
Established process and activities of fisheries co-management model in Lak Lake, Daklak Province, Viet Nam

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ABSTRACT

Lak is the largest natural lake in Dak Lak Province, with an area of 658ha. The swamps and low-lying fields around the lake, provide nutrition for fish species. Based on the data from the Mekong River and Reservoir Fisheries (MRRF) component, the average fish yield from Lak Lake was around 100 tons annually, and the fisheries created livelihoods and income for over 300 fishers living around the lake.

From 1980 to 2001, several agencies and organisations managed the fisheries of Lak Lake however, all management schemes seemed to be ineffective, and the fisheries were open access. To solve this, the MRRF worked with local authorities and line agencies to establish a co-management model to improve the fisheries situation and to maintain the yield from Lak Lake.

The process of establishing fisheries co-management in Lak Lake had four stages; Discussion with the local authorities and line agencies; Strengthening awareness of local community; Finding the leaderships and the memberships; and Establishing the Fishers Union. The Lak Fishers Union was established in June 2001. Initial results led to an improved fisheries situation, environmental awareness enhancement for fishers, and protection of the environment and fisheries resources. The use of destructive fishing methods has been reduced by 80-90%. The MRRF and local authorities helped the Lak Fishers Union to establish credit and savings groups in the sub-unions and to carry out the plan of fenced-net fish culture in one area of Lak Lake.

This paper presents the establishing process and initial results from the fisheries co-management model implemented by the Fishers Union in Lak Lake

INTRODUCTION

Lak Lake (12°25'23" N; 108°10'34" E; 658 ha) is the largest standing natural water body of Daklak Province, with a water surface area of 658ha. Lak is shallow, with maximum depth of about 3m and a drawdown about 1m. Long time fishers report that the lake is becoming increasingly shallow, and deforestation and landslides have added to the natural situation. These phenomena represent the greatest threat to the lake and its fisheries (Thai *et al.*, 2001).

Four communes surround Lak Lake: Lien Son, Dak Lieng, Bong Krang, and Yang Tao. These four communes consist of 44 villages with a total population of approximately 20,000 (Nguyen *et al.*, 1999). Lak Lake fishery has been exploited through a high fishing effort and use of diverse fishing gears. The annual fish yield was about 100 tons from 1997 to 2001 (Truong and Tran, 2003), with an estimated value of around 500,000 million Viet Nameese Dong (VND). The fisheries sector has created livelihoods and income for over 300 fishers living around the lake.

Phase II (2000-2005) of the MRRF Project focused on the objective of 'Sustainable co-management model for optimal fish production in reservoir selected, implemented and disseminated', and has worked to establish fisheries co-management examples in some water bodies in Dak Lak Province. The MRRF co-ordinated with local authorities, line agencies in Lak District, as well as fishers

communities around the lake in order to establish fisheries co-management in Lak Lake. The Lak Fishers Union has been established since June 2001, this paper presents the process of establishing fisheries co-management in Lak, some initial results of this model, and recommendations in order to enhance the fisheries co-management system in Lak Lake.

