

# **Developing new recommendations through partnership trials with farmers**

## **FISH PRODUCTION IN RICE FIELDS**

Livestock and Fisheries Section, Savannakhet - Aquaculture Systems Group,  
Institute of Aquaculture, Stirling



**RICE-FISH CULTURE PROJECT**  
**INSTITUTE OF AQUACULTURE**

ODA Aquaculture Research Programme

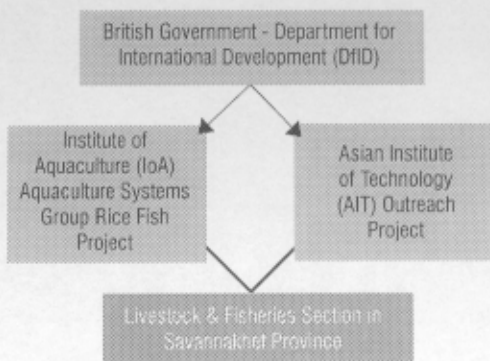
## Prologue

This booklet has been produced by the Department for International Development (DfID) (formerly ODA) project R6380CB co-ordinated by the Aquatic Systems Group (ASG), Institute of Aquaculture, University of Stirling in collaboration with the Livestock & Fisheries Section (LFS) staff of Savannakhet Province, as well as collaborating staff of the Loa Women's Union (LWU) with the aim of helping the development of recommendations for growing fish in rice based agro-

ecosystems. It forms part of a process being established by the LFS to document and regularly revise recommendations for farmers and support farmers research. The LFS in Savannakhet Province, amongst its other activities, provides recommendations to farmers regarding fish and livestock production and veterinary issues.

The process of supporting farmer research follows on from a "situation analysis" (a participatory approach to understanding issues within, and characteristics of, local communities) which has just been completed by the section with support from ASG.

The Section is currently supported by the Asian Institute of Technology (AIT) Outreach Project to strengthen its capacity to develop and extend aquaculture and fisheries technology. The Aquatic Systems Group (ASG) research project to investigate and address constraints to raising fish in rice is working closely with the section and Outreach.



## Purpose of this Book

This booklet is to explain how provincial and district officers in the LFS and LWU helped farmers to plan trials for fish in rice. It will also help the staff to record the results of the trials in their own district and compare them with the results of trials in other districts.

It has been written because we have developed a new way of doing research, which will help us and the farmers to find technologies for rice-fish production which are suited to their own farming conditions. This booklet will help to remind us of the procedure and help us to make suggestions to improve it.

## Who is involved

### Key field researchers:

#### *In Khantabouli District*

Mr. Somboun Head of District Livestock and Fisheries Section, Khantabouli  
Mr. Bounthavy, District Livestock and Fisheries Section, Khantabouli  
Mrs. Nouna, District representative Lao Women's Union  
Mrs. Syronphan, b. Xok Lao Women's Union

#### *In Atsphangtong District*

Mr Somphit Head of District Livestock and Fisheries Section  
Mr Phonphet District Livestock and Fisheries Section  
Mrs Khanthamala District representative Lao Women's Union  
Mrs Khanthong Ban Nanokien LWU  
Mrs Leoudone Ban Lian-xai LWU

#### *In Sepon District*

Mr Samlan Head of District Livestock and Fisheries Section  
Mr Baula District Livestock and Fisheries Section  
Mrs Okham District representative Lao Women's Union  
Mrs Khounsy Ban Sepon LWU  
Mrs Home Ban Thakhong LWU

### Provincial support staff:

Mr Bounthiane Deputy Head, Provincial Livestock and Fisheries Section, Savannakhet  
Mr Khamchanh, Provincial Livestock and Fisheries Section, Savannakhet  
Mr Bounthong, Provincial Livestock and Fisheries Section, Savannakhet  
Mr Bounthanom, Provincial Livestock and Fisheries Section, Savannakhet  
Mr Thonglay, Provincial Livestock and Fisheries Section, Savannakhet  
Mr Tingkham, LWU, Provincial Office, Savannakhet

### Training and other support:

Mr Graham Haylor, ASG, IoA, Stirling  
Ms Anna Lawrence, AERDD, Reading  
Mr Eric Meusch, Local consultant, Savannakhet

## Where we are working

We are working in Savannakhet Province, the largest and most low-lying province in Lao PDR, occupying 21,774 km<sup>2</sup> or just over 9% of the country. The province is quite varied. Much of the Savannakhet Plain, which borders the River Mekong and one of its tributaries Xe Banghiang, is below 200 m. The central part of the province comprises rolling upland, to the east towards the boarder with Vietnam is highland with mountains and upland valleys. Over one fifth of the country's rice is produced in 92,400 ha of paddy in the province. The annual rainfall for the whole country is 1500 - 2000 mm, with rainfall averaging about 1778 mm/y. The wet summer season prevails from about May to October, when 75 - 90% of rainfall occurs and a dry, cool season extends from about November to February.

