
Inland fisheries co-management: what next for Viet Nam?

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ABSTRACT

Natural resources co-management by local users, concerned local governments, and other stakeholders that pays particular attention to the role of the users in resource management has been strongly encouraged by many projects in Viet Nam in recent years. There are many reasons for this, although in general, various socio-economic and environmental problems make the need for resource management clear. However, users must accept the proposed management measures if they are to be legitimate and effective.

This paper focuses on the experiences of the Management of River and Reservoir Fisheries (MRRF) Viet Nam sub-component and makes recommendations to decision-makers on whether or not to promote fisheries co-management, to promote more systematically, and how to carry out this promotion. These recommendations are based on:

- an examination of the economics of co-management and other management systems at selected reservoirs,
- other less measurable but very important costs and benefits, which enter comparative economics equations with difficulty, and
- other lessons learned from efforts to establish co-management in six reservoirs in Dak Lak province, in the Central Highlands of Viet Nam.

In general, participation of fishers in the management of resources on which they depend should be promoted. However, there is great local variation in fishery resources and fishing communities and no single model will apply to all. Local, not just central government support is needed for any co-management effort to succeed and policy guidelines are needed to encourage local governments to support co-management. This should be combined with developing among local officials an increased awareness in the need for user participation.

Finally, the people who use these resources have very little money and limited free time. They usually cannot afford to invest the time and effort needed to achieve successful co-management. However, some modest compensation usually helps to encourage their participation.

KEY WORDS: Natural resources, reservoir, stakeholders, co-management

INTRODUCTION

Definition of co-management

The working definition of co-management used by the Management of River and Reservoir Fisheries (MRRF) sub-component in Viet Nam is:

‘...an increase in broad-based participation of the user community in managing the resource, which gets formal agreement.’

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This fitted the objectives of the component. However, participants at the First Regional Training Course in Inland Fisheries Co-Management in 2001 came up with the following alternative definition:

‘A systematic process of participation by

{	affected resource user groups, concerned levels of government, and any other concerned agencies	}	in	{	Planning, making decisions about regulating and controlling, monitoring and evaluating and/or distributing	}
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benefits from the use of a resource in a way which gets agreement, if possible formalised, from all concerned. It requires a sharing and definition of both the power and responsibility for managing the resource’ (Cowling 2001).

Reasons for co-management

If a resource is sufficiently abundant to meet the needs of the community using it, there tends to be little perceived need to manage the use of the resource. When the resource becomes insufficient because of decreased abundance or increased needs of the community, the need to manage it becomes more widely appreciated.

We define as stakeholder as, ‘any individual or group who depends on, or has control, over management of a resource’. Co-management by its very name means management by agreement between, or among, more than one stakeholder. This makes management more complicated, so why is it needed?

One fundamental point, and is it the key to successful co-management, is that fishers, the people who live by, and depend on these resources, are inevitably involved in managing them. They decide whether they will exploit the resource and how and when to exploit it. Fishers’ knowledge of the resource is considerable. After all, it is their livelihood; they work with it daily, and have done so for many years and for many generations. No other stakeholder is so intimately involved with resource management and wise policy makers do not discount this intimate source of knowledge. The challenge for other stakeholders is to recognise this, and work with it.

So, when we ask, ‘why co-management?’ we are asking, ‘why should all concerned stakeholders actively cooperate to manage the resource?’

