

## FARMERS' EVALUATION OF FARMING SYSTEM MODELS IN THOI LAI COMMUNE, CO DO DISTRICT, CAN THO, VIETNAM.

Truong Thi Ngoc Chi<sup>1</sup> and Ryuichi Yamada<sup>2</sup>

<sup>1</sup> Cuu Long Delta Rice Research Institute, Omon, Cantho, Vietnam

<sup>2</sup>Japan International Research Center for Agricultural Sciences,  
Tsukuba, Ibaraki 305-8686 Japan

### ABSTRACT

*A focus group discussion with key informants in Thoi Lai commune reviewed that model with more components as RVAC and RVC and rice – fish system were perceived as high economic efficiency ones. However, farmers need to be assisted capital, technical knowledge by training given to both male and female farmers, subsidy for farm machinery for implementing and have to be ensured in selling products at harvest with stable price.*

### INTRODUCTION

Social and cultural change has been occurred in the nation due to globalization in general. In particular, rice is the culture of the people living in rural area. Shifting rice cultivation into a farming system is the hope of increase income of farmers. Farmers combine rice with other farming activities raising the issue of how farmers access and make the choice for their farming system model and did they obtain the benefit from the selected model? This paper focuses on farmers' evaluation of existing farming system models in the commune.

### METHOD OF DATA COLLECTION

Focus group discussions mentioned by ASA (1997) were used to collect information from farmers. Group discussion was conducted with knowledgeable farmers and key informants during March 2004 in Thoi Lai commune. The information on existing farming system model used by farmers, their opinion and problem related to applying the model was collected. The information was summarized in this report.

### RESULTS AND DISCUSSION

Five farming system models were available in the commune. Rice has been present for a long time until now. According to farmers and commune leaders, rice is the main source of income and it will be maintained for the future. The economic efficiency level was 70% as evaluated by farmers. Rice based-

systems on the rice land itself included rice alone or rice with fish or intercropping with upland crops. Rice alone occupied 30 %. Rice with upland crop rotation (soybean, water melon) occupied 10%. Rice with fish was 50%, and rice with fish and upland crop occupied 10%.

Rice based system in the rice land:

System 1: Rice – Rice - Rice + Fish  
50%

System 2: Rice – Upland crop - Rice + Fish  
10%

System 3: Rice – Upland crop –Rice  
10%

System 4: Rice- Rice – Rice  
30%

System 1 is a very high return system because fish can get food from rice fields, farmers do not have to spend much for feed. This system limits expenses for insecticide. Development of this system is the strategy of the local government. Several problems however, would be faced by farmers to implement the system. They lack of capital to hire labor in building boundaries. They cannot find market at harvest. The price at harvest is risky, especially the price of silver carp, and carp low down to 6000 VND/kg meanwhile farmers expect to be 10,000 VND/kg. Rice price at harvest is low. Most of farmers do not have contracts of buying their products at harvest. On the other hand, the cost of input such as fertilizer is still high; farmers obtain lower benefit than their expectation.

There are some advantages of this system. Fish grow very fast due to food availability in the fields. The rice yield is normal (not reduction even fish in the field). On the same land area, farmers gain both fish and paddy. The following rice season, farmers do not need to harrow their field because fish already ate all stubble and straws.

The average rice yield in dry season (Winter-Spring) and wet season (Summer-Autumn) often gained 7-8 t/ha, and 4.5 - 5 t/ha, respectively.

Farmers owned only land for mixed orchard were usually poor. Mixed orchard situation has been present since 1985 and economic performance was only 30% as compared to well-managed orchard according to the evaluation by farmers. Intercropping in mixed fruit trees was recommended as vegetable or legumes. However, they produced low yield and farmers offered very low income from this pattern. Thus, gardening was considered as subordinate works. They became hired labors to manage their life.

Rice and fruit orchard (RV) model started in 1985. It was evaluated 80% for economic efficiency by farmers. This model will be maintained and developed in coming years.

