



## Strengths

- Improves production efficiency and can be replicated in other villages
- Enables the expansion of rice field areas combined with fish farming
- Offers potential to improve fish species for better adaptation to rice field conditions

## Weaknesses

- Requires irrigation or reliable water sources; rain-fed fields are unsuitable
- Shallow water fields may face challenges such as high temperatures, fish predation by birds, and theft
- The use of chemical insecticides and herbicides can be harmful to fish



*This document includes data, information, and photographs from the TABI project (2009–2020)*

## Authors:

- **Mrs. Xaysomphone Phaiphadith**, RDA, <xaysomphone.ppd@gmail.com>
- **Mr. Sengphanh Sayphoumie**, Project facilitator, TABI project <ssengphanh@yahoo.com>

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## Results from the field

Fish raised in rice fields are usually sold at local markets or directly to traders who visit the villages. The selling price typically ranges from 25,000 to 30,000 kip per kilogram. Suitable species for rice–fish farming include carp, tilapia, and naturally occurring aquatic species such as catfish, whitefish, river prawns, shrimp, snails, and eels.

## Example from the Phaxay District

In four target villages, 31 families practiced rice–fish farming across a total of 9.1 hectares. They released 112 kg of fish (approximately 12 kg per hectare) and harvested a total of 1,187 kg. Part of the harvest was kept for breeding, while the remainder was sold. The activity generated an income of 11,370,000 kip, with an average of 2,842,500 kip per family in 2018.

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## ALiSEA Team

- Regional Coordinator: **Lucie Reynaud** <reynaud@gret.org>
- Laos National Secretary: **Soutima Boudvised** <soutima2506@gmail.com>

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## Technical Leaflet INTEGRATED RICE AND FISH FARMING: STEP-BY-STEP GUIDE



Location of implementation  
Phosy, Nahung, Xiengdy, and Navan  
village, Xiengkhouang Province, Laos

## Agroecological system:

Zone	Main activities	Climate	Rainfalls	Temperature
Plain	rice / vegetable / bee raising	Seasonally tropical (rainy season: June to October)	~ 1400mm/year	Avg max: 33°C - Avg min: 10°C

# Combining Rice Growing and Fish Raising

Raising fish in rice fields is a smart way for farmers to make use of their land year-round. Fish not only provide an extra source of income and food, but also support rice growth by eating weeds and pests, loosening the soil, and adding natural fertilizer. The following steps explain how to successfully combine rice cultivation with fish farming.

## Step 01: Site preparation

### 1.1: Rice field

The rice field should:

- Have year-round water availability or access to reliable irrigation
- Be slightly elevated to prevent flooding while retaining water, the soil should not be too porous
- Have fertile soil with a pH between 6.5 and 7.5
- Ideally be located near the house for easier management

### 1.2: Fish farming pond construction

- Reinforce the bunds with soil or other materials to prevent seepage and erosion
- Raise the bunds by 0.5–0.8 meters to maintain a water depth of 25–30 cm
- Dig a trench around the edges of the field (0.5–0.8 meters wide and 0.5–1 meter deep)
- If possible, create a small pond within the field to facilitate drainage and fish harvesting
- Install drainage channels equipped with pipes or nets to prevent fish from escaping

### 1.3: Field preparation and predator control

- Apply lime to eliminate pathogens harmful to fish and to enhance soil fertility.
- Remove predators and potential threats, such as snakes and other animals that may harm the fish.

## Step 02: Selection of fish species



Choose fish that:

- Are easy to raise, grow quickly, and do not eat rice plants
- Can reproduce rapidly and reach market size within 3–4 months
- Tolerate shallow water and environmental fluctuations
- Are popular with consumers

## Step 03: Selection of rice varieties

Choose rice varieties that:

- Have strong roots to withstand damage caused by fish movement
- Are long-duration or annual types that match the fish rearing cycle
- Can grow in deep water, as fish farming requires higher water levels than rice cultivation alone

## Step 04: Timing and Stocking density for fish

- Apply manure to the field one week before releasing the fish to enrich the water for both plants and aquatic life
- Release fish 1–2 weeks after transplanting the rice, once the plants are well established
- Recommended stocking densities:
  - Tilapia: 8,000–10,000 fish per hectare
  - Carp: 5,000–6,000 fish per hectare

## Step 05: Feeding



- Use natural feed by applying animal manure (e.g., chicken, cow, or buffalo dung) at a rate of 50–80 kg per lot. This promotes plankton growth, providing a low-cost and effective food source for local fish.

## Step 06: Maintenance and Monitoring

- Maintain a water depth of 25–30 cm until harvest to ensure optimal fish growth
- Regularly check for and remove predators such as snakes, fish-eating birds, and nocturnal animals
- Avoid using chemicals, insecticides, or pesticides in areas where fishes are present

## Recommendations

- If dikes are prone to erosion and cannot withstand water pressure, plant perennial trees or ground cover to stabilize them
- In case of drought or low water levels, carefully relocate young fish to prevent stress or injury
- To prevent fish from escaping during floods, install drainage pipes and cover their openings with fine mesh nets