



## **Asserting Rights, Defining Responsibilities:** Small-scale Fishing Communities And Fisheries Management Perspectives In Asia

A Study In Cambodia



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## Small-scale Fishing Communities And Fisheries Management Perspectives In Asia

### A Study In Cambodia

By

Tep Chansothea, Meng Kimsan, Tit Phearak, Deap Polin  
Chap Sopanha, Sim Bunthoeun and Rebecca Rivera-Guib  
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*The views expressed in this study report are those of the authors and are not necessarily reflective of the supporting partners.*

**Copies available at:**

**International Collective in Support of Fishworkers (ICSF)**

27 College Road, Chennai 600006 India

Telephone: (91) 44-2827 5303

Facsimile: (91) 44-2825 4457

Email: [icsf@icsf.net](mailto:icsf@icsf.net)

**CBNRM Learning Institute**

#30, Street 9, Sangkat Tonle Bassac, Khan Chamcamon

P.O.Box 2509, Phnom Penh, Cambodia

E-mail: [info@cbnrmli.org](mailto:info@cbnrmli.org)

Website: [www.cbnrmli.org](http://www.cbnrmli.org)

**Researched and Written By:**

Tep Chansothea

Meng Kimsan

Tit Phearak

Deap Polin

Chap Sopanha

Sim Bunthoeun

Rebecca Rivera-Guieb

**Design and Layout**

Hay Sochet

**Photo Credit**

Small-Scale Fishing Communities Study Team

**Collaborating and Supporting Partners**

International Collective in Support of Fishworkers (ICSF)

CBNRM Learning Institute (CBNRM LI)

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**SIM BUNTHOEUN**

Deputy Program Coordinator, CBNRM Learning Institute



## LIST OF ACRONYMS

|          |  |
|----------|--|
| CBNRM    | Community-based Natural Resource Management                          |
| CF       | Community Fisheries  |
| CFDO     | Community Fisheries Development Office                               |
| DoF      | Department of Fisheries  |
| DFID     | Department for International Development                             |
| EEZ      | Exclusive Economic Zone  |
| FiA      | Fisheries Administration   |
| ICSF     | International Collective in Support of Fishworkers                   |
| IDRC     | International Development Research Centre                            |
| GDP      | Gross Domestic Product   |
| MAFF     | Ministry of Agriculture, Fisheries and Forestry                      |
| MFO      | Municipal Fisheries Office   |
| NGO      | Non-government Organization  |
| OGB      | Oxfam Great Britain  |
| PFO      | Provincial Fisheries Office  |
| PRIAC    | Policy Reform Impact Assessment                                      |
| SEAFDEC  | Southeast Asian Fisheries Development Center                         |
| TSBR     | Tonle Sap Biosphere Reserve  |
| UNDP/FAO | United Nations Development Program/Food and Agriculture Organization |
| UNTAC    | United Nations Transition Authority to Cambodia                      |
| VDC      | Village Development Council  |





## DEFINITION OF TERMS

**Bia** – a big well or pond for stocking fish in the dry season when water level is low.

**Chou** - is a Khmer word that refers to women who are looked upon as proud for doing the work of men

**Commercial fishing** – composed of the fishing lot and the dai fishery in inland waters. In the marine areas, commercial fishery is characterized by large-scale fishing in offshore water from 20-meter depth to the limit of the Exclusive Economic Zone

**Community Fisheries Area Management Plan** - refers to the document prepared the community fisheries and approved by the Fisheries Administration. The plan is envisaged to provide an assessment of the environmental and social situation of the community fisheries, and detail the procedures, regulations and measures related to the sustainable use of the community fishing area.

**Community fishing area** - refers to the state fisheries domain in which it has been agreed to entitle local communities living inside and near the fishing grounds to use in a traditional way.

**Dai Fisheries** - The dai or bag net fishing is located in the Tonle Sap river in Kandal and Phnom Penh provinces, where the river is reduced to a single but deep channel. Large cone-shaped bag nets of about 100 m long and with a mouth diameter of 25 m are suspended from floaters and anchored in the channel, where they are held open by the current. Mesh size is 15 cm at the entrance and 1 cm at the bag. Each net is considered a fishing lot.

**Prahoc and Pha ork** - traditional fish paste in Cambodia

**Middle-scale fishing** - License is required to operate this type of fishery in Cambodia. Middle-scale fishing gears, especially in the Mekong River, the Tonle Sap River, and the Great Lake, are seines nets, small river small trawl nets, beach seines, gillnets, traps, cast-nets, scoop-nets, hooks and lines, and brush parks. This type of fishing is done outside of the fishing lots and in freshwater fishing areas.

**Small-Scale fishing** – in inland fisheries, it is also known as “subsistence fishing” or “family fishing.” Small-scale fishing is done in floodplain areas, in fishing lots during the closed season and in rice fields during the rainy season. No license is required for this type of fishing. In the marine area, this refers to fishing operation in the inshore fishing area, which extends from the coastline at higher tide to a depth of 20 meters. Boats used are without engines or with engines of less than 50 hp. Licenses are not required for boats with no engine or with engine below 33 hp.



**Samrah** – is a brush park, a popular device used in inland fisheries. Any kind of bushes or tree branches are cut from the nearest available source, usually the flooded forest. The branches are set out next to each other close to the riverbank or inside a lake or recession pond in water depths of 1.5 to 8 meters. The use of the samrah is prohibited by the Fisheries Law

**Sinking Net/River Pelagic Trawl** - is used for middle scale fishing. It is made from thread woven into a big bag, with rope attached to the lower part with iron pieces and the upper part attached to 2 boats. It is used to catch fish in major rivers like the Mekong River and Basac River.







## EXECUTIVE SUMMARY

**Photo Credit:** Small-Scale Fishing Communities Study Team



## EXECUTIVE SUMMARY

This study aims: (a) to document and explore the understanding that fishing communities have about their rights to fisheries and coastal resources, as well as the obligations and responsibilities associated with these rights, and (b) document and discuss the initiatives being taken by fishing communities to assert their rights and to fulfill their responsibilities. To do this, a review of secondary data on fisheries and case studies on two community fisheries: Tum Nup Rolok in Sihanouk Ville municipality and Bak Amrek-Doun Ent in Battambang province were accomplished.

Legally and historically, the state plays a major role in making decisions on fishery use and management in Cambodia. But when the fishery policy reform and community fisheries (CF) began in 2000, some space for community participation has slowly emerged even if decisions on fishery use and management still need the approval of the state and all CF actions have to abide by the rules of the state. Results from the two study sites suggest that when the CF was established and the fishery and local authorities disseminated information about CF, the people became more aware of their right to fish and in particular, their right to stop illegal activities. This new awareness encouraged them to take actions to stop illegal fishing. For example, the CF in Tum Nup Rolok negotiated with the Municipal Government of Sihanouk Ville to stop the aquaculture development in their community. In Bak Amrek-Doun Ent CF, the local people destroyed a bamboo enclosure of a fishing lot owner that led to a case in court. The results further show that awareness of rights to fisheries is not enough if the people do not have the capacity to assert their right and there is no guidance and support from authorities. In the case of Tum Nup Rolok, the CF successfully negotiated and stopped the aquaculture company because of the CF committee's good capacity to negotiate and the support of the fishery and local authorities.

Presently, the CF Sub-Decree and the Fisheries Law are used as basis for determining the people's rights to fisheries. For example, people have the right to inform the authority about illegal fishing but cannot confiscate or destroy an illegal fishing gear; only the fishery authority in cooperation with local authorities can do that. The legality of people's action (i.e. one has to always act in accordance with the law) appears to be an important consideration to the local people. Amidst all the welcome changes in the increasing role of communities in fishery management, one thing remains unchanged – the right of the local people to do small-scale or family fishing. Family fishing has always been practiced and thus the right to do this is considered “traditional” by local people; it has always been there. Unfortunately, there is insufficient information about family fishing and was in fact, previously excluded from official fishery statistics. A better understanding of this type of fisheries is needed to establish appropriate and rational measures for sustainable fishery management and livelihoods improvement as well as in assessing traditional rights for rural people to fish and collect aquatic species.





## CHAPTER ONE: BACKGROUND TO THE STUDY

This study is a collaboration between the International Collective in Support of Fishworkers (ICSF) and the Community-based Natural Resource Management Learning Institute (CBNRM LI). The ICSF has been working on issues related to small-scale and artisanal fishworkers, with a particular focus on seeking recognition of the rights of small-scale fishing communities to fisheries and other coastal resources, as well as their right to participate in decision-making processes. CBNRM LI a Cambodian NGO with a mission to analyze and improve the CBNRM approach as an integral component of poverty alleviation, sustainable livelihoods and resource management, conservation, and decentralization policies and strategies of the Royal Government of Cambodia.

The ICSF organized a Regional Forum in Siem Reap, Cambodia on 3-8 May 2007 with the following objectives:

- To discuss the desirability of rights-based approaches to fisheries management and to examine their scope in the Asian context
- To advocate for equitable and sustainable coastal and fisheries management regimes appropriate for small- and large-scale fisheries in the Asian context
- To advocate for policies that secure the rights of fishing communities to coastal lands customarily used by them.

The Forum had a three-day workshop for fishworker organizations, NGOs, researchers and activists from the Asian region followed by a two-day symposium attended by policy-makers as well as representatives of regional and international organizations. Participants from Cambodia, Vietnam, Indonesia, Thailand, Malaysia, India, Sri Lanka, Pakistan, Philippines, Bangladesh and Laos took part in these activities.

The ICSF contracted the CBNRM LI to conduct the country study in Cambodia for presentation in this Regional Forum. The study objectives are:

- To document and explore the understanding that fishing communities have about their rights to fisheries and coastal resources, as well as the obligations and responsibilities associated with these rights, and
- To document and discuss the initiatives being taken by fishing communities to assert their rights and to fulfill their responsibilities.

This study provides a review of secondary data on fisheries and case studies on two community fisheries: Tum Nup Rolok in Sihanouk Ville municipality and Bak Amrek-Doun Ent in Battambang province.

A small team of researchers implemented this research with support from some key research partners. The team is supported by advisers and individuals from partner institutions.



## METHODOLOGY

The methodologies used in this research are desk study and field research survey. The desk study is conducted for a month to gather all information related to fisheries overview in Cambodia. The field work activities were done by 2 teams for five days in the 2 selected sites. Focus group discussions were held with community fisheries members, non-members, community committee, village chief, commune councilors, and village elders. In selecting the study sites, the following criteria were used:

- Availability of information and resource persons
- Accessibility of the area
- Willingness of the local people and partners to participate in the research
- Advice from the research partners

The following specific steps were undertaken:

1. The study plan and agreement between ICSF and CBNRM Learning Institute was finalized by February 2007
2. A meeting with key research partners was held on 16 February 2007. It was attended by SEAFDEC, World Fish Center, Oxfam-GB, FACT and CFDO. In this meeting, CBNRM LI introduced the study to its partners and asked for feedback and guidance on its implementation.
3. The desk study was made from last week of March until mid-April. The research team collected and reviewed country-level information, including statistical information on (a) population dependent on fisheries; (b) fisheries production; (c) issues on fisheries; (d) fisheries and other relevant legislation and v) key fisheries management measures.
4. The field work in the two case study sites was made on 8-12 April 2007. The research team coordinated with the organizations supporting the communities to assist in the fieldwork. The research team met prior to field work to ensure that the team understands the research process. During field work, the team held an introductory meeting with provincial partners to explain the study, coordinate activities and choose the research participants. Photo and video documentation of the field work was made.
5. Information analysis and preparation of the first draft of report was completed by the team by second week of April.
6. A validation and reflection meeting with research partners was held in Phnom Penh on 19 April to share the initial findings from the research and gather feedback and comments from the partners.
7. The comments and suggestions were incorporated into the study report and a final copy was submitted to the ICSF and research partners.
8. The research team presented the results of the study in the Regional Forum.