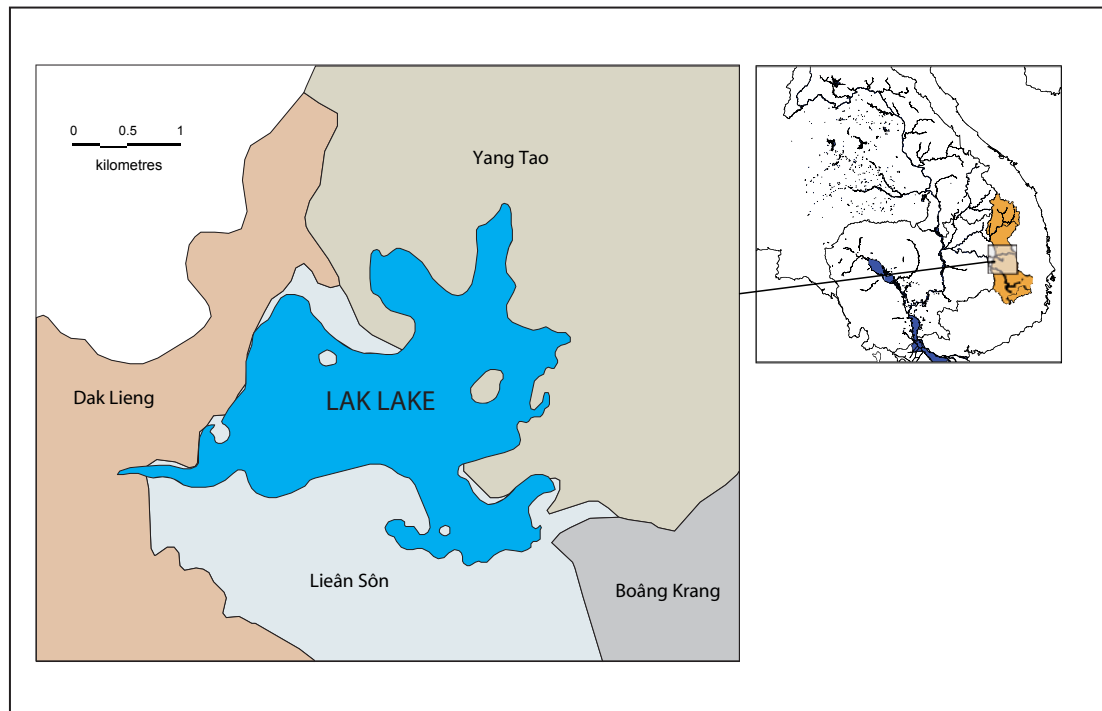


Figure 1. Map of Lak Lake and the neighbourhood communes

HISTORICAL MANAGEMENT SYSTEM BEFORE ESTABLISHING FISHERIES CO- MANAGEMENT MODEL

The Agriculture, Rural and Development Office managed the Lak Lake fisheries from 1975 to 1991. The Lien Son commune managed the fisheries from 1991 to 1994, at which point the District Police took over the responsibility for fisheries management until 1997, when taxes were doubled. From 1997 – 1999, fisheries management of Lak Lake was handed over to the Board for the Protection of History, Culture and Environment of Lak Lake. The Board had to pay the People’s Committee eight million VND per year for managing the fisheries and tried to collect 35,000 VND per month from each registered Kinh fisher, regardless of type and quantity of gears used. The tax on indigenous fishers was only 15,000 VND per month.

The management mandate of the agency covered regulation of resource utilisation, protection, tax collection, and dissemination of rules on fisheries. The rules however, were not formally written but were disseminated by word of mouth. Out of the Board’s fifteen full-time staff, five staff members

were assigned the task of collecting taxes and patrolling. In early 1999, the Board closed the Lak fishery to fishers from outside the District, with limited success. Finally, the Board could not get the taxes they needed, and fisheries management was returned to the District. Later in 1999, the District once again handed over responsibility for taxation of fishers, this time to Lien Son Township but this agency was not successful in this task. Although the fishery in Lak Lake was managed by many organisations, it has actually been open access for a long time.

ESTABLISHING A CO-MANAGEMENT SYSTEM IN LAK LAKE

Co-management can respond to a wide range of circumstances, including stock depletion, threats to biological sustainability, or aboriginal rights to manage fisheries. It can be used to give legitimacy to a management regime or to create equitable regulations (Ahmed 1997). The co-management concept that has been implemented in Daklak is ‘the sharing of rights and responsibility between Government and resource users’.

Before setting up a new management system, the biological aspects of the water bodies and the socio-economic information related to the local community were investigated. The co-management scheme in the Lak Lake was initially set up in 2000 and the process of establishing a co-management scheme is described below.

Discussion with the local authorities and line agencies

The purpose of this phase is to explain the objective of the project, and getting the agreement and the necessary support of local authorities, to allow the promotion of the management systems. In Lak Lake this phase was carried out over a 16 month period from January 1999 to April 2000 with a series of meetings organised between local authorities, line agencies and representatives of the fishers. The objectives of these meetings were to present the results of the projects studies, including the current situation of the socio-economic and biological aspects of Lak Lake, and suggest an appropriate management model, which involved the local community to a higher degree. The plan of the project was also presented in these meetings. Finally, a steering committee of 7 members was set up in December 1999 to approve and advise on project activities, assure compliance with the laws, and promote good communication between the community and local government. This committee consisted of; a member of the district People’s Committee; the township People’s committee; the police; the Agricultural Extension Office; the Board for the Protection of History, Culture, and Environment of Lak Lake; and two representatives from the fishing community. A meeting was held every three months to discuss the plan for establishing the management scheme.

Strengthening awareness of local community

As a next step, training courses on environmental awareness and fisheries management were held for the fishing community. The participants in the training course were selected based on a ‘training

needs' survey. This survey determined the level of interest in training with randomly selected fishers. Over 60% of those interested in the training course were selected, with consideration given to geographical region and literacy of fishers. The maximum number of participants at each training course was 20, each course was carried out over two days.