Participants on the First Regional Training Course in Inland Fisheries Co-Management gave a long list of reasons, including:

- it is the cheapest way to manage resources (in the long run)
- sharing responsibilities should lead to better management since stakeholders can complement one

another (no single stakeholder can manage the fishery in a sustainable way)

- the government does not have the capacity, budget, or resources to manage it and needs the help of communities in monitoring, patrolling, and conservation
- reducing government responsibility for managing the resources (to a more manageable level). Communities are often capable of thinking and managing on their own
- strengthening local ownership (responsibility and problem-solving) and local empowerment. People who depend on the resource are involved in decision-making and enforcement. This should lead to better compliance, and more effective management
- helping solve shared social problems. Appropriate for management of common property
- supporting sustainable development if long-term and all concerned are involved in coming to agreements
- resolving conflicts and improves understanding between government officers and fishers. This improvement in communications should lead to more effective management
- increasing community understanding and consideration of the resource. Users learn how to solve problems on their own. Their knowledge is used and their thinking is stimulated
- organisation of local fishers and fishing activities strengthens the community
- more effective resource conservation if level of agreement is high
- user participation is needed to improve or restore resources
- optimal resource utilisation, with minimal disturbance to environment, society, and culture
- conflicts among users are reduced and benefits are shared more equitably leading to reduced gaps among resource users. If all concerned and affected groups participate, none should be seriously affected by management decisions
- hopefully, economic and income improvements
- hopefully, increased yields and size of caught fish
- in reservoirs, which are multipurpose, encourages discussion among all stakeholders
- peace
- fishers' knowledge of the resource is considerable. They are exposed to it over many years on a daily basis. This knowledge needs to be used in managing the fishery

- fishers normally live close to the resource and are in the best position to respond to emergencies if they are free to do so. They can usually adapt management to changing conditions or needs more promptly than agencies which are further-removed from the resource
- it is only fair to have a say in managing the resource on which one depends.

Most of these are reasons for promoting user participation. However, if users can be good managers, then why do other stakeholders need to be involved? The attendees gave following reasons:

- assurance that regulations confirm to government policies and the law of the land
- local resolution of conflicts between locals and outsiders
- co-ordination with other agencies and sectors
- complementation in surveillance and enforcement
- access to technical support and advice
- access to financial support

These are all good reasons why central and local government should promote co-management of fisheries, but how do these ventures work in practice? To answer this we will examine some existing co-managed fisheries located in Dak Lak Province in the Central Highlands of Viet Nam.

History of MRRF Viet Nam

MRRF association with Viet Nam began in August 1995. At this early stage its immediate objective was:

‘Enhanced capacity of government fisheries agencies to plan and manage reservoir fisheries on a sustainable basis.’

However, as the project development plan makes clear, community based co-management was always the ultimate objective:

‘Sustained high yields of fish achieved from reservoirs managed under local community agreement with government.’

The aims of Phase I were, therefore, to training project staff and relevant government agencies to conduct baseline biological and socio-economic surveys of selected reservoirs in the Central Highlands of Viet Nam.

The surveys brought to light important variations in the productivity of the reservoirs and their systems of fisheries management. Two of reservoirs were un-stocked and their fisheries managed ineffectively. The other reservoirs were stocked and their management better regulated and more effective. Groups of a few individuals contract two of the reservoirs from local administrative authorities, a cooperative runs

one, and an employee of the Dak Lak Aquatic Products Company (DAPCo) manages the fourth. Only two of the four stocked reservoirs contained significant numbers of wild species.

The surveys also show that no two reservoirs are alike and, consequently, no single management model is applicable to all. At best, managers will be able to work within a set of broad guidelines tailoring them to match local circumstances and developing them as they gain experience.

Phase II began in March 2000. Its immediate objective was:

‘To develop, implement and disseminate sustainable co-management models for optimal fish production in reservoirs.’

Three of the reservoirs studied in Phase I were dropped from Phase II. One reservoir, managed by a cooperative, was too small. Another, under the management of a provincial company, was already well run, even though the local fishing community did not partake in decision-making. In the instance of the third reservoir we felt there was little prospect of establishing a venture under co-management. We selected three new reservoirs to replace the discarded ones.

The first steps towards establishing co-management ventures took place at Ea Soup in June 1998. Lak followed in January 1999 and the other four reservoirs very early in the Phase II.