## RESEARCH PARTNERS

The CBNRM LI cooperated with some partners who have been working on fisheries sector in Cambodia such as CFDO, FACT, SEAFDEC, AFSC, VSG, World Fish Center, the Capacity Building for Community Fisheries Management Project of the Food and Agriculture Organization and the Fisheries Administration (FAO/FiA) and OGB. As research partners, individuals from these institutions provided guidance on the implementation of the research and shared their feedback on the research report.



## OVERVIEW OF INFORMATION ON FISHERIES IN CAMBODIA

**Photo Credit:** Small-Scale Fishing Communities Study Team



## CHAPTER II: OVERVIEW OF INFORMATION ON FISHERIES IN CAMBODIA

### A. BRIEF OVERVIEW OF FISHERIES IN CAMBODIA

Cambodia is located between Lao PDR, Viet Nam, Thailand and the Gulf of Thailand and covers 181,035 sq. km. of land (See Figure 1). Its population is estimated to be 13.4 million with a growth rate of 2.4% per annum. Population density is only 72 persons/sq. km. and just over 5 persons/hectare of arable land. Rural households make up 90% of the poor and about 36% of the population lives below the poverty line i.e. on less than US\$300 a year (UNDP/FAO, 2003; So Nam & Buoy Roitana, 2005).

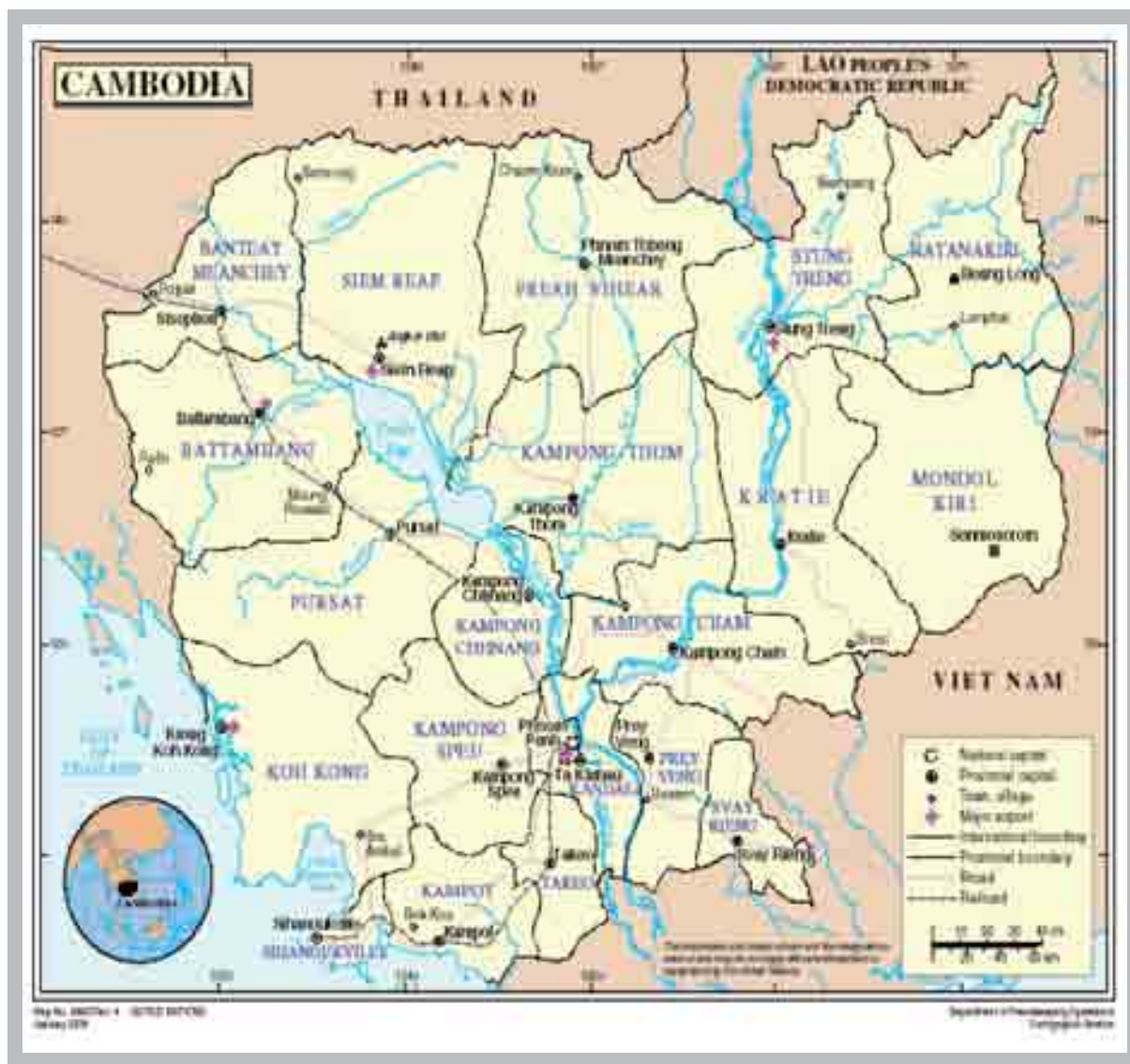
Rice and fish are staple food for Cambodians. Fish contributes more than 75% of the people's animal protein intake (Ahmed et.al. 1998; So Nam & Buoy Roitana, 2005). The national average fish consumption rate is reported to be 23-31 kg per year (So Nam & Nao Thuok, 1999) but estimates from selected provinces and regions in Cambodia (See Table 1) suggest that fish consumption rate might even be higher.

In 2001, the fisheries sector contributed 11.4% to the national Gross Domestic Product (GDP) with a value of US\$200-300 million (DoF, 2006a). Approximately 4 million people or 29% of the country's population derive employment from fisheries related activities (So Nam & Buoy Roitana, 2005). This number is an underestimation since farming and fishing often go hand in hand and those reported to be gainfully employed in agriculture and farming are likely to be engaged in fisheries as well.

**Table 1: Distribution of Per Capita Fish Consumption by Province and Region in Cambodia**

| Region                                      | Per capita fish consumption (kg/capit year) | Author                    |
|---|---|---------------------------|
| Cambodia (Average)                          | 23 - 31                                     | So Nam & Nao Thuok, 1999  |
| Tonle Sap (up land Siem Reap)               | 32  | Hong Hy, 1995             |
| Tonle Sap (floating village)                | 71  | FAO/PNRM, 1995            |
| Tonle Sap and plains (8 provinces)          | 87  | DoF/FCFMC, 1995           |
| Tonle Sap (including Kandal and Phnom Penh) | 67 - 80                                     | Ahmed et al. 1998         |
| Fishing household                           | 80  | Ahmed et al. 1998         |
| Non-fishing household                       | 67  | Ahmed et al. 1998         |
| Fishing dependant commune                   | 71 - 76                                     | Ahmed et al. 1998         |
| Southeastern (Svay Rieng)                   | 22 - 40                                     | Tana, 1993; Gregory, 1997 |
| Southwestern (Kampot)                       | 38  | APHEDA, 1997              |
| South (Kandal and Takeo)                    | 40  | CIAP, unpublished         |

**Source:** So Nam, 2000; So Nam and Roitana, 2005



Source: [www.un.org/Depts/Cartographic/map/profile/cambodia.pdf](http://www.un.org/Depts/Cartographic/map/profile/cambodia.pdf)

## 1. Major Fishing Areas in Cambodia

Cambodia is divided into 3 main regions, where fishery resources are concerned. These are the Tonle Sap Basin, the Mekong River Basin and the coastal zone. The Mekong, Tonle Sap River/Tonle Sap Lake and Basac Rivers and many of their tributaries, numerous lakes and the floodplain comprise a wide range of different habitat types such as marshes/swamps, shrub lands, grasslands, flooded forest to rice fields and reservoirs. In the coastal zone, mangroves, seagrass beds, coral reefs, sandy beaches and tidal flats are the main important habitats founds.



The floodplains in the Tonle Sap cover 44,000 sq km, with 22 sq km of flooded forest, shrub or grassland area and 18,000 sq km of wetland area (So Nam & Roitana, 2005). There is an estimated 200 plant species in these flooded forests and in addition, the Tonle Sap contains at least 200 species of fish, 42 species of reptiles, 225 species of birds, and 46 species of mammals (So Nam & Thuok, 1999). Because of its importance, the Government of Cambodia established the Tonle Sap Biosphere Reserve (TSBR) in February 2001 as a focal point of environmental management (ADB, 2003).

The Mekong River Basin is defined by the land area surrounding all the streams and rivers that flow into the Mekong River and includes parts of China, Myanmar and Viet Nam. It has a total area of 795,000 sq. km. and a drainage area of 386,560 sq. km (Welcomme, 1985, cited in Baran, 2005). The Mekong is host to over 1,000 species of fish, one of the highest species counts of any river system in the world (Coates et al. 2004). About 500 of these species occur in Cambodia (Rainboth, 1996).

The coast of Cambodia is located along the Gulf of Thailand from the Thai border in the northwest to the Vietnamese border to the southeast. The coastal area includes provinces of Koh Kong and Kampot and the municipalities of Sihanouk Ville and Kep. The Exclusive Economic Zone (EEZ) covers approximately 55,000 sq. km. and is relatively shallow with an average depth of about 50 meters. The coastline of Cambodia is approximately 451 km long (FAO, 2004b).

## **2. Types of Fishing in Cambodia**

In the inland fisheries, fishing can be divided into 3 types: small-scale, middle-scale and large-scale fisheries. In marine fisheries, fishing is in the inshore and offshore fishing area.

### **Inland Fisheries: Small-scale fishing**

Small-scale fishing is also known as “family fishing” or “subsistence fishing.” It is done in floodplain areas, in fishing lots during the closed season and in rice fields during the rainy season. Access to this fishery is open and does not require a license to operate. Formerly, small-scale fishing is not included in the official fisheries statistics but the recent estimate by DoF (2006a) puts family fishing production at 137,700 tons and rice field fishing at 91,800 tons. Small-scale fishing is important to most rural households because it is the only practicable way of generating cash for their daily consumption since rice production is insufficient (Hori et.al. 2006). Fish capture by hands, scoop baskets/bags, fishing spears, single hook lines are examples of small-scale fishing gears.

### **Inland Fisheries: Medium-scale fishing**

License is required to operate this type of fishery in Cambodia. Middle-scale fishing gears, especially in the Mekong River, the Tonle Sap River, and the Great Lake, are seines nets, small river small trawl nets, beach seines, gillnets, traps, cast-nets, scoop-nets, hooks and lines, and brush parks. This type of



fishing is done outside of the fishing lots and in freshwater fishing areas (Torell et.al., 2004).

### **Inland Fisheries: Large-scale fishing**

There are two types of large-scale fisheries in Cambodia: the fishing lot system and the dai fisheries. The fishing lot (loh nessart) system accounts for the large freshwater fishing industry in Cambodia. Fishing lots are auctioned to stakeholders or bidders. The concession for each lot is given to the highest bidder for exclusive exploitation over a two-year period and these lots provide an important source of revenue to the national government. The Dai or bag net fishing is located in the Tonle Sap river in Kandal and Phnom Penh provinces, where the river is reduced to a single but deep channel. Dais are operated from the end of September until March, targeting the migrating fish leaving the Tonle Sap lake and floodplain when the water levels begin to recede and in the months after that. There is a pronounced peak in the catches in January. Most of the catch is processed into various fish pastes and sauces, a portion is dried, and the rest is consumed locally as fresh fish, with a small proportion (of high-valued species) exported to neighboring countries (De Silva & Funge-Smith, 2005).

### **Marine Fisheries: Inshore and off-shore fishing**

Marine fisheries is characterized by small-scale fishing operating in the inshore fishing area, which extends from the coastline at higher tide to a depth of 20 meters. Boats used are without engines or with engines of less than 50 hp. Licenses are not required for boats with no engine or with engine below 33 hp. Boats with more than 33 hp engine pay a license fee of 27,000 Riel (US\$7) per horsepower per year. Trawling and light fishing are not allowed in the inshore fishing area. On the other hand, commercial fishery is characterized by large-scale fishing from 20-meter depth to the limit of the EEZ. Boats, in general, use engines of more than 50 hp, which also pay a fee of 27,000 Riel (US\$7) per horsepower per year (FAO, 2004b).

