# Farmer Learning Exchange Visit on Agroecological Farming Practices in Xiengkhouang, Lao PDR

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# Abbreviations

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| ASSET | Agroecology and Safe Food System Transitions |
| CGIAR | Global partnership for a food-secure future |
| CIRAD | French Agricultural Research Centre for International Development |
| DALaM | Department of Agricultural Land Management |
| DOPC | Department of Planning and Cooperation |
| HLPE | High-Level Panel of Experts |
| IWMI | International Water Management Institute |
| Lao PDR | Lao People's Democratic Republic |
| NAFRI | National Agriculture and Forestry Research Institute |
| PAFO | Provincial Agriculture and Forestry Office |
| TABI | The Agro-Biodiversity Initiative |

# Executive summary

The report documents a farmer learning exchange visit on agroecological farming practices in Xiengkhouang, Lao's People Democratic Republic (Lao PDR), from 20–22 November 2024. It was organized by the International Water Management Institute (IWMI), under the CGIAR Initiative on Agroecology and the CGIAR Initiative on National Policies and Strategies. The visit was arranged in cooperation with the agroecology and safe food system transitions project's implementing and commissioning team from the Department of Planning and Cooperation, the Department of Agricultural Land Management, the National Agriculture and Forestry Research Institute, the Provincial Agriculture and Forestry Office in Xiengkhouang, and CIRAD, the French Agricultural Research Centre for International Development.

Objectives of the visit were to facilitate peer learning between farmers practicing agroecological farming systems in the two provinces and to strengthen cooperation among relevant sectors and actors implementing and advocating for agroecology. These were also to promote co-creation of knowledge as a core agroecology principle in the whole country. Key learning activities included field learning activities, including structured farm tours, group discussions, and learning reflections.

Overall, the visit provided a unique opportunity for farmers and officials from Xiengkhouang and Attapeu provinces to share knowledge and strengthen cooperation on agroecology practices. This exchange highlighted the importance of cross-provincial and cross-sectoral cooperation in addressing the challenges of sustainable agriculture and soil health. Noteworthy observations and lessons learned from the visit were as follows:

**ASSET Project's agroecological farming practices in Xiengkhouang**

- Soil improvements are possible through integrating bean crops and fruit trees into foundation crops, for example, tea trees are integrated with pigeon peas, bananas, mangoes, longans, peaches, and papaya. The diversification is also to enhance food security in the short and medium terms, increase income generation opportunities, and enhance climate resilience.

- Introducing non-chemical fertilizer use by community-made composting is also a promising approach to minimize soil degradation, reduce the cost of inputs, and facilitate organic agriculture, as parts of agroecology principles.
- Strengthening farm groups to enhance their supply capacity and linkages to secured markets is recommended.

**CGIAR Initiative on Agroecology in Attapeu**

- The practice of integrated rice-fish farming appears very useful to synergize crop cultivation and fisher culture to improve soil fertility through fish waste and fish movements and increase food and nutrition security as well as income generation from rice and fish.
- A step in the right direction was to strengthen community ownership to improve Nonglom Lake management for sustainable resource utilization under the land and natural resource governance principle of agroecology. This practice is also associated with strengthening collective actions through group establishment so that it also facilitated dynamic discussions between farmers from the two provinces.

Key observations and lessons learned by the visiting team, through observations and discussions, are listed below:

- Although climate differences exist between the southern and the upper-central regions, agricultural conditions for introducing agroecological farming systems in Xiengkhouang appear similar to the current context in Attapeu, where cassava and other mono cash crop plantations are emerging and causing concern for soil health. Lessons learned from Xiengkhouang, especially on soil improvement, would be well applicable for farmers and relevant public agencies to promote sustainable agricultural production and natural resources management.
- Key success factors for the introduction of agroecology in Xiengkhouang may be associated with readiness and the needs of participating farmers. For example, a farmer in Xiengkhouang took initiative to improve soil quality deterioration by shifting to banana farming. In addition, existing structures in the target communities and experiences in involving other development interventions are seen as favorable environment; for example, the ASSET Project could build on strengthening tea farmer groups from previous development efforts.

- The farmers from Attapeu were also impressed with the operation of tea farmer groups in Paek District, in terms of their group market access, different lines of income generation and group management. These are lessons and motivations for the visiting farmers to adapt.
- However, farmers from both provinces still need continued and more support on farming education and demonstrations that prove the environmental, economic, and social benefits of the agroecological farming practices to facilitate their gradual adoptions.
- Overall, the contributions from the two projects helped introduce and showcase numerous principles of the High-Level Panel of Experts (HLPE) on Food Security and Nutrition 13 principles of agroecology, such as soil health, input reduction, and economic diversification.

