



STREAM



SUPPORTING THE PLANNING OF A COMMUNITY FISHERIES MONITORING AND EVALUATION DATABASE



**A collaborative project undertaken by CFDO, FLD,
STREAM, VSO and AYAD**

August 2003

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Preface

Cambodia is one of the poorest countries in the world; much of its population live in rural areas and many live below the local poverty line. The management of common property aquatic resources is of over-riding importance to food security and sustainable rural development in Cambodia. Aquatic resources are utilized principally by subsistence fishers and the landless, for whom aquatic resource use is an important livelihood activity. Subsistence fishers access mainly the rivers, lakes and inundated forests in Tonle Sap provinces, the lower Mekong and Bassac regions and the upper part of the Mekong. Freshwater capture fisheries probably contribute more to national food security and the national economy in Cambodia than in any other country in the world.

Fish and rice are the nutritional staples of Cambodia with fish and fish products expected to contribute 75% of the dietary protein intake of the population. In addition, local fishing or fishing related activities are the primary occupation for around 10 % of households, a part-time activity for over one third of households and most landless people catch and trade fish for rice, so fishery resources play a significant role in supporting rural livelihoods, especially of the poor (Ahmed et al 1998).

The management of the fisheries sector in Cambodia has been based on a fishing lot concession system, which allows private persons to acquire almost exclusive rights to exploit the fish resources in a defined area. However this practice has been threatening not only the sustainability of the fish stocks but also the social peace. Tensions among stakeholders have increased during the last decade. There has been illegal and widespread destructive fishing within these lots and serious irregularities have been noted in regard to the allocation of licenses and collection of fees (Degen & Thuok, 1998, Swift 1997).

Recently, the government initiated a fisheries policy reform that focuses on reducing the extension of the fishing lots and releasing substantial areas to be managed under the "Community Fisheries" agreements.¹ The important changes are in the access of local villagers to concessions, to facilitate the development of community-based management of fisheries. A new fisheries law is being drafted and the government encourages a partnership approach to this initiative.

The purpose of STREAM Cambodia is to strengthen, or develop, and communicate strategies, processes and practices that enable poor and vulnerable aquatic resources users to pursue their livelihoods objectives. This will be achieved through supporting better understanding of poor people's livelihoods, building capacity of service providers, legal reforms and improved communication. Within this context the purpose of this pilot study, undertaken with Community Fisheries Development Office (CFDO) and the NGO FLD (formerly SCALE), is to contribute to understanding of the information collection and storage needs of the CFDO in relation to the monitoring and co-managing of Community Fisheries.

¹ 56% of the fishing lots have been released for management under the "community fisheries" agreements

The mission of FLD is to contribute to sustainable improvement in nutrition, food security and income among the subsistence rural communities. The CFDO's mission is to facilitate the establishment of CF's throughout Cambodia and support their function as management partner with the DoF in a drive for efficient, sustainable use of aquatic resources.

The CFDO of Department of Fisheries operates at provincial level through the Community Fisheries Development Unit (CFDU) of the Provincial Fishery Offices and exchanges information within the DoF and other government departments and ministries. The role of CFDU is to facilitate the establishment of Community Fisheries (CF), strengthen existing CF's, support the community in developing plans for the established CF's and support the protection and conservation of the resources in co-operation with the Provincial Technical Unit of each Provincial Fishery Office.

Since the process of reform of fisheries management policy was initiated at the end of 2000, more and more fishing villages have signified their desire to take on the challenge of participating in the management of their fisheries. There is a considerable need for the processes of dissemination and training of fisheries co-management at national, provincial and local levels to sustain the resources for future generations. This will require active participation and co-ordination from many different stakeholders.

At present, there are approximately 264 Community Fisheries established in Cambodia. This is not accurately known and estimates differ between organizations. However, knowledge of Community Fisheries and their capacities is a precursor to co-management and to facilitate this, the CFDO wishes to develop a database to monitor and evaluate Community Fisheries and plan co-management.

Acknowledgements

This work was initiated by the CFDO in collaboration with the local NGO FLD (formerly SCALE) and STREAM. There were four partners involved in implementation of the project; CFDO (Department of Fisheries Phnom Penh), NGO FLD, Provincial Fisheries Office and Provincial Office of the Department of Women's and Veteran's Affairs (DoWA) in the provinces of Kratie, Kampong Chhnang and Kandal.

Two expatriate advisors, one from Britain, with VSO and the other with an Australian Youth and Development (AYAD) programme supported the process.

The Provincial Fisheries Office and DoWA contributed and coordinated the selection of the villages and transportation around the provinces. Their contribution to this project was invaluable as without their assistance and local knowledge the project could not be implemented.

The implementers gratefully acknowledge the support of village leaders, Community Fishery Committees and villagers of Koah Kaev Leu, Dang Koum, Praeak Kdei, Boeng Chonlen in Kandal, Stueng Snguot, Kanleung Phe, Kampong Tralech Kraum and Ta Mol Leu in Kampong Chhnang and, Krakor, Bueng Run, Kaeng, Chrouy Banteay in Kratie that have contributed their time to take part in the discussions.

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Acronyms

AYAD	Australian Youth and Development
AusAID	Australian Funding Agency
CF	Community Fisheries
CFDO	Community Fisheries Development Office
CFDU	Community Fisheries Development Unit
DoF	Department of Fisheries
DoWA	Department of Women's and Veterans' Affairs
FAO	Food and Agriculture Organization of the United Nations
FLD	Farmer Livelihood Development (formerly SCALE)
GIS	Global Information System
GPS	Global Positioning System
IO	International Organization
M&E	Monitoring and Evaluation
NGO	Non-Governmental Organization
PRA	Participatory Rural Appraisal
SAO	Southeast Asian Outreach
SCALE	SAO Cambodia Aquaculture Low Expenditure
STREAM	Support to Regional Aquatic Resources Management
SWOL	Strength Weaknesses Opportunities Limitations
VSO	Voluntary Services Overseas

Executive Summary

Cambodia is among the poorest 20 countries in the world with 90% of its rural poor comprising those with fishing and agriculture as primary sources of income, who depend on aquatic resources, small-scale rice farming and forest resources (MoP 1999). Freshwater capture fisheries are the largest source of supply of fish and their sustainable management is of paramount importance to food security, income generation and sustainable livelihoods in Cambodia. Subsistence fishers constitute significant groups of poor people who use aquatic resources as part of their diverse livelihoods portfolios, in the rivers, lakes and inundated forests in Tonle Sap provinces, the lower Mekong and Bassac regions and the upper part of the Mekong.

The major issues for poor aquatic resource users in Cambodia revolve around the rights and access to fishing grounds and communication between the poor and agencies that support them. The management of common property aquatic resources is of over-riding importance to food security and sustainable rural development. The abolition of many commercial fishing lots provided an opportunity for poor aquatic resources users to exert greater legal control over the resources upon which their livelihoods depend. However, many poor aquatic resource users are unable to respond to these opportunities due to ineffective community representation within co-management.

A significant development problem within fisheries is the effectiveness of mechanisms for collecting and sharing data and the validity and usefulness of the data collected. There is a need to strengthen the data collection and sharing mechanisms for co-management. If local communities are to play an effective role in promoting good governance, community management needs to be sustainable, and the emerging trend towards people-centered approaches needs to be maintained.

CFDO's management of Community Fisheries in Cambodia aims to improve the livelihoods of the rural poor. By focusing on collecting and managing information related to Community Fisheries, the CFDO hope to better understand issues relating to the sustainable use of the natural resources pertaining to subsistence living. The better the understanding of issues affecting Community Fisheries, the higher will be the CFDO's capacity to co-manage fisheries, and to coordinate with provincial staff involved in Community Fisheries.

This report illustrates the development of a pilot data collection, sharing and interrogation mechanisms for key information in support of co-management, identifying information requirements and procedures for the transmission and sharing of information between relevant stakeholders.

A combination of focus group interviews with the community committee and village leaders, and participatory rural appraisal, which involved the whole village, was used as a means of information compilation. The focus group interviews helped to identify quantitative data while the participatory rural appraisal enabled discussion of qualitative data. In this way a baseline for monitoring and evaluating the co-management of Community Fisheries in the

provinces might be evolved. The object of the pilot database project was to examine the processes not specifically to collect information.

The system identifies a process of identifying and recording the Community Fisheries by the combined use of local knowledge and GPS. Conflicts around co-management and measures to combat these were noted. The maturity and operation of Community Fishery was determined by monitoring election turnout, administration processes and perceived levels of success, knowledge of the concept of a Community Fishery, the use of by-laws, establishment of fish sanctuaries, formation of patrolling groups and the documentation associated with these.

A simple database system was developed that enables data to be stored and processed electronically, and reports generated. The data may be updated as required while further enhancement of the system will enable the information to be analyzed and developed into a useful presentation suitable for distribution among the stakeholders.

Community Fisheries are very much in their infancy with large differences in the abilities and the understandings of many of the committees, however there are already some effective committees with a clear appreciation of their roles in their future development. By continuing dialogue amongst government and community stakeholders and the use of an appropriate information database, there is a real opportunity to enhance the livelihoods of poor people in fishing communities by directing appropriate advice or assistance in the areas most needed.

Supporting the Planning of a Community Fisheries Monitoring and Evaluation Database

1 Introduction

Civil unrest in relation to the management and administration of the fisheries domain has become the primary contemporary aquatic resources management issue in Cambodia, with lack of access to the resource by poor people at its heart. The government has responded with reforms to fisheries management. As well as changes to fishing lots the reforms included changes to the high level administration of the Fisheries Department and the transitional withdrawal of provincial fisheries inspection stations in all fishing lots throughout the country.