## **B. POPULATION DEPENDENT ON FISHERIES**

The 6 provinces around the Tonle Sap Great Lake have a population of nearly 3 million or 30% of the country's total population (Nao Thuok, et.al. 1996). About 25% live in floating villages or raised houses with little or no access to farmland (ADB, 2004) with a large proportion being ethnic Vietnamese. Haapala (2003) claims there is a negative migration rate (-1% to -6%) in all the provinces bordering the Lake except Kampong Chhnang province because of decreasing fish catches, droughts and irregular rains/floods that impact rice yields, yields, and increased sediment contents in rivers that degrades water quality.

In the Mekong River Basin, an estimated 60 million people are engaged in open capture fisheries and aquaculture (Oxfam America, 2005). In the coastal zone, the 2004 census indicated that population was about 959,000.



## C. FISHERY PRODUCTION

### 1. Overall Fishery Production and Value

There are various estimates of fishery production and value, depending on the source of information. Table 2 shows the yearly fishing statistics from 2001-2005 based on the DoF's accomplishment report. Similar information on inland fishery production is reported by van Zalinge et al. (2001) noting an annual production of 300,000-400,000 tons, which makes Cambodia's freshwater capture fisheries ranking fourth in the world in 1996. The reported value at the landing site ranges from US\$ 100 to 200 million and increases in the marketing chain to between US\$ 250 to 500 million.

The marine fishing data are likely to be an underestimation. In the coastal zone, fishery statistics mainly come from the taxable gears confined to inshore waters. There are no catch estimates from offshore fishery made up of international fleets. It is believed that as much as 80% of the catches in the coastal zone is directly sold to foreign vessels (mainly Thai) and not landed in Cambodia (So Nam & Nao Thuok, 1999).

The aquaculture sector has the smallest contribution to the fishery production of Cambodia. The wild fishery in Cambodia has been so productive that there has been little incentive for development of aquaculture. In the Mekong Basin, aquaculture represents only 12% of the fish resources basin-wide (Sverdrup-Jensen 2002). Moreover, until recently, poor infrastructure limited the distribution of fish feed, fingerlings and the products of the industry. Aquaculture production includes cage/pen culture of fish of non-marketable size from capture in the fishing lots, fish farming in ponds, pens and cages and crocodile farming in ponds and cages. Crocodiles are mainly produced in the Great Lake region and in Sihanouk Ville (Nao Thuok et.al., 2001).

**Table 2: Annual Fishery Statistics, 2001-2005**

| Fishing type       | 2001    | 2002    | 2003    | 2004    | 2005    |
|--------------------|---------|---------|---------|---------|---------|
| Fishing lot        | 135,000 | 110,300 | 94,750  | 68,100  | 94,500  |
| Family fishing     | 140,000 | 140,000 | 120,000 | 106,400 | 137,700 |
| Rice field fishing | 110,000 | 110,000 | 94,000  | 75,500  | 91,800  |
| Total              | 385,000 | 360,300 | 308,750 | 250,000 | 324,000 |
| Marine fishing     | 42,000  | 45,850  | 54,750  | 55,800  | 60,000  |
| Aquaculture        | 14,000  | 14,600  | 18,500  | 18,660  | 26,000  |
| GRAND TOTAL        | 441,000 | 420,750 | 382,000 | 324,460 | 410,000 |

**Source:** Department of Fisheries, 2006a



## 2. Fish Processing Technology

Processing involves preservation techniques such as sun-drying, salt drying, smoking and steaming. In addition, there is significant processing of traditional fisheries (fermented fish and fish sauce). Frozen method has only applied to products for export only. Recently, freshwater and marine fish have been processed by traditional and modern technologies. The traditional processing technologies can be classified into three scales such as small, middle, and large-scale. Most processed product is consumed domestically, though a proportion of higher-quality, higher-valued product is exported, mainly to markets in Southeast Asia. Principal species processed include freshwater and marine finfish and shrimp (dried, iced and frozen), squid, octopus and beche-de-mer. In 2001, processed fisheries products are 33,772 tons, of which 18,140 tons or 54% are exported (Hap Navy, 2001).

## 3. Fishery Trade

### International Trade

The history of Cambodia's freshwater fishery exports can be dated back to the 1930s when freshwater fish were exported to as far as France. Recently, the main markets for international fisheries production exports are Thailand and Vietnam. The other international markets are Hong Kong, Malaysia, the USA, Japan, Australia, China, Singapore and the Philippines ([www.fao.org/fi/fcp/en/KHM/profile.htm](http://www.fao.org/fi/fcp/en/KHM/profile.htm)).

Table 3 shows the volume of exported fish products from inland and marine fisheries in 2001 and 2005. It indicates that the total volume of exported fish products increased by 27%. The exported inland fishery products increased by 40%; this trend is reversed in the marine fisheries sector, where a 31% decrease in volume was noted for the same period. Unfortunately, there is no sufficient available data on the value of these exported fishery products. In addition, the actual volume exported may be higher because not all is noted down for documentation. It is a common practice to export goods at the borders with neighboring countries ([www.fao.org/fi/fcp/en/KHM/profile.htm](http://www.fao.org/fi/fcp/en/KHM/profile.htm)). For example, fish sauce has been exported to Thailand from Battambang, Siem Reap and Kg. Chhnang provinces and to Vietnam from Kg. Cham, Kandal, Takeo, Phnom Penh and Prey Veng provinces.

**Table 3: Export Fish Products, 2001 and 2005 (in tons)**

| Export Fish Products      | 2001   | 2005   |
|---------------------------|--------|--------|
| Inland Fisheries Products | 25,000 | 42,000 |
| Marine Fisheries Products | 13,100 | 10,000 |
| Total                     | 38,100 | 52,000 |

Source of basic data: DoF, 2006a





## **Domestic Markets**

The most important products marketed and distributed are freshwater finfish and their traditionally processed derivatives. Small quantities of freshwater prawns and bivalves are also sold. High value species are usually sold to traders for marketing in Phnom Penh or for export. Only 20-40 % of the total small-scale freshwater aquaculture production (low-valued exotic fish: tilapia, common carp, Chinese carps, and Indian carps) is locally sold. Freshwater product is distributed in a number of different ways. In many locations around the Great Lake and along river systems, fish is sold to consumers at farm gate prices. This is especially so for small-scale producers of traditional products who produce for subsistence purposes and for localized sale. In other cases, fish is transported by ox-cart, motorbike and small trucks to urban markets (So Nam et al. 1996).

The domestic market for marine products is small; consumption of marine species by Cambodians is primarily confined to marine areas (FAO, 2004b).

## **D. MAJOR FISHERIES ISSUES**

### **1. Illegal Fishing**

The very nature of illegal fishing makes it difficult to determine its precise scale and extent. Illegal fishing in Cambodia comes in many forms: from the use of prohibited small-scale fishing gear, electricity, poison, explosive and water pumps to the massive encroachment of fishing lots into public access areas and intrusion of big foreign boats into the coastal waters designated for community fisheries (CF). All lead to a very high fishing pressure, as well as killing non-target species and damaging habitats.

There are multiple and complex reasons behind the pervasiveness of illegal fishing in Cambodia. There are fishing gears that are cheap and easily accessible like the nylon monofilament gill-nets and fine-mesh fences with traps. A 50-meter gill net costs about US\$3-5 per unit while a typical 50-meter fine-mesh fences made of mosquito netting costs about US\$30 (Hortle et.al., 2004). Thus, replacing confiscated fishing gears is an easy option open to illegal fishers. Communities across Cambodia also report the possible involvement of some military and police units in protecting illegal fishers or selectively implementing the fisheries legislation in favor of commercial interests for personal gain (Gum, 2000). Armed protection for illegal fishing is reported in the coast, particularly for the foreign-owned boats (FACT/EJF, 2002) and in the commercial fishing lots (Gum, 2000). Open and effective communication, including stakeholder awareness of environmental issues, is also described as a challenge in controlling illegal fishing (Thompson, 2006). Unfortunately, the environmental consequences of illegal fishing in Cambodia remain unquantified.





## 2. Fisheries Conflicts and Competing Claims to Fishery Resources

Fisheries conflicts happen between communities and commercial fishing lot operators, between community users and business/developmental projects, and among community users themselves. These conflicts have been visible as protest, petitions, fish-ins, arrests and detention for forced labor, confiscation of fishing gear and livestock, injuries, serious human right abuse, and reported killings of fishers and fisheries officers (FACT/EJF, 2002). There appears to be few formal mechanisms to resolve fisheries conflicts at the local level although the CF is increasingly observed as a potential venue for conflict resolution. Two examples are described here based on personal field observations. In Tum Nup Rolok, the Sihanouk Ville Municipal Government and District of officials approved a Cambodian-Australian company's aquaculture project inside the CF. The community users, through the CF, opposed and negotiated this project with the Municipal Government. In an earlier decision, the Municipal government allowed a Russian company to develop the Koh Pos Island and Hawaii Beach Ville that is expected to provide at least US\$80,000 in annual rent tied to revenue (Kimsong, 2006). In Kampong Kra Sang CF in Takeo province, the fishers have conflicts with farmers who are using chemical fertilizers and pesticides that pollute the channels and waterways. Farmers are not fully aware of the effects of these pollutants and they have not even been properly instructed on the use of these chemicals. Agricultural produce in Kampong Kra Sang is not big; they grow only I AIR 5004 that it is imported from Vietnam so the use of chemicals, with the promise of higher production and income, is an attractive option for farmers in the CF. The CF in Kampong Kra Sang had initiated environmental education work and coordinated with various NGOs to offer alternative farming techniques. These examples of conflicts within and outside communities are numerous in Cambodia and the effectiveness of the CF in handling conflicts remain to be seen in the future. As of now, conflicts rarely reach the courts for resolution and evidence is not brought forward for examination but the CF could potentially manage some of these conflicts.

## 3. Threats to Fisheries Environment/Ecology

**Construction of Dams:** Since the 1950s, nearly 6,000 large and small dams and associated reservoirs and irrigation schemes have been built in the Mekong watershed, including thirteen with an outcome of hydropower output of 10 MW or more (van Zalinge et al. 2001). This has led to large reductions in the coverage of aquatic habitats, the blocking of migratory fish species spawning, fry nursery and feeding areas, the altering of the level and quality of water, and the ending of the seasonal ebb and flow that is vital to the cycle of mating and reproduction (Baird & Mean 2005). The Government of Lao PDR has a goal of 23 dams to be completed by 2010 and the People's Republic of China reportedly has plans for 12 more power projects on the Mekong main stream, including 2 large reservoir projects that will have a significant impact on the downstream flow regime (FACT/EJF, 2002). Vietnam also has plans for a few more dams on the Sesan in Vietnam. Cambodia has not included any mainstream hydropower projects in its current development plans but it is apparent that the impacts of dam construction is an issue that the Cambodian government needs to address as they continue to affect the natural hydrological regime, damage fish habitats, and restrict or prevent the movement of fish.



**Pollution:** Reliable data on water pollution is very scarce. However, FACT/EJF (2002) reports that pesticide use in the Tonle Sap catchment in 2000 is 1.3 million liters, including highly hazardous chemicals imported from neighboring countries such as Dichloro-Diphenyl-Trichloroethane (DDT) and methyl parathion. In addition, the study reveals that fish samples taken from the lower Mekong basin indicated that pesticide residues are ubiquitous with the highest concentrations in catfish species, one of the most commercially valuable fish species. The impacts of pesticide use on ecological security have yet to be assessed, but are potentially acute. The widespread use of fertilizers in the dry season could also affect the ecology of the lake. Household organic pollution, while mainly limited to the floating villages is another issue to deal with.