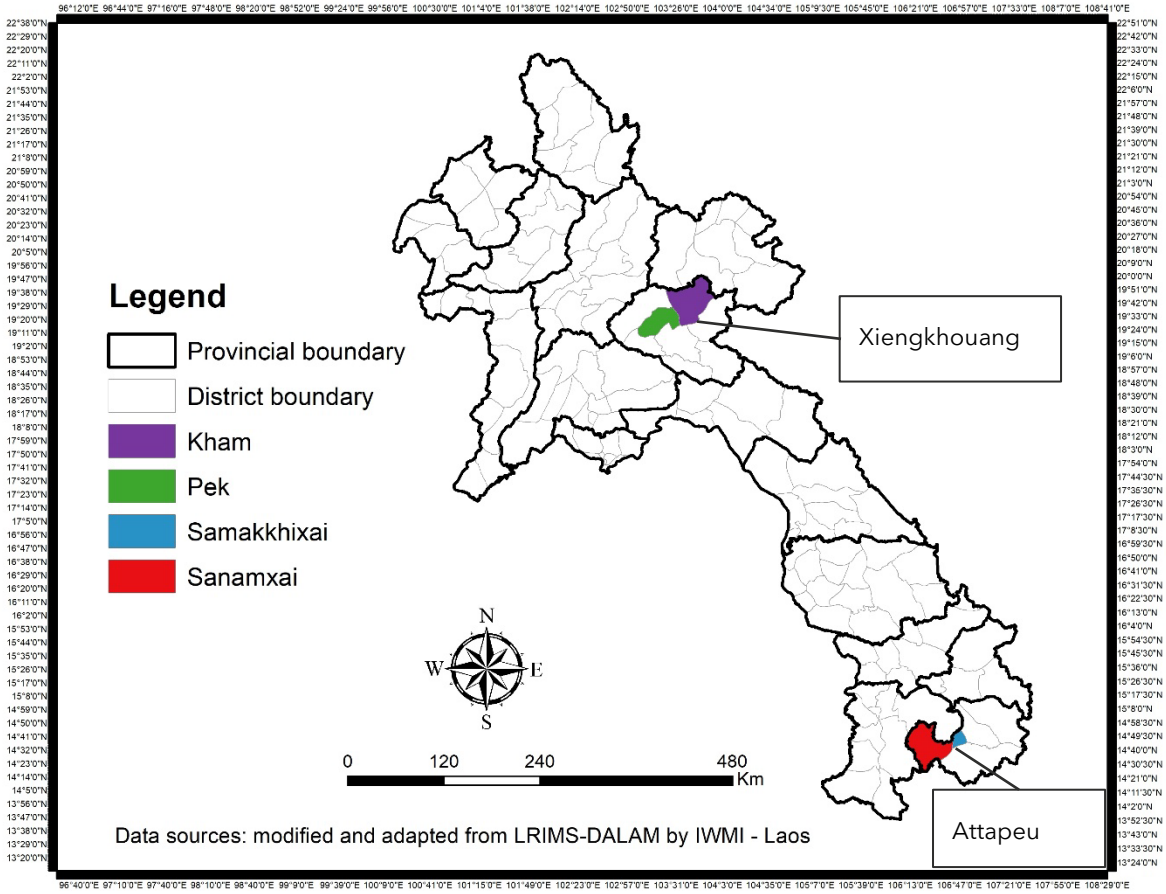
Further collaboration between the two agroecology projects and other stakeholders would be beneficial to strengthen the co-creation of knowledge as one of the objectives of the visit and agroecology principles. This could be achieved by bringing ground evidence into policy consultation platforms like the sub-sector working group on agroecology, facilitating agroecology practices in more comprehensive transformative food systems. It would also help strengthen co-creation of knowledge, aligning with one of the core principles of agroecology.

The learning exchange visit between Xiengkhouang and Attapeu has proven to be an essential step toward promoting agroecology in Lao PDR. The participants from both provinces gained valuable insights into sustainable farming practices that enhance soil health, improve food security, and contribute to environmental sustainability. Moving forward, it would be essential to maintain momentum by organizing follow-up workshops and establishing farmer networks that will facilitate continued learning and support. Additionally, securing funding for scaling agroecology practices in both provinces will be crucial for long-term success. The exchange also presented an opportunity for further collaboration between farmers, researchers, and policymakers in Lao PDR.

