



Agroecology and
Safe Food System
Transitions



ALiSEA NATIONAL GENERAL ASSEMBLY IN LAOS

ALiSEA Small Grant

Manivanh Aliyavong, ALiSEA Regional Small Grant Officer

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In partnership
with

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ALiSEA Small Grant : Overall Objective

Strengthen **ALiSEA** members and partners on three major topics in support to agroecology transition in the Sub-Mekong Region.



ALiSEA GRANT FACILITY

Are you engaged in agroecological initiative?

The **Competitive grant** scheme opportunity in **May 2022** in **Cambodia, Laos, Vietnam and Thailand**
Open now!

THREE SMALL GRANT FACILITY TOPICS:

- 1) Assess the impact and effect of public policy supporting agroecology and food systems
- 2) Test and support agroecological innovations (technical, organizational and institutional)
- 3) Evaluation of the performances, impacts of agricultural and food system and enabling conditions towards agroecology transitions

WHO MAY APPLY?
Consortium of organizations involved in agroecology with ALiSEA members as team leader

Deadline Tuesday 21st June 2022

Donors by



Implemented by




ALiSEA
Agro-ecology Learning alliance in South East Asia

2023 ALiSEA GRANT FACILITY

03 TOPICS ON: *Cambodia, Laos, Vietnam, and Thailand*

The **Competitive grant** scheme opportunity in **August 2023**
Open now!

WHO MAY APPLY?
A consortium of organizations involved in agroecology with ALiSEA members as team leader

APPLY NOW
Before **16 Oct 2023**

Link field experience in Agroecology and Food Systems to Public Policy framework

Support and improve market access for Agroecology Products

Empower and strengthen the involvement of Youth in Agroecology initiatives

Implemented by:



In partnership with:



Funded by:



5 Grants rewarded in 2022-2023

Call 2022: 2 grants



Link and learn agro-ecology from the field



Promotion of renewable energy into agriculture post harvesting for smallholders

Call 2023:3 grants



Scale up Agroecological Products Access to Sustainable and Integration Markets Project

Re-enchanting Agriculture for Youths through an Organic Network



Youth and Women Empowerment for Agroecology

Small Grants: Key Figures in Laos

Diversity of selection committee members : DPA, UNI4COOP, Action Aid , CIRAD, GRET, CARES, CASRAD, SAEDA, CISDOMA, IRD, NOMAFSI and Scientific Secretariat of the Advisory Committee.

20

Projects proposals received in Laos

5

Grants awarded Team leaders of consortium:
3 national NGOs, 2 private sectors.

33

Knowledge products created



73 ha

601 people

414 women



Budget: €15–20k per grant; €94k total in Laos
Sources of funding : ASSET project (AFD/EU)



Achievements and Results

- **Objectives:** Increase the capacity of young people particularly women on agricultural products through environmentally friendly and agroecology practices
- **Farmers strengthened** their understanding of gender roles through GALS training, while young agroecology practitioners received comprehensive leadership, technical, and soft-skills training, enabling them to successfully implement agroecological practices.
- **Established** the "Agriculture Promotion Group for Nakha Cluster" officially endorsed by the District Agriculture and Forestry Office (DAFO)
- **Perspectives:** The formally recognized farmer group provides institutional foundation for continued activities and members demonstrated unity and commitment, with regular monitoring by group leadership
- **Total beneficiaries:** 220 farmers included young farmers (166 women)



Training technical skills (technical skills (organic farming; group formative and entrepreneur and marketing).



Small Grant Sharing results: BanSuaneAiOun

Achievements and Results

- **Objectives:** Build a sustainable network of organic farms in Luang Prabang that includes young farmers, and create effective hands-on training based on farmers know-how and experiences.

Results:

- **Develop** training curriculum in Power point format with embedded videos and technical leaflets
- **Provide** an organic farming curriculum on chicken rearing, black soldier fly, small piglet production, some garden vegetable cultivation, frog rearing, catfish rearing, beekeeping and business plan
- **Linkages** with local organic network, which markets network, Hotel, Restaurants and producers
- **Perspectives:** Building on the foundation of the organic model farm network, maintaining connections with agricultural value chains
- **Total Beneficiaries:** 40 people (students, farmers) included 15 women



Small Grant Sharing results: PDDA

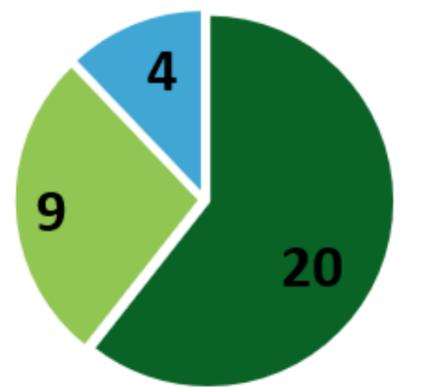
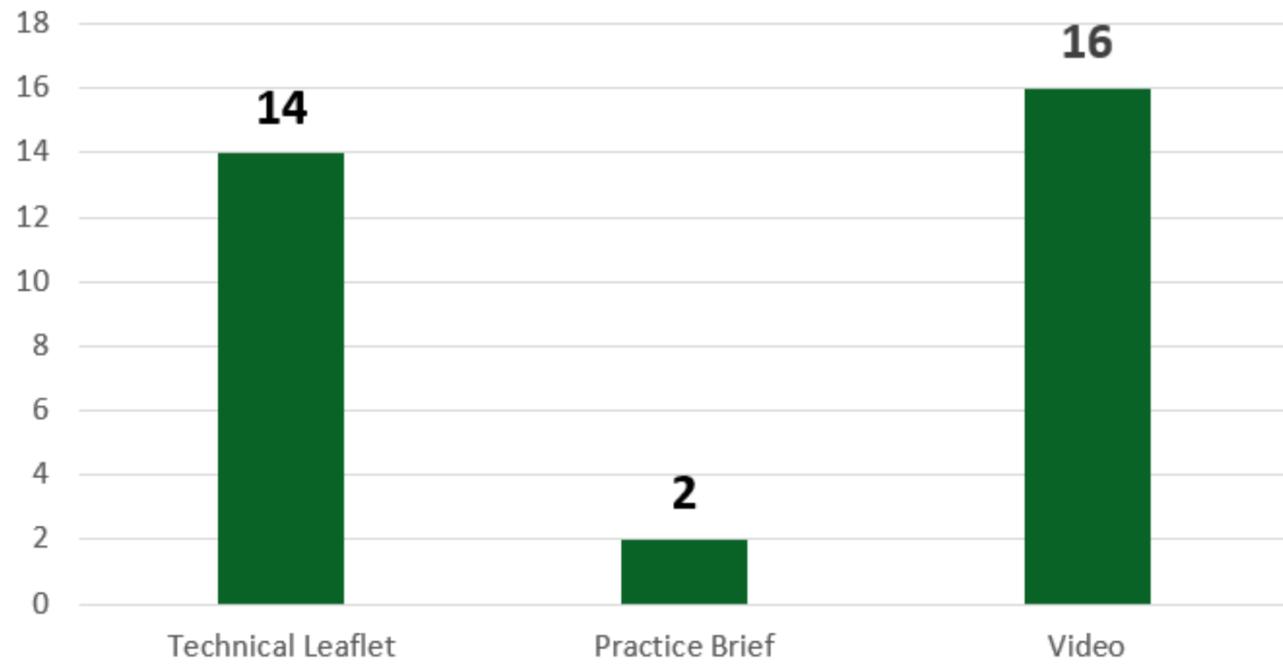
Achievements and Results