At the outset, we informed the local authorities of MRRF’s objectives. Having obtained their consent, we then held similar discussions with the appropriate representatives from local communes. Participatory rural appraisal-workshops usually followed these initial meetings. These workshops helped identify the principle stakeholders, bring to light potential problems and discuss possible solutions. The details of the work programme were resolved once follow-up discussions with critical stakeholders, training courses, and workshops had taken place.

Following the initial workshops, we gave fishers at each reservoir a training course on environmental awareness. The number of courses depended on the size of the fishing community around the reservoir. These courses allowed participants to consider the need for managing the resource. Fishers realised that some existing fishing methods were not sustainable, but often saw no choice if they were to eat the next day. A common conclusion from every session was that the participants wanted their children to be able to fish. To achieve this needs management; and for the management to be successful, the fishing community had to be involved.

With the co-operation and approval of community and local authorities, informal groups of fishers organized themselves into formal bodies with their own by-laws and elected executives. MRRF staff helped facilitate this work. Generally, the objectives of the fishers-groups’ aims were, assuring sustained fish production, providing mutual help to maintain and improving the living standards of the communities they represented. Facilitating work with concerned officials and other agencies was a third common objective.

To be able to manage the resource effectively, fishers developed regulations to control fishing practices; in many cases these included prohibiting non-sustainable fishing methods, especially use of electro-fishing. Penalties included fines and confiscation of gear. Consistent enforcement against violators of the regulators has been important. In practice, monitoring and enforcement has depended on the fishers' unions, often with some support from local police forces. Some fishers' groups have also stocked their reservoirs, as an additional way of increasing yield.

Table 1. *Reservoirs included in Phase II, showing management systems before and after MRRF involvement.*

Reservoir	Location (District)	Area (ha)	Fishing popn. 1996-2001 (families)	Management system before	Management system after
Ea Soup	Ea Soup	240	74	un-stocked/ open	stocked/union managed
Lak	Lak	658	325	un-stocked/ open	un-stocked/ union managed
Yang Re	Krong Bong	56	47	stocked/ contracted	stocked/ contracted
Krong Buk Ha	Krong Pac	120	30	un-stocked/ contracted	un-stocked/ contracted
Nam Nung	Krong No	52	69	stocked/ contracted	stocked/ contracted
Buon Tria	Lak	141	25	un-stocked/ open	stocked/ union managed

While managing the fisheries was the initial focus for the fishers' groups, the benefit from this was not sufficient to justify the time and money members invested in their organisation; assurance of mutual welfare quickly became an equally important objective. To address this concern all fishers groups received training in credit and savings management, and courses in livelihood alternatives to fishing were provided to most. The courses in credit and savings dealt with all aspects of management of very small-scale financing groups where members could deposit money for later use and borrow money conveniently, at modest interest rates. Most of the livelihood alternatives courses dealt with farming various crops, livestock husbandry, and aquaculture. These courses supported the objectives of the members by encouraging good management (financial and otherwise) and providing fishers with choices so that they could abandon unsustainable practices but still maintain their living standards.

Each month MRRF staff visit each fishers group to monitor their member's activities. During these visits, they attend group meetings, gave advice, and liaised with officials and other agencies as needed.

Finances

The lack of funds to carry out planned activities was one issue that arose in all fishers' group meetings. All the groups had plans to finance their activities through taxation and/or various sorts of contributions from the members; however, these sources alone were insufficient to meet costs. Stocking and patrolling are the two main activities that will help sustain optimal fish production, but these activities are expensive and, to put in place, need more financial contribution from the members and other organisations. The MRRF was not in a position to provide systematic financial assistance to the fishers'

groups, and not every group had the resources to do everything it deemed necessary. Neither the Ministry of Fisheries nor the Province of Dak Lak was in a position to help. In 2001 and 2002, the Australian Embassy provided VND 108,100,000 (about US\$ 7,000) in assistance. This money was used mainly to purchase inputs for household economic activities supported by the credit and savings programs, fingerlings for stocking in Ea Soup and Buon Tria reservoirs, digging ponds in Nam Nung reservoir and patrolling and other union activities in Lak reservoir. Without this assistance, many fishers' groups would have failed.

