrient cycle between crop cultivation and livestock farming. This integrated approach maximized local resource use and reduced reliance on external inputs, improving efficiency of both production components. Moreover, the model proved to be a low-cost, environmentally friendly solution that helped clean up the village surroundings while generating additional income for farmers. When incorporated into farming systems, composting enhances product safety and supports long-term ecological sustainability.

- However, the model also faced challenges, particularly in promoting farmer adoption. A major limitation was the initially how acceptance of agroecological practices due to limited awareness and capacity.

- In summary, while composting has proven to be an effective and replicable solution, its success relies heavily on farmer engagement, clear economic incentives and environment improvement, and strong local facilitation. Future agroecological transitions should consider farmers' capacity levels, integrate economic benefits, and ensure meaningful farmers' participation with continued technical support in early phases to ensure sustainability and impact.

***Mr. Cu A Chinh a 23- year- old man, from Hmong Ethnic group***

*"Compost is different from un-composted fertilizer, it is more porous and lighter, easier to transport and odorless. A lot of people order composted fertilizer. The hamlet has sold it 3 times and earned 5 million already. Since composting, the environment in the hamlet is much cleaner. Now the hamlet roads are clean, the households don't see any leftovers like before. He also shared his happy about the change of the village – is now become a typical community tourism village of Lai Chau province".*

***Mr. Lo Van Vangin in charge of Chu Kheo's agricultural extension staff***

*"Participating in a 3-day training course on "Simulation game" by national and international experts, I feel confident in using the "Simulation game" methodology to discuss with my people on farmers' livelihoods, cleaning livestock barns and establishing a financial self-management group. As a result, we have received 100 % consensus from the people in building a common livestock waste collection area of the village to be processed by them into organic fertilizer using microbial production that can be sold to gardeners introduced by the project staffs.".*

## REFERENCES


- *Christian Aid Good Practice Guide PARTICIPATORY VULNERABILITY AND CAPACITY ASSESSMENTS (PVCA):https://www.christianaid.org.uk/sites/default/files/2022-09/christian-aid-good-practice-guide-pvca-oct-2009.pdf*
- Farmer Field School (FFS):https://openknowledge.fao.org/server/api/core/bitstreams/44f528c6-7a4a-4613-a500-98149e92cd8e/content
- **TerriStories** (http://www.terristories.org)



**Authors**:

- **Mrs Doan Thu Thuy**, CISDOMA's technical adviser, project coordinator
- **Mr Truong Quoc Can**, CISDOMA's director, project manager
- **Email:** thuy.dt@cisdoma.org.vn

**Model farmer**

- **Mr. Pham Ngoc Vu**, CISDOMA's Local technical officer - Tel: +84 (0) 982547185



**Date of publication: June 2025**

Supported by:

Coordinated by:

www.ali-sea.org

**ALiSEA Team**

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

Funded by:

This document has been produced with the financial assistance of the French Development Agency (AFD), the European Union (EU) and the French Facility for Global Environment (FFEM). The views expressed herein can in no way be taken to reflect the official opinion of the AFD, EU and FFEM.