- **Objectives:** Overcome key challenges face by Xiengkhouang's organic farmers, including weak market access, low production capacity, consumer doubts, price volatility, and lack of formal producer & buyer linkages.
- **Results: Strengthened organic vegetables value chains** by improved production (increase quantity), agroecological practices , market access, and increased farmer incomes.
- **Perspectives:** Strengthen contract formalization, expand production and market reach to both new and existing target groups through continuous follow-up by DAFO and PDDA, and promote knowledge sharing via social media and the ALiSEA regional network.
- **Total Beneficiaries:** 40 farmers included 39 women
- **5.2 ha improved land management.**
- **17 greenhouses built for year-round production**



Overview of all Knowledge Products per format

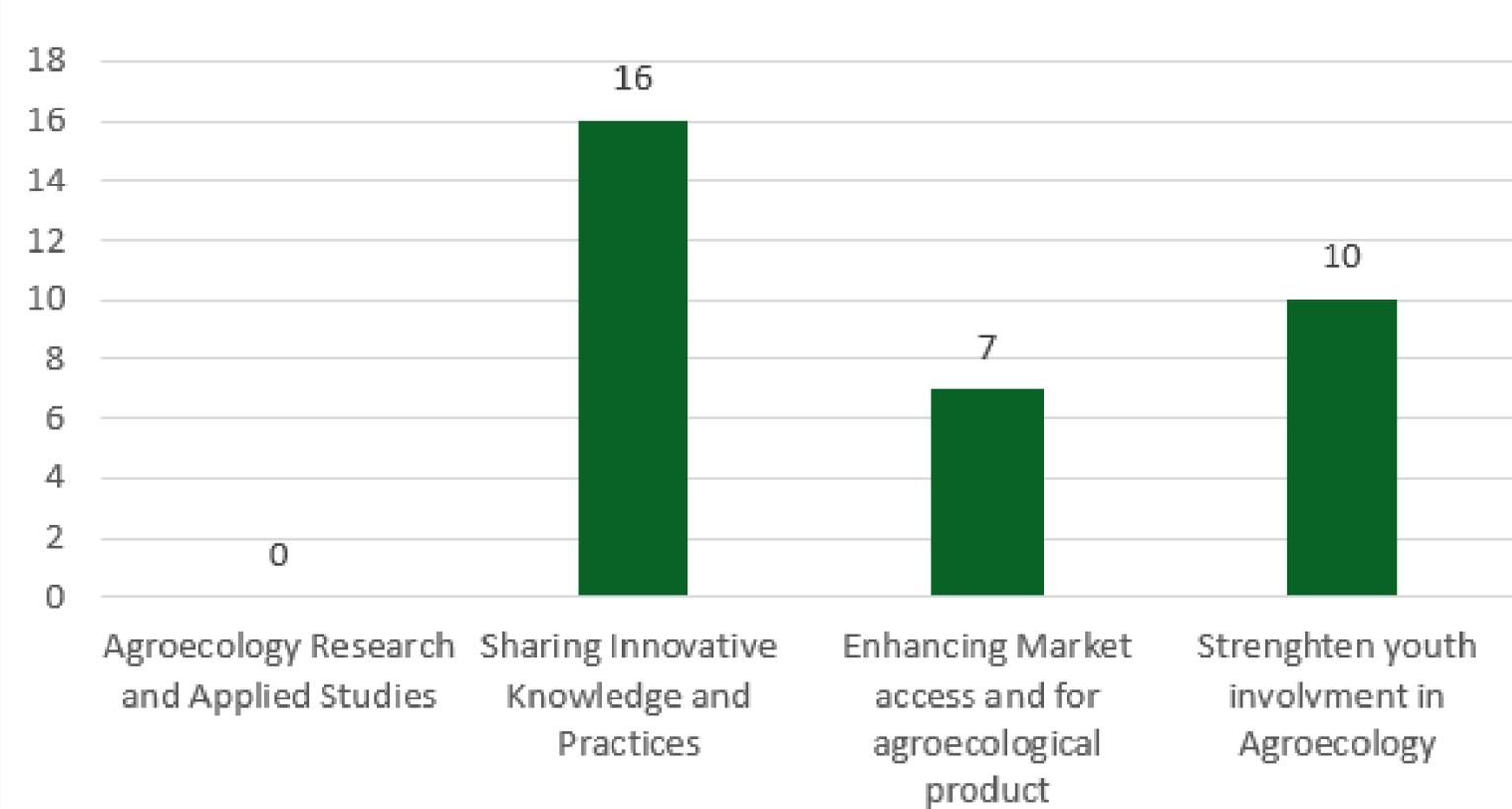
Total : 33



■ Final ■ Nearly finished ■ Ongoing

KP In progress

Overview of Knowledge Products per topic



Small Grant Sharing results: ADSA

Compost Fertilizer Recipe

Benefits of Compost

This compost acts as a superfood for your garden, building rich, living soil that supports healthy plant growth. It gradually releases essential nutrients, improves soil structure for easier root development, and retains moisture—reducing the need for frequent watering. Compost also introduces beneficial microbes that can help protect plants from disease and enhance nutrient uptake, resulting in stronger and more resilient plants.

Tips and Advice

- Store compost in a shaded area and cover it with a plastic sheet or store it in a container to protect it from rain and sun.
- When kept in a dry, well-ventilated place, compost can be stored for up to 1 year without losing its quality.
- Fresh compost should appear dark or grey, have a crumbly texture, and smell earthy, like a forest floor.
- Ensure the composting process is fully complete before using—it should no longer generate heat.

ALISEA Team

- Regional Coordinator: Lucie Reynaud <reynaud@grt.org>
- Laos National Secretary: Soulima Boudvised <scoulma2506@gmail.com>

Authors:

- Mr. Xiangmonechan KUNYATAM, Director of ADSA, <xiangmonechan@gmail.com>
- Mr. Kolaka BOUANEDAOHEUANG, Director of Phan-Thin Social Enterprise, <kolaka.kb@gmail.com>

Date of publication: June 2025

Natural pesticide recipes

Formula 4: Tobacco Leaf Solution
Against soft-bodied pests like aphids and mealybugs

Ingredients

- Tobacco leaves: 20 g
- Clean water: 2 L
- Dishwashing liquid (optional): 0.5 teaspoon

Preparation Steps

- Boil 20 g of tobacco leaves in 2 L of water until it reaches 100°C, then let it cool.
- Strain the liquid through a thin white cloth to remove the leaves.
- Mix 300 ml of the tobacco solution with 100 ml of water.
- Add 0.5 teaspoon of dishwashing liquid to help the solution adhere to plant leaves.
- Spray the mixture daily for 7 consecutive days to eliminate pests.
- For prevention, spray every 7-15 days.