**Deforestation and siltation:** Deforestation of flooded forests in Tonle Sap and Mekong basin, for firewood and converting to rice paddies and crop cultivation areas, has impacted on fish habitats and caused accelerating soil erosion leading to a serious problem of siltation. There is a lack of reliable long-term data but So Nam and Buoy Roitana (2005) point out that from an original area of over a million hectares, flooded forests have decreased to 614,000 hectares in the 1960s, and to 362,000 hectares in 1991.

**Introduction of exotic species:** Introduction of exotic species should be done with great care as it causes irreversible alteration of the aquatic environment. For example, the threat from the exotic, fast spreading water hyacinth (*Eichhornia crassipes*) and giant mimosa (*Mimosa pigra*) has been highlighted by fisheries officers and local fishers, but the evidence for whether these plants cause harm to aquatic ecosystem remains unclear. About 17 exotic species are known to have established wild populations in the Lower Mekong Basin (Hortle et al. 2004). All these species potentially compete with, prey upon, or may transmit diseases to more valuable native fish.

**Marine habitat destruction:** Habitat destruction is another threat to Cambodia's marine resources. Important causes include destructive fishing such as the use of dynamite and cyanide, and mangrove forest destruction for firewood, shrimp aquaculture and land development. FAO (2004b) reports that coastal villagers point to the increasing use of large trawlers in shallow waters, the use of push nets and other destructive fishing methods as reasons for the decline in fish catch.

#### **4. Changing Resource Condition and its Impacts on People's Livelihoods**

Local communities are often engaged in diverse sources of livelihoods (Sophal & Acharya, 2001; Campbell et.al. 2005; Marschke, 2005). Villagers are engaged in rice cultivation and general crop activity for about five months and they forage, fish and gather a range of food and non-food items from fisheries and forests the rest of the year. In addition, some of them are also engaged in small business activity and wage labor. Thus, rural Cambodians earn their living from multiple sources. Unfortunately, the income from the use of forests and fisheries was noted to be declining in the recent years and affecting the rural households who depend on these common property resources. Local people's access to common property resources is critical for their daily survival.



For example, Rab et al. (2005) shows that more than 80 percent of households in the Tonle Sap and Mekong Bassac area get an income of US\$ 26 per annum from firewood collection and gathering of vegetables like morning glory and water spinach. This is a substantial contribution to household expenses.

The slow growth of agriculture is also not helpful to developing people's livelihoods (Sophal & Acharya, 2001). A slow growing rural economy is naturally unable to effectively support the increasing number of people joining the labor force each year. This is in addition to the growing number of landless people who turn to wage labor for income. All of these naturally lead to negative impacts on people's livelihoods and growing food insecurity in the rural areas. Marschke (2005) illustrates how rural fishers in selected villages in the Tonle Sap and the coastal zone are able to live with uncertainty and deal with on-going stresses and shocks, and as there is an ever-increasing fishing pressure and more fishers are competing over scarce resources within the same fishing grounds. Conflicts ensue and are manifested in gear loss, and sometimes, violent situations.

## **5. Fisher Access to Markets and Credit**

An issue outside of actual fishery resource extraction pertains to fishers' access to markets and credits. Studies like Sok (2004), Bush (2005) and Navy (2006) are instructive but many of the constraints faced by fishers and traders are not yet well understood. For example, Sok (2004) explains how insufficient managerial and entrepreneurial skills put the Cambodians to a disadvantage in domestic markets. Bush (2005) studied how high levels of informal taxes and gratuities paid to a range of government sanctioned concessionaires affect fisher access to good markets. In most situations, access to market is controlled by a combination of fishers being tied to debt from middlemen and social obligations based on ethnic, familial or socio-political relationships. In particular, middlemen play an important entrepreneurial role in trade networks by financing market access to poorer fishers (Bush 2005). In fact, middlemen are preferred creditors of fishers over formal institutions like ACLEDA Bank (Navy, 2006). A focus on markets as an important component of a pro-poor livelihood development is acknowledged by the government and with support from DFID has embarked on a project on post-harvest. Recently, a new section on post harvest was also created at the DoF.

## **E. THE LEGAL AND HISTORICAL CONTEXT OF FISHERIES MANAGEMENT**

### **1. The Early Years of Fisheries Management**

It is reported that arbitrary dues on fishing was given to the king under the reigns of King Norodom (1859-1897) and his predecessors. Privileged groups, made up mainly of Chinese traders and investors, bought the use rights of the fishing grounds, which are subdivided further and leased to other people for a suitable price. From the mere transfer of concession rights from the hands of the original user to the subsequent users, income generated from the use of the fishing ground increases tremendously. Further sub-leases are made if so desired by the sub-contractors. Hence,



between the State as the concession holder and the actual users of the fishing ground, numerous go betweens earn incomes with no risk or effort to pay on their part. Rules were not set and contracts were always negotiated. Fish was sometimes used for payment and boats and fishing equipment could be rented out to sub-leasers (Degen & Nao Thuok, 1998).

The initial decades of the French Protectorate did not change this situation. In fact, the laws and regulations on fishing, written down for the first time in Cambodia, formalized pre-existing exploitation patterns in fisheries. The main intention of the 1908 fishery ordinances and regulations were to generate revenues for financing the colonial administration, made possible through stiff taxation schemes imposed on peasant farmers Thay Somony et.al 2005; Degen and Nao Thuok, 1998).

## **2. Fisheries Management during Democratic Kampuchea (1975-1978)**

There is very little information available during Democratic Kampuchea (1975-1978). Degen and Nao Thuok (1998) reports that fishing efforts apparently decreased during this period although some fishing among cadres was likely to have happened. The legacy of this period was the government's obsession on increasing rice production that led to cutting down massive areas of flooded forests. Ethnic Vietnamese and Cham fishers were also persecuted thus very valuable fishing knowledge and expertise could have been lost.

## **3. The People's Republic of Kampuchea (1979-1989)**

During the People's Republic Kampuchea (1979-1989), krom samaki as socialist solidarity groups were formed for both fishery and forestry exploitation. By 1983, there were 1,340,000 families forming 102,500 krom samaki of 3 different models. The first type was the model collective: the krom directly managed all the rice land, the draught animals were kept for use within the group, and the krom leader was responsible for sharing the production work from sowing to harvesting, and also for the distribution of food within the group. For the second type, the krom managed the rice land but the group divided itself into smaller teams of 3-5 families, and those teams assigned the labor for themselves and also shared the food according to their own team (puok). Each puok had at least one ox or buffalo. The krom leader acted as overseer. In the third type, the krom worked some of the land collectively but other areas were handed over to families to work separately or according to mutual assistance practices (Slocumb, 2003).

There is little documentation on the arrangements of the krom samaki for fishery exploitation. Degen and Nao Thuok (1998) explains that each krom samaki received a section of a lot to fish, including the provincial fisheries administrations. For example in Kampong Chhnang Province the local fisheries office fished 5 lots and the central DoF from Phnom Penh allocated itself 2 lots, while other government departments, such as the Commerce Department, and provinces with no fishing grounds, like Kompong Speu, fished other lots (Swift, 1997). It is possible that further sub-leasing of the lots was made to generate revenues for the administration.



In 1987, the Fiat Law on Fisheries Management and Administration provided the legal framework for the use and management of fishery resources. With this law, fishing grounds could be auctioned off as fishing lots to commercial-scale operators through a bidding process. The “owner” of a fishing lot is then granted exclusive rights to fish in that area for a period of two years, with the condition that it would not engage in fishing during the closed season imposed by the government. Family-scale or small-scale fishing is allowed in Cambodia all year round for all fisheries domain, except in sanctuaries. Under the law, they could fish in designated areas inside the fishing lots.

In 1997, the DoF introduced a new management category referred to as “research lots”. A key feature of research lots is that they are not subjected to public auction and are instead allocated and managed by direct agreement between lot owners and the DoF. The arrangement in the research fishing lots is valid for 4-6 years (Seilert and Lambert 2000). In 1997, there were 7 research lots and this increased to 69 during the auction period of 1999-2000 (STREAM, 2000). The objective of research fishing lots is to improve the management of lots through research into catches, fish biology, water quality and impacts, operation and socio-economic conditions of local fishing communities.

It was also during this period that several community development projects and fund assistance poured into Cambodia beginning from the 1993 democratic election organized by UNTAC. Rural reconstruction came in the context of establishing new democratic organizations such as the Village Development Committees (VDCs), or by first identifying existing interaction patterns at different levels of the village and then trying to enhance their self help capacity. At this time, a variety of mutual assistance groups already existed at the village level. These groups were observed to be popular among the poorest people in the village. The poor tend to join mutual exchange groups for meals, emergencies, gratitude, means of production, cooking, etc. The Pagoda Committee seems to be the most respected and consolidated community organization in the countryside. However, in line with Buddhist perceptions, monks and respected elders do not usually want to be involved in fisheries (Degen & Nao Thuok, 1998).

#### **4. Fishery Policy Reform in Cambodia**

Family-scale fishers come into conflict with fishing lot operators, who, in spite of the law, prevent subsistence fishers from accessing the resource through intimidation, violence and false imprisonment (Levinson, 2002). The increasing fishery conflicts together with public protests and letter writing action from the Cambodian people, and the political motivation of the government to win the 2002 commune and 2003 national elections, paved the way for the fishery policy reform (Mansfield 2002; Thay Somony, 2002).

In October 2000, Prime Minister Hun Sen visited Siem Reap province and was apparently impressed by the problems that relate with the fisher’s access to commercial fishing lots (Ratner, 2006). The next morning, he immediately announced the release of 8,000 ha from the 84,000 ha under commercial fishing lots in Siem Reap province. By February 2001, the government agreed to release a total of 536,000 ha from the fishing lot systems for local community management or 56% of the entire area



under commercial fishing lots in Cambodia (Evans, 2002). The DoF was under intense pressure to follow up on this reform, even though there was a limited understanding of what community fisheries might evolve into. There was a transitional withdrawal of provincial fisheries inspection people apparently to learn more about community fisheries and subsequently, the Community Fisheries Development Office (CFDO) was created in 2001 and became overall in-charge of the process of crafting a Sub-Decree on CF.

Subsequently, a series of sub-decrees were issued to formalize the release of the fishing lot, and a Sub-Decree on CF was formulated and discussed with stakeholders. In 29 May 2005, a Royal Decree on the establishment of CF was proclaimed and in 10 June 2005, the Sub-Decree on Community Fisheries Management was approved by the Prime Minister. In 30 March 2006, this Sub-Decree was given more solid legal standing with the approval of the new Fisheries Law by the National Assembly and was promulgated by the King on 21 May 2006.

It should be noted that the policy reform in fisheries is happening in Cambodia in conjunction with other sector reforms such as land management, forestry and especially the decentralize administrative reform with the process of commune council election through out the country. The fisheries reform in Cambodia is perceived as a way to transfer the role and responsibilities from the national government to local communities. However, the Cambodian government remains as a key player in terms of providing supportive policy and legislative framework and technical support including capacity building and law enforcement. The community, on the other hand, develops the by-laws and regulations, management plans and fishing area agreements following the procedures and models issued by the Ministry of Agriculture, Forestry and Fisheries (MAFF). Communities are also bound to cooperate with government to control illegal fishing activities in the CF area.

When the fishery reforms were introduced in 2000/2001, it was unclear what new systems of tenure and management would be put in place in the areas where fishing lots were removed (Ratner 2006). Much of the initial work on community-based resource management was “experimental,” with community members and NGOs or government-supported projects working on understanding just how community management could unfold on the ground. Such experiences have informed policy debates and policy formulation, both from a good governance mandate (i.e., the PLG Ratanakiri experience) and from a community based management perspective (i.e., the FAO Tonle Sap project) within the Departments of Fisheries and Forestry. In addition, village-level institutions have been formed like the village management committees in Koh Kong province or the Community Fisheries and Mangrove Protection in Sihanouk Ville. Before the new Fisheries Law, these institutions were usually recognized only informally through a memorandum of agreement from the village headperson to the provincial Governor, and in some cases technical departments at a provincial or national level. The new Fisheries Law requires these institutions to align themselves within the prescribed governance structures (Marschke, 2003; Rivera-Guieb et.al, 2004).