# 1. Introduction

The report documents a farmer learning exchange visit on agroecological farming practices in Xiengkhouang, Lao's People Democratic Republic (Lao PDR), from 20–22 November 2024. The agroecological farming systems in this context are referred to as farming systems aligned to some of the 13 principles of agroecology[1], adopted by the High-Level Panel of Experts (HLPE) on Food Security and Nutrition, such as soil health improvements, land and natural resource governance, and synergy of crop cultivation, fisheries, and livestock, i.e., integrated rice-fish farming.

The visit was organized by the International Water Management Institute (IWMI), under the CGIAR Initiative on Agroecology and the CGIAR Initiative on National Policies and Strategies, at the hosting sites of the Agroecology and Safe Food System Transitions (ASSET) Project in Kham and Paek districts. The areas were shown in Map 1.




MAP 1: A map of Lao PDR depicting the sites of ASSET in Xiengkhouang and the CGIAR Initiative on Agroecology in Attapeu. *Credit:* Somphasith Douangsavanh

[1] Agroecology Info Pool. 2019. 13 Principles of Agroecology. biovision and Swiss Agency for Development and Cooperation. Available at: https://www.agroecology-pool.org/13aeprinciples/.

The visit was arranged in cooperation and facilitation support by the ASSET project's team from the Department of Planning and Cooperation (DOPC), the Department of Agricultural Land Management (DALaM), the National Agriculture and Forestry Research Institute (NAFRI), the Provincial Agriculture and Forestry Office (PAFO) in Xiengkhouang, and CIRAD, a French Agricultural Research Centre for International Development. There were 31 visiting participants, including 16 farmers from Attapeu, six government officials from the provincial and district levels, five IWMI staff, and three government officials from relevant departments of the Ministry of Agriculture and Forestry, including DOPC, NAFRI, and DALaM. There were six female participants among the visiting team.

Objectives of the visit were to facilitate peer learning between farmers practicing agroecological farming systems in the two provinces and to strengthen cooperation among relevant sectors and actors implementing and advocating for agroecology. Both provinces encountered similar key agricultural production challenges in relation to soil degradation due to monocropping and ineffective natural resource management. Exchanging lessons learned was required to enhance knowledge and the need for transitioning to sustainable farming systems to ensure long-term food security. The learning exchange was also to promote the co-creation of knowledge as a core agroecology principle in the whole country.

# 2. Learning methodology

The farmer learning exchange visit is a co-designed learning activity led by IWMI, in consultation with the ASSET project team from provincial and national levels, including PAFO in Xiengkhouang, CIRAD, and DALaM. The joint facilitation between IWMI and the ASSET project team included concept note development, field preparations prior to the visit, and field learning activities, including structured farm tours, group discussions, and learning reflections. Details of each activity are as follows:

**Structured guiding tours to agroecological farms:**

- The visiting farmers were handed a simple checklist to guide their observations and questioning during the visit. The checklist was developed by IWMI in consultation with the CGIAR Initiative on Agroecology's Provincial Coordinator from PAFO in Attapeu.
- During the farm visits, the ASSET project team from CIRAD and PAFO in Xiengkhouang and farm owners were the ones who provided information about farming practices and interacted with the visiting team.

**Group discussions:**

The group discussion in each visited district was arranged after the farm tours in arranged villages to facilitate reflections, knowledge exchanges, and networking. Key sessions included i) presentations on agricultural production context and adopted agroecological farming practices by the hosting and the visiting villages, ii) a panel discussion, and iii) contact information exchange. The discussion was moderated by provincial coordinators from PAFO in Xiengkhouang and Attapeu by using guided questions prepared by IWMI. On the contact information exchange, it was arranged at the end of the discussion to facilitate further communications and continued knowledge exchange between the hosts and visitors was agreed on (voluntary basis) by using a contact card with name, phone numbers, village name, and farming practices.

**Learning reflections:**

A half-day session was arranged after the two-day visits to reflect on gained knowledge, draft adoption actions by individual villages, and provide feedback on the technical, coordination, and

operational arrangements of the visit. The session was facilitated by IWMI with participation by the ASSET project team from the national level.

# 3. Agroecology in Xiengkhouang

## 3.1. Context

It was told by the hosting farmers that soil fertility in Xiengkhouang was considered suitable for crop cultivations. The main livelihood activities are rainfed rice cultivation by lowland and upland systems, with livestock, especially big animals like cattle, and dry seasonal crop cultivation such as maize, tea, and vegetables as alternative activities to enhance income generation opportunities.