Advantages

- Cost-effective and easy-to-make
- Biodegradable natural pesticides
- Combination of insecticides and repellents
- Having a broad range of effects (fungi, bacteria, viruses, insects,...)

Materials

- 20 L bucket
- 20 L container or bucket with a lid
- 1 metallic bassine
- Strainer (cloth...)
- Knives
- Sprayer
- Pair of gloves

Technical Leaflet
NATURAL PESTICIDE RECIPES

Agroecological system:

Zone	Main activities	Climatic	Health risks	Temperature
High	Plant propagation	Seasonally humid with abundant rainfall	Low	18-30°C

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Date of publication: June 2025

Recipe for Carnivorous and Herbivorous fish 1-2

Formula 4
For tilapia (3 months or older) and for catfish/ common carp (1 month or older)

Ingredients

- Finely chopped banana stems: 1 kg
- Fine rice bran: 1 kg
- Fermented fish water (from leftover fish waste): 1 L

Preparation Steps

- Mix the finely chopped banana stems and fine rice bran thoroughly.
- Add 1 liter of fermented fish water and stir well.
- Form the mixture into small balls.
- Feed the fish immediately.
- Alternatively, sun-dry the balls for later use.

Advantages

- Easy and inexpensive process
- Ensures high nutritional quality
- Promotes natural food production by boosting plankton and floating plants

Recommendations for Small Fishes

Use 1 kilogram of feed for every 4,000 fishes, feeding once daily in the morning or afternoon.

From the start of the farming process until fishes are one month old, it is recommended to use fresh feed.

Once the food mixture is prepared, shape it into small round pellets and place them in a feeding container submerged in the fish pond. When the fish reach one month of age, switch to dry food.

Materials needed

- Grinder and blender
- Open and sealed buckets
- Tray

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Date of publication: June 2025

Video: Youth and women empowerment for AE

ການເສີມສ້າງຄວາມຮູ້ດ້ານນິເວດກະສິກໍາ ແລະ ພາວະຄວາມເປັນຜູ້ນຳ
Building agroecology and leadership skills through project

ນາຍໂຕໂຕກາງາ
Youth and Women Empowerment for Agroecology (YWEA)

ໂຕກາງາສ້າງຄວາມເຂັ້ມແຂງຂອງພວນ ແລະ ແມ່ຍິງ

Make Compost Fertilizer

Composting can be done using locally available raw materials, making it an affordable and accessible alternative to chemical fertilizers. By reducing dependence on external inputs, compost production can significantly lower costs—farmers may save up to ten times the amount they would spend on chemical fertilizers.

Formula 1 and 2

Ingredients - Formula 1

- Regular soil: 1 kg
- Fresh rice husks: 1 kg
- Burnt rice husks: 1 kg
- Animal manure: 1 kg
- Leguminous plants: 1 kg
- Molasses: 2 tablespoons
- Water: 20 L
- Bio-Fermentation Liquid: 1 kg
- Fine rice bran (optional): 1 kg

Preparation Steps - Formula 1 and 2

Mixing Ingredients

- Combine all ingredients thoroughly, except the fine rice bran, which can be added later if needed.

Forming the Compost Pile

- Shape the mixed materials into a circular pile to support proper aeration and moisture distribution.

Preparing the Bio-Fermentation Liquid

- Mix 2 tablespoons of molasses with 2 to 8 tablespoons of Bio-Fermentation Liquid in 20 liters of water.

Adding the Bio-Fermentation Liquid

- Evenly sprinkle the prepared liquid over the compost pile until it reaches about 60% moisture content (moist but not soggy).

Last steps

- During the first 7 days, the compost will generate high heat. Turn or flip the pile daily for 2-7 days to ensure even decomposition.
- Do not stack the compost more than 5 layers high.
- Once the compost has cooled, it is ready for use.

Key Notes

- The ideal moisture level is around 60%—the pile should feel moist when squeezed but not drip water.
- If the mixture becomes too wet, add fine rice bran to help absorb excess moisture.
- If it is too dry, use rice washing water instead of plain water (mixing the compost with molasses or bio-fermentation liquid can increase the compost's effectiveness).

Usage - All Formulas

- Apply the compost on vegetable beds at the rate of 1 kg per square meter.

Formula 1: Lemongrass, Galangal, Turmeric

Ingredients

- Galangal: 1 kg
- Turmeric: 1 kg
- Lemongrass: 1 kg

Preparation Steps

- Finely chop or crush all the three ingredients.
- Mix 20L of clean water with the crushed mixture in a bucket or container. Stir well to ensure a proper mixture.
- Let the mixture ferment overnight (12-24 hours).
- Strain the liquid using a fine cloth or sieve to remove solid residues.
- Dilute the concentrated solution with an equal amount of water (1:1 ratio).

Use

- Apply once every 7 days for prevention or more frequently for severe infestations.

Benefits

- Chilies contain capsaicin, which kills insects and fungi.
- Local red chilies have pungent oils like piperine, which repel pests.
- Bird's eye chilies contain aromatic oils, which repel ants, aphids and whiteflies.
- This formula also helps to prevent viral diseases.
- Effectiveness: Works against aphids, whiteflies, and soft-bodied insects.

Formula 2: Chili Mix

Ingredients

- Fresh red chili: 1 kg
- Fresh bird's eye chili: 1 kg
- Fresh green chili: 1 kg

Preparation Steps

- Finely crush or blend fresh chili peppers. Wear gloves to avoid skin irritation from capsaicin.
- Mix the crushed chilies with 20 L of clean water in a sealed container (e.g., bucket with lid).
- Let it ferment for 3-5 days in a shaded, cool place.
- Strain daily and strain the liquid through a fine cloth or sieve to remove solid residues.

Adjustment: Use higher concentration (0.5 L) for severe infestations or lower (0.2 L) for mild prevention.

Frequency: Every 3-5 days for active infestations. Every 7-10 days for prevention.

Storage: Store unused extract in a cool, dark place for up to 1 month.

Benefits

- Effective against fungal diseases and pests like aphids, whiteflies, thrips, and red spider mites.

Formula 3: Garlic and Water

Ingredients

- Garlic: 1.5 kg
- Water: 28 L

Preparation Steps

- Finely crush or mince fresh garlic.
- Mix the crushed garlic with 20 liters of water in a clean container.
- Let it ferment for 1-2 days.
- After fermentation, filter the liquid through a fine cloth or sieve to remove solid particles.

Use

- Mix the concentrated solution with 8 liters of clean water.
- Reapply every 3-5 days or after rain for severe infestations.

Benefits

- Effective against fungal diseases and pests like aphids, whiteflies, thrips, and red spider mites.