There is still considerable confusion in Cambodia about the state of the fisheries law, fisheries administration (particularly the concept of community management and the institutional roles and responsibilities of the state and of communities associated with it), and the early stages of institutional development that are required to support community management. Support needs are vast and require coordinated efforts in key directions. The over-riding needs of poor aquatic resources users themselves are secured legal access to the resource and appropriate support services from local and national (government and non-government) mediating institutions. Specific issues usually vary relating to the location and socio-ecosystem.

The concept of community co-management of fisheries has been introduced and implemented in some local communities but information about community co-management of fisheries has not yet been well disseminated to all the stakeholders. As a result, not only fishermen but also organizations working in fisheries are unclear as to what Community Fisheries means and how it is to operate.

The institutional need is primarily one of capacity building to co-ordinate and support co-management and there is an important need for relationship building amongst Community Fisheries development professionals and local communities. An early necessity is for information and a process to capture and regularly update information about the emergence and status of Community Fisheries.

The Community Fisheries Development Office (CFDO) was established within the Cambodian Department of Fisheries (DoF) in 2001 as part of on-going fisheries reforms to undertake the role of coordinating emerging Community Fisheries (CF's).

As per Article 16 of the Declaration of the Tasks and Responsibilities of the Department of Fisheries the sections of the mandate of the CFDO office that are applicable to this project are as follows (translated from Khmer version):

1. Planning/Implementing research on Community Fisheries and related socio-economic development
2. Planning together with the Community Fisheries for the sustainable use of living aquatic resources
3. Promotion and facilitation of the establishment and development of Community Fisheries
4. NA
5. Cooperate, coordinate and communicate with institutions, associations and NGO's (national and international) to facilitate and enhance the development of Community Fisheries within the legal framework set
6. Monitoring and evaluation of Community Fisheries activities
7. NA
8. Cooperate to solve conflicts in Community Fisheries
9. NA
10. Education and training of DoF staff, CF officers and members to improve the skills for Community Fisheries management
11. Coordinate and supervise provincial fishery offices working with Community Fisheries Development Units
12. NA

To fulfill the activities within this mandate and the CFDO Strategic Plan there is a need for up-to-date and accurate information on Community Fisheries. The aim of this project was to support the CFDO to investigate an information collection system and a pilot Community Fisheries Monitoring and Evaluation Database (described in Section 2 with a prototype database in appendix II). The pilot was conducted in 12 villages in Kratie, Kandal and Kampong Chhnang Provinces. Although useful information was collected in undertaking this project it was the processes involved in collecting and storing relevant data that was investigated.

The pilot system identifies a practical process for:

- Identifying and recording the existence and location of Community Fisheries
- Monitoring activities and conflicts relating to co-management issues
- Assessing the maturity and operation of the fishery at the time of visiting
- Updating this information regularly on the database.

This includes the identification of financial, human and other resources required for each component.

2 Planning a Monitoring and Evaluation System

2.1 Data Collection Method

The pilot project took place during January and February 2003, including one week preparation 4 weeks fieldwork and 3 weeks report writing.

Step 1: Preparation

During preparation, staff from the CFDO and FLD held two meetings. The first meeting discussed numbers of staff needed, the kind of data required, the method to be used, how to store the data, village selection and the role of central and provincial staff. As the result of this meeting CFDO started to select staff to take part by interviewing those interested.

In the second meeting selected staff considered in more detail the data required, building from the ideas highlighted in the project proposal. From this a number of potential fields were chosen to test reporting capability.

The team decided to categorize information as qualitative (where numbers must be estimated or variables measured) and quantitative (about attitudes, beliefs and perceptions). A data form can be used to collect qualitative data by talking with the village chief or CF Committee. SWOL analysis can be used to collect quantitative data with a cross-section of the community members.

The National Census provided the baseline population figures, with more recent information collected from the village chief, indicating the change over time.

Some discussion took place over the criteria and terminology. "Type of fishing" would be categorized as predominantly lake, channel or river. "Fishing use" would be difficult to categorize. Although some families may usually only fish for their own consumption, when there is an abundance of fish, they may sell the surplus. Also, some communities may not be able to fish all year round, so may not be regarded as full time fishers. Therefore when designing the data collection sheets, descriptive notes were to be encouraged. These may need refining as the database develops. "Production" figures would also be an important management tool in a national database system.

An "illegal fishing gear" field was proposed which could be a list of possible gear, from which a choice may be made, e.g. electric shock, poison, small mesh net and information on numbers involved could also be noted. This was regarded as an important if problematic element.

Although a "fish sanctuary" field could be expanded into a table to include information such as area or seasonal variation, for the purposes of this project only a note of the existence of a sanctuary would be taken.

In order to be consistent with departmental budgets the range of the interviewees would be determined and limited, but with the broad aim of interviewing 10% of the households was agreed. Also agreed was the number of villages and the schedule for fieldwork.

Step 2: Fieldwork for data collection

One week each was allocated for fieldwork in Kandal and Kampong Chhnang. In the third week a meeting was held to review the methods and adjust the plans as required for Kratie where traveling time would extend the fieldwork period. This equated to a half day to brief provincial staff about methods and how to encourage participation and one day fieldwork per village, including traveling between the province and villages, general discussion with villagers and 2-3 hours for specific topics. Some of the lowland fishery communities were cultivating dry season rice away from the village so could not be consulted and in a few locations this included the CF committee.

In the first village in each province, CFDO and FLD staff spent 2-3 hours with provincial staff demonstrating the use of a data form and SWOL. The provincial staff also learnt by observing their techniques and were able to play a more active role in the next village.

After the discussion with villagers, through an evaluation of the day, the data collection form, facilitation and coordination was improved. Each province team evaluated the process of implementing data collection.

Step 3: Report writing

Report writing included analysis and interpretation of the discussions and their input into a usable form in the database. The field team was able to use their daily review sheets to appraise the fieldwork procedures.

Figure 1 shows a flow chart of the pilot database development.

2.1.1 CFDO management:

The team leader from the CFDO met with the Provincial Fishery Office and DoWA staff before the team started to work in each province. He established the village selection, transportation, accommodation, the work schedule in each village and the expenditure.

The project began with Kandal province, which is close to Phnom Penh where village telephone connections made it easy for the coordination. While the team was working in Kandal province, the team leader started working in Kampong Chhnang province with the provincial fishery staff to select villages, means of transport and arrangements with Community Fisheries Committees.

2.1.2 Materials and means of transportation

There were only a few materials used during the fieldwork such as flip charts, marker pens, a GPS and camera. Data collection forms were printed in A4 size. About 3-4 flip charts were used in each village to record the results of the SWOL analysis.

Different means of transport to the villages were used depending on the provinces. All villages in Kandal could be reached by 4-wheel drive car and ferry, whilst in Kampong Chhnang most villages could be reached by motorboat. Some villages were reached by road then motorboat for the final stretch to the village. Kratie villages similarly could be reached by boat or road but the road was only suitable for motorbikes, and then only in dry season.

2.1.3 Team composition

The team included three full time staff from the CFDO (Department of Fishery, Phnom Penh), two full time staff from FLD NGO, two provincial staff in each province from the Provincial Fisheries Office and the Department of Woman's and Veterans' Affairs, and an expatriate advisor from both FLD and CFDO (see Appendix III).

All team members had experience in participatory approaches applied during livelihood studies previously undertaken with SCALE, DFID and STREAM. Provincial Fisheries staff contacted the village leader and community to briefly explain the purpose of the work. DoWA staff involvement encouraged women in the communities to join in and express their ideas.

The advisers commented on overall organization, communication issues, presentation techniques, database design and report composition.

2.1.4 Community participation

The team held separate discussions with the CF Committee and villagers.

The committees started by completing the data form. While some information was well documented by village leaders, some required a quick review and discussion among themselves before agreeing an appropriate response. The team then used the results and discussion topics as a basis to start a SWOL.

The villagers group discussion started immediately with the SWOL (see Appendix I).



Meeting the Community Fisheries Committee

2.2 Identifying and Recording Community Fishery Existence and Location

There are 24 provinces in Cambodia and about 18 have important fisheries where it is anticipated CFDU's will be established to play an active role in Community Fisheries co-management in Cambodia.

Community Fisheries is a new form of resource management adopted by the government of Cambodia in 2001, where commercial fishing grounds were released to local communities for community management (Thay Somony, 2002). By the end of January 2003 there were 264 Community Fisheries though few have management plans and some of them have not yet prepared regulations or by-laws. The number of Community Fisheries established in each province is shown in table 1.