## 5. The Emergence of Community Fisheries

Article 9 of the new Fisheries Law clearly maintains that fisheries domains<sup>(1)</sup> belong to state property and that the use of fisheries domain for non-fisheries related purposes must be approved by the government based on the request of MAFF. However, the same law becomes the basis for the establishment of community fisheries. Article 59 states that “All Cambodian citizens have the rights to form a Community Fisheries in their own areas on a voluntary basis to take part in the sustainable management, conservation, development and use of fishery resources.” The MAFF is entitled to allocate part of the Fishery domain to the CF that live inside or around the fisheries domain as community fishing area (Article 60). This means that it is the MAFF’s decision to hand over a portion of the fisheries domain to the CF for management but the community fishing area remains a state public property (Article 3 of the CF Sub-Decree). Thus, it may be assumed that the tenure of the CF is neither permanent nor exclusive. Even the CF area agreement has a validity of 3 years (Article 26 of the CF Sub-Decree) and the CF management plan is reviewed and approved by the fisheries authorities every year (Article 29 of the CF Sub-Decree).

In 2001, there were 165 established CFs in the country (Refer to Table 4). The biggest number of CFs during this year is found in Stung Treng (32) and Kratie (28). This number increased to 440 by 2005 with an average increase rate of 28.5% annually. By 2005, about 266 of the 440 CFs (60%) have by-laws, 135 CFs (31%) have maps, 57 CFs (13%) have action plans, and 74 CFs (17%) have fish sanctuaries (DoF, 2006a).

By 2005, 54.5% of the total number of fishing lots has been abolished, with the highest number in Banteay Mean Chey Province (See Table 5). It is noted, however, that 100% of the fishing lots in Phnom Penh and Kratie Province have been abolished.

One of the key steps in establishing the CF is defining the boundaries of the CF area, covering both land and water. The guideline on how to do this has already been drafted and passed on to MAFF for approval. In practice, the CF in inland fisheries follows the defined boundaries of a fishing lot and negotiates this with neighboring CFs and local authorities. In the coastal zone, the inshore fishing area (i.e. from the coastline to a depth of 20 meters) is usually designated as the CF area although this is still negotiated with the local authorities and adjoining CFs. Presently, the key element in defining the CF boundaries is not the criteria but the process of negotiation among the CFs and local authorities.

Based on the Article 9 of the CF Sub-Decree, any one can be a member of the CF, given the following conditions: (a) have residency in one of the villages of the CF; (b) hold Khmer citizenship; and, (c) be at least 18 years of age. One individual may only be a single CF member in the community where he or she lives. In practice, only one member of a fishing family registers as a member of the CF even if there is more than one fisher in the family. Also, traders, monks, teachers, police, military and middlemen do not join the CF.

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<sup>1</sup> Article 8 of the new Fisheries Law stipulates that the fishery domain consists of permanent waters; the Mekong River flooded areas and tidal areas, which serve as main fishing grounds and fisheries ecosystem protection. The permanent water comprises inter alia sea, rivers, tributaries, lakes, channels, streams, reservoirs and canals. The Mekong river flooded areas includes inter alia swamps, refuges, wetlands and inundated areas. Tidal areas in the coastlines are inter alia mangrove forest.



**Table 4: Number of Established Community Fisheries by Province/Municipality, 2001-2005**

| No    | Province/Municipality | Number of Community Fisheries/Year |      |      |      |      |
|-------|-----------------------|------------------------------------|------|------|------|------|
|       |                       | 2001                               | 2002 | 2003 | 2004 | 2005 |
| 1     | Kampong Thom          | 8                                  | 10   | 15   | 17   | 32   |
| 2     | Siem Reap             | 10                                 | 10   | 10   | 13   | 21   |
| 3     | Banteay Meanchey      | 6                                  | 10   | 13   | 13   | 19   |
| 4     | Battambang            | 9                                  | 19   | 26   | 33   | 37   |
| 5     | Pursat                | 8                                  | 14   | 16   | 22   | 25   |
| 6     | Kampong Chhnang       | 14                                 | 32   | 44   | 44   | 44   |
| 7     | Kandal                | 10                                 | 17   | 17   | 17   | 24   |
| 8     | Takeo                 | 12                                 | 13   | 16   | 19   | 21   |
| 9     | Prey Veng             | 7                                  | 22   | 23   | 23   | 23   |
| 10    | Kampong Cham          | 10                                 | 18   | 20   | 20   | 20   |
| 11    | Kratie                | 28                                 | 31   | 40   | 51   | 56   |
| 12    | Phnom Penh            | 1                                  | 1    | 1    | 1    | 1    |
| 13    | Stung Treng           | 32                                 | 38   | 51   | 51   | 51   |
| 14    | Ratanakiri            | 1                                  | 1    | 5    | 5    | 5    |
| 15    | Preah Vihear          |                                    | 2    | 2    | 2    | 2    |
| 16    | Ordor Meanchey        |                                    |      |      | 3    | 6    |
| 17    | Kampong Speu          |                                    |      | 5    | 6    | 9    |
| 18    | Svay Reang            |                                    | 4    | 5    | 9    | 9    |
| 19    | Kampot                | 1                                  | 8    | 8    | 7    | 8    |
| 20    | Kep                   | 1                                  | 1    | 1    | 1    | 1    |
| 21    | Sihahouk Ville        | 4                                  | 4    | 5    | 12   | 17   |
| 22    | Koh Kong              | 3                                  | 3    | 6    | 6    | 9    |
| TOTAL |                       | 165                                | 258  | 329  | 375  | 440  |

Source: DoF, 2006a

## 6. Impacts of the Fishery Policy Reform

Since the start of the fishery policy reform, some studies have already been initiated to look into its impacts. Oxfam-Great Britain (2003), for example, showed that fishers in general showed remarkable support for the fishery policy reform despite numerous implementation problems brought about by the low capacity of the fishing communities and the institutional authorities (including but not confined to the fisheries staff). The immediate impacts of the reform are increased access to fishing areas and decrease in payments to fish, enjoyed mainly by the medium-scale fishers. The poorer fishers or those using small-scale gears and therefore did not pay any pre-reform taxes and were least likely to fish in fishing lots, do not appear to have benefited from the fisheries reform as much as middle-



scale fishers. Similarly, there are reports that fishers with larger gears and those who can travel to more distant fishing areas benefited the most from the initial release of the fishing lots (Thay Somony, 2002).

The immediate increase in access to fishing came without the guidance of any supporting institutional framework (OGB, 2003; Ratner, 2006). It was not particularly clear to the communities or the fisheries institutions what it meant for a fishing lot to be released and transferred to the community for management. In the beginning of the reform, an increase in illegal fishing was actually noted for some community fisheries (OGB, 2003). The increase in illegal fishing activities was mainly attributed to the temporary management vacuum created by the withdrawal of the fisheries officers from the field and relaxing the controls on fisheries when the fishing lots were released (DoF, 2006b).

The second round of Policy Reform Impact Assessment (PRIAC) in early 2006 made a much more optimistic review of the fishery reform. By this time, the CF Sub-Decree has already been passed and this guided the different actors in community fisheries about their roles and responsibilities. The people's assessment on their livelihoods was also better than in previous evaluation as a slight increase in fishing income associated with increased fish catch is reported. However, of great concern is the continued clearing of flooded forest in the former fishing lots, which have been opened up for agricultural opportunities. For example, the Department of Fisheries (2006b) notes that migrant agricultural workers in released fishing lots in Prey Veng Province had new laboring opportunities on lands opened up for agriculture and the chance to supplement their incomes by fishing but this caused great concern to the local authority about the destruction of flooded forest areas.

Overall, despite increasing documentation on field experiences on community fisheries in Cambodia, it is still difficult to get a good sense of what is really happening on the ground with regards the changes it has brought about. How do community fisheries committees really function? What are they struggling with most? Does community fisheries have exclusive use rights? Establishing the extent of community control is still difficult to ascertain at this point although some observations can be made. Community fisheries management planning is still underway for most communities but there are already some indication of community assertion of rights to stop illegal fishing (Marschke, 2003; Rivera-Guieb et.al., 2004). Kurien et.al. (2006) also notes that fisher feel "free" to relate with aquatic resources without fear of reprisals from fishing lot owners as one important benefit from the fishery policy reform. While the state remains as the owner of fishery resources, opening more access to some fishing lots and delineating the CF boundaries in the coast are certainly a welcome change.

## **F. COMMUNITY-BASED MANAGEMENT SYSTEMS IN CAMBODIA**

Community-based natural resource management (CBNRM) is an idea that has slowly grown in Cambodia in the recent years. Ken Serey Rotha (2005) provides an excellent introduction to CBNRM in Cambodia. He explains that there are various strategies in the country that are fundamentally based on CBNRM such as community forestry, community fisheries, participatory land use



and planning and participatory protected area management. These strategies, as expounded by Rotha and other selected papers in the CBNRM Learning Institute's book (2005) have government and communities working together in the management of the resources. These Cambodian strategies tend to be more on the "government controlled side of the co-management spectrum" (Rotha, 2005).

Thus to talk about community-based management systems in Cambodia, one has to bear in mind that community does not always necessarily refer to villages or local people alone. A "community" is likely to include the government as represented by the officers and officials of the Local Authority and the national and provincial government line departments. In some instances, a "community" may also include the NGOs that are working on community-based management projects in specific sites.

## **1. The Traditional Rural Cambodian Village**

Chandler (2000) provides some insights on the situation of villages in Cambodia in the early 19th century. During this period, villages can be divided into 3 types: the kompong, rice-growing villages and villages in the wilderness (prei).

The kompong, after the Malay word meaning "landing place," were located along navigable bodies of water and could support populations of several hundred of people. Some of the inhabitants were Chinese or Sino-Khmer, Malay and Cham, although minorities tended to keep themselves in separate hamlets that formed elements of the kompong. Rice-growing villages, on the other hand, are poorer and smaller than kompong. These were numerous and populated by ethnic Khmer. Houses are scattered around in no special order near a Buddhist monastery or wat and also near the pond or stream that provided water for the village. The lives in these villages revolved around farming and fishing and numerous ceremonies celebrate the different stages of the rice growing cycle. In times of crisis, people in these villages may run off into the forest but they somehow always return to their villages. The third type of village lay hidden in the prei or wilderness that made up most of Cambodia at this time. Here the people were illiterate and usually non-Buddhist, they spoke language related to Khmer but owed no loyalties to the kompong. The villages were frequently raided for slaves and they were economically important because they were able to exploit forest resources. Their political loyalties, however, were to other villages in the prei where people spoke the same dialect and performed the similar religious rituals. There is no evidence that any villages in Cambodia were governed by formally constituted councils of elders during the 19th century and it was likely that villages settle their own disputes through conciliations rather than by law (Chandler, 2000). Ebihara (1968) also asserts that villages lack indigenous, traditional, organized associations, clubs, factions, or other groups that are formed on non kin principles. Thus, Cambodian society was referred to as "loosely structured" implying that in the 19th century, there were no "durable, functionally important groups" or voluntary associations aside from the family and the Buddhist monastic order or sangha. When a village organized itself – for defense or for a festival – it did so for a short time in response to a specific need. And the sangha are likely the ones unifying the people in handling community matters.