Formula 1 For Nasia

Ingredients

- Compost: 100 kg
- Fine rice bran: 20 kg
- Hydrated lime mixed with water: 70 kg
- Water: 70 L
- Bio-fermentation liquid: 1 L

Preparation Steps

- Crush all the ingredient into a fine powder, place them in gauze, and tie the gauze tightly. Put the bundles in a container and pour water over them.
- Soak the ingredient and whisk it for 5-10 minutes twice a day for 15 days. The mixture can then be used and stored for up to six months.

Recommendations for Feeding Herbivorous Fishes

- Prioritize Plant-Based Feed**
Catfish and common carp are naturally herbivorous or omnivorous, so their diet should mainly consist of vegetables, aquatic plants, and agricultural by-products. Avoid excessive protein-rich feeds, such as meat or fish meal.
- Avoid Overfeeding**
Overfeeding causes decomposition, leading to water pollution with high levels of ammonia and nitrites, as well as oxygen depletion. Poor water quality weakens fish immunity and can result in disease. Feed small portions 2-3 times daily, and ensure the fish consumes all feed within 10-15 minutes. Remove any uneaten feed promptly to prevent spoilage.
- Adjust Feeding Based on Season**
Fish eat less in cold weather, so reduce the feed quantity in this case. During warm months, when their metabolism is higher, increase the feed slightly.
- Regularly Monitor Water Quality Using Rapid Test Kits**
Check pH, ammonia, and dissolved oxygen levels frequently.

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3SD

Small Grant Sharing results: BanSuaneAiOun

Frog Breeding and Rearing

Advantage
Raising frogs offers **eco-friendly pest control** and provides an **alternative income** source through integrated frog-rice farming. It supports food security, offering a sustainable protein source for mountain communities, while reducing pesticide use. This method aligns with agroecology, focusing on organic livestock feeding.

Mastering Tank Setup & Tadpole Rearing
Clean the tank: It's important to clean and disinfect the tank with dry lime powder before starting.

Water selection and quality: The best option is to use water from a nearby river or stream. If it's not available, you can use tap water — but let it sit for 24 hours before use to allow the chlorine to evaporate.

Maintain good water quality and regularly sort tadpoles to reduce losses. Use air stones or bubblers to increase oxygenation.

Adapt the size: Start small to minimize risks and ensure easier management. Avoid overcrowding to prevent stress and disease.

Consider Rice Paddy Farming: This method mimics the frog's natural habitat, supporting their health and sustainability.

Adapt Feeding: Tailor the diet based on age and purpose (commercial vs. breeding), focusing on high-protein, energy-rich feed for rapid growth.

Authors:
• **Mr. Vongsone CHANTHOUNMA**, Smile farm farm owner, <vongsonec@gmail.com>
• **Mr. Anouthikone SIPASEUTH**, BanSuaneAiOun Organic Farm, farm owner, <stip_sipaseuth@hotmail.com>

Date of publication: June 2025

Frog Farming Costs – 3-Month Cycle with 100 Froglets

- Total cost: 782,500 LAK**
- **Concrete tank** (1,200,000 LAK, 5-year use): 60,000 LAK depreciation per 3 month cycle
 - **100 froglets**: 100,000 LAK
 - **Feed (3 types)**: 430,000 LAK
 - Feed No.1 - 1 kg: 30,000 LAK
 - Feed No.2 - 5 kg: 100,000 LAK
 - Feed No.3 - 15 kg: 300,000 LAK
 - **Other expenses** (equipment, utilities, etc.): 192,500 LAK
- Revenue & Profit**
- **Frogs Sold**: 80 frogs (80% survival), approx. 18 kg (15 frog/kg)
 - **Selling Price**: 90,000 LAK/kg
 - **Total Revenue**: 1,440,000 LAK
 - **Estimated Profit**: 657,500 LAK per cycle
- This model excludes labor costs but highlights the strong income potential of small-scale frog farming with minimal capital investment.

Technical Leaflet: FROG BREEDING AND REARING

Luangprabang, Laos

Agroecological system: Integrated farming systems

Zone	Main activities	Climate	Rainfall	Temperature
Plain	Rice production, frog rearing	Subtropical highland (dry season: June to October)	1000-1500 mm/year	18°C-30°C

Introduction to Frog Breeding and Rearing
This leaflet provides essential information on the breeding, rearing and feeding of frogs in both commercial and breeding environments. It covers key aspects such as selecting breeding frogs, managing water quality, feeding practices, and ensuring healthy growth. By following these guidelines, you can ensure optimal conditions for frog development and production.

Step 01: Selecting Breeding Parents

Do not feed tadpoles for 1-2 days after hatching. Start feeding on day 3 with hard-boiled egg yolks or commercial powdered feed (30-40% protein), 3-4 times daily. Change 50% of the water morning and evening. Rear tadpoles until 7 days old, then sort by size and transfer to a new tank or net cage at 1,500-3,500 individuals per square meter. The tank should be filled with 10-15cm of water. There's no need to change the water daily. Feed according to age: powdered tadpole feed for 3-10 days old, and small floating pellets for tadpoles 30 days and older. By 30 days, tadpoles become froglets. Regularly sort tadpoles by size to prevent larger ones from eating smaller ones.

Female: A breeding female with eggs will have a noticeably swollen abdomen.
Males: During the breeding season, male frogs make loud calls, the vocal sac under their chin enlarges, and their bodies turn a darker yellow. When a finger is placed near their abdomen, the male uses both front legs to grasp it tightly.

Step 02: Frog egg hatching
After the eggs are released, they hatch into tadpoles in 18-32 hours. Fill the tank with 10-15 cm of water at a density of 5,000-7,000 eggs per square meter. Use an air pump to increase oxygen and change 50% of the water daily. If no air pump is available, a continuous drip system can provide oxygen and replace the water. Once hatched, tadpoles can be moved to a net cage or kept in the same tank for rearing.

Step 03: Rearing Tadpoles

Step 04: Feedings
From day 30 to 45, feed frogs three times daily with frog feed containing at least 40% protein available at your local agricultural supply store. From day 46 to 60, switch to floating pellets with 38% protein, three times a day. From 60 days onward, provide feed with a minimum of 28% protein, three times daily for one month.

Feeding methods:
• For commercial farming, feed unlimited amounts 3-4 times a day.
• For breeding stock, feed 1-2 times a day.
• Frogs naturally prefer insects and earthworms, which can be attracted by electric lights at night. In this case, feed only once a day.

Step 05: Farm Crop Production
To support sustainable pig feeding, grow a variety of crops on the farm such as maize, cassava, taro (from natural sources), banana trees (for stems and fruits), pumpkin, and forage legumes like stylo and Napier grass. Cassava and legume species are highly recommended due to their nutritional value.
• Pig feed should come from three sources: natural forage, farm-grown crops, and external market inputs. This combination ensures feed security, lowers costs, and enhances farm resilience.

Commercial Farming: Frogs reach mature size for sale in 90 days.

Semi-intensive local pig raising system

General Tips and Advice

- Grow fodder for pigs to reduce reliance on commercial feed, as local pigs typically have low Feed Conversion Ratios (FCR) and Average Daily Gain (ADG).
- Implement paddock rotation to prevent over-rooting and maintain pasture quality.
- Separate pigs by age and size rather than mixing them to improve management and reduce stress.