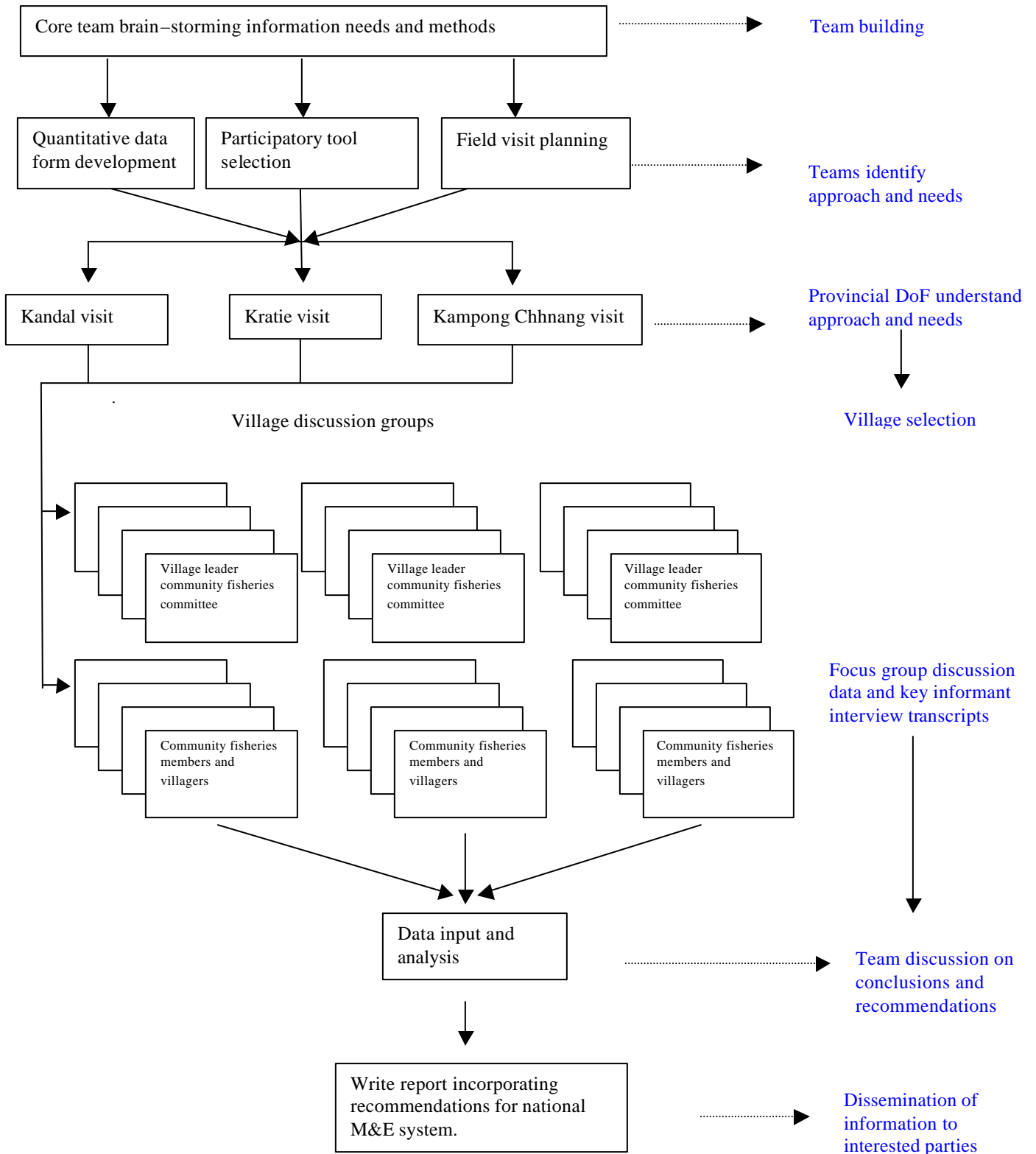
Villages within different ecosystems, with CF's derived from the former fishing lots were selected, to include communities supported by NGOs and by the Provincial Fishery Office.

A GPS was used to identify the location of villages and village codes from the National Census of 1998 were used to access information such as: village name, commune name, district name, province name and the population of the villages.

Table 1: Communities Fisheries in Cambodia (January 2003)

No.	Province	Established CF's	Soon-to-be-established CF's	Total
1	Kg. Thom	10	2	12
2	Siem Reap	10	3	13
3	Bantey Meanchey	10	1	11
4	Battambang	19	4	23
5	Pursat	14	4	18
6	Kg. Chhnang	34	3	37
7	Kandal	17	1	18
8	Takeo	15	1	16
9	Prey Veng	22	8	30
10	Kg. Cham	18	2	20
11	Kratie	31	15	46
12	Stung Treng	38	8	46
13	Ratanakiri	3	1	4
14	Prea Vihea	2	0	2
15	Svay Reang	4	0	4
16	Phnom Penh	1	1	2
17	Kampot	8	4	12
18	Koh Kong	3	3	6
19	Kep	1	2	3
20	Sihanoukville	4	2	6
Total		264	65	329

Figure 1: Flow chart of pilot database development



2.3 Information for Assessing Community Fishery Maturity and Operation

Maturity and operation are key characteristics of a Community Fishery that add value to simply recording its existence. Indications can be drawn from qualitative and quantitative data, illustrated in appendix II. The existence and content of a plan for the development and sustainability of the fishery demonstrates that the committee is operating and is capable of managing the fishery. The establishment of a fish sanctuary shows that the committee is considering the long term prospects of their resources and their success in maintaining this resource is an indication of their development.

Among the 12 CF's visited during the pilot project it was found that three communities had development plans, 8 communities has set up a fish sanctuary and 7 communities have regulation. From the data below it appears that CF's 1 and 7 are more mature than the others.

ID	Development Plan	Regulation	Fish Sanctuary
1	v	v	v
2		v	v
3		v	v
4			
5			
6	v		v
7	v	v	v
8			v
9			
10		v	v
11		v	
12		v	v

More richness of understanding can be captured using PRA exercises, for example, both CF Committee members and villagers in groups, were willing to participate and express their ideas through the SWOL analysis. Villagers did not hesitate to complain about the CF Committees when they felt that the committees had not performed well; they described problems encountered with the Community Fishery as well as the initiation of plans for developing the community. The comments of both villagers and committees focused on the following themes:

Conflict

- Conflict management
- Illegal fishing cases

Capacity of committee and villagers

- Committee structure and roles and responsibilities
- CF's regulations or by-laws

- Management of local income in the community
- Management plans
- Natural resource management measures (fish sanctuary)

Communication

- Regular meetings with the community members and villagers
- Increasing awareness of the CF's
- The promotion of information related to community fishery

Benefits and participation

These are illustrated in more detail in the following sub-sections.

2.3.1 Conflict

One of the themes above relates to conflict and its management. The decision by the government to encourage the development of CF's and to instigate co-management came about because of the tension between the fishing lot owners and villagers. Where CF's are established these tensions are unlikely to be simply ended. Indeed new conflicts are becoming apparent. The SWOL analyses identified other conflicts within communities, including between fishers and rice farmers in water management (e.g. most of the people in one community wanted to manage channels for rice crops but the fishermen use various methods to catch fish in the channel that disturb the water management), and the emerging use of illegal fishing gear in the community and deteriorating fishing lot area (where villagers claimed the fishing lot to be personal property while the committee did not manage to mark the fishing boundary). Identification of conflicts and how the conflicts happened that were identified during PRA's revolved around a number of issues:

- Water management
- Illegal fishing gear
- Accessibility to communal property (land ownership)
- Trends of natural resources
- Financial management
- Outsider's influence

The examples above sketch out some sources of conflict and help also to illustrate the degree of maturity and operation of the Community Fishery. This kind of data recording adds a richness of understanding not shown by set indicators of institutional development (such as having a plan, regulations, or a sanctuary).

An example taken from the database serves to illustrate this;

Topic:	Boundary
<i>Strengths</i>	Villagers support the concept of CF because they have a larger fishing ground.
<i>Weaknesses</i>	Not clear about the boundary of the CF fishing ground. Some conflict in use of dam between the water control men and CF. The group that controls the dam drain water to catch fish and use illegal fishing gear.
<i>Opportunities</i>	The committee could organize a meeting to solve this problem with the dam control group.
<i>Limitations</i>	The villagers do not recognize the CF. There is interference from the military.

2.3.2 Capacity of committee and villagers

The knowledge of the CF's committee and villagers is important for community fisheries management. Most committee members have limited education; some do not read and write which affects their ability to take the lead in managing their community fishery. As a consequence some have not managed to fulfill their roles and responsibilities within the committee and rely instead on the village leader. Some members are not able to write reports on their activities and have limited experience of keeping records or documents to promote their plans to the villagers. Similarly bookkeeping and financial managing abilities are limited yet villagers need to see transparency in the financial context.

In the database the capacity of CF Committees is assessed through indicators including:

- Documentation of events
- Fulfillment of roles and responsibilities
- Report and proposal writing
- Facilitation skills
- Experience in leadership
- Assessment of the benefits from workshop and training courses attended

During the visits the team found most of the CF Committees had not yet documented information, there was a heavy reliance on the village leaders. In most cases the roles and responsibilities of committee members were not clarified. Commonly, without help from village leaders they were not able to arrange the meeting with villagers.



Discussion with villagers

2.3.3 Communication

By considering the development of lines of communication internally and externally, it was proposed by the team that a sequence of progress in communication might be recognized. Steps could be characterized as follows:

- Partnerships
- Number of participants
- Relationship between local authorities and other stakeholders
- Federation with neighboring communities
- Reputation of the committee
- Benefit from attending training and workshops

At this early stage there is a certain amount of serendipity about communications. For example, in one community in Kratie province one person in the village learnt that their village needed a CF Committee through listening to the radio and then started to communicate with the Provincial Fishery Office to help villagers establish the CF. There is however emerging evidence that some committees and communities aspire to more sophisticated forms of communication. For example, a few communities in Kampong Chhnang province expressed the idea that they wanted to form a federation by the involvement of neighboring communities but they did not know who could help them and how to ask for help.

2.3.4 Community fishery benefits and participation

An issue at this stage in the development of Community Fisheries is that the community fishery structure is not yet identified and villagers are not clear about the roles and responsibilities of the village leader and CF's Committee. This obviously relates to communications and there are still some significant problems of lack of transparency and accountability among the CF's Committees. Some committees are not yet clear about the mandate of the CF's and they feel their work is under pressure from the authority and outsiders. Although villagers elected committees there is currently no further involvement in decision making from the villagers.