**Maize production in Kham District:**

In late 2000, the majority of villagers in Kham opted for commercial maize production as the alternative practice after the rainfed rice productions. However, it was observed that maize productivity was decreasing consecutively each year due to soil degradation. The villagers had to apply chemical fertilizers to increase yields, but this caused a loss of profits. For example, a case of a farmer who cultivated maize in dry seasons after harvesting of the rainfed rice cultivation experienced a loss in 2005 due to the required purchase of chemical fertilizers.

**Tea production in Paek District:**

In the past, when farmers started growing teas in 2008/2009 as an alternative option to shifting slash-and-burn practices, there was no market for the tea. Until 2016, when a project named *The Agro-Biodiversity Initiative* (TABI) came to buy tea products and strengthen the farmer groups for tea and bee productions. However, the groups were not formally endorsed during the time.

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## 3.2. Agroecological farming practices in Xiengkhouang

In 2022, the ASSET project introduced different agroecological farming practices such as intercropping, organic fertilization, and crop rotation to diversify production and restore soil health. The project also supported the farmer groups to strengthen group functionality and market linkage from 2018. The project also empowered local communities to take charge of their agricultural sustainability through community-led soil monitoring initiatives to have data to guide their practices and demonstrate the benefits of agroecology to other farmers. More details of the ASSET project are available at https://www.asset-project.org/. Key activities shared during the visit are as follows:

**Soil improvement through integrated cultivation of beans and other fruit trees**

- Growing pigeon peas in tea and coffee gardens to help improve soil fertility, with both roots and leaves. Their trees can grow and give shade to other crops, like coffees and teas, within two to three years. The integrated cropping garden was shown in Photo 1.

PHOTO 1: The farm owner shared his practice with the visitors. *Credit:* Viengxay Xaydala

- Crotalaria is another soil cover and bean crop with a shorter cropping cycle of three months, which is suitable for soil improvements in rice fields.
- In addition, diversification of other short-term to long-term fruit trees was also integrated into the tea and coffee gardens, including papaya, lemons, bananas, mangoes, longans, and peaches. This crop diversification was to enhance food security, income generation opportunities from different crops and fruits, and climate resilience.
- Besides, field-based composting was promoted to improve soil organic matter content and help reduce soil degradation. The practice was also introduced to reduce the cost of fertilizers (less nutrient leaching) and support pest management.
- Some feedback from farmers was: "I already had income from bananas in the second year and expected to have income from coffee beans in coming years from the integrated cultivation" and "A challenge in group management was about active involvements of the members, and its advantages were about opportunities to gain external support from the government and development projects, such as training, equipment, and market linkage".

**Strengthening farmer groups**

- Farmer group establishment was on a voluntary basis, with solidarity, and understanding of the group management rules among the members.
- The group was formally endorsed by district authorities and received support from the relevant government sector.
- The group has been operating under a clear management structure, comprising management committee members for different functions such as quality control, marketing, and accounting.
- Success factors from the perspective of group members were transparency in group management, especially cash management; regulation of management rules for group members to follow; and performance improvements with frequent reflections on the performance of the group management committee members. These lessons learned were shared during the discussion in Paek District, as shown in Photo 2.

PHOTO 2: The group president presented the group management structure. *Credit:* Viengxay Xaydala

# 4. Agroecology in Attapeu

## 4.1. Context

Visiting farmers from Attapeu shared that the villagers in their province also grow rice during rainy seasons as the main livelihood activity, and some villagers who had irrigation access grow rice also in dry seasons for commercialization. In addition, villagers also had livestock and dry seasonal crop cultivation as alternative activities.

Besides, villagers still kept fishponds or trapped ponds in rice fields to store natural fish for household consumption and income generation after rice harvest when water in the rice fields dried out. The pond size was about 1.5 metres deep and 5 metres square or round. This practice was inherited from their ancestor's time, although fish catch was not as much as before. For a case of villagers in Hom and Tammaleuay villages where Nonglom, a community-based lake was located, the lake was also used for their livelihood activities and a natural food source. However, access to the natural resources in the lake was not sustainably managed by the communities.

Recently, cassava cultivation has emerged as cash crop in addition to sugar and banana plantations by companies. These commercial practices caused community concern for soil degradation and forest exploitation if expanded to a larger scale.