Pigs' protection from diseases

- Visitors should not be allowed entry, or must change clothes and shoes before entering.
- Feeding materials should be dedicated exclusively to pigs.
- Equipment should be used only for pig-raising purposes.
- Staff must change shoes and thoroughly wash hands before and after handling pigs.
- Boars should never be shared between groups.

Our farmer's experience
Merci Farm, located in Laos, began its journey in late 2022 with the goal of helping smallholder farmers adopt sustainable agricultural practices. The name "Merci" (meaning "thank you" in French) reflects gratitude for the collaborative efforts that brought this farm to life. It functions both as a working farm and a permaculture learning garden, emphasizing eco-friendly farming methods that help local communities adapt to the impacts of climate change. The farm blends traditional Lao agricultural wisdom with modern, sustainable techniques.

Mr. Phaeng XAPHOKHAME, the farm's owner, is passionate about sharing his knowledge. After learning about permaculture and organic farming in Australia, he returned to Laos to implement these practices.

Technical Leaflet: SEMI-INTENSIVE LOCAL PIG RAISING SYSTEM

Luangprabang, Lao PDR

Agroecological system: Integrated farming systems

Zone	Main activities	Climate	Rainfall	Temperature
Plain	Rice production, pig raising	Subtropical highland (dry season: June to October)	1000-1500 mm/year	18°C-30°C

Authors:
• **Mr. Phaeng XAPHOKHAME**, Farm owner, <xaphokham.phaeng@gmail.com>, <Mr. Phaeng XAPHOKHAME, Farm owner, <xaphokham.phaeng@gmail.com>, <Mr. Phaeng XAPHOKHAME, Farm owner, <xaphokham.phaeng@gmail.com>
• **Mobile**: +856 20 97090797

Date of publication: August 2025

Introduction
This technical leaflet provides practical guidelines and practices for establishing and managing a semi-intensive local pig raising system. It covers aspects such as housing setup, paddock fencing, feeding strategies, and crop production to support pig nutrition. Emphasizing agroecological principles, this guide promotes environmentally friendly practices that maintain soil health, biodiversity, and resource efficiency. Designed for small to medium-scale farmers, the leaflet aims to optimize animal welfare, improve feed efficiency, and enhance farm productivity through cost-effective and well-planned methods.

Step 01: Pig Housing and Fencing
Within the paddocks, allocate at least 40m² of space per piglet to support healthy growth and minimize stress.
Washed iron mesh fencing is durable but often too expensive. Use electric fencing as a more cost-effective solution to subdivide paddocks. A fence height of approximately 1 meter is generally sufficient for piglets and growing pigs.
Build a feed preparation unit (pig kitchen) for cooking or processing pig feed.

Step 02: Farm Crop Production
To support sustainable pig feeding, grow a variety of crops on the farm such as maize, cassava, taro (from natural sources), banana trees (for stems and fruits), pumpkin, and forage legumes like stylo and Napier grass. Cassava and legume species are highly recommended due to their nutritional value.
Pig feed should come from three sources: natural forage, farm-grown crops, and external market inputs. This combination ensures feed security, lowers costs, and enhances farm resilience.

Step 03: Feeding and Management
Pigs are usually fed twice daily, in the morning and evening, with feeding frequency and quantity adjusted based on their age, weight, and production stage (e.g., growers, finishers, pregnant sows). The proportion of each feed type should be adjusted according to daily availability.
Monitor how quickly pigs eat. If food remains after 5-7 minutes, the portion is too large and should be reduced.
For young pigs and females before mating, add a small amount (about one handful) of commercial feed to their cooked food.
When transferring young pigs from maternal milk to cooked feed, diarrhea may occur; adding bananas or charcoal to their diet can help alleviate this issue.

Step 04: Tree and branch selection
Tree selection
• Productive (high yield)
• At least 3 years old
• Healthy, with good growth performance
• Corresponds to market demand

Branches selection
• Neither too old nor too young
• Length 50-70 cm, diameter about 0.5 cm
• Straight branch

Fruit trees cutting and nursing

Material and Equipment Preparation

Materials

- Rootstock
- String
- Hormone (B-Start, Viannin B1, Rooting Hormone)
- Coconut fiber

Equipment

- Sharp pruning shears (or secateurs)
- Grafting knife (or budding)

Rationale of the Initiative
This initiative is carried out within the framework of the national agricultural development policy, which prioritizes improving fruit production and supporting rural livelihoods. It originated from participatory workshops, where farmers expressed a strong need for training and access to high-quality planting material.

Advantages of Fruit Trees Propagation
Fruit tree propagation helps multiply trees, conserve species, boost yields, and generate income. It protects against mutations, maintains superior varieties, and supports commercial fruit production. By using methods such as cutting, grafting, and tissue culture, farmers can increase the number of trees, preserve desirable traits (such as greater disease resistance, higher yields, and better nutritional value, and safeguard valuable genetic resources. These improvements benefit farmers and consumers while strengthening food security.

In addition, propagation supports economic growth. The production and sale of seedlings, cuttings, and planting materials can provide significant income for individuals and communities, supporting local economies and contributing to the overall agricultural sector.

Technical Leaflet: FRUIT TREES CUTTING AND NURSING

Luangprabang and Phoukhou district, Luangprabang Province, Lao PDR

Agroecological system:

Zone	Main activities	Climate	Rainfall	Temperature
Plain	Fruit tree propagation, nursery management	Subtropical highland (dry season: June to October)	1000-1500 mm/year	18°C-30°C

Authors:
• **Mimee Phommaly**, Farm owner, <mimeephommaly331@gmail.com>, <Mimee Phommaly, Farm owner, <mimeephommaly331@gmail.com>, <Mimee Phommaly, Farm owner, <mimeephommaly331@gmail.com>
• **Mobile**: +856 20 97090797

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Step 02: Propagation techniques
Cut unnecessary sub-branches using pruning shears by leaving 2-3 sub-branches per branch.
Remove a 5 cm strip of bark (ring cut).
Scrape off the cambium tissue (strip cut until sapwood) within the ring.
Apply rooting hormone (only on the upper edge of the cut).
Place a layering bag filled with coconut fiber.
Wrap with plastic and tie both ends tightly.
Record the date, number and varieties of propagation.

Step 03: Monitoring and maintenance
Check every 2 weeks to ensure the medium stays moist.
If it is too dry, add water.
Propagation is more successful in the rainy season due to higher moisture.
New branches usually appear and are ready for cutting within 8 weeks, depending on species and climate.
For some species like guava, an additional support like a stick may be needed.

Step 04: Cutting and nursing
Prepare nursery bags
• 4 x 9 inches, filled with moist soil

Cutting
• When healthy roots are visible through the plastic (brown color), cut the branch just below the rooted section.
• Prune unnecessary branches, reducing canopy by about 40-50%.
• Remove all flowers and fruits.