The model of mixed orchard and fish pond (VA) started in 1980 and it got low economic efficiency (40%). The garden was planted with different kinds of fruit trees and upland crops. The pond was usually small and fish harvest was low and mostly for home consumption.

The model of rice, fruit orchard and fish pond (RVA) started in 1990. Its economic efficiency level was low (50%). In this model, the products from garden as vegetable were used as food for fish. Though it has low economic efficiency, it will be maintained and developed in the future.

The other three components in the model were RVC (rice, fruit orchard and animal raising). This was evaluated as good model and it produced high economic efficiency (90% as evaluated by farmers). It will be maintained and developed stronger in the future.

The four component- model of RVAC (rice field, orchard, fish pond and animal raising) was started in 1990. It produced maximum economic efficiency (100%). It was evaluated as good model and good combination. Rice is used as food for animals. This model will be developed stronger in the future.

Table 1. The available farming system model in Thoi Lai commune evaluation by farmers (focus group discussion)

Model	Year started	Economic efficiency (%)	Note
RV	1985	80	Combine of caring, will keep and to be developed in the future
V	1985	30	Mixed orchard, intercropping in the garden. Subordinate gardening work, mainly obtain income from working as hired labor
R	Long time ago	70	Main source of income, main work, will maintain in the future
RVA	1990	50	The product from garden as vegetables will be used as food for fish, will keep and to be developed in the future
RVAC	1990	100	Good combination, rice is used as food for animals, will be developed stronger in the future
VA	1980	40	Mixed orchard, intercropping in the garden
RVC	1985	90	Good combination, will be developed stronger in the future

*R= Rice field; V= Orchard; A= Ponds for fish cultivation; C= Shelter for animal raising*

Most of models with two or lower components were originated from farmers (table 2). The local government suggested applying the model of three or higher components as RVA, RVC, and RVAC. The model of RVAC was liked best by farmers and it was ranked as 1 because of its good income. Rice (or model R) is only one component but it existed for a long time and it is the main source of income, thus

farmers also liked it best (ranked 1). Though the model of RVA was lower economic efficiency than RVC because of low yield and income from orchard due to bad weather and price fluctuation, farmers liked it (ranked 2) better than RVC (ranked 3). This may be related to fish and animal caring. Income from model is important criteria in ranking the likeness of model.

Table 2. Persons who suggested models and likeness ranking of models

Model	Who suggested	Ranking of likeness	Reason
RV	Farmers	4	Low income from mixed orchard
V	Farmers	6	Very low income due to mixed orchard
R	Farmers	1	Main source of income
RVA	Government	2	Low yield and income from orchard due to bad weather and fluctuation of price
RVAC	Government	1	Good income but also affect of price fluctuation
VA	Farmers	5	Low income because of low price, low yield due to bad weather
RVC	Government	3	Good because rice is used to feed animals

1: like best

Regarding to conditions to apply model, the models with 1 or 2 components (as R, V, RV and VA) do not require large land size. Farmers who have small land size from 0.1 to 0.3 ha can practice these models. To apply the model RVA and RVC farmers need to have pumping machine, boats, large land with

minimum of 1 ha. There are only 30% of farmers who can apply the model with more components as RVAC because the need to own themselves the means of production as pumping machine, boats, large land with minimum of one ha (table 3).

Table 3. Conditions to apply model

Model	Means to apply model
RV	Have pumping machine, minimum of 0.3 ha of land
V	Have minimum of 0.3 ha of land
R	Have minimum of 0.1 ha of land (80% household have pumping machine, the rest borrow from other farmers)
RVA	Have enough means as
RVAC	Have enough means as pumping machine, boats, large land with minimum of 1 ha (owned by themselves)
VA	Need minimum of 0.1 ha
RVC	Have enough means as pumping machine, boats, large land with minimum of 1 ha