The Ea Soup and Lak reservoir fishers' unions, who received support from the Vietnam Fisheries Association, are incorporated formally under provincial regulations. The Buon Tria reservoir group continued to manage its fisheries, but the membership is small and poor, and credit and savings activities did not work well. The Nam Nung reservoir group, while not yet managing its fishery, had a healthy credit and savings programme, and was in a position to manage other community activities, including the fishery, should local decision-makers decide favourably. The Krong Buk Ha reservoir group was progressing in this direction. At Yang Re reservoir, the level of organization declined. Most members, for who fishing was a secondary or tertiary activity, have not managed credit and savings activities efficiently.

Because of inadequate financing, fishers' groups at some locations were unable to participate fully in their fisheries co-management; in these instances, other stakeholders took more control.

The commune at Yang Re awarded a new contract through open tender, giving the contract to bidder who offered the highest price. This left little spare revenue for the new contractor to distribute to the fishing community. However, the contractor still allows poor fishers (mainly indigenous people) to fish in the reservoir with small nets and catch a small amount of fish for their own consumption.

The irrigation manager at Krong Buk Ha felt that any change to the existing fishery management system could lead to conflicts putting a very important dam at risk. The dam, manufactured from inflatable rubber, irrigated a large area, and the manager was concerned that conflicts could lead to sabotage. Ironically, he wanted to prohibit small-scale fishing at certain times and bring in outside fishers to harvest the reservoir. The manager agreed with MRRF's argument that participation by the community would probably reduce conflicts but did not put co-management into practice because he was afraid of the potential risks.

At Nam Nung, the contractor, despite repeated discussions with MRRF, did not agree to share management of the fishery with the local community.

Comparative economics and fishing pressure of co-managed and non-co-managed systems

In this section, we review some reservoir management systems that are already in place. We compare the costs and benefits of the system and comment on the impact the schemes have on fish stocks and the fishery. Unfortunately, the data that allow a more detailed comparison of the performance of individual

reservoir fisheries before and after the implementation of a given management scheme are not available.

The various types of reservoir management systems fall into three broad categories:

1. quasi-privatised, where an individual, or small group of individuals, invest in managing the fishery and decides the split of profit between themselves and the fishers
2. government managed, where a government agency regulates the fishery and taxes the fishers
3. co-managed, where the fishing community, and/or its elected representatives, invest in managing the fishery and apportion the share of profits among themselves, in cooperation with concerned local authorities and line agencies

However, before examining four cases in detail we can make some general comparisons between the benefits of the old and new systems. We have chosen two examples, Lak and Ea Soup. Before responsibility for management transferred to a fishers union both reservoirs operated under a system where the District collected taxes. Under this system, many fishers refused to pay taxes because they believed the fishery was under poor management. After transfer of management, however, most fishers willingly joined the scheme because they believed revenue from the taxes would support their own management activities as well as going to the district authorities. In the event, although the tax rate was higher in the old scheme, revenues received from taxes under the new system were twice as large (Table 2). Furthermore, the reduction in destructive practices is roughly four to six times greater under the new management scheme.

Table 2. *Comparison of the tax fee and fishing pressure during two management systems at Ea Soup and Lak reservoirs*

Reservoir	Management system	Tax fee (VND/month)	No. of registered fishers	Max. fishing fee (VND/year)	% of fishers using destructive gear
Lak	old (1997-2001)	35,000 for Kinh 15,000 for I.P	57	23,900,000	25
	new (2001-2003)	25,000 for Kinh 15,000 for I.P	218	53,760,000	6
Ea Soup	old (1980-1999)	10% of total catch	20	8,000,000	30
	new (2000-2003)	A = VND 30,000	20	16,200,000	5
		B = VND 20,000 C = VND 10,000	20 35		

Notes: The tax fees, A, B, and C account for differing types of gear and number of full and part-time fishers. Kinh are ethnic Vietnamese, IP indigenous people.