The involvement of the community and their level of appreciation of the new Community Fisheries can be indicated by:

- Number of people taking part in the elections
- Perceived benefit from CF's
- The understanding of the objectives of CF's

The current work identified that not many people had taken part in the elections to select the CF Committees but most communities perceived that they benefited from the community fishery. They had more access to the fishing grounds, more opportunity to manage water for crops and some communities managed to lease the fishing ground then used the income to develop their communities.

2.4 Sharing and Dissemination of the Information

In order to fulfill its mandate the CFDO cooperates with many organizations within the DoF, provincial offices / CFDO's, NGO's and IO's. All these organizations work in CF's on a daily basis, aiming to manage the living aquatic resources in an efficient and sustainable way. To achieve this they all have similar information needs with regards to Community Fisheries. To operate efficient and effective all these organizations should be working with the same information (data and definitions) on Community Fisheries. This means that the information on Community Fisheries should be available to all these organizations. The technical solution to fulfill the stated requirements is to have a central database on Community Fisheries that is made available to all organizations. Depending on their roles and needs organizations interact with the database using different interfaces. The needs and interests of the various parties, including the CF's themselves determines the type and detail of these reports.

2.5 Data Storage

Microsoft Access software was used for this pilot database. The structure of the database was designed to store data in *tables*; *queries* were used for analysis and links of useful data were used to produce *reports*. The *forms* in Access have two functions; they are used to enter data and operate the queries and reports (see appendix II).

The data collected from the field during this pilot was translated into English and put in the database, as developed by the team leader. At the present a database of this nature is unable to practically accommodate the Khmer language so it has to be maintained in English. This might be a reason to select another software package. A decision about this should be an activity in the development of an agreed database.

The soft data collected was analyzed and firstly typed into Microsoft Word, which allowed checking of the spelling and grammar; an English speaking advisor helped to edit the text to try to ensure the meaning was agreed before transferring it to Microsoft Access.

2.6 Use of Information in the Database

Information from the database can be compiled into a report, which highlights conflicts, the strengths and weaknesses of the management system, the opportunities and need to develop community and institutional influences etc. The information in a report can be used to set up mechanisms for promoting and sharing of lessons learnt about community fishery management among the communities and stakeholders throughout the country. Furthermore the information is useful to review and update the strategic plan.

The database should be available to all partner organizations which develop plans to assist community fisheries. Partner organizations that are involved in CF's management should be registered in the database, as illustrated in Appendix IV, which allows the CFDO to build a contact network and where necessary to intervene or to set up feedback mechanisms with stakeholders. Using the English database, reports would require translating into the Khmer for dissemination and could be produced to particular specifications if necessary.

2.7 Updating the database

The database could be planned as a work in progress so the information would be updated regularly to meet the need of communities, partner organizations and other stakeholders. Given the current rate of CF development an appropriate period to update could be every 6 months, during the dry and monsoon seasons, which would highlight different activities and conflicts within communities. It would also allow time for a team to collect, enter and analyze data, then produce a report for distribution to the stakeholders and use the information to review and update the strategic plan and feedback to the partner organizations.

A significant amount of capacity building will be necessary amongst central and provincial staff. As resources and skills in the CFDO and the provincial offices increase, routine visits to communities should be sufficient for provincial teams to update their information and the database. Protocol needs to be developed in-house to ensure consistency and quality of data.

2.8 Resource Requirements

Based on the pilot project and considering the subsequent recommendations, it is estimated that setting up the database, collecting and inputting baseline data for a monitoring and evaluation system for the three initial provinces would cost in the region of \$70,500 (as of March 2003) over a one-year period, using the same team structure (Appendix V). Projecting this nationally, the full database development cost could be estimated at approximately US\$423,000, at US\$23,500 per province and including 18 provinces. Funding for this type of work is not yet allocated within the normal operating budget of the CFDO so support would need to be sourced externally. It is anticipated, however, that once the system is established, operation and maintenance costs would be achievable within an appropriate annual budget.

More preparatory work and training in participatory rural appraisal techniques would be required nationally for provinces that had not been involved with the Sustainable Livelihoods Study that has trained the current staff. The cost of building capacity in participatory approaches is quite high and the time this takes varies but a series of at least three workshops and learning opportunities would be necessary (see A Process and Practice for Understanding Livelihoods of Fishers and Farmers STREAM CD ROM Version 1.0 2002 STREAM).

To undertake a series of training workshop involving 2 facilitators, 4 DoF staff, 2 provincial staff from each province plus 20 stakeholders would cost around US\$10,000 per province. A field visit could be incorporated for the teams for this budget.

Community Fisheries Co-Management Evaluation

The fieldwork for collecting the baseline data in the initial three provinces using a team of 4 and including assessment visits would cost in the region of \$43,600 for travel and expenses. Salaries for the team would be likely to add a further \$11,000, including the 2 office-based staff needed to develop the database and enter the information.

It is anticipated using a field team of four people per community, including two provincial staff, supported by two office-based staff plus the team leader. Although these may be

CFDO personnel, involving a local NGO such as FLD appears to reassure communities and makes them more open to discussions as well as demonstrating transparency.

Equipment

It would be prudent to have a computer dedicated for use by the database, as some considerable time would be involved both in design and maintenance of the system. It may be appropriate considering the distance and time taken to get to some sites for the field teams to have laptops or electronic data collectors for the collection of the data. The data could then be entered on site for quick reviewing with the villagers. This is not included in the above estimates.

Dedicated transport for the teams would be advised as it is possible they would be spending some considerable time in the field, putting excessive demands on the use of shared vehicles.

Communication between the field team, provincial offices, head offices and communities has been identified as being a potential impediment to the development of the database. Good lines of communication and their reliability are necessary and provision for this needs to be included.

3 Discussion, Conclusions and Recommendations

Although this work was intended to examine the processes of data collection, villagers reported that the discussions were useful; it was a chance for them to learn more about community fisheries and participate with the community fishery committees. Some villagers said they were more likely to support the development of the community fisheries; they had a higher commitment and a stronger intention to eliminate illegal fishing activities.

However in communities in lowland areas where many people were busy planting dry season rice, the team were not available to meet most villagers (and in one village in Kampong Chhnang not able to meet with the CF Committee). The old men and young people who were able to attend the meetings did not have any ideas to contribute to the discussion, as most of them knew nothing about the process of the community fishery.



PRA in practice

Sometimes the team found it difficult to start the discussion where most people in the communities were not aware of the meaning of Community Fisheries and they were not clear about the objective of establishing a CF Committee. However, using the participatory approach and SWOL, the participants felt happy to join in discussions as they thought it was useful for them and easy to understand.

In some communities regular visits from institutions have provided a good level of understanding about Community Fisheries e.g. where several training courses to build the capacity of the committees as well as the community members have taken place or where visits to other communities to share their experiences have been facilitated there is a good understanding of the concepts and issues around co-management. In some cases there is also a good committee network in place. Within these CF's the committee found it easy to understand the questions posed by the pilot database work and provide information. For example the community fishery in Ta Mol Leu had been established only 5 months but the

committee knew good management because they had had a chance to take part in a capacity building training course. They were able to communicate with other NGOs and other institutes. They knew how to make an action plan for their community, arrange meetings, take responsibility, create a sanctuary, and manage local income. They have used general income for building a bridge, repairing the road, building guesthouses etc. The committee said they are happy to work with an NGO partner because they have some money for spending on meetings like the place, materials, cakes and tea.

NGOs and the Department of Fisheries have so far been the main institutions working with Community Fisheries. Those communities that have a partnership with a good NGO and have regular meetings tend to find good ways to develop their communities. Their weakness tend to be that they don't extend their knowledge to people in their communities.

Community Fisheries that have been established by the Department of Fisheries Provincial Office and without regular facilitation and support are sometimes not so good. The role of the community and the committee may yet to be decided and there may be limited understanding of what community fishery or co-management might mean. Usually they have not been involved in training courses.

The team found that where the community fishery is close to a town center, both with NGO support and without NGO support, the committee understands more about the meaning of community fishery by following radio, TV and newspaper reports. They are more likely to be educated, have access to other sources of information and be aware of how to find out what they need to know. Being close to a town means that it is easy to access information and communicate with other organizations.

The team developed a working schedule with quite limited time for information collection in order to rapidly develop basic information for a Community Fisheries database. This is quite different to a livelihoods analysis where a team may stay in a village for some days.



Ta Mol Leu, Kampong Chhnang

The conclusions and recommendations are as follows:

Ownership and operation

- The CFDO should own and update the Community Fisheries Monitoring and Evaluation Database. It should be widely shared with stakeholders, and contributions from stakeholders' own data resources should be actively sought at the start of its development. It should be regularly updated, perhaps biannually, to ensure it continues to be a useful monitoring and evaluation tool. The most appropriate time to access information from communities is between February and April in the dry season and August to October in monsoon season.
- Provincial staff should continue to use their routine visits to communities with fisheries to register the presence of Community Fisheries and a mechanism should be developed to incorporate this information into the database.
- The contextual information related to conflict and needs of the communities should be carefully facilitated in each community. This would contribute to developing a CF management plan at the community level as well as national level.
- GPS is a useful tool in the location of Community Fisheries when combined with a mapping tool.
- An electronic form of data collector such as a palm-top device would be useful and improve efficiency, as this would prevent the double handling of figures and reduce the possibility of errors.
- The success of participatory approaches depends strongly upon the presentational facilitation and PRA skills of the field team, SWOL analysis, was recognized as a most effective tool for understanding conflict, though other tools may be used as experience increases.
- The operation form and standard report need further development, especially the mechanism to review reports with specific needs.
- Further developments of the database would enable a GIS system to be created and links to other systems such as digital mapping and the Internet.