## 4.2. Agroecological farming practices in Attapeu

In 2022, the CGIAR Initiative on Agroecology, led by IWMI and WorldFish in cooperation with PAFO, started their joint interventions in Sanamxay and Samakkhixay districts. Key field-based interventions included integrated rice-fish farming, Nonglom Lake management, and community-managed groundwater irrigation with solar power technology to facilitate dry seasonal cultivation and substitute water use from Nonlom Lake. Details of the CGIAR Initiative on Agroecology are available at https://www.cgiar.org/initiative/agroecology/ and https://www.iwmi.org/projects/agroecology/.

**Integrated rice-fish farming**

- Integrated rice-fish farming was to synergize rice cultivation as the foundation crop with fisheries and other water-based vegetations.

- This agroecological farming practice was to support more effective land use and reduce inputs such as fertilizers, pesticides, and fish feeds.
- Integrated rice-fish farming was also suitable for other fish and aquatic animals to migrate in and grow in the same trench.
- Home-made fish feed with ingredients available in the villages, such as rice bran, broken rice, and banana, was also introduced to accelerate fish growth and reduce costs for purchasing additional fish feeds.
- Some feedback from farmers: "After three to four months of the practice of the integrated rice-fish farming in July 2024, I observed that fish was growing well with a good size of five to six fish per kilogram." and "I had both fish and rice for household consumption from the same rice field." The feedback and knowledge about the integrated rice-fish farming were shared during the discussion in Kham District, as shown in Photo 3.

PHOTO 3: The discussion session in Kham. *Credit:* Viengxay Xaydala

**Strengthening Nonglom Lake Management Committee**

- Nonglom Lake is managed by a joint committee from the two villages of Hom and Tammaleuay and the community-managed regulation, which was endorsed in October 2024 by the district governor and relevant sectors at the district level. This is expected to facilitate further sustainable community management of the lake.

# 5. Observations

The section reflects on authors' viewpoints and observations during the two-day visits in Xiengkhouang, where the participating farmers shared and exchanged their practices, knowledge, and thoughts. The following points are not comprehensive but reflect key points of the discussion:

- Although climate differences exist between the two provinces, the agricultural condition at the time when agroecological farming systems were introduced in Xiengkhouang, was like the current context of agricultural production in Attapeu, where dry seasonal commercial cassava cultivation and other monocropping plantations are emerging and causing concern for soil health and forest exploitations. Lessons learned from Xiengkhouang, especially approaches for soil improvement, such as composting and diversification through intercropping fruit trees with foundation crops, would be well applicable for farmers and relevant public agencies to promote sustainable agricultural production and natural resources management.
- The success of tea farmer groups in Paek District was impressed by the visiting team from Attapeu, in terms of their strong organizational structures, ability to access diverse markets, and income generation from different products of processed tea and intercropped fruits and services. Although forming production groups was not relatively new to the visiting farmers, operating a successful group management and collective market access has not been achieved.
- Selecting project sites where the community had some experiences in previous development activities was seen as a favorable factor so that a new project can build on it. For example, tea farmers in Paek benefited from previous support under the TABI project, which had already established the foundation for collective actions and group coordination. This enabled the ASSET project to focus on scaling agroecology innovations rather than starting from scratch.
- Another success factor may be associated with identifying suitable entry points and participating farmers who had the need and readiness to adopt agroecology. For the case of Xiengkhouang, farmers experienced challenges in maize productivity due to soil quality deterioration and had sought solutions by shifting to banana farming, for instance. This was similar to the case of Attapeu, where the farmers who adopted the integrated rice-fish farming had observed a reduction of fish catch from their fishponds in the rice fields.

- It was also observed that strengthening farmer capacity to innovate and co-create solutions played a crucial role in adoption. For instance, hosting farmers in Xiengkhouang shared their experience on how experimentation with intercropping and composting enabled them to refine practices that suited their unique conditions. These experiences underscore the importance of participatory learning and adaptive management.
- More support for continued education and demonstrations on the environmental, economic, and social benefits of the introduced farming systems would still be required for farmers in both provinces to help them gradually adopt the practices. For instance, the supported coffee planting in Xiengkhouang will require several more years to reach full production, necessitating ongoing extension support. Similarly, external assistance will be essential for effectively implementing the Nonglom Lake management plan in Attapeu to ensure sustainable community-based resource utilization.
- The visit also highlighted the potential for peer-learning events to serve as a catalyst for change. Exchanges between provinces demonstrated the value of farmer-to-farmer interactions in accelerating knowledge transfer and building confidence to experiment with agroecological practices. Future programs should incorporate more structured exchange opportunities to sustain this momentum.

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