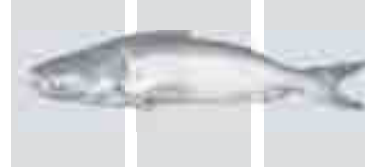
However, a Cambodian identifies himself in relation to one's status (Nee and Healy, 2003; Best, 2005) and this could be located from one's standing from the king to the sangha and to the leaders of the kompong and down to the landless and minority peoples. If a person's place was relatively secure, people in weaker positions sought him out and offered homage in exchange for protection. Cambodian society was characterized by the exchange of protection and service in different relationships, often described as "lopsided friendships" (Wolf, 1996). In a village context, these links might be with older and more fortunate members of one's family, monks in the local wat, bandit leaders, government officials, or holy men (nak sel) who appeared from time to time promising their followers invulnerability and riches. In the kompong and the capital, where people grew their own food, patronage became more complex as having a patron was connected with one's chances to survive. Many people enslaved themselves to a patron to protect themselves against the greed of others. Both sides of the patron-client equation saw their relationship as natural, even obligatory ones. "The rich must protect the poor, just as clothing protects the body" illustrates this (Finot, 1904 cited in Chandler, 2005). Indeed, Cambodians have traditionally regarded the righteousness and permanence of patron-client relationships. And throughout the 19th century and even in the earlier Angkorian period, patronage and hierarchical relationships have been the key elements in Cambodian society.

## **2. The Key Characteristics of a Cambodian Community**

From the 19th century to the French Protectorate (1863-1953), the Pol Pot regime, the UNTAC period and present time, communities in Cambodia have adapted and changed throughout the years and subtle changes might have occurred. The following are some observations made about the key characteristics of a Cambodian community.

First, the relationships in Cambodian communities are still largely shaped by wealth, power, gender and education. The strict code of behavior requires people to act according to their position and condition in society. There is always a polite, correct and virtuous way for the "lower" person to relate to the "higher" person. Special mention has to be made on gender relations, particularly since women are being urged to participate in development programs and the nation's affairs. Resurreccion (2006) advises against inserting women into development projects by only addressing poverty reduction and conservation goals without recognizing actual gender/social inequalities. This may inadvertently reproduce existing gender hierarchies instead of actually transforming them.

Second, kinship networks and obligations are important to Cambodians. Families are seldom nucleus. Extended relations stay in one roof and where all family "members" are subsistence farmers or fishers, the absolute necessity for family interdependence is even greater and more urgent. Loans or gifts of materials or money, and sharing of labor within families is still a necessary and universal practice in many Cambodian communities. The kinship network is an essential support system in times of emergency. Kinship networks help in times of emergency and provide protection in cases of conflicts and violence. They are also expected to deal with conflicts within both family and community. Sharing resources and mutual assistance within the kinship networks



is an obligation shared and honored by all Cambodians. The strong sense of sharing and mutual assistance among Cambodians has proven to be useful in establishing self-help and mutual support groups in the communities (Simmons & Bottomley, 2001; McAndrews, 1998). In particular, encouraging the very poor families to form such groups has the potential of fostering greater cohesion, mutual understanding, a sense of belonging and a source of identify among the members.

Third, the network of relationships (whom Cambodians relate with) defines a person's identity and in most situations, Cambodians would never challenge the person they hold in respect. People say to one who is of higher status: Tell me what I must do. People appear to be more comfortable in following the instruction of others. Particularly at the village level, it is extremely difficult to challenge those in power. Respect for somebody in position is suggested to have a deeper basis in Buddhism as many Cambodians acknowledge that "one's position in the social order is largely pre-ordained" so people accept their lot even with a general understanding that one's position could change through good deeds and luck (O'Leary & Nee, 2001). Nee and Healy (2003) suggest that feelings of insecurity and despondency is a direct effect of militarism and this attitude has become so entrenched long after the war has ended, and many are still finding it hard to imagine their long-term future and continue to suffer from a lack of initiative and confidence. This apparent helplessness sometimes tends to make a community to believe that it has a right to external assistance and support and that their own development is and should be an externally-driven process.

Fourth, the patron-client system is still very much a part of the Cambodian community and society at large. While some raise the exploitative relationships in this system (Wolf, 1966; Blunt & Turner, 2005; Degen & Nao Thuok, 1998), one could view patronage as a traditional part of social networking. One has to deal with the patron-client system in a more careful way and not to simply dismiss it as negative or to work towards eliminating it. Nee and Healy (2003) suggests that the rural poor generally do not see any problem having patrons as the overriding perception is that the patron and clients are "helping each other." Thus, it could be viewed as a form of social welfare service that has existed informally for a long time. Usually, values of trust and cooperation, which are essential for social capital, are strongly built into this system. While society is still poor and resources still limited, there is no system to replace it; and without an alternative, the patron client system may be the only life-line of the very poor (Simmons & Bottomley, 2001). The patron-client system is simply a way for people to survive and to destroy the system prematurely would amount to destruction of a survival network.

Fifth, while some studies (Best, 2005; Vijghen & Sareoun, 1996) have suggested that there were no functionally important groups or organizations in Cambodian communities, at least traditionally, the wat and the Pagoda association is an example of what might be called an "organic" group in Cambodia. An organic group refers to the indigenous associations/committees that have existed in communities for a long period of time and are collectively initiated by local citizens (Sedara & Sovatha, 2005). They exist in all communes in Cambodia. The participation of these organic groups in community-based management should be encouraged as they are formed part of the community's social capital that is likely to sustain local participation. For example, the community-based fishery management in Phneat Kohpongsat in Banteay Mean Chey province shows how the Buddhist monks brought people to work together for



resource conservation and how community members try to follow the fisheries rules not simply because these are the rules, but also because these are derived from the basic religious tenets of Buddhism (CFDO & CBNRM LI, in press). Indeed, to this day, the pagoda continues to be an important unifying force in Cambodia (Pellini, 2004).

Sixth, there are minority groups in Cambodian villages, particularly in fishing communities that are on the farthest end of development assistance. For example, there are not enough studies that deal with the Cham minority. The Cham people are an ethnic group living in Cambodia, Vietnam and Thailand, speaking the Cham language and considered to be descendants of the kingdom of Champa (Tarling, 1992). Cambodia has the largest concentration of Chams, estimated between half a million and one million; about 90% of them are Muslims (Pann & Doyle, 2003). A recent study on livelihoods made some reference to the Cham community in Cambodia as likely to have a strong identity linked to fishing and which might pose as an obstacle shift people into new occupations (Campbell et.al. 2005).

Finally, the Cambodian community's perception of their rights needs to be viewed in the context of their culture and history. In the Cambodian hierarchical structure, many people consider respect of status to be more important than respect of rights. Those who respect status are regarded as correct, virtuous and polite. When rights are described in political terms, they often respond, "for the time being I do not need any rights, but I am hungry" (Nee & Healy, 2003). The promotion of any rights that are unrelated to a community's basic needs is likely to fall on deaf ears or cause conflict.

### **3. Evidence of Customary Practices and Traditional Community Management**

The present Cambodian constitution provides some basis for resource ownership. For example, Article 44 states that "All persons, individually or collectively, shall have the right to ownership." It goes on to specify that only Khmer entities and citizens shall have the right to own land. "Commons" (in a broad definition) is considered as "State property" and its use and management to be determined by law (Article 58). Any direct reference to customary practices is not made in the constitution but references are made to Khmer traditions and culture and already in the Preamble reference is made to the "fine Angkor civilization" (Torell, 1998)

Yet against this legal backdrop, there is very little direct documentation or reference to customary practices or traditional community management in Cambodia. Torell (1998) describes a practice in provinces like Svay Rieng where fishing is open to anyone during the periods of floods when rice fields are submerged. But when the water recedes and the contours of the fields become visible again, the open right to harvest the resources quickly ends.

Indirectly, there are beliefs, knowledge and practices that affect resource use patterns and are thus argued to form part of local people's customary practices.

For example, local people believe that on Buddhist prayer days many fish can be caught. Since Buddhist prayer days coincide with the phases of the moon, this is supported by another



observation: fish like the moonlight, they are playful in moonlight and are easily caught with gillnets at full moon. When rain is coming up, however, no fish can be caught. Only when the rain starts falling the fish would come out of their hiding places. During certain times of the day, very little fish is caught. Asked for the reason, a fisherman told that the fishes are now in the rice fields looking for food. They would come out later to play in the canal where they can be caught with the cast-net (Balzer, et.al., 2002).

Similarly, Bao et.al. (2001) describes some of the local ecological knowledge of the people in the Mekong River basin. A common observation is that many fishes lay their eggs in the flooded forest or in the flooded shrubs surrounding their rice fields. The fingerlings then come to look for food in the rice fields and the flooded grasslands. Another observation is that once the trees and shrubs are gone in an area, the abundance of fishes is reduced. Fishers also have the capacity to explain changes in their environment in their own way. In Sesan River, fishers have noticed that when water is released from the Yali Falls dam, the river often becomes very turbid and red, unlike anything that was experienced in the past. One fisher commented that if a pail of water is taken from the river at these times, there is generally one finger's width of red silt at the bottom of the pail within ten minutes, which is much more turbid than they ever saw the Sesan River before dam constructing began (Baird & Mean, 2005).

There are also oral stories from the field that relates with specific fishery management strategies that assert local people's claims to fishery resources. For example, the village leaders in Chrouy Pros Bay in Koh Kong province explains that they have put in cement blocks within the boundaries of their community fisheries as fish aggregating devices and also to prevent the commercial fishing boats from encroaching in their community. This is similar to stories from provincial fishery officers in Kampot that talked about the use of spiked tree stumps on coastal waters to prevent the illegal fishers into their community.

An interesting essay by Hortle and Srun Lim Song (2005) shows the different proverbs on fish that Cambodians grew up with. For example, Cambodians would say kom moa-ut ch'rarn doach trey komphleanh, (don't talk a lot like trey komphleanh) which means "if you talk too much you may make a mistake or give out secrets". This saying refers to gouramis (*Trichogaster* spp.), which often live in low-oxygen environments and have a habit of swimming near the surface while opening and closing their mouths to gulp air. Or kom saoich khang pek proyat rohaek moa-ut doach trey sanday, (don't laugh too much or you will get a big mouth like trey sanday!), which means "one must not laugh loudly at someone who is making a mistake", referring to trey sanday (*Wallago attu*), a voracious predator that has an extremely large mouth with sharp teeth. This essay shows that language is potentially an area of inquiry on better understanding Cambodian culture, particularly the people's relationship with fisheries and the environment. In probing more about the Cambodian proverbs, metaphors and stories, one might get more evidence on traditional management systems and customary practices.

Overall, there is a huge gap on information about traditional fishery management systems in Cambodia. Studies on customary practices often relate with upland resource management and indigenous peoples (e.g. Ratanakiri) but certainly, such practices are likely to be similarly found in fisheries.



## CASE STUDY OF BAK AMREK-DOUN ENT COMMUNITY

**Photo Credit:** Small-Scale Fishing Communities Study Team



## CHAPTER 3: CASE STUDY OF BAK AMREK-DOUN ENT COMMUNITY

This case study describes the Bak Amrek-Doun Ent CF and in particular, focuses on the perceptions of the claims to fisheries and coastal land, community actions to support these claims, and the rights and responsibilities of the communities related to fishery resource use. This study highlights the actions of the CF to respond to issues on illegal fishing and cutting of flooded forest. It shows that the community views fishing as a right open to all provided that it follows the fishing laws and the by-laws of the CF. The responsibility of managing and protecting fishery resources, and the flooded forest in particular is also emphasized in this study.

### A. BACKGROUND INFORMATION ON STUDY SITE

Bak Amrek-Doun Ent CF is located in the villages of Bak Amrek and Doun Ent, Prek Luong Commune, Ek Phnom District, Battambang Province. Established on 21 September 2003, it has 280 members, 150 (or 53%) of which are women, while the rest are men. The CF covers a total area of 1,075 hectares of land and water. Presently, the Bak Amrek-Doun Ent CF is a part of a federated CF composed of 3 other communities (Data collected from the CF for its Management Plan, 2006). There are 7 committee members (4 women and 3 men). The committee has one male chief, two vice chiefs – male and female, one female accountant, one female secretary, one female disseminator, and one patrolman.