Capacity building

- Capacity building in support of the CFDO, CFDO provincial staff and monitoring teams should be developed before they take part in developing scaled-up plans for work on the database in other provinces.
- A workshop to further develop the indicators highlighted in 2.3 of this report around conflict, capacities, communications and benefits could help to clarify the information needs for this part of the database to assess the maturity and operation

of CF's. This should involve a wide range of stakeholders to discuss requirements including the CF's committees.

- Villagers reported that they would appreciate more frequent visits, especially early on in the establishment of the CF's, as the discussions assist in the capacity building of the communities and they benefit from this input.

Participation

- The role of provincial staff is to inform the community and prepare the logistics but most importantly to explain the purpose of the database, so they should participate in developing the plan and agree on the objectives of the data collection system. (Even where available, telephone communication is not enough for a full explanation of the purpose of the project. This can only be done thoroughly face to face.)
- The development of the database, like the support for Community Fisheries, should actively include isolated communities in remote areas early in the process.
- Discussion groups should be small and gender separated to allow participants to express their ideas. Working closely with more and smaller groups could also facilitate triangulation of information and greater participation.
- Funding permitting, the time taken with the community could be expanded to a two-day period. This would allow time for reflection on matters raised and in building good relationships.

Communication

- For full dissemination between stakeholders, reports would need to be in English and Khmer. Support to ensure the correct meaning is maintained in translation would be necessary.
- Agreements should be sought between government departments, other organizations and agencies whereby advice or assistance may be available to assist CF's to achieve sustainability.

Other issues

CF Stakeholders contact details should be stored on the database to assist in co-management. There is a need for detailed information related to the partnership of the communities with government or other organizations that work in the communities, especially how often they are in contact with the communities. The address of organization and the key person to contact should be identified. The local stakeholder organization can then be consulted on location and information collected could be shared by and with them. This will facilitate a greater benefit from the resources available and avoid duplication of effort.

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Appendix I: Supplementary Information

Community Fisheries Formation

The promotion of Community Fisheries has been a very dynamic process that has motivated collective action through the prospect of ownership and benefits. At the same time it has also created passivity in situations where committees have felt unable to do anything until they achieve official recognition by the fisheries administration. Key to the process of Community Fisheries has been empowerment of communities and building their capacities for collective action and self-help. Community Fisheries development has emphasized the sharing of rules and collective management between communities in each federation and between federations, rather than the dividing up of the management area between communities.

The process of establishing Community Fisheries is different between organizations (see Appendix IV). In general, Community Fisheries organized by NGOs have a longer process than with CFDO/CFDU. The process of community fishery development by NGOs began through the facilitation teams cooperating with provincial staff, meeting with local authorities to discuss the concept of Community Fisheries and to gather information on who are the primary users of each fishing ground. The facilitators then visited each village and held discussions with the people about resource use to accurately identify primary and secondary users. Participatory rural appraisal (PRA) was conducted in each location and information collected from all social categories of each village. Through this exercise problems, constraints and opportunities were identified for each location.

Subsequent meetings and workshops were held at each village and eventually each village elected a core group to represent the people of that specific village. After the core group were elected and initial rules and regulations for resource use drafted, workshops were held at each site with all the villagers, commune, provincial authorities and provincial staff of Department of Fisheries (DoF) to elect a Community Fisheries committee with a representative from each village. Each Community Fisheries committee also established a team of people responsible for protection (patrol group) and others were responsible for extension within each Community Fisheries location. Rules and regulations for resource use were formulated at the village level and discussed and negotiated into a common set of rules and regulations by a Community Fisheries committee. These by-laws cover everything from types of fishing gear permitted, size of fishing gear, timing of use, placement, protection of wildlife, protection of inundated forest and associated fines for violators. This established legitimacy of the Community Fisheries development process and confidence among the participants.

The process of establishment of Community Fisheries by the provincial staff of Department of Fisheries began with a meeting with local people to disseminate the policy of fisheries reform and discuss the concept of Community Fisheries. The next stage was the selection of a core group to help convince people of the advantage of forming a fisher's organization and to help draft the constitution and by-law. They then held a meeting to select the Community Fisheries committee.

Since this procedure was undertaken, little further information has been collected from the CF's, and their effectiveness is unknown, hence the perceived need for a system to monitor and evaluate their operation. This pilot project was developed to test the processes involved in that system.

CFDO's management of Community Fisheries in Cambodia is directly linked to improving the livelihoods of the rural poor. There will be much improved capacity for documenting and monitoring issues including conflict and management constraints with the introduction of a Monitoring and Evaluation system. By focusing on collecting and managing information related to Community Fisheries, CFDO will understand issues related to the rural poor. The better the understanding of issues affecting Community Fisheries, the higher its capacity to manage communities, and to cooperate with provincial staff involved in Community Fisheries.

Although this would normally be included as part of the core duties of the CFDO, setting up the system and collecting the baseline information requires funding outside of the normal operating budget, hence the need for this project, which is intended to become the forerunner to a national initiative.

The PRA Technique "SWOL"

The participatory method "SWOL" encourages participants to talk freely. The technique was observed to be useful for the team to involve those on the periphery of the community to comment on how the issues under discussion affected them. They could be encouraged to be included in the meeting thus allowing a diverse and complete assessment to be made.

This participatory approach was the core method used in this project to collect data. There were two kinds of data collected, qualitative and quantitative. The qualitative data was collected using SWOL analysis while the quantitative data was collected using the data collection form that was developed by the team.

The information from the data forms was used as a checklist in the SWOL analysis. However, the information in the data form cannot explain the meaning behind the figures, e.g. it can tell that the community had set up the sanctuary but it cannot tell how the sanctuary works, so the SWOL provides an opportunity to understand the full meaning of fish sanctuary. Villagers as well as committee were more likely to participate in the discussion and express their ideas in the free atmosphere provided by this participatory approach.

SWOL analysis is a method using flip charts to collect any issues or progress happening in the community and the planned for future development plan of the community. The discussions on the SWOL were conducted in separate groups, villagers and committee members. The flip charts were divided into four columns to record the good things, bad things, the opportunities and limitations of the issues. The four categories can be divided in two; Strengths and Weakness investigate what has been done and is being done. Opportunities and Limitations are the things that the community hope to do and expect to happen.

The discussion on the strengths helps to investigate what they have done and how they are successful. The weaknesses help to investigate the problems or conflicts encountered by the community and the things that have not been achieved. The opportunity is the solutions or goals suggested by the community and the needs of the community to achieve their purpose. The last category is limitations; not all the issue have limitation but some issues show limitations where the committee is unable to progress.

Most discussions with villagers started with the bad things in the community, then the opportunity to change or remove these bad things. The villages found it difficult to think of good things about the leaders; they all wanted to complain about them. The limitations and the good things in the community were found later in the discussion. The process of discussion carried on by clarification and prompts on what they had been discussing. The committee group was willing to talk about the good things and the opportunities, but sometimes they wanted to hide the bad things. The bad points could come out when they had further discussions and they realized that this was a process of learning and finding ways of improvement, it was not time to punish them.

The monitoring team conducted regular meetings when returning from the field to review all of the activities in order to find out the areas for improvement in the next survey and editing the data. The soft data collected was analyzed and firstly typed in Word programme, which allow checking the spelling and grammar. Unfortunately this software does not allow the storage of data in national language (Khmer), so when the data was collected from the field it then needed to be translated into English. The VSO advisor employed by FLD was responsible to edit English grammar as well as discuss the meaning before it was transferred to Microsoft Access. The structure of the database was designed to store the data in tables; queries were used for analysis and links of the useful data to produce reports.

Based on the experience gained through this pilot project the team thought of using another participatory tool (Trend line) to collect data and compare the change between two periods, before and after CF was established. This tool would encourage the communities to show the difference between the period without a CF and after the CF has been established.

This data would be presented on a flip chart, when the villagers would be asked to draw a line diagram to show whether the changes increased or decreased. The information on the flip chart would be processed in the programme Freehand then converted to JPG file, an image file that may be imported into the database. The resultant image may be seen, but no further editing will be possible in Access.

Appendix II: The Database

Introduction

A database is a collection of information that is related to a particular subject or purpose, in this case Community Fisheries. If the database is not stored on a computer, or only parts of it are, the information may have to be gathered from a variety of sources that then need to be coordinated and organized. Using Microsoft Access, the information can be managed from a single database file. This report should be read in conjunction with a copy of the pilot database.

Within the file, the data can be divided into separate storage containers called tables, which can then be viewed, added to, and updated. Also the data can be interrogated to find and retrieve just the data required by using queries; and analyzed or printed in a specific layout by using reports. It allows users to view, update, or analyze the database's data from the Internet or an intranet by creating data access pages. To store the data, one table is created for each type of information. To bring the data from multiple tables together in a query, form, report, or data access page, relationships between the tables are defined. To find and retrieve just the data that meets conditions specified, including data from multiple tables, queries are created. The query can also update or delete multiple records at the same time, and perform predefined or custom calculations on the data.