## We are working in 2 villages in each of 3 Districts:

### BAN XOK AND BAN GNANGSOUNG IN KANTABOULI,

A lowland district about 15 km from Savannakhet town, characterised by lowland paddy farming, with new road and community irrigation projects being developed, with relatively good transport and access to inputs and markets.



ban Nanokien and ban Lianxai in Atsphangtong, A district about 90 km from Savannakhet town and the Mekong, characterised by rolling upland paddy in dry dipterocarp forest, bisected by Route 9 (the main road from Savannakhet to Vietnamese border).

ban Sepon and ban Thakong in Sepon, A remote upland district near the Vietnamese border about 240 km from Savannakhet close to the border with Vietnam, characterised by upland paddy with some mountain valley paddies and bomb craters (the area was severely affected by the war from 1964 to 1973, with particularly heavy bombing) with some potential for fish production and with little institutional development or external assistance, poor access / transport and undeveloped markets.



## 1 A new approach

The traditional approach to giving farmers new information has been for scientists to develop and standardise technical recommendations and for district staff to pass these on to farmers.

**But: it is difficult to develop good recommendations, unless scientists know about farmers:**

- Do farmers want fish?
- What conditions are like on and close to their farms?
- What resources do they have?
- Which resources are expensive or difficult to get?
- How do farm families spend their time? *and so on...*

**Standard recommendations are not very useful if people have different needs:**

- "My paddy dries out if there is a break in the rains!"
- "How can I keep wild fish out of my paddy?"
- "How can I encourage the wild fish to collect in my field?"
- "What do you think I should feed these fish?"
- "We grow fish but can't get good sized fry for stocking!"
- "I have irrigated paddy in the dry season"
- "I only have standing water for 3 months after the rains" *and so on ...*

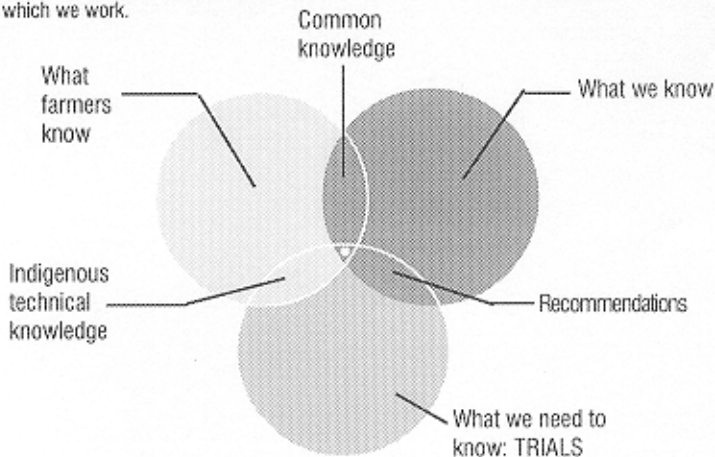
In Savannakhet Province, there are a wide range of conditions for growing rice, and situations in which fish could be produced in the rice farming system. Some of these involve culturing fish in ponds, paddies, bomb craters and so on, and some involve encouraging and capturing wild fish.

**Appropriate technology is difficult to develop without sharing information.**

**It is difficult for farmers to adopt or to adapt a single standard technology to their own conditions and needs.**

In Savannakhet, we are trying a different approach. We are involving the farmers in describing their farms and systems, and we are asking the farmers to design and conduct the research in which they are interested, so that a range of technical options can be developed which are suitable for the diverse environment in which we work.

This approach involves the development of partnership trials.





The trials are conducted by farmers on their farms with our support.

The partnership trials have four stages:

- 1 finding out what information already exists (What farmers know, and What specialists know)
- 2 using this information to help each farmer plan a trial which suits the conditions of his or her farm (which will help to fill the 'What we need to know' circle)
- 3 helping the farmer to conduct and record the trial
- 4 working with the farmer to find out the results of the trial

## 2 What we have done so far

The district staff of the L&FS working together with the LWU have spent six months meeting farmers and finding out about their farming systems and how they use fish in their systems. Together we have also identified their problems with catching or producing fish, and found out what opportunities there are for improving fish production in the rice field.

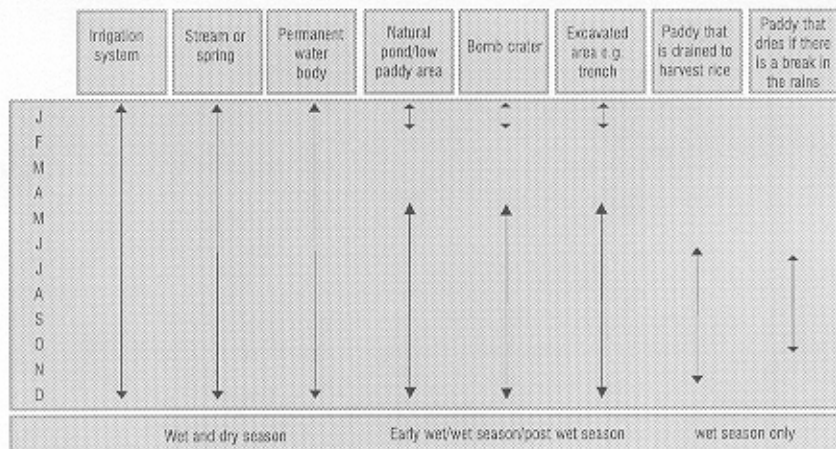
Farmers in Laos make decisions within the family, so for the next phase we have decided to work with individual families. This is because we are trying out new ideas, and every farm is different, so we have to test the ideas on separate farms. These trials will help us to develop new recommendations for fish in rice.