Prepare the nursery bed
• Raised bed (mound/colum)
• 60-70% sunlight
• Protect from farm animals and children.
• Set up sprinklers for water supply.

Transferring of the branches to the bed
• Carefully remove the plastic and plant the rooted branch in the nursery bed with moist soil

Nursery monitoring
• Check daily to ensure soil moisture between 70-80% and protect from animals
• After 3 weeks, transfer seedlings to a nursery shed with 50% sunlight
• After 6 weeks, seedlings are ready for delivery to farmers for field planting

Organic vegetable growing techniques is currently in progress

Home garden consideration

- 1. Site selection**
Choose a site with fertile soil, close to a water source and near the home to reduce labor and energy for daily care and harvesting.
- 2. Vegetable selection**
Choose diverse crops adapted to local climate and family consumption. If selling, check market demand.
- 3. Light and Shed**
Plants need light for photosynthesis. Short-day shaded species (e.g. galangal, ginger, lemongrass) can grow in partial shade; full-sun vegetables (lettuce, Chinese cabbage, chili) require full daylight

Technical Leaflet: HOME GARDEN CONSIDERATION

Luangprabang, Lao PDR

Agroecological system: Integrated farming systems

Zone	Main activities	Climate	Rainfall	Temperature
Plain	Vegetable growing, home garden	Subtropical highland (dry season: June to October)	1000-1500 mm/year	18°C-30°C

Garden designs

- Traditional garden**
- Vertical garden**
- Off ground garden**

ALISEA

Organic vegetable growing techniques 1/2

Testimony

Ms. Sodsuda Udomsouk, the Organic Agriculture Cooperative of Paik District (POCA), has collected formulas and knowledge related to the production of natural pesticides and bio-fertilizers. Most of this knowledge comes from practical experience leading farmers in real implementation, from projects that support farmers, and from competing knowledge gained from international volunteers who have worked with POCA. Therefore, she filed and collected natural fertilizers and pesticides to replace chemicals. These techniques are suitable for farmers because they are low-cost, safe for the health of producers and consumers, and environmentally friendly.

Advantages

- Cost-effective of producers
- No harmful to producers and consumers
- Environmentally friendly
- Productive & Good prices

Recommendations

- Be carefully when using these recipes, you should wear facemask to protect dizziness because some formulas have a strong odor.
- You should follow the recommendation of harvesting vegetables according recipes
- The most ingredient you have, the correct method you follow is the most effective to your garden

Technical Leaflet: TECHNIQUES FOR PRODUCING INSECT REPELLENTS 1/2

ALISEA Team

- Regional Coordinator: Lucie Reynaud <reynaud@gst.org>
- Lao PDR National Secretary: Soulima Boudvisied <soulima2506@gmail.com>

Agroecological system:

Zone	Main activities	Climatic	Soil	Temperature
Plain	Rice, vegetable	Subtropical (rainy season: June to October)	1000 meters	Avg. max: 35°C Avg. min: 15°C

Authors:

- Xorther XAOCHA, (PDDA) project manager <xorther@pddd.com>
- Sodsuda Udomsouk, (POCA) <sodsuda@yahoo.com>

Date of publication: September 2025

Organic vegetable growing techniques 2/2

How to produce and use pesticides against various pests

Ingredients

- BES water 1-2 spoons
- Tomato leaves juice 1 spoon
- Chromolaena odorata (Jack in the Bush) juice: 1 spoon
- Khadao of 1 spoon
- Khuangkhao of 1 spoon
- Eucalyptus juice 1 spoon
- Dokdaehuang oil 1 spoon
- clean water 10 liters

Using

- Use a spray to prevent or control weeds, grasshoppers and beetles (use white lime to spread throughout the soil during soil preparation)
- Medicinal herbs 1 liter mix 3 clean water liters, if there are many insects spreading we can use oring 3 days. But if only to protect we can use 1 time per week

Advantages

- Cost-effective of producers
- No harmful to producers and consumers
- Environmentally friendly
- Productive & Good prices

Recommendation

- Be carefully when Using these recipes, you should wear facemask to protect dizziness because some formulas have a strong odor.
- You should follow the recommendation of harvesting vegetables according recipes
- The most ingredient you have, the correct method you follow is the most effective to your garden

Technical Leaflet: TECHNIQUES FOR PRODUCING INSECT REPELLENTS 2/2

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- Xorther XAOCHA, (PDDA) project manager <xorther@pddd.com>
- Sodsuda Udomsouk, (POCA) <sodsuda@yahoo.com>

Date of publication: August 2025

Organic vegetable growing techniques

Making vegetable beds

1st method - Two-layers bed

- Prepare the bed to be about 1 meter wide and as long as needed
- Dig the first layer about 10-15 cm deep and set the soil aside
- Mix this soil with approximately 30% plant residues (e.g. dried bean husks or straw)
- Then dig the second layer another 10-15 cm deep and break up the soil into a fine texture
- Mix it with around 20% plant residues (e.g. peanut shells or dry grass), and add 2 kg of organic compost per square meter
- Refill the bed by covering the second layer with the prepared mixture from the first layer
- Let the bed dry in the sun for about 7 days before use

2nd method - Single-layer bed

- Prepare the bed to be about 1 meter wide and as long as needed
- Loosen the soil by digging to a depth of about 20 cm
- Mix the soil with approximately 20% plant residues and 2 kg of organic compost per square meter
- Turn the bed over to ensure even mixing
- Let the bed dry in the sun for about 7 days before use

Material

Grab-hoe, shovels, knife, buckets, sprinkler, plastic sheet

Land improvement (twice a year)

First time (rainy season from May to October)

- Level the soil or raise the beds 15-20 cm above ground level

Second time (dry season from November to April)

- Much the soil surface or bury organic matter 1-2 cm deep

Benefits of these methods

- Mixing soil with plant residues and compost increases fertility and improves soil structure. Loose soil helps better aeration and drainage, and also helps suppress weeds
- Exposing the soil to sunlight for a few days before use helps eliminate pests and weed seeds
- Land improvements are necessary to enhance drainage, conserve water, manage high humidity, and maintain adequate soil moisture

Technical Leaflet: ORGANIC VEGETABLE GROWING TECHNIQUES

ALISEA Team

- Regional Coordinator: Lucie Reynaud <reynaud@gst.org>
- Lao PDR National Secretary: Soulima Boudvisied <soulima2506@gmail.com>

Agroecological system:

Zone	Main activities	Climatic	Soil	Temperature
Plain	Rice, vegetable	Subtropical (rainy season: June to October)	1000 meters	Avg. max: 35°C Avg. min: 15°C

Authors:

- Xorther XAOCHA, Project Coordinator, <xorther@pddd.com>
- Ms Sodsuda Udomsouk, Assistant, <sodsuda@yahoo.com>

Date of publication: June 2025

Bio-extracted liquid fertilizer (BE)

Compost Production

Ingredients:

- 1 bag (50 x 84) of dry animal manure
- 1 bag of burnt husk
- 0.5 bag of soft manure
- 1 liter of bio-extract
- Other locally available materials such as sawdust, sugarcane waste, bean husks, soybeans, green beans, coconut husks, fresh leaves, dry grass or charcoal - 0.5 bag each
- 5 tablespoons of sugar or molasses
- 10 liters of tap water

Equipment:

- Shovel, spoon and watering can
- Recipient for mixing

Method:

- Mix the dry animal manure, soft husk, burnt husk, and other materials thoroughly.
- Mix 10 liters of water with 5 tablespoons of bio-extract and 5 tablespoons of sugar or sugarcane fiber.
- Pour the liquid mixture over the dry ingredients and stir everything together.
- Water repeatedly and mix until the moisture level reaches approximately 60%. (To test moisture, handle the mixture: if it sticks together like a ball, the moisture is correct.)