To easily view, enter, and change data directly in a table, a form can be created. On opening a form, Microsoft Access retrieves the data from one or more tables, and displays it on the screen with the layout chosen in the Form Wizard, or a layout that created from scratch. To analyze the data or present it a certain way in print, reports are created. To make data available on the Internet or an intranet for interactive reporting, data entry, or data analysis, a data access page can be used. Microsoft Access retrieves the data from one or more tables and displays it on the screen with the layout chosen in the Page Wizard, or a designated layout. Users can interact with the data by using features on the data access page.

Database structure

1. Tables

The data collected both hard and soft, was designed to be stored in 8 tables using Microsoft Access. The record in each table was identified by village code, which became the link from table to table using a query. The village code was copied from the National Census in 1998. Through this code secondary data could be accessed, such as village name, commune name, district name, province name, village population and other related data from the National Census.

The following tables comprise various fields of data:

1. Table Village households and population: this table is comprised of many fields, which stored data from the National Census in 1998. The table can be used as the main table, from which other tables can link to it and extract information.
2. Table 1 Village population: this table is designed to store data of current population in the village. Through the village's code the present data can be compared with the previous data in the National Census 1998.
3. Table 2 Community fishery background: this table is designed to store information related to the establishment of the community, how the community long has been formed and when.
4. Table 3.1 Community fishery management: this table enables the database to record the composition of the committee member, their roles, positions, sex and responsibilities.
5. Table 3.2 Community fishery management: It has the following fields, term of office, fishery ecosystem, number of households joining the CF, households mostly relying on fish, households fishing for family consumption, number of cage culture, pond culture, community fishing domain area, federation, patrolling group, regulation, community map and fish sanctuary.
6. Table 4.1 Legal fishing gear: it has fields to store the name of legal fishing gear that is being used by villagers.
7. Table 4.2 Illegal fishing gear: it has fields to store the name of illegal fishing gear being used in the community.
8. Table 5 Conflicts and problems in the community: this is the only table designed to store qualitative data. The information from the SWOL analysis, which describes the Strengths, Weaknesses, Opportunities and Limitations, will be stored in the table.

Table village households and population (from National Census)		
<i>Field name</i>	<i>Data type</i>	<i>Description</i>
Pro-cod	Number	Province code
Dist-cod	Number	District code
Comm-cod	Number	Commune code
Vill-cod	Number	Village code
Area	Text	Area (2 =Rural,1= Urban)
Village Name	Text	
Comm-Name	Text	Commune name
Dist-Name	Text	District name
Pro-Name	Text	Province name
TOTHH98	Number	Total households in village
REGHH98	Number	Number of households registered
MALES98	Number	Number of males
FEMALES98	Number	Number of females
PERSONS98	Number	Total persons

Table 1 Village situation (from data collection form)		
<i>Field name</i>	<i>Data type</i>	<i>Description</i>
Date	Date/Time	Date collected data
Vill-cod	Number	Village code - number that is matched to the National Census 1998
Ge-GrReN	Text	Geographic grid reference Northings
Ge-GrReE	Number	Geographic grid reference Eastings
Cu-HH	Number	Current households in the village
Cu-Male	Number	Current number of males
Cu-Female	Number	Current number of females
Cu-ToPerson	Number	Current total persons in village

Table 2 Community fishery background		
<i>Field name</i>	<i>Data type</i>	<i>Description</i>
Vill-cod	Number	Village code matched to National Census 1998
Date	Date/Time	Date collected data
FCG-Date	Date/Time	Date forming the Core Group
E-Date	Date/Time	Election Date
NPE	Number	Number of People join the Election
NPE-M	Number	Number of People join the Election Male
NPE-F	Number	Number of People join the Election Female
Partner-In	Text	Partnership Institution
NameInsti	Text	Name of institution support

Table 3.1 Community fishery management		
<i>Field name</i>	<i>Data type</i>	<i>Description</i>
Date	Date /time	Date collected data
Vill-Cod	Number	Village Code
NameCo	Text	Name of community committee
Sex	Text	
Position	Text	Position in the committee
Responsibility	Text	

Table 3.2 Community fishery management		
<i>Field name</i>	<i>Data type</i>	<i>Description</i>
Vill-cod	Number	Village code as in the National Census 1998
Date	Date	Date collected data
Te-O-Of	Number	Term of office (Number of years)
Fish-Ec	Text	Fishery Ecosystems, type of water body in the communities
FishCoMeM	Number	Fishing Community Member Male
FishCoMeF	Number	Fishing Community Member Female
HICoFish	Number	Number of Households Involved in Community Fishery
HouMoFish	Number	Number of Households Mostly rely on fishing
HFish-F	Number	Number of Households Fishing for family use
HCa-Cul	Number	Number of households doing cage culture
Po-Cul	Number	Number of households doing pond culture
Fish-Area	Number	Fishing area in the communities
Federation	Yes /No	If Yes fill the code of the member in the table 3:1 federation membership
Federation-M	Number	Number of community form the federation
Pa-G	Yes /No	Patrolling group
NPa-G	Number	Number of patrolling group
Pa-G-M	Number	If yes, enter the number of patrolling group member
Co-Map	Yes /No	Community map
Regulation	Yes /No	
Fish-San	Yes /No	Fish Sanctuary

Table 4.1 Legal fishing gear		
<i>Field name</i>	<i>Data type</i>	<i>Description</i>
Vill-cod	Number	Village code as in the National Census 1998
Date	Date	Date collect data
Le-FishG	Text	Legal fishing gears used in the communities

Table 4.2 Illegal fishing gear		
<i>Field name</i>	<i>Data type</i>	<i>Description</i>
Vill-cod	Number	Village code matched to the National Census 1998
Date	Date	Date collected data
Il-Fish-G	Text	Illegal fishing gear used in the communities

Table 5 Conflicts and problems in the community (from PRA SWOL)		
<i>Field name</i>	<i>Data type</i>	<i>Description</i>
Vill-cod	Number	Village code as in the National Census 1998
Date	Date	Date collected data
TargetGroup	Text	Committee group or villagers group
Topic	Text	Topic of issues to be discussed
Strengths	Memo	The things that have worked well, the things that you proud to tell others, that like to brag about
Weaknesses	Memo	
Opportunities	Memo	The things that have not worked so well, the things that would rather others didn't know about
Limitations	Memo	Possibilities for positive change, given both the strengths and weaknesses. The chance to change things for the better The thing that stop us from realizing the opportunities, stop change from happening.

2. Query

The query in Microsoft Access programme was used to link table to table and it is the base form to create reports in the database. The tables in the database will be compiled in one or more queries by using village code to link the record in the table to table. The data field can be selected to show the query then they can be shortened or selected to present in the report.

In this database there were 3 queries that had been developed to produce specific reports. Each query will start in the main table that allows the database to access village name, commune name, district name, province name and the village population in the National Census 1998. Then the query will be used to produce reports. Three tables of quantitative data may be linked to the main table to create one query.

Two queries were used to manage the qualitative data. The two queries have the same data and the same link but it were used to produce different reports.

3. Form

The form is used as the mechanism to operate the database. One data entry form was designed to enter the quantitative data that described the Strengths, Weaknesses, Opportunities and Limitations. This type of data is described in long sentences. Through the table it is difficult to show the whole record, so the form was used to enter this data, otherwise it could be entered direct on to the table.

The other form is designed to operate the report. The data stored in the table is huge, so when it is shown as a report it will be long and difficult to read. The form allows access to the report by topic, which is short and easy to read.

4. Report

The database can produce several reports; most of the hard data was compiled into one report. The qualitative data produces two reports and the quantitative produces one report.

The quantitative information of the communities creates one report that shows the information grouped by community.

The two qualitative reports have the same data but they are designed to show different aspects of information. The first report can preview all data by provinces that have strengths, weaknesses, opportunities and limitations. The second report manages to preview the data, which is sorted by the key word. This report is short, easy to read and it is easy to find specific information.

Note: Every table has the field of Date. Date in the table would allow us to compare the data over time.

Example reports are shown below, but although the data has been collected and is real, the presentation is for demonstration purposes only.

Community Fisheries Management Conflicts And Problems (Results from PRA)

Village code 4020205
Village Name Ta Mol Leu
Commune Name Kaoh Thkov
District Name Chol Kiri
Date collect data 23-Jan-03

	Topic: Development
<i>Strengths</i>	The CF is developing plan to generate local income through selling fish.
<i>Weaknesses</i>	Villagers are not involved in the fish pricing structure discussions. The information about bidding for the fishing lot is not extended to all villagers.
<i>Opportunities</i>	Demonstrate transparency with regards to the income and expenditure of the CF.
<i>Limitations</i>	No compromise between villagers and village leaders at present.
	Topic: Committee
<i>Strengths</i>	The committee chief is knowledgeable and experienced in management and leadership.
<i>Weaknesses</i>	The committee has poor communication with authority, sometimes difficult to compromise with village leader.
<i>Opportunities</i>	Could improve support or agreement with villagers.
<i>Limitations</i>	Difficult to meet villagers to discuss the issues due to their workload.
	Topic: Plan
<i>Strengths</i>	The committee has set the strategy plan for their community: to generate local income, seek NGO partnership, developed community policy and split the fishing ground into three areas 1- Sanctuary area 2- Families fishing area 3- Community development area. The committee members are confident to work because they feel they have a lot of resources in the village.
<i>Weaknesses</i>	The community has been established about 7 months. The plan is not implemented yet. Maybe some villagers do not agree with the plan. Need co-operation from neighbouring village. Some villagers want to plant lotus in the fishing lot area (illegal). There is continued degradation of the inundated forest.
<i>Opportunities</i>	Seek support from wide range of local authorities. Seek skill and materials to extend information to villagers.
<i>Limitations</i>	Community law is not approved yet.
	Topic: Support
<i>Strengths</i>	The capacity of the committee members has been improved through training, sponsored by ACR (Australian Catholic Release)
<i>Weaknesses</i>	The committee relies on ACR. The knowledge gained through the training is not sufficient.
<i>Opportunities</i>	Request more training and study tours to other communities.
<i>Limitations</i>	ACR have finished working in the community.