We will now examine four reservoirs in more detail, Ea Soup and Lak lake, which are co-managed, and Ho 31 and Ea Kao that are run under quasi-privatised management (Tables 3, 4, 5 and 6 - over page).

The quasi-privatised reservoirs, Ho 31 and Ea Kao achieved higher yield values per hectare because management had stocked them already. The situation at Ea Soup (Table 3) is particularly interesting

because the survey covers a period immediately following stocking. Most of the species restocked were declining before stocking and total yields continued to decline afterwards. However, subsequent data from Ea Soup recorded in 2003 suggests that production was stable but stocked species made up about 10% of its total income (about VND 50.4 million in 2002). Therefore, we suspect that stocking may be responsible for maintaining the yields and income of this fishery.

These trends reflect in the figures for profit per hectare, which is greater in small reservoirs than large reservoirs, and in stocked reservoirs than un-stocked reservoirs even under the same management system. Profit to management cost ratios are considerably higher in government managed and co-managed reservoirs because management costs are lower. Fishers assume management costs directly in un-privatised reservoirs. Net profits per fisher (their share of gross income minus their management costs) were higher in the privatised reservoirs and this was mainly because of stocking.

Also, the number of fishers in Ea Soup and Lak is considerably higher than in the quasi-privatised reservoirs so benefits are more widely but thinly distributed. Hence, the profit per fisher (co-operative member) in Ho 31 is actually lower for each of the 30 members than in Lak and Ea Soup. However, the contractor (a member of the co-operative) gets higher benefits. The profits of this reservoir under a contractor is much higher than it was under the old management system (from 1996-2000). The benefit contribution of the present contractor was 17 million as tax to Tan An co-operative, while annual profit from 1996 to 2000 was only about 11 million. This was because management and fingerling costs were relatively high and management methods were ineffective under the old scheme.

An employee of DAPCo manages Ea Kao reservoir. Thirty fishers operated in this reservoir and 12 people form the fishing team and patrolling group. The fishers pay these people 30% of the total value of the catch and the cost of their yearly insurance premiums. The benefit per fisher (including fishing and patrolling team) is relatively high but about 50% of net benefit goes to the contractor.

The current management systems at Ea Kao and Ho 31 have been very successful in terms of achieving high production and smooth co-operation with the local authorities. However, the managers decide how benefits are distributed, and as a result managers get greater proportion of the revenues (50%) than do the fishers.

The advantages of co-management, based on these data, appear to lie mainly in saved management costs and reduced use of destructive fishing methods. This is valid to some extent, but the whole question of cost and benefits of co-management is considerably more complicated than the simple numbers given here.

Finally, co-management of the water bodies as discussed here is a new activity and this analysis may therefore underestimate the benefits that could result from older, more established co-management systems.

Table 3. *Ea Soup: a medium-sized reservoir co-managed by the fishers union and restocked with fish*

Annual costs (2002)	Amount (million VND)
Meetings	12.3
Guarding	3.6
Communicating	1.1
Training	2.6
Stocking	12.0
Other	1.2
Total costs	32.8
Income (landed value 2002)	504.5
Profit to management group	471.7
Profit/ha.	2.0
Profit/cost ratio	14.8
Profit to fishers	471.7
Number of fishers	100.0
Profit/fisher	4.7

Table 4. *Lak lake: a lake co-managed by fishers union and not stocked*

Annual Costs (2002)	Amount (million VND)
Taxes	6.5
Meetings	17.1
Communicating	3.0
Guarding and boat maintenance	5.6
Allowance for collectors and board members	15.0
Training	5.5
Total costs	52.7
Income (landed value 1997-2001)	740.0
Profit to management group	687.3
Profit/ha.	1.0
Profit/cost ratio	13.0
Profit to fishers	687.3
Number of fishers	218.0
Profit/fisher	3.2