Seven training courses were held around Lak Lake. The contents of the training course included awareness of the environment, concept of resource management, and the need for participation of the local community in management. The training used lectures, diagrams, group discussions, and presentations, and plenary discussions. In the last section of each course, local officials were invited to join the plenary discussion. This helped them understand the constraints of the fisheries and the expectations of the fishing community. It was also necessary for common understanding and support of the fishing community. Through the training courses, participants became aware of the need to maintain their fisheries resource and that, in order to achieve this, they must first organise themselves.

Participants in the training workshops, not only developed a greater awareness of their resource, but also improved many skills necessary to community activities such as, addressing and presenting ideas for group discussion. It also helped the project to identify a core group based on receptiveness and leadership potential displayed during the training courses (Tran 2001). Twenty participants were selected in Lak Lake to establish the core group.

Finding the leaderships and the memberships

The participants in all training courses saw the need for new management systems, which involved the community more in terms of making decisions and regulations for the fisheries. Many management models were discussed by project staff, consultants (experts, local authorities, line agencies etc.), and fishing community. Based on the country situation and Viet Nameese law; local authorities, the project, and the fishers recognised that the union model was suitable for fisheries management in Lak Lake.

A series of discussions were then held with the core groups with a view to organise Fishers Unions that could work jointly with local authorities to manage the fisheries in these water bodies (Tran *et al.* 2001). The core group was divided into small groups of 2-5 members, based on geographical areas and each one had one leader and vice team-leader. Every one or two months, the core group held a plenary meeting to plan activities and review previous results. The core group communicated the awareness they had developed from the courses to others fishers, who could not join the training courses. In order to insure that the fishers joined the Fishers Union voluntarily, the core group conducted a survey to determine who was interested in joining the union. The potential members of the Fishers Union were determined after the survey and divided into small groups based on core groups.

Establishing the Fishers Union

In Lak Lake, a meeting with the steering committee, local authorities, line agencies and representatives of fishers was held in January 2001 in order to discuss the plan to establish the Fishers Union. In the same month, the project held a training course for the core group to discuss the method of drafting the Fishers Union regulations. Following this, the core group organised successive meetings for anyone concerned with fisheries and guided them in drafting the Fishers Union regulations. Draft regulations consisting of 22 clauses were drawn up with high agreement of fishers and submitted to the district People’s Committee and the Steering Committee in April 2001. Their comments were incorporated into ... regulation on ... 2001? (Tran *et al.*, 2001).

In March 2001, the core group attended a training course on organisational mechanics and leadership for enhancing their capacity. A Fishers Union was established with an interim Executive Committee of seven members in June 2001, and the district People’s Committee approved the Union Regulations in August of the same year. In April 2002, the Province approved a permanent Union and all members of the union elected the Executive Committee. The Union was divided into two geographic sub-unions, each with a team leader, who is a member of the Executive Committee. Currently, 216 fishers have joined the Fishers Union, including 114 Kinh and 102 indigenous people.

Figure 2. The fisheries co-management structure in Lak Lake (From 2002 to now)