Community Fishery Background

(Results from questionnaire)

Province Name	Kandal						
District Name	Lvea Aem						
Commune Name	Kaoh Kaev						
Village Name	Kaoh Kaev Leu						
Geographic Cross Reference							
	North	East	Total		Male	Female	Total Person
	22-11.26.52	105.12.942	175		488	513	1001
Number of people join election							
Form core group	Election				Total	Male	Female
	1/13/2003				0	0	0
Partner institution	Name of	Term of Office			Fishery Ecosystem		
GOVERNMENT	DoFishery Kandal	3			River-Channel-Lake		
Fishing Community Members							
Households	Male	Female	Mostly rely on Fish		Fish family consumption		
166	0	0	6		402		
Number of households							
Cage	Pond culture	Fish-Area/ha	Federation	Federation-M	Patrol group	Patrol	
0	0	20		0		5	

District Name	Mukh Kampul						
Commune Name	Ruessei Chrouy						
Village Name	Boeng Chonlen						
Geographic Cross Reference							
	North	East	Total		Male	Female	Total Person
	22-11.46.42	104-59.710	151		395	417	812
Number of people join election							
Form core group	Election				Total	Male	Female
	6/30/2001						
Partner institution	Name of	Term of Office			Fishery Ecosystem		
OTHER	MRC& DoF Kandal	3			Lake		
Fishing Community Members							
Households	Male	Female	Mostly rely on Fish		Fish family consumption		
88			15		136		
Number of households							
Cage	Pond culture	Fish-Area/ha	Federation	Federation-M	Patrol group	Patrol	
4	5	100		5	10		

Appendix III: List of Field and Monitoring Team Members

No	Name	Sex	Position	Organization
1	Mr. Chhuon Kimchhea	Male	Project Manager	DoF (CFDO)
2	Mr. Ung Rachana	Male	Field Staff	DoF (CFDO)
3	Ms. Phann Sota	Female	Data Entry	DoF (CFDO)
4	Mr. Heng Da	Male	Team Leader	FLD
5	Ms. Yi Chanthary	Female	Technical Staff	FLD
6	Mr. Seng Sunhut	Male	Provincial DoF	Fishery Office Kandal Province
7	Ms. Lay Bophall	Female	Field staff	DoWA Kandal Province
8	Mr. Uy Sophea	Male	Field staff	Fishery Office Kampong Chhnang Province
9	Ms. Hang Tharada	Female	Field staff	DoWA Kampong Chhnang Province
10	Mr. Seam Kin	Male	Field staff	Fishery Office Kratie Province
11	Ms. He Sophana	Female	Field staff	DoWA Kratie Province
12	Mr. Matt Fox	Male	Technical Advisor	DoF / AYAD
13	Ms. Heather Airlie	Female	Technical Advisor	FLD / VSO

Appendix IV: Stakeholders

List of National and Provincial Stakeholder

Organization Name	Project Name/ Theme	Provinces	Contact persons/address	Start Date
AACK	Facilitating Community Fisheries establishment	Kampong Thom	Mr. Yim Lam, Phone: 012.960.140	1996
ADHOC/FACT	Fisheries sub-committee/FACT	Kampong Cham	Mr. Keo Sophan Phone: 012.757.061, or 042.941.326	2001
AIT/DoF	Community fish pond	Phnom Penh	Mr. Hav Viseth Phone: 012.918.487, or 023.210.565	
AS/Ashpiwath Sathrey	Community Fisheries	Battambang	Ms. Thoung Tharin Phone: 053.952.433	1998
CAA	Organizing fishing communities, capacity building credit	Stung Treng, Kratie	Mr. Tan Somatbunnawat Phone: 011.906.450	1997
CCD	Community Fisheries Development Program	Banteay Mean Cheay		2000
CEPA	Culture Environment Preservation Association	Stung Treng	Mr. Sou Sivutha Phone: 012.974.931	1995
CFDS	Fishing community organizing and capacity building	Battambang	Mr. Kith Bunthat. Phone: 012.998.425	1998
COWS	Cambodia Organization for Women Support/ Community Fisheries establishment and capacity building	Kampong Thom	Ms. Chhuon Chanputheary 012.784.122	2001
CWS/Church World Service	Fisheries resources management project	Kampong Thom	Mr. Em Channarith Phone: 012.708.193	1995
FACT or NGO forum	NGO forum		023.360.119 admin@ngo.forum.org.kh	
FAO	Participatory Natural Resources management in the Tonle Sap Region/Organizing fishing communities, capacity building, resources mapping, information dissemination	Siem Reap	Mr. Chan Tong Phone: 012.880.763 063.963.525	1998
IDRC/PMMR	Participatory Management Mangrove Resources Project/ Organizing of fishery communities, facilitating the development of sustainable livelihoods. such as small scale Aquaculture	Koh Kong	Chhey Pichrathana 016.702.541	1997

Supporting the Planning of a Community Fisheries Monitoring and Evaluation Database

Organization Name	Project Name/ Theme	Provinces	Contact persons/ address	Start Date
JICA	World Bank office in Department of Fisheries		Mr. Shingo Takahashy Phone:	2001
KCAD/Khmer Community Agriculture Development	Natural resources management/ Community Fisheries establishment and capacity building	Kampong Thom	CCC Box 255	1993
LEUCAENA	Community Fisheries establishment and capacity building	Battambang	Mr. Lay Long Phone: 016.93.31.21	
MRC	Capture Fisheries Component	Kandal/Kamong Cham	Mr. Nick Vanzaline Phone: 023.723.275	1999
MRC/AIM	Aim Component	Kandal/Kamong Cham	Mr. Ouk Vibul Phone: 012.836.376, or 023.216.244	1999
MRC/Assessment	Assessment Component	Kandal/Kamong Cham	Ms. Khay Dany Phone: 011.876.059, 023. 211.494	1999
MRC/Reservoir	Reservoir Component(Phnom Penh)	Kandal/Kamong Cham	Ms. Kaing Khim Phone: 016.875.917 or 023. 213.026	1999
NAS/Nak Akphevut SaaKum	Irrigation Project in reservoir Bueng Veam/ Community Fisheries establishment and capacity building	Kampong Cham	Mr. Tek Theng Phone: 012.985.512	
AFOXFAM AMERICA	AF	Battambang	Mr. Michael Lerner Phone: 012.736.812.023.210.357	2000
OXFAM Australia	OXFAM Australia		Phone: 023.720.929	2000
OXFAM GB	OXFAM GB		Ms. Ouch Phomy Phone: 023.720.928	2000
OXFAMGB/Funding support agency	Fisheries Unit/Fisheries community pilot Project	Kampong Cham	Phone: 023.720.036, 032.720.929	1992
SADP/South East Asia Development Programe	Community development/ Facilitation Community Fisheries development, capacity building and consultation			
TCU	Technical Coordination Tonle Sap			
VSO	Voluntary Service Overseas	P. Penh	Mr. Robert Hartnell Phone: 023.216.734	
WFD/Weak Family Development	Rural Development/ Community Fisheries establishment	Kampong Thom		
WWF/CBNRM	Community Based Natural Resources Management - Initiative/ Research on Community Based Natural Resources Management	Kratie/ P.Penh	023.218.034 E-mail: drwithing@bigpond.com.kh	

Supporting the Planning of a Community Fisheries Monitoring and Evaluation Database

Organization Name	Project Name/ Theme	Provinces	Contact persons/ address	Start Date
DOWA	Department of Woman's Affairs	Kampong Chhnang	Ms. Hang Thadara Phone: 026.988.680	
DOWA	Department of Woman's Affairs	Kandal	Ms. Bun Puthy Phone: 012.892.770	
DOWA	Department of Woman's Affairs	Kratie	Ms. He Shanna Phone: 011.905.184	
EPDO/Environment Protection Development Organizing	Community encouragement and local forestry conservation	Prsat	Phone: 052..951.426	2000
KAWP	KAWP	Battambang	Mr. Nou Vary Phone: 012.856.303 E-mail: kawp@bigpond.com.kh	
KNCED	Khmer National Community Economic Devilmnt	Battambang	c/o CAREERE; 012.804..420	
Dayku Aphiwat	Dayku Aphiwat	Kampot		
SEILA	SEILA	Ratanakiri		
CCK	Angkar Chamreun Cheat Khmer/ CommunityCapacity Building	Takeo	Keo DarinPhone: 032.347.058	
GTZ	German Technical Cooperation	Kampong Thom	062.961.253	
CFDS	Cambodian Family Development Services	Pursat	016.810.420, E-mail: cfds@bigpond.com.kh	
BDASE	Buddhism Development Association Supporting Environment	Pursat	Phone: 012.866.450	
K.D.P	Khmer Development Program	Pursat	E-mail: cdplas@worldmil	
ADB	Asian Development Bank	P.Penh	023..215.805, 023.215.806 E-mail: adbcarm@adb.org	
CCD	Cambodia Community Development	Takeo	Ms. Yim Langy Phone: 012.964425	