Storing Method:

- Place the compost in large bags and keep them in a shady, well-ventilated area.
- Use a wooden base on the floor to prevent the compost from touching the soil.
- The compost can be used after 7 days of storage.

Technical Leaflet: BIO-EXTRACTED LIQUID FERTILIZER

ALISEA Team

- Regional Coordinator: Lucie Reynaud <reynaud@gst.org>
- Lao PDR National Secretary: Soulima Boudvisied <soulima2506@gmail.com>

Agroecological system:

Zone	Main activities	Climatic	Soil	Temperature
Plain	Rice, vegetable	Subtropical (rainy season: June to October)	1000 meters	Avg. max: 35°C Avg. min: 15°C

Authors:

- Xorther XAOCHA, (PDDA) project manager <xorther@pddd.com>
- Sodsuda Udomsouk, (POCA) <sodsuda@yahoo.com>

Insect protection formula (BES)

Ingredients

- Alcohol 50 percent - 2 glasses
- Vinegar 5% - 1 glass
- Brown sugar - 1 glass
- Bio-extracted water - 1 glass
- Dishwash liquid - 1 spoon

Steps

- Production: Mix the ingredients in a container and leave for about 24 hours before using. It should not be exposed to sunlight. It can be stored for up to 1 year.

Using

- Use: Use Insect Repellent (BES) using 2 spoons with 10 liters of water
- 10 liters of water sprayed on 20 m² (depending on the type of sprayer used)
- Used to spray all types of insects that damage vegetables and trees. Apply for 3 consecutive days, once a day. In the case of insect repellency, we should apply once a week, preferably in the evening when there is no direct sunlight. And you should pay attention to insect damage. If insects damage at night, clean them in the evening, and if insects damage during the day, clean them in the morning.

Protection against the flea beetle

Ingredients

- Garlic : 1g
- Latana flower 'Dokamsi' : 1g
- Galangal : 1g
- Tinospora 'Khuankhao' : 5g
- Ginger : 1g
- French mango 'Dokdaehuang' : 2g
- Thai peaches : 2 L
- Tap water : 2 L
- Chili : 5g
- Climbing wattle 'Nyoun leaves' : 1g

Steps

- Crush and finely chop all the herbs, mix well, add water. If the 2 liters of water is not enough (if the water is not covering all the ingredients), you can add more, cover the herbs and leave to ferment for 24 hours before using.

Using

- Mix 1 liter of herbal water with 10 liters of tap or fresh water (transparent water) and apply it in the evening for 2-3 consecutive days until the flea beetles are no longer visible.
- Should not be kept for more than 2-3 days, it will expire. It should be made and used immediately.
- Can be stored for 2 days at the end of the fermentation step (if you water more than 1 week, the vegetables will die).

General pest control

Ingredients

- Hak leaves (Calotropis gigantea)
- Champa leaves 'Dok Champa'
- Papaya leaves
- Latana flower 'Dokamsi'
- Kadao leaves or seeds (Azadirachta indica)
- Chromolaena odorata
- Tinospora 'Khuankhao'
- Betal pepper leaves
- Phaknao ulin' - Khuang tokma (Jatropha) 1kg

Preparation Steps

- 1 handful of fresh cow dung
- 10 liters of clean water
- A water tank of 13 liters or more

Steps

- Cut all the ingredients into small pieces, weigh them to make 1 kilogram (if there are less than 5 ingredients, you can still make it), pour them into the prepared container, add rice and cow dung, mix them together, and let them ferment for 5 days. Stir once a day during the fermentation step.

Using

- Mix 1 liter of herbal water with 3 liters of water. If there are many insects, use for 3 consecutive days once a day. If for prevention, use once a week.
- Can be stored for 2 days at the end of the fermentation step (if you water more than 1 week, the vegetables will die).

Protection against various types of pests

Ingredients

- kadao leaves or seeds, (Azadirachta indica)
- khuankhao, (Tinospora): 1 kg
- Blumea balsamifera, ginger, Galangal Root, dry garlic 1kg
- Chili 1kg,
- Blackberry leaves 1kg,
- Phaknao ulin' - Khuang tokma (Jatropha) 1kg

Preparation Steps

Production method: Crush all kinds of herbs into powder, tie them with gauze, put stones in them, tie them tightly, put them in a container, pour water into it, soak the herbs and stir in it for 5-10 minutes in the morning and evening for 15 days. It can be used and stored for 6 months.

Using

- 1 liter of herbal water for 10 liters of water. Mix the herbal water with water for watering or spraying in the evening for 3 consecutive days. It will help protect against all kinds of pests.

aphid control sprays

Ingredients 1st recipe

- water mixed with tobacco 1 spoon (khajst gujui)
- water BES 1-2 spoons
- Dok daehuang (khantawng) 1 spoon
- Azadirachta indica 1 spoon
- lemon grass juice 1 spoon
- garlic juice 1 spoon
- Galangal Root juice 1 spoon
- water 10 Liters

Ingredients 2nd recipe

- 1 glass of vegetable oil (oil bean oil)
- 10 liters of water
- washing liquid soap 1 spoon

Preparation Steps

mix together and apply to the head or spray (cannot be stored)

Using

Medicinal herbs 3 spoons mix with 5 clean liter water to ongoing spray to the ant at evening can eliminated the ant

Preventing and killing red ants

Ingredients 1st recipe (to prevent red ants)

- Use cheese to prevent or control red ants.
- red chili 1 spoon
- water BES 1-2 spoon
- clean water 10 liters
- Use to water gardens with red male ants.

Ingredients 2nd recipe (to kill red ants)

- dry garlic 0.5 kg (chop for smallest)
- Gasoline 0.05 L
- 2 L of water

Preparation Steps - 2nd recipe

Mix garlic and gasoline together and leave it for 2 hours. After, add 2 L of water to the mix. After 24 hours, filter the mix to keep only the liquid part. Leave for 1 week until the gasoline smell is gone

Using (2nd recipe)

3 spoons of the solution/5 liters of clean water, sprayed in the evenings consecutively, use it carefully and with an adapted facemask

Integrated cropping

Integrated cropping is a sustainable approach to vegetable farming that promotes high yields, healthier soils, and natural pest control. It combines practical, low-cost methods to support resilient and efficient agricultural practices.