Table 5. *Ea Kao: a medium-sized reservoir managed by DAPCo. employees*

Annual Costs (2000-2002)	Amount (million VND)
Fingerlings	35.0
Insurance for team	12.0
Guards' wages	36.0
Taxes and fees	18.0
Repairs to gear	25.0
Total costs	126.0
Income (landed value 2000-2002) (ca.74% stocked)	475.0
Profit to management group	349.0
Profit/ha.	1.2
Profit/cost ratio	2.8
Profit to fishers	173.0
Number of fishers (including fishing and patrolling team)	42.0
Profit to contractor (1)	176.0
Profit/fisher (42 fishers)	4.1

Table 6. *Ho 31 a small reservoir managed by a co-operative member*

Annual Costs (2000-2002)	Amount (million VND)
Fingerlings	5.3
Taxes to tan and co-operative	17.0
Feeding	9.0
Fertiliser	0.6
Labour (fishing and patrolling)	9.2
Total costs	41.1
Income (landed value 2000-2002) (ca.99% stocked)	69.6
Profit to management group	28.5
Profit/ha.	5.4
Profit/cost ratio	0.7
Profit to co-operative members (30)	17.0
Profit to contractor (1)	28.5

Note: This reservoir was at the time stocked under ACIAR fund

OTHER PROBLEMS AND BENEFITS OF CO-MANAGEMENT

Problems

Co-management costs are low in financial terms partly because poor fishers assume them and the cost of their labour is very low. These people are poor and have little time to spare. This means that while they are willing to volunteer the time needed to help manage their fisheries, they are not always able to do so unless some modest compensation is available. Successful co-management depends on the active participation of the resource users. If they cannot afford to participate and invest the apparently modest costs needed, the effort will fail. Therefore, if public agencies wish to promote co-management, they need to be ready to devolve reasonable funding, as well as responsibility, to the users. In addition, participation in managing the resources does not always run smoothly and conflicts arise among users. At present, there are no effective, and timely, procedures in place with which to arbitrate and resolve these conflicts.

Benefits

All the fishers' groups have adopted additional objectives relating to mutual support for the welfare of the community and liaising with local agencies and authorities. They could clearly see that the benefits from managing the fishery alone might not be enough to justify the investment they need to make. Therefore, these groups have all established credit and savings activities and invited support from other agencies, notably those involved in training in alternative livelihoods.

Although the benefits from these activities are difficult to measure, they certainly exist. Nam Nung is a good case in point. Nhung (2002) points to additional, equally intangible benefits that may be of even greater importance; community groups that develop their management skills may be able to manage an increasing number of other different activities more competently and to the benefit of the community. This can increase the prosperity of the community, reduce the workload of over-worked officials, provide instructive examples for other communities and local governments, and ultimately lead to a stronger, more resilient society.

These benefits deserve serious consideration by decision makers responsible for determining the level of support and strong arguments can be made for co-management and community participation in resource management. However, decision-makers must also keep in mind the need for sufficient (and usually financially modest) support for the efforts of the community.

In fact even though co-management looks inexpensive (because fishers' labour is cheap), this does not mean that fishers can afford the investment. Since their participation in management is central, the whole process may fail unless financial assistance (or similar support) is sufficient to allow them to afford to invest their scarce free time.

LESSONS LEARNED BY MRRF VIET NAM

In Viet Nam, co-management will not take place unless local authorities give it adequate support. The extent to which MRRF (Phase II) has been able to establish co-management has depended entirely on the attitudes of local stakeholders. In all cases but one (Nam Nung), it was local authorities who permitted, or prevented, the participation of the fishing community in managing the fishery.

It does not always follow that an initial agreement by critical stakeholders will result in the establishment of a co-management scheme. Some stakeholders can change their minds when the implications of devolving responsibility become clear.

The economic and social importance of the fishery may affect the local authorities' attitude to fisheries co-management; their willingness to sacrifice immediate revenue in favour of community participation and prosperity and past their experiences of managing fisheries may influence their position.