***Farmers' problems in applying models***

It is difficult for farmers to apply the models with more than one component because they faced several problems as lack of capital because of poor conditions to access models, limited land, and weather change. They lacked of family labor and hired-labor. It is difficult for farmers to call for hired-labor when they need because the labors nowadays prefer to find non-farm work as labor in factories. Thus, few family labors have to work for long days in the field. They lacked of technical knowledge because of no training on implementing of mixed components in a model. They only obtained training of each component separately. Fluctuation of price at harvest is one of big problems for the farmers. The information system in the commune is weak because in many hamlets of the commune, electricity is still not available. There are not enough loudspeakers at all hamlets in the commune. Farmers like the broadcast of technical information from loudspeakers at 5:00 am and 5:00 pm when everybody can hear. They do not like the broadcast at 11:00 am because they feel tired after field work in the morning. They need to rest at this time. Most of farmers have television (90%). However, according to them, the news reporting on good farming system model on television program is at low frequency.

Farmers' knowledge gap is one of the problems in implementing the models. During the training, they only heard from the trainor, thus they acquired the new knowledge about 70% only.

Farmers do not access the guidance of the technical staffs. The booklet and leaflets are not sufficient to most of farmers. The mobilization is only general but not concrete. Therefore, farmers feel difficult in implementing the advanced model. If they do so, they obtain very low benefit.

Other social problems also slow down the progress of farm works as lack of medical doctor at the clinic station in the commune. Family labor getting sick without in time curacy from doctor will affect farm production. The work will be cancelled to the later days, for example farmers will shift the

time of planting, spraying chemicals or fertilizer applications. Due to lack of knowledge and less contact with other people in the daily life, the spouses, especially the wives who are busy with the children and household chores, also are the barriers in applying the new models. This problem occupies about 40% of households in the commune.

***Likely condition in applying models***

Likely condition for potentially apply the new model is the progressiveness from young farmers. The local and state governments encourage farmers to apply the good model to improve household economy.

***Expectation from farmers to overcome their problems***

- Farmers want to have the assistance of credit system as permission to obtain the loan for long term.
- Organize technical training to equip knowledge in farmers.
- Governments find the markets to help the products from the models be sold all at harvest.
- Government should keep market price stable.
- Farmers want to be provided seeds, seedlings and stud animals.
- Subsidies for farm machines as row seeders, pumping machines.
- The extension or technical staffs should increase the frequency of contacts with farmers and should contact both male and female members of farming household. So far, they only meet the household heads who are usually the husbands.
- Increase the number of tenure extension staffs in the commune.

***Diffusion of the farm models***

Commune authority encourages farmers who are outstanding farmers by giving rewards or incentives. The extension staff of the commune organized trips for farmers to see the models. They mobilize the masses to do the models as other good farmers. The models are diffused through the loudspeaker, discussion within farmer groups, and oral

transmission at coffee shop and special occasions as wedding, dead anniversaries.

### CONCLUSION

Farmers have known the benefits and conditions to apply the good model or rice-based farming system. The model with more components as RVAC and RVC and rice – fish system had high economic efficiency. These are expected to be developed widely to improve household economy. However, they require labor, capital and technical knowledge for implementing. If the local government and

the state have strategy to develop advanced model or farming system, it is necessary to have policy on market price stability, credit scheme assistance, subsidy for farm machinery, and efficient technical training given to both male and female farmers.

### REFERENCE

ASA (American Statistical Association). 1997. Section of Survey Methods. American Statistical Association, USA.

### **Nông dân đánh giá các mô hình và hệ thống canh tác ở xã Thới lai, Cờ Đỏ, Cần Thơ**

Phỏng vấn nhóm với những người am tường và nông dân kinh nghiệm trong xã Thới Lai cho thấy rằng mô hình canh tác có nhiều thành phần như là RVAC (ruộng, vườn, ao, chuồng) và RVC (ruộng, vườn, chuồng) và hệ thống lúa cá được nông dân đánh giá mang lại hiệu quả kinh tế cao. Tuy nhiên, nông dân cần hỗ trợ vốn, kiến thức kỹ thuật từ việc mở các lớp tập huấn có cả nam và nữ tham gia, bù giá cho các loại máy nông nghiệp và đảm bảo tiêu thụ sản phẩm sau khi thu hoạch với giá cả ổn định