General sowing (rainy season)

This refers to sowing seeds directly into garden beds or fields. For very small seeds, it's best to use a small container or box with a lid to help distribute them evenly. Make small holes in the bed to sprinkle the seeds uniformly. After sowing, lightly cover them with compost or soil, and water gently until the soil is moist.

Fertilizer application (dry season)

Fertilizer application should be based on the soil fertility of each area and follow the recommended rates for garden use. In general, organic compost is applied twice per vegetable cycle at a rate of 1 kg per 2 square meters. The first application is made when the plants develop their first two leaves, and the second is applied once the plants reach maturity.

Mulching

After planting the vegetables, cover the soil evenly with straw, dry grass, or fresh bean leaves. This helps suppress weed growth, prevents soil from splashing onto the leaves, and retains moisture in the soil. Mulching is a simple and effective way to protect and care for your crops.

Crop rotation

Crop rotation involves planting different types of crops each season. Growing the same crop repeatedly can lead to a buildup of pests and diseases, making plants more vulnerable to insect damage.

Watering

Watering should be adjusted according to weather conditions to keep the soil evenly moist—not too wet and not too dry. Check soil moisture twice a day. In the dry season, water the plants in the morning and again in the evening. In the rainy season, once a day is usually enough. (This applies to home gardens only.)

Planting in holes

Dig individual holes and plant 1 to 3 seedlings in each. You can also sow seeds directly into the holes or transplant seedlings into larger pots when water is limited. In some cases, holes are placed in the center of the bed to make better use of space.

Transplanting

This method involves sowing seeds in one location and later transplanting the seedlings to another. Use a stick or small tool to gently lift the seedlings with soil around their roots. This helps the plants establish more easily and promotes healthy leaf growth.

Harvesting

Harvesting depends on the type and maturity of each vegetable. It's best done in the early morning or evening when temperatures are cooler, and the plants should be watered beforehand. To keep vegetables fresh longer, leave the roots attached and wrap them upright in bamboo leaves. Avoid packing them too tightly, as this can lead to overheating and faster spoilage.

Formula 1: Accelerated Plant Growth (Leaves recipe)

Ingredients

- Fresh leaves such as Slim weed or Senna leaves, in total 3 kilograms
- 1 kg of ripe mango (if you can't find all three, use two types of fruit for a total of 3 kg)
- 1 kg of sugarcane fiber or sugar or 1 liter of boiled sugarcane juice
- 11 liters of tap water

Equipment

- Rubber container with a lid (capacity: 15 liters or more)
- Machete and knife
- Chopping board
- Weighing scale
- Water container

Method

- Wash the container thoroughly.
- Break the shells into small pieces and place them in the container.
- Dispose the sugar (or sugarcane juice) in the water, then pour the solution into the container. Stir thoroughly.
- Close the lid loosely and let the mixture ferment for 7 days.
- Add 1 kg of sugar with 10 liters of clean water and stir well.
- Close the lid loosely and let ferment for 3 days.

Formula 2: Produced Fruit recipe (Fruit recipe)

Ingredients

- 1 kg of bananas
- 1 kg of ripe papaya
- 1 kg of ripe mango (if you can't find all three, use two types of fruit for a total of 3 kg)
- 1 kg of sugarcane fiber or sugar or 1 liter of boiled sugarcane juice
- 11 liters of clean water

Equipment

- Rubber container with a lid (capacity: 15 liters or more)
- Machete and knife
- Chopping board
- Weighing scale
- Water container

Method

- Wash the container thoroughly.
- Break the shells into small pieces and place them in the container.
- Dispose the sugar (or sugarcane juice) in the water, then pour the solution into the container. Stir thoroughly.
- Close the lid loosely and let the mixture ferment for 7 days.
- Add 1 kg of sugar with 10 liters of clean water and stir well.
- Close the lid loosely and let ferment for 3 days.

Formula 3: Productivity Recipe (Snail recipe)

Ingredients

- 1 kg of shellfish (crabs, fish, etc.) or lean meat
- 1 kg of sugar
- 1 liter of tap water
- 1 young papaya

Equipment

- Knife and fork
- Mallet (or hand mixer)
- Wooden spoon or bowl
- Plastic container (7 liters or larger) with a lid

Method

- Wash the container thoroughly.
- Break the shellfish into small pieces and place them in the container.
- Dispose the sugar (or sugarcane juice) in the water, then pour the solution into the container. Stir thoroughly.
- Close the lid loosely and let the mixture ferment for 7 days.
- Add 3 liters of water, transfer the mixture into a clean tank, cover, and let ferment for an additional 3 days.

Lesson learned

- **Small Grant Facility interesting tool to :**
 - a) Engage members in partnership between ALiSEA members & non-members to strengthen skills and mutual learning
 - b) Provide direct funding to local organizations to test innovations and implement AE programs,
 - c) Engage members in generating knowledge to document their work & results

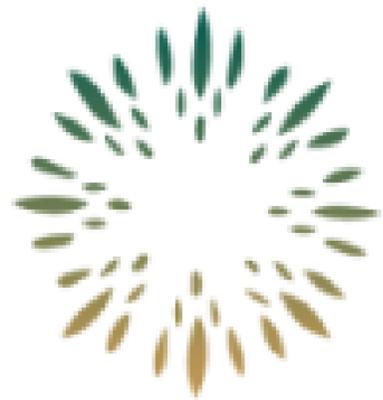
- **Recurrent question :** grant budget VS number of members benefiting

- **How to reduce gap competition between local organizations and INGOs in terms of proposal writing ?**
 - Potential alternatives : specific writing proposal training, support project implementation, translate guidelines and template in national languages

- **Discrepancy** between procedures requirements and grant size budget



- Seeking for funding to launch new calls in 2026 – 2027
- Collaboration with Agroecology Fund : Nomination Process for submitting a Small Grant Proposal to AE Fund



**AGROECOLOGY
FUND**

- ALiSEA network is **eligible to nominate members organizations**
- **Members Organizations allowed to submit a full proposal directly to AEF.**
- **Final funding decisions are made solely by the AEF, without any involvement from the ALiSEA team.**



Agroecology and
Safe Food System
Transitions

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THANK YOU !



Agroecology and Safe Food System Transitions in Southeast Asia (ASSET)

វិវឌ្ឍនាការកសិកម្មស៊ី និងប្រព័ន្ធស្បៀងអាហារសុវត្ថិភាព

ການប្រែប្រួលបរិបទសេដ្ឋកិច្ច និង គុណភាពប្រព័ន្ធស្បៀងអាហារ

Chuyển đổi Nông nghiệp sinh thái và Hệ thống Thực phẩm An toàn



Main Challenges in Laos

Submission & Implementation

- Grantee faced gaps in project management and implementation, due to a disconnection between proposal writers and implementing teams.

Monitoring & Support

- Delayed feedback, and staff turnover affecting coordination

Finance & Admin Management

- Budget overspending, reporting and procedures manual confusion, incomplete documentation.

External factors

- Delays were mainly caused by seasonal disruptions, natural disasters, grantee illnesses, and simultaneous management of multiple grants.