The CF has a total population of 2,196 people - 1,138 (or 52%) are women and 1,058 (or 48%) are men. There are 431 families in the CF - 253 families in Bak Amrek village and 178 in Doun Ent village. (Provincial Department of Planning, 2005)

Table 6 shows that women and men in the Bak Amrek-Doun Ent CF are engaged in a number of livelihoods and that most are into fishing, farming and raising animals. Engaging in small business like stores and sewing are work of women while machine repairing, collecting palm juice water for wine and sugar (Skar Thnaot) production and charging batteries are work of men. Interestingly, one of the 5 motor taxi drivers is a woman. She is a widow in the village.

**Table 6: Livelihood Activities of Women and Men in Bak Amrek-Doun Ent CF**

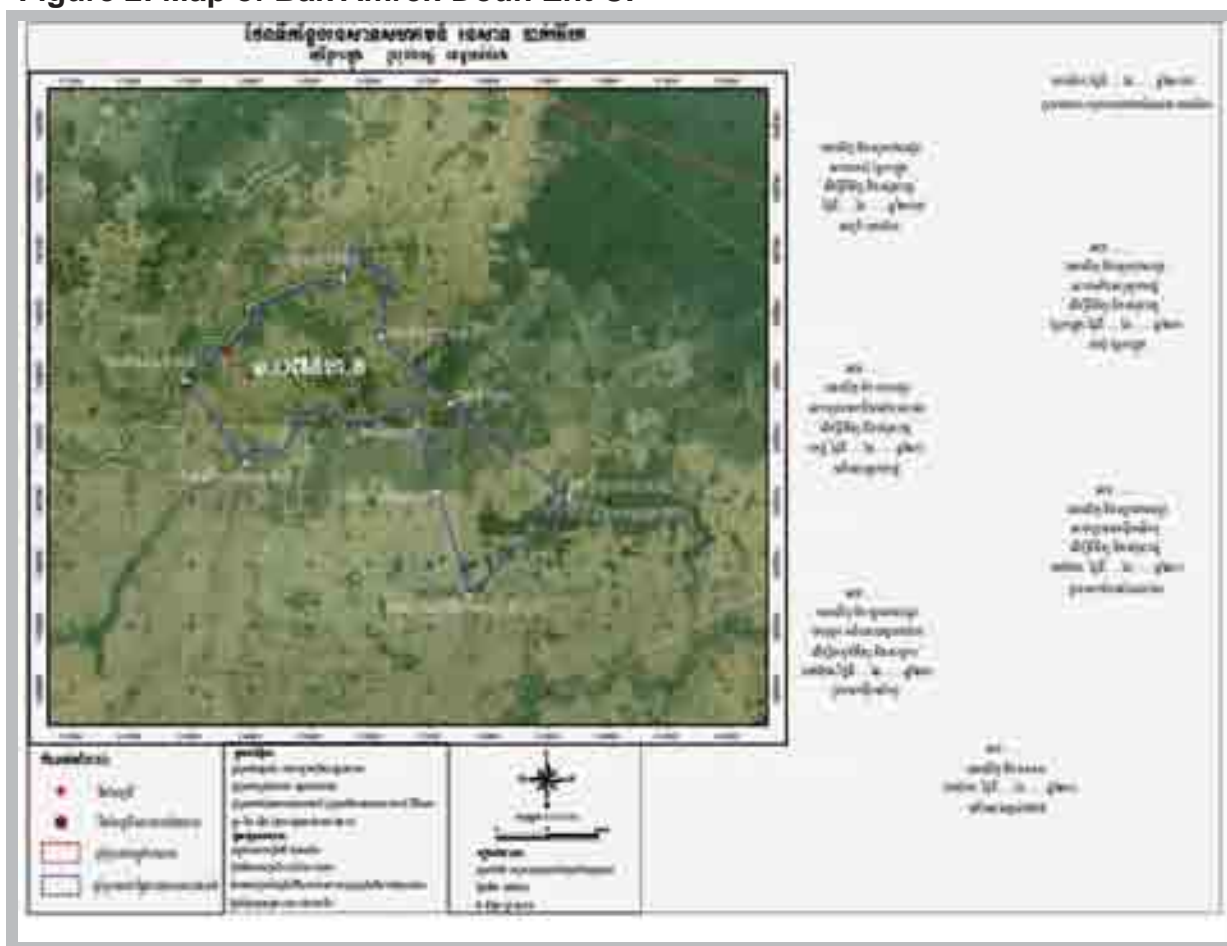
| Livelihood Activities    | Number of Families Involved | Men participate | Women participate | Men and women participate |
|--------------------------|-----------------------------|-----------------|-------------------|---------------------------|
| Farming                  | 376                         |                 |                   | ✓                         |
| Fishing                  | 429                         |                 |                   | ✓                         |
| Raise animal (livestock) | 429                         |                 |                   | ✓                         |
| Small-Scale business     | 40                          |                 | ✓                 |                           |
| Laborer                  | 30                          |                 |                   | ✓                         |
| Motor taxi               | 5                           |                 | there is one      | ✓                         |



**Table 6: Livelihood Activities of Women and Men in Bak Amrek-Doun Ent CF (Cont)**

| Livelihood Activities       | Number of Families Involved | Men participate | Women participate | Men and women participate |
|-----------------------------|-----------------------------|-----------------|-------------------|---------------------------|
| Machine repairing           | 5                           | ✓               |                   |                           |
| Hairdressing                | 3                           |                 |                   | ✓                         |
| Tailor/seamstress           | 7                           |                 | ✓                 |                           |
| Boat service                | 1                           |                 |                   | ✓                         |
| Palm juice water collection | 4                           | ✓               |                   |                           |
| Battery charging            | 2                           | ✓               |                   |                           |
| Morning glory collection    | 6                           |                 |                   | ✓                         |
| Shellfish/snail collection  | 5                           |                 |                   | ✓                         |

**Figure 2: Map of Bak Amrek-Doun Ent CF**



**Source:** Provincial Fisheries Office, 2007



Table 7 shows that the fishers in the CF use multiple fishing gears that target various fish species. In the discussions with the CF, the local people report that some villagers and outsiders use illegal fishing gear such as mosquito nets, brush park (samrah), sinking nets, electric fishing and poison. The fish catch from mosquito nets and sinking nets is high and that is what makes it an attractive option for fishers. During the peak season (September to December), a mosquito net can catch an estimated 300 kg/day while sinking nets have an average catch of 800 kg/day.

**Table 7: Fishing Gear, Species Caught and Catch Estimates in Bak Amrek-Doun Ent CF**

| Type of Fishing Gear                           | Main Species Caught  | Present Average Catch/day (In kilograms)    |   |
|--|--|---|---|
|  |  | Peak fishing season (September to December) | Lean fishing season (January to August) |
| Gill net (use along tributary)                 | Jullien's mud carb (Riel), Common silver carb (Chpin)            | 5   | 0.5                                     |
| Gill net (use along flooded plain area)        | Cobia (Phtok), Walking catfish (An-deng), Yellow mystus (Chlang) | 10  | 0                                       |
| Hooked long line and Hook (Bankay)             | Multi fish species   | 7   | 1                                       |
| Cast-net                                       | Common climbing perch (Kranh), Cobia, Walking catfish            | 5   | 2                                       |
| Handled pick out (Angrut)                      | Common climbing perch, Cobia, Walking catfish                    | 0   | 1                                       |
| Small cylindrical drum trap (Lorb)             | Multi fish species   | 10  | 0                                       |
| Bamboo eel trap (Luan)                         | Eel  | 1.5   | 0                                       |
| Folded woven trap (La)                         | Tree spot gourami (Kampleanh)                                    | 3   | 0                                       |
| Scooping net (Thnang)                          | Ka Et and other species  | 2   | 0                                       |
| Kra Bey Yun (catch small shrimp)               | Lanchester's fresh water prawn (Kam Pis)                         | 0   | 5                                       |
| Scooping basket (Chnneang Tram)                | Multi fish species   | 0   | 2                                       |
| Mosquito net pipe (Lou Sbay Mung)              | Multi fingerling species   | 300   | 0                                       |
| Samrah (brush park)                            | Multi fingerling species   | 0   | 200                                     |
| Electro-fishing gear                           | Multi fingerling species   | 5   | 10                                      |
| Sinking net (Oun Pra Yung or Mong Peang Stung) | Multi fingerling species   | 800   | 0                                       |
| Bamboo enclosure (Bor or Lorb Nor or Rav)      | Multi fingerling species   | 500   | 0                                       |
| Poison   | Fish and birds   | 0   | 15 birds                                |

**Source:** Focus Group Discussion in Bak Amrek-Doun Ent, 9 April 2006

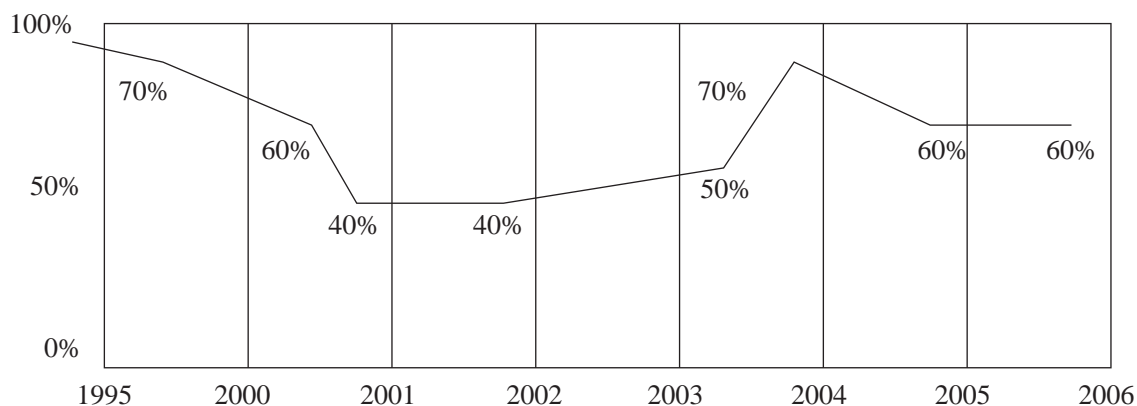


Figure 3 shows the community's perception on fish catch trend in the CF from 1995 to present. Fish catch reportedly decreased from 1995 to 2001, from 70% to 40% in 2001. The people attributed this decrease to the prevalent use of illegal fishing activities such as the electro-fishing gear, Bor gear, mosquito net pipes, samrah and sinking nets. Bor is similar to the bamboo enclosure that is used along flooded plain area. It is made up of a net with 2 cm mesh size and a length of 2,000-4,000m. The mosquito net pipe is 7-12m long and the mouth opening is 3m; it uses very small mesh-sized nets less than 0.5cm. The samrah is made of piles of about 500-1500 branches, cut from the flooded forests. The sinking net is pulled in the lake, extending from 20-30m, and with a height of about 3.5m. All of these fishing gears are very efficient and catch even the small fish and fingerlings, and make use of the flooded forest.

From 2001 to 2002, fish catch declined by 40% and remained at this level. During this period, the fishery policy reform has already begun and the local people are beginning to be aware that they have a right to fisheries. This awareness came about when the Provincial Fisheries Office (PFO) in Battambang went to the villages and informed them about community fisheries. At this point, it appears that the local people's understanding of community fisheries was that they had free access to the fishing lot and that they have the right to stop illegal fishing, even if those acts were made by the fishing lot owner. This newly found awareness encouraged the local people to take bolder steps to stop illegal fishing. One such act was the destruction of a bamboo enclosure owned by the fishing lot owner #9 in 2002. This case is explained further in the succeeding section.

There were reports of an increase in fish catch from 2002 to 2004. The perceived increase in fish catch is attributed to people's growing awareness and understanding on the negative effects of illegal fishing. With the establishment of the CF in 2003, the people's solidarity and advocacy against illegal fishing became stronger. Supported by the Village Support Group (VSG), the PFO, Local Authority and other relevant institutions, the new CF started dissemination of the CF by-law and fishery law to local people and also collaborated the fishery authority and commune police to crack down on illegal fishing in the community fishing ground and public area e.g. Sangke river tributary.