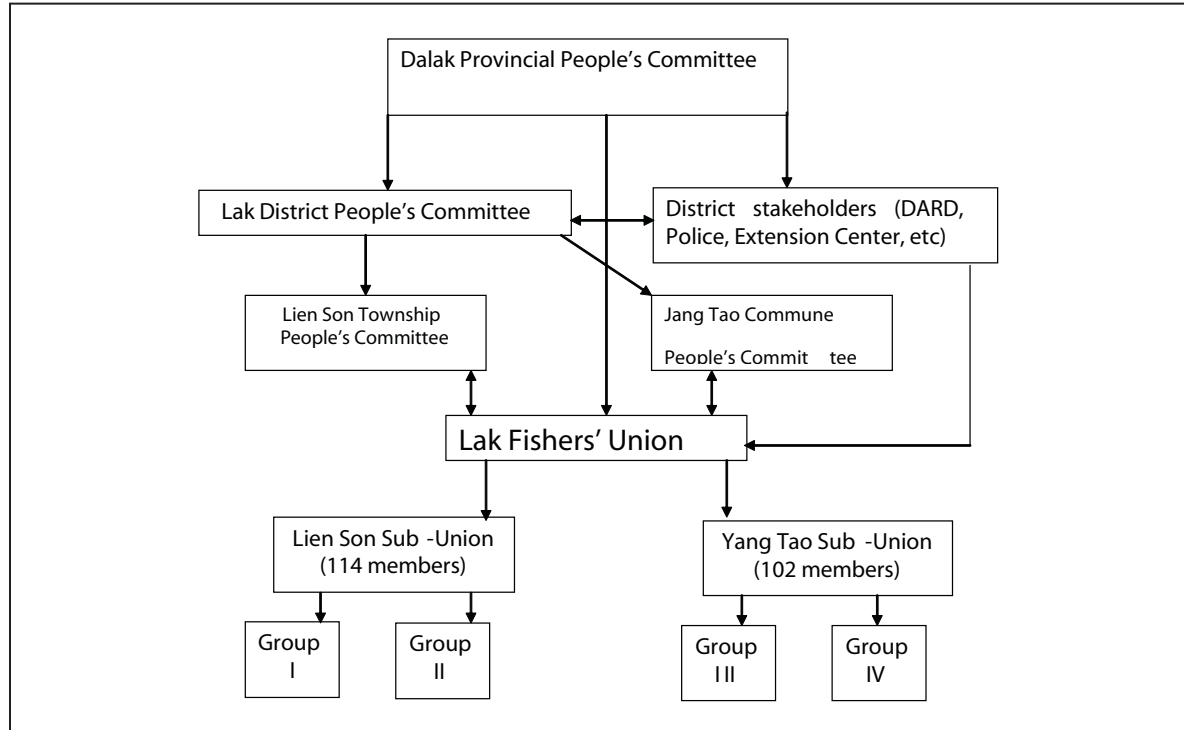


Table 1. Number of fishers and fishing fee level of the Lak Fisher' Union

Target		Place	
		Lien Son Township	Jang Tao Commune
Number of members		112 (Kinh members)	104 (Ethnic members)
Fishing fee	Members of Union	25,000 VND / boat/month	4 0,000 VND / household/ month
		VND / 2 boats/month	5,000 VND/household/ month
	Non-members of Union	50,000 VND / 3 boats/month	
		50,000 VND / boat/month	15,000 VND/household/ month
		80,000 VND / 2 boats/month	
		100,000 VND / 3 boats/month	

In general, people who joined the Fishers Union in Lak Lake wanted to participate in environmental management and hoped that they could improve their living standards through the activities of the Union.

ACTIVITIES OF FISHERIES CO-MANAGEMENT MODEL

Fishers Unions in Lak Lake faced many initial obstacles, the two most serious of which were, electro-fishing and a lack of funds for development.

In order to reduce electro fishing in the water bodies, a guard team was established with the main members belonging to the Fishers Union. The guard team, cooperating with the police, patrolled and confiscated electro-fishing gears, however, no official punishment was applied. Nevertheless, the patrols have effectively reduced electro-fishing activities in Lak Lake. After the guard team confiscated six boats and quantities of dynamite, the use of electro-gear was seen to decline.

Insufficient financing was a common priority problem facing all fishers groups and the project was not in a position to help. Experience with Lak Lake indicated that the opportunity costs of voluntary community service might not be affordable for many fishers. The activities of all fishers groups required financing from the fishing community, but this was often not enough to lead to effective results. As a result, the Australian Embassy provided a total grant of VND 52.7 million (about US 3,500) in support of fishers group activities at the six water bodies, in October 2001. This has been used for a variety of purposes by different water bodies. In Lak Lake the money has been used for the purchase of a motorised boat for patrolling activities and for payments to patrol members (Nguyen *et al.*, 2002).

All activities of the union need money: guard team patrols, meetings, and stationery are examples. Initially, the project supported money for stationery but in the long term the Fishers Unions should pay by themselves. Some fishers contribute a lot of effort and time, and this affects the fishers income, which is normally low. For example, all members of the guard team are fishers and they fish almost every night. If they patrol, they cannot catch fish and earn money. Members of the Union Executive Committees have a similar problem. They spend a lot of time on Union activities. In

the short term, the fishers can afford the sacrifice, but in the long term they cannot, because their living standard depends on the fishing activities. Consequently, nobody wants to commit to long-term Union activities. Hence, in the near future the fishers, who contribute a lot of effort to the Fishers Union should be supported with some money as regular income. Additionally, in the fishers Union, most members need money to invest in fishing gears. They cannot get a loan from the banks because the procedure is too complicated. How to find money to support union activities is a major outstanding question.