Resource users are very quick to understand the need for sustainable management and clearly see their role in this as crucial. They need training, facilitation, and time in order to achieve successful participation in resource management.

As we have said previously, users need some modest financial support, at least initially, if they are to make time available to participate in resource management.

We want to emphasise that it takes time to establish a successful co-management venture. Resource users have a limited amount of money, time, official contacts, and formal education. For co-management to become well-established prolonged, continuous communication and related support is essential.

Organising users to manage the resources on which they depend for their livelihood, in a sustainable manner, cannot be divorced from efforts to maintain and raise their standard of living. Most users exploit resources in an unsustainable way because they feel they have no choice. They are willing to control their efforts if other users do and if they can afford to do so.

Besides incentives, such as training in alternative livelihoods, discouraging violation of rules and regulations needs a system of penalties. Consistent enforcement of these penalties is essential. The wider community must understand and appreciate lenience in individual cases for the regulations to succeed.

Resource users can identify objectives around which they can organise themselves but the means of achieving these objectives need flexible and responsive planning. Poor economic circumstances force users to focus on short term, urgent issues, and unforeseeable, uncontrollable external factors can make more elaborate or longer-term plans inoperable.

The level of government directly involved with a given fishers' group should reflect the geographic area in which the fishery is important. In general the more local the crucial stakeholders, the faster and more

responsive the communication, and the more effective the management will be.

RECOMMENDATIONS

Participation of users in managing the resources on which they depend should be encouraged more actively by higher levels of government.

Since management of fisheries, or any other resource, carries implications for various sectors of the economy, and of society, this support should have the agreement of the Central Committee. Policies of particular ministries, while helpful and sometimes crucial, will be limited in their effectiveness without this support.

Encourage local governments to support resource co-management. Higher government levels may accomplish this in different ways such as, campaigns to promote awareness of the need for co-management, related training courses, and favourable publicity for local officials who conscientiously support co-management initiatives.

Public agencies that decide to promote co-management must be ready to support user groups with training, advice, liaison with other agencies and officials, and, at least initially, modest financing. They must be ready to invest the necessary effort and communication, and realise that successful establishment of a co-management mechanism takes a few years rather than a few months.

Efforts to establish co-management, if they are to succeed, must be combined and coordinated with efforts to maintain or improve the resource users' living standards.

REFERENCES

- Cowling, V. (2001) 1st Regional training course on co-management in inland fisheries documentation. Mukdaharn/Savannakhet 15-24 May, 2001. *Component Report* No. 32. MRC Fisheries Programme, Mekong River Commission, Vientiane.
- Nhung, N. T. (2002) The future of fisheries co-management in six reservoirs in the Central Highlands of Viet Nam. In: *Proceedings of the Fifth Technical Symposium on Mekong Fisheries, 11th-12th December 2002* (The 5th Technical Symposium on Mekong Fisheries, Khon Kaen, Thailand, 11 December-12 December 2002). A. Poulsen, ed. Mekong River Commission, Phnom Penh, pp. 195-214.
- Phuong, T. H. and An, N. Q. (2001) Opportunities and constraints to reservoir fisheries co-management in Dak Lak Province. Presented at the Sixth Asian Fisheries Forum, Kaoshiung, Taiwan. 16 pp.
- Phuong, T.H. and Hoang, T.M. (2002) Initial results from the fisheries co-management in Lak Lake, Central Highlands of Viet Nam. In: *Proceedings of the Fifth Technical Symposium on Mekong Fisheries, 11th-12th December 2002* (The 5th Technical Symposium on Mekong Fisheries, Khon Kaen,

Thailand, 11 December-12 December 2002). A. Poulsen, ed. Mekong River Commission, Phnom Penh, pp. 329-338.

Sollows, J. D. (2001) Management of reservoir fisheries: some lessons learned to date. Presented at the MOF-Danida SUMA Workshop on co-management, Nov. 28-20, 2001, Hanoi.