List of supporting NGO's

No	Name of organization	Community name	Province	Contact person	Contact address
1	MRC Mekong River Commission	Beung Chunlen	Kandal	Ms. Kaing Khim, Director of Reservoir Project	Phone: 016.875.917, 023.213.026
2	CIDSE International Co-operation for Development and Solidarity	Koh Keo Leu	Kandal	Mr. Ek Cheang	Phone: 023.216.369 chamron.mudita@everyday.com.kh
3	ACR Australian Catholic Relief	Tamul Leu	Kampong Chhnang	Mr. Dy Chhunly Field Advisor	Phone: 026.988.757
4	CREDO Cambodian Rural Economic Development Organization	Kampong Tralach Krom	Kampong Chhnang		Phone: 801007credo@forum.org.kh
5	CCD Cambodian Community Development	Kanleng Phe	Kampong Chhnang		Phone: 012.964.425
6	SAP	Kanleng Phe	Kampong Chhnang		
7	NGO Forum	Kanleng Phe	Kampong Chhnang		023.360.119 admin@ngo.forum.org.kh
8	CAA Community Aid Abroad	Beung Run Keng Chhruy Banteay	Kratie	Mr. Tan Somatbunnawat	Phone: 011.906.450

Appendix V: Draft Budget

Draft Budget for Community Fisheries Monitoring and Evaluation Database - Phase One

Details	No	No of man-days	Duration (months)	Unit price	Total
A-Personal#					
Team Leader	1	8/22	12	300	1309
Data entry	1		8	150	1200
Field Staff	1		12	150	1800
Database Team leader	1		12	350	4200
Technical staff, field	1		12	250	3000
Provincial Staff	2	238		10	4760
Total A					16269
B-Equipment					
GPS	2			500	1000
Total B					1000
C-Consumable					
Stationary			12	20	240
Proceeding report					300
Computers disk/ink cartridge/batteries, etc					100
Total C					640
D-Communication					
Courier					200
Telephone	5			40	200
Telephone/mail	5		12	10	600
Total D					1000
E-Travel and accommodation					
Overnight expenses for national advisors	2	8	10	15	2400
Daily expenses for national advisors	2	8	10	5	800
Overnight expenses for national team	2	22	10	15	6600
Daily expenses for national team	2	22	3	5	660
Expenses of provincial teams	2	238		5	2380
Kratie					

Supporting the Planning of a Community Fisheries Monitoring and Evaluation Database

Travel in province	1	22	4	40	3520
Travel to province for national team	5	4	4	10	800
Kandal					
Travel in province	4	22	3	10	2640
Travel to province for national team	5	22	3	40	13200
Kampong Chhnang					
Travel in province	1	22	4	40	3520
Travel to province for national team	5	8	4	3	480
Motorbike	1			1000	1000
Motorbike maintenance /fuel	1	2	12	25	600
SCALE vehicle	1	5		40	200
Total E					38800
F-Meetings / Workshops					
Kratie team travel to PP	2	4	1	42	84
Kandal team travel to PP	2	2	1	18	36
Kampong Chhnang team travel to PP	2	4	1	28	56
Training CFDO staff	4	4		10	160
Training Provincial staff	4	4		25	400
Training Provincial staff (Kandal)	2	4		15	120
Training -Field visits	7	2		20	280
Hire room	1	2		90	180
Materials				75	75
Lunch and snacks	30	2		5	300
Resources persons	1	2		45	90
Total F					1781
Total (A+B+C+D+E+F)					59490
Contingencies 10%					5949
Local Administration fee 7.5%					4908
Grant total					\$70,347

1. CFDO staff - this may not be the same person throughout the project
2. National Team - CFDO field staff, CFDO Advisor, FLD tech. staff, FLD Advisor
3. Travel to Kandal & Kampong Chhnang includes driver
4. Kandal travel and expenses includes for one monitoring visit

Appendix VI: Draft Monitoring Forms

Data Collection Form²

ទំរង់សំរាប់ប្រមូលទិន្នន័យ

Date collect data ថ្ងៃ ខែ ឆ្នាំ ប្រមូលព័ត៌មាន.....

1- Village situation ស្ថានភាពភូមិ

- Village code សេខកូដភូមិ
- Geographic grid reference (from GPS) E _____ N _____
- Number of household ចំនួនគ្រួសារនៅក្នុងភូមិ
- o Male បុរស
- o Female ស្ត្រី
- o Total persons សរុបមនុស្ស

2- Community fishery background ប្រវត្តិរបស់សហគមន៍នេសាទ

- Community fishery establishment
 - o Form the core group date.....
 - o Election day date.....
- Number of people join election
 - o Male
 - o Female
- Partnership institute ស្ថាប័នដៃគូ (អង្គការ ឯកជន).....
- Name of partnering institution ឈ្មោះស្ថាប័នដៃគូ

3- Community fishery management ការគ្រប់គ្រងសហគមន៍នេសាទ

3.1 Name of community committee

Name ឈ្មោះ	Sex ភេទ	Position ឋានៈ	Responsibility ការទទួលខុសត្រូវ

² For use during focus group interviews with CF Committee members and village leaders

3.2 Community fishery management

- Term of office (year) អណត្តិនៃការគ្រប់គ្រង (ឆ្នាំ)
- Fishery ecosystem (Type of water body) ប្រភេទកន្លែងនេសាទ.....
- Number of households joins the community
 - o Committee record number of households in community Yes No
 - o ចំនួនគ្រួសារជាសមាជិកសហគមន៍
- Number of fisher men
 - o Households mostly rely on fish គ្រួសារពឹងផ្អែកទាំងស្រុងទៅលើត្រី.....
 - o Households Fishing for family use នេសាទសំរាប់ប្រើក្នុងគ្រួសារ.....
 - o Cage culture ចំនួនគ្រួសារចិញ្ចឹមត្រីក្នុងបែ.....
 - o Pond culture ចំនួនគ្រួសារចិញ្ចឹមត្រីក្នុងស្រះ.....
- Community fishing domain area (ha) ផ្ទៃដីដែលនេសាទរបស់សហគមន៍នេសាទ.....
- Federation Yes No ការចងក្រងជាសហព័ន្ធ សហគមន៍នេសាទ
- Membership of federation សមាជិកនៃសហព័ន្ធ
- Patrolling group Yes No ក្រុមឈ្នាត
- Patrolling group member ចំនួនសមាជិកនៃក្រុមឈ្នាត
- Regulation Yes No ច្បាប់របស់សហគមន៍នេសាទ
- Community map Yes No ផែនទីសហគមន៍នេសាទ
- Fish sanctuary Yes No តំបន់អភិរក្ស

3.2 Community income

Date	Sources of income	Name of income	Amount	Other

4- Fishing gear

4.1 Legal fishing gears used in community

ប្រភេទឧបករណ៍នេសាទស្របច្បាប់មានប្រើនៅក្នុងសហគមន៍នេសាទ

4.2 Illegal fishing gear used in community ប្រភេទឧបករណ៍នេសាទខុសច្បាប់ដែលមានប្រើនៅក្នុងសហគមន៍នេសាទ

Check List for SWOL³

	Strength	Weaknesses	Opportunities	Limitations
Community Fisheries				
Community Fisheries committee				
Community Fisheries management				
Fishery resources				
Other				

Notes:

- 1) Community Fisheries: The idea is to evaluate how villager's idea in the Community Fisheries projects. Does they think it useful or not useful
- 2) Community Fisheries committee: Focus on the capacities of the committee that had been elected
- 3) Community Fisheries management: related to patrolling group, community members, by law and by regulation, management plan, map, conflict, meeting
- 4) Fishery resources: It relates to how the fishing activities in the communities.
- 5) Other: Any issues that villagers have been raising should be recorded

³ For use as discussion prompts only

Community Fisheries Sampling Daily Review Form⁴

STUDY SITE NAME.....

PROVINCE.....

DATE OF SURVEY.....

TEAM MEMBER.....

1. Please indicate the approximate time taken for the following activities:

- Introductions/objectives.....
- CF Questionnaire.....
- SWOL analysis.....

2. Logistics....

Please see rate the following aspects from 1-5 (1 being lowest rating, 5 being highest):

- transport arrangements- 1 2 3 4 5
- communications between stakeholders and participants- 1 2 3 4 5
- preparation (equipment and material)- 1 2 3 4 5

3. Project Participants...

Please rate the level of success in the following categories:

3.1 National Team

Working together 1 2 3 4 5

Achieving project objectives 1 2 3 4 5

Please list any strengths or successful elements of the team/procedure.....

Please list any limitation or areas for improvement of the team/procedure.....

3.2 Provincial counterparts

Enthusiasm/commitment to tasks 1 2 3 4 5

Communication/relationship with village participants 1 2 3 4 5

Coordination with national team 1 2 3 4 5

⁴ Used to assess the day's activities

3.3 Community Fishery participants

Overall level of attendance/enthusiasm of village participants 1 2 3 4 5

Level of appreciation (ie. Expectations and understanding) of the project objectives among village participants 1 2 3 4 5

4. Method

4.1 Questionnaire

Enthusiasm of participants 1 2 3 4 5

Survey design 1 2 3 4 5

Please list any specific problems relating to the questionnaire.....

Please list any particularly useful/successful elements of the questionnaire.....

4.2 SWOL analysis

Enthusiasm of participants 1 2 3 4 5

Survey design 1 2 3 4 5

Please list any particularly useful/successful elements of the SWOL analysis.....

Please list any particularly/successful elements of the SWOL analysis.....

5. Overall, how would you rate the success of the day's sampling activities with regard to the project objective?

1 2 3 4 5

6. Please write any additional comments with regard to the day's sampling activities which would assist in future sampling activities.....