When the fishers joined the Fishers Union in Lak Lake, initial membership fee was set at VND 60,000, of which VND 50,000 is returned if anyone leaves the Union. The remaining VND 10,000 went to the welfare fund. There are additional monthly dues of VND 2,000, which cover routine union expenses, however, this fund is still not adequate for union activities. Previously, VND 10,000 for one night of patrolling, was allocated from the monthly dues paid by Union members. This fund soon became exhausted, and in March 2002 a halt was called on patrolling activities.

In order to improve the economic status of union members and increase benefits of the Unions, credit and savings became a main activity. Many credit and savings groups were successfully established for farmers groups by the Support to Water Resources Management Project (SWRM) in Daklak. Training courses on credit and saving management held in cooperation with SWRM for the Union Executive Committee and other interested members in Lak Lake in July and August 2002. After that, credit and saving groups were established in Lak Lake and this activity has so far operated well, especially in all the minority ethnic groups.

Table 2. *Number of members and amount of money of credit and savings groups*

	Credit and savings groups		
	Group I	Group II	Group III
Number of members (fishers)	13	10	11
Amount of monthly loan (VND million)	2.0 - 3.5	2.0 - 3.2	1.0 - 2.8
Amount of money of each group (VND million)	14.2	11.9	10.0

Regular meetings are an important component, ensuring that activities implemented by the Fishers Union are in line with their initial plans. Both sub groups and the Executive Committee hold monthly meeting in order to review activities being carried out, consider current and potential problems, and make both short and long term plans. Subgroup meetings are generally held prior to Union Executive meets. In some cases, the monthly meeting of a subgroup is combined with discussions on credit and savings.

Almost all fishers are poor, and any increase in living standard is desirable. Hence, many people use destructive gears such as seines and electro-fishing gears as these gears can increase their income quickly. Many fishers realised that they should manage fisheries sustainably and should follow the fisheries regulation, but cannot always afford to do what they should. Diversified livelihoods

of fishers can reduce dependence on income solely from the fisheries. So, another type of training for fishers, organised by the project and the Fishers Unions, in cooperation with the Agricultural Extension office, was related to livelihoods: fishing technology, fish culture, and various agriculture and livestock technologies (Nguyen *et al.* 2002)

Collecting taxes from fishers is not a new concept in Lak Lake, and as such, has not been a difficult activity to implement. However, previous management systems were unsuccessful in collecting taxes as fishers did not benefit from these management practices due to destructive gears (seines, electro-fishing) being operated intensively in the lake and a lack of enforcement on regulations. The Fishers Union has been able to stop the use of destructive gears, as a result, fishers are paying the tax voluntarily. Currently, according to the fisheries regulation, the fishers need to pay a tax of 25000d/month /household and minority people pay 15000d /month/ household to the Fishers Union. Old and young fishermen (under 18 years) do not pay tax. The Fishers Union has to pay 7 million per year to the local government as a tax of natural resource exploitation. 10% and 15% of the remainder of the fisheries tax are paid to the tax collectors and all members of the Union Executive Committee, respectively.

Currently, in order to improve the economic status of Union members and increase the benefit from the fisheries, the Union initiated aquaculture in a fenced-net area in Lak Lake, with an area of around 30 hectares used. The Union stocked 500kg of fingerlings with five species in pen culture: Grass carp, Big head carp, Silver barb, Ro hu and Common carp from July 2005. Four months after stocking, the average weight of grass carp, silver barb, and common carp were 310g, 130g, and 110g, respectively. The average length of grass carp, silver barb, and common carp were 35.8cm, 21.8cm, and 23.1cm, respectively.

CONCLUSIONS AND RECOMMENDATIONS

- Lak Lake has a long history and tradition in indigenous fishery. From 1997 – 2001, the Lak fishery was managed by many organisations, but has actually been open access for a long time, and use of destructive fishing gears such as electro fishing and seine nets was a prevalent problem.
- Lak Lake Fisheries Union was established in June 2001. Initially improving the fisheries situation, enhancing awareness through training courses, meetings, credit and savings activity.
- In order to increase the benefit to Fishers Union members, the Union cultured fish in a fenced-net area from July 2005.
- All activities of the Union need money: guard team patrols, meeting, fenced-nets cultural area, stationery etc. The fishing fee was often not enough for these activities. So, the

Lak district People's Committee, Viet Nam Fisheries Association, the bank, and other organisations need to help the Fishers Union to solve this financial problem.

- Participation of users in managing the resource on which they depend should be encouraged more actively by higher levels of government. This may be accomplished in different ways such as; campaigns to promote awareness of the need for fisheries co-management, related training courses, advice and liaison.

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