In each village, farmers who are interested in working with the project have decided to start trials which aim to increase fish production in their rice fields. The district staff of the L&FS are working together with the LWU to help farmers do this.

## 3 What types of paddy farming systems are good for fish production?

After collecting this information from the farmers in the six villages, we found that there are at least eight different paddy farming systems in which farmers think that they could produce fish. Figure xx shows these farming systems, which are based on the water resources and growing season available in each type.

Different agro-ecosystems could incorporate fish at different periods









## TRIAL FORM B1

Recommendation	As a result of this recommendation what do you expect to change?	How will you know if it has changed?	How will you measure the change?
	1.	2.	3.
	1.	2.	3.
	1.	2.	3.

START DATE \_\_\_\_\_

FINISH DATE \_\_\_\_\_

How will you report your results? When?

*Report during annual workshop/write article for newsletter*

### Directions for completing Recommendation Form (B)

Recommendation Form (B) consists of table with 4 columns to be filled out as follows:

- 1st column: Write the recommendation.
- 2nd column: Record what will be changed by the recommendation (change may be small or large according to what is agreed between the district officer and the trial farmer).
- 3rd column: Record a description of how this change will be known.
- 4th column: Record a detailed plan of what will be measured, how it will be measured, when and by whom (district officer or farmer).

### Remarks:

Information collected should be in a form that can be measured and compared.

Any method may be used to measure and compare results.

All information that results should be carefully recorded so it can be presented at the annual meeting or circulated as a newsletter in the future.

### Forms were as follows:

Form A shows the district in which the recommendation is being made, the date and the type of recommendation (fish/livestock/disease and feeding/breeding/disease/management). The recommendation is described and the number of families to which the recommendation will be likely to be made in the year (the target) is recorded. Form A is completed by the District Officers, one copy remains with the "district portfolio" of recommendations and one is passed to the province for the Subject Matter Specialist where it is checked and summarised in a "provincial portfolio" of recommendations. If a recommendation is improved or changed this should be recorded on a new Form A and filed in the district and provincial portfolios in the same way.

If a recommendation is a new one or has not been tested before the results should be measured and recorded - to see if it works well (this will be a trial). Looking at the results with farmers and staff from other districts and the provincial staff (at annual workshops, etc.) will help to select good recommendations and change less good ones. A trial will be planned on form B. The recommendation is described the expected changes that will result how this will be measured and recorded, the start and finish dates and where the results will be reported. Form B is completed by the District Officers, one copy remains with the "district portfolio" of recommendations and one is passed to the province for the Subject Matter Specialist where it is checked and summarised in a "provincial portfolio" of recommendations.



## 5 Monitoring the trials with farmers

When farmers try out something new on their farms, it can affect a wide range of their activities. For example, when they grow fish in the paddy fields, they do not only increase fish production, but they improve family nutrition and income as well. To find out about these changes, we developed a method to record the farmers' reactions to the trials. We listed all the factors which might change as a result of the trials, and then made two tables.

The first table asks the farmer to put these factors in order of importance, before the trial and then again after the trial. This will show us if the farmer's perceptions change as a result of the trials.

The second table asks the farmer to look back after the trial, and think about how the amount of each factor has changed as a result of the trial.

The forms will be filled in by men and women in each household so that we can see the effect on different members of the family.  
Men and women filling in forms

## Form 1 for Monitoring of fish-in-rice

district .....

village .....

interviewer .....

person interviewed .....

date of interview .....

Time .....

topic	importance level		comments
	date before fish culture	date after fish culture	
· time			
· investment			
· labour			
· land			
· rice production			
· wild fish yield			
· technical knowledge			
· cultured fish yield			
· living expenses			
· income			
· food			

other comments .....

### Explanation

- use this form (1) for monitoring fish-in-rice, to interview before and after (two times) raising fish
- make small cards and write each topic on one card
- let the villager arrange the cards in order of importance
- record the order of importance assigned by the villager, by writing the number in the column beside the topics (1,2,3,....., 11)

## Form 2 for Monitoring of fish-in-rice

province .....

district .....

village .....

interviewer .....

person interviewed .....

date .....

time .....

topic	before fish culture	after fish culture	comments
time			
investment			
labour			
land			
rice production			
wild fish yield			
cultured fish yield			
technical knowledge			
living expenses			
income			
food			
other .....			
other .....			

Explanation

1.	many	10	XXXXX
	middle	5	XXXXX
	few	1	X

2. Interview participants once only, after raising fish, and ask the importance of the topics both before and after raising fish. This comparison is to identify possibly differences between before and after.

## 6 Information generated from partnership trials

The remainder of this booklet is to record and share the information generated from partnership trials conducted across the province. It is divided into the 8 agro-ecosystems for which recommendations are being developed. These will be shared, discussed and reviewed at annual meetings and developed and refined by further trials.