**Figure 3: Fish Catch Trend in Bak Amrek-Doun Ent CF: 1995-2006**



**Source:** Focus Group Discussion in Bak Amrek-Doun Ent, 9 April 2006



From 2004 to 2005, fish catch decreased again because of the use of more efficient fishing gears like the bamboo enclosure, the continued cutting of flooded forest for farming land, the support of soldiers to illegal fishing and the increase in the number of outsiders fishing in the CF. This situation is slowly being addressed by the CF as it made a stronger commitment in stopping illegal fishing and cutting flooded forest. Moreover, fishery authority and relevant NGOs provided training courses to the community to strengthen their capacity in maintaining and sustainably using fishery resource.

In 2005, the CF also demarcated the CF boundaries by using a GPS to create a map. The demarcation was joined in by the PFO, VSG, Local Authorities, district environment staff, community committee, district representative, and neighboring communities. The CF map formed part of the CF agreement which was signed and thumb-printed by Bak Amrek-Doun Ent CF committee Chief, chiefs of neighboring CFs and the Village Chiefs of Bak Amrek, Doun Ent and other neighboring villages. The CF by-laws have also been agreed upon and disseminated in the 2 villages and neighboring villages.

The fish species that are nearly extinct include: Hoeven's slender barb (Trey Pra Loung), Greater bony lipped barb (Krum), Marbled sleepy goby (Dom Rey), Great white sheatfish (Sandai), Smith barb (Chror Keng), Kar Chorn, Eye spot barb (Khman), Kanh Chanh Chras, and Armed spiny eel (Khching).

The fish species that are extinct include: Catlacarpio siamensis (Kul Rang), Red cheek barb (Ampil Tum), Paradise threadfin (Puk Mot Chmar), Twisted jaw sheatfish (Khleng Hai), Truncated estuarine catfish (Tror Nail), Siamense tiger fish (Kon Trop Khlar), Freshwater tonguefish (Andart Chkei), Red tail tinfoil barb (Kar Hei), Nieunof's walking catfish (Andenk Kuy), Soldier river barb (Chkauk), and Siamense rock catfish (Kanh Chors Thmor).

## B. COMMUNITIES: STRUCTURAL AND INSTITUTIONAL ASPECTS

Table 8 shows the description of the different socio-economic groups in the Bak Amrek-Doun Ent CF based on the people's perception. The local people report that a majority of the families in the CF is poor (51%) but a big percentage (41%) is also from the middle-income group. Only 2 families (1%) are rich while 30 families or 7% are very poor (Refer to Table 9).



Women seller in the village

Photo by: Small-Scale Fishing Communities Study Team



When asked what factors make people rich, the community reported improving the fishery condition is important to them and this could be achieved by stopping illegal fishing and cutting of the flooded forests. Specific reference was also made on being more knowledgeable of farming techniques that would address the lack of water for farming during the dry season. Other responses include the importance of external assistance to the community for establishing self-help groups, providing credit with low interest rate, and training for better fish processing techniques and constructing better roads.

The people perceive that they are poor because of the decrease in fish catch caused by flooding and draught, illegal fishing and cutting of flooded forest. Others say that having no farm land, no knowledge on better agricultural techniques and the lack of irrigation system also contribute to poverty. The importation of fruits and vegetables (e.g. watermelon, cucumber and corn) from Thailand that poses stiff competition with local produce also contributes to lesser income and increasing poverty.

**Table 8: Socio-Economic Groups in Bak Amrek-Doun Ent CF**

| Criteria             | Very poor                          | Poor                    | Medium                          | Rich                                      |
|----------------------|------------------------------------|-------------------------|---------------------------------|---|
| Total income Per Day | 0                                  | One small boat          | One big boat                    | Two big boats                             |
| Fishing gear         | One bamboo basket and one cast net | One fish net            | Three fish net and One cast net | sinking net plus Samras and mosquito pipe |
| Education            | Illiteracy                         | Less education          | Grade 1-9                       | Grade 1-12                                |
| Number of children   | Many children                      | 8 children and lower    | 5 children and lower            | 5 children and lower                      |
| Property             | Small cottage                      | bike and old motor bike | bike and motor                  | Car and motor                             |

**Source:** Focus Group Discussion in Bak Amrek-Doun Ent, 9 April 2006 and VSG data

**Table 9: Number and Percentage of Socio-Economic Groups in Bak Amrek-Doun Ent CF**

| Socio-economic Class | Number of Families | Percentage (%) |
|----------------------|--------------------|----------------|
| Very poor            | 30                 | 7              |
| Poor                 | 222                | 51             |
| Middle               | 177                | 41             |
| Rich                 | 2                  | 1              |
| Total                | 431                | 100            |

**Source:** Focus Group Discussion in Bak Amrek-Doun Ent, 9 April 2006





## **Associations and Groups in the Community**

There are several associations and groups in Bak Amrek-Doun Ent CF, namely: (a) Elderly people association that currently has 95 members for people 56 years old and above and with a one-time membership fee of 6000R (US\$1.50) per person; (b) savings group; (c) credit group; (d) cattle and rice bank; and (e) women self-help group. These groups are supported by the VSG.

The elderly association gives advice to the community for conflicts related to domestic violence and other social problems and fishery conflicts, if needed. It also raises money for building school, road, and other ceremonies. The association also assists the homeless elders by providing a small amount of social fund to build a house or provide rice, mosquito net, blanket, scarf, long skirt, kettle, mat, etc. The association is funded by VSG. In the beginning, the elderly association is only focused on helping the elders who are members of the association but now, it is helping the very poor families in the community, even if they are not members of the association.

The main religious group is composed of Buddhists; 100% of the people are Buddhists. There is a Pagoda Association and the monks are active in disseminating information about fishery resource protection and conservation.

Some women are active as leaders of the CF Committee, and the Chief of the savings group and the Chief of the self-help group are women. In the community, the women leaders have sometimes been criticized by some villagers and illegal fishers. They are called names like “chou,” which refers to women who are considered “proud” for doing the work of men. Sometimes, women are also taunted as “carrying the earth by themselves,” referring to women who want to be in charge of everything by themselves. There were also reports of domestic violence in the villages but the number of incidence apparently decreased in 2005 with the support of VSG. Presently, the CF committee helps to solve domestic problems. The community suggests for the CF committee to also help train women to engage in small business such as sewing, hairdressing, small-scale business, animal raising and agricultural technique.

## **Conflicts in the Community**

**Conflicts between fishers and *bia* owners.** Before the CF was established, some wealthy people who were farming near the lake dug a *bia* and put up samrahs (brush parks) to catch fish and get water for farming. A *bia* is a big well that is dug near the lake where fish are trapped. The owners of the *bia* disallowed the villagers to fish or use the water in the well. The conflicts between the *bia* owners and some fishing families continued without any resolution until the CF was established. Bak Amrek-Doun Ent CF cooperated with the CFs in O’Kambut-Kpop, Prek Loung-Sdey Lue, Sdey Kroum-Raha Soung and Bak Rates to try to resolve this conflict. In a meeting among the CF committees, the CF leaders asked the *bia* owners to pay a fee to the CF. All of the *bia* owners agreed because they preferred to pay the CF committee rather than unofficially pay to the army, fishery authority, military police and police. But the payment of fees did not stop the local people from fishing or getting



waters in the *bia* so the CF so the conflict continues. Presently, the CF is planning to stop taking money from the *bia* owners and just allow the local people to openly fish in the *bia* by 2008.

**Conflicts between fishers and soldiers owning a *bia*.** The CF has just been established in 2003 when the soldiers dug a canal that connects to a 40m x 36m *bia* near the lake. Every year since then, the soldiers allow a middleman to harvest fish from their *bia* in exchange for a fee of US\$3,000. Acting on complaints from the local people, the CF committee, Local Authorities and fishery authorities negotiated with the soldiers. The leader of the soldiers did not want to give up the *bia* but instead offered to give a contribution of 100,000R (US\$25) to the CF community every season. Other *bia* owners are already contributing money to the CF and their contribution depends on the size and level of fish catch. The CF committee accepted the soldiers' proposal. The other *bia* owners were jealous of this decision because the soldiers contribution is small compared to their contribution. Some *bia* owners pay the same amount even if their income is reportedly not higher than 600,000R (US\$150) every season. The local people also want to freely access the resources in the soldier's *bia* because they think that soldiers should not be allowed to have a *bia*. Until now, the soldiers continue to maintain their *bia* and disallow the local people to fish or get water from their *bia*.

**Conflicts between fishers and soldiers supporting illegal fishers using encircling seine net (oun hum).** In one incident, after the CF has already been established, Bak Amrek-Doun Ent CF members cooperated with the other CFs in the federation and the fishery authority and military police to arrest and confiscate an encircling seine net and boat. However, about 13 armed soldiers chased the arresting group and took back the confiscated seine net and boat. The soldiers accused the community group as thieves. The PFO Chief was called to mediate between the conflicting groups. The compromise reached was for the community to return the seine net and boat to the soldiers. At that time, the community had no choice but to accept the decision. However, the community later decided to bring their complaint at the District level of government. They have already gathered thumb prints from 600-700 people in two communes although they are still awaiting response from the District.

**Conflicts between the community and fishing lot owner.** In 2002, about 35 people from the community destroyed the bamboo enclosure in Ar Key Lake inside fishing lot #9. The bamboo enclosure obstructs the movement of fish in the lake and the people think this is the reason why they have low fish catch. After this incident, the fishing lot owner complained to the Provincial Court and the community members involved in the incident was sentenced to 25 years in prison and asked to pay a fine of 45 million riel. The community contested the court and filed a counter complaint. This time, the court heard the pleadings of 7 representatives of the community, the community's lawyer, fishery authorities and the fishing lot owner. The court decided to reduce the sentence from 25 to 15 years and the fine was lowered to 25 million riel. The community was still dissatisfied with the decision of the court so they filed another complaint to the Appeal Court. This time the court decided to keep the people out of prison and required a fine of 400,000 riel. Still dissatisfied with this result, the community elevated the case to the High Court. This case is still pending.



### C. PERCEPTIONS OF COMMUNITY

The people described themselves as a fishing community. Everyone who is registered with the village and commune authorities is part of their community. There is one family in the community who is engaged in fishing and palm water collection. This family was allowed by the Village Chief to live along the canal but community members do not consider them to be one of them because the family did not register with the village authority.



Focus group discussion – Bak Amrek Doun Ent community fisheries  
Photo by: Small-Scale Fishing Communities Study Team

### D. COMMUNITY PERCEPTIONS OF CLAIMS

The community claims that small-scale fishing is open to anyone at any time provided that the users do not use an illegal gear and that they follow the Fisheries and CF by-laws. This open right to fisheries is particularly felt and freely exercised by the community now with the establishment of the CF. The community reports they do not feel the pressure from the fishing lot owners anymore. The community also said that all fishers should help in protecting the resources.

Outsiders also come to fish in the community. They come from neighboring places such as Bak Prear, Tha Koul, Sampouv and Banan Mountain and sometimes from farther places like Siem Reap. The outsiders live in boats or construct makeshift houses on the hills and stay in the CF for most of the flooded season i.e. September to December. They use cast-net, fishing net and long line. Some also use electro-fishing gear. The outsiders are allowed to fish in the community, following the same conditions mentioned above.

In contrast, the use of flooded forest is restricted. Cutting dead trees for firewood is allowed but only after permission is granted by the Village Chief. The incidence of indiscriminately cutting flooded forest has decreased since the establishment of the CF. Reportedly, more people understand the value of the flooded forest and they are also aware of the CF by-laws. The community also said that they stopped cutting of flooded forest to “follow the instruction of the Prime Minister.”

In the canal, about 40 families have been residing there for 10 years now. These families used to live along the river tributaries but they moved along the canal when the tributaries became narrower and the tributary bank even fell down. Some of these families also moved along the canal when they got married or they bought a land there. People along the canal have no land title but they have receipt issued by District Land Authority. There are some reported conflicts related to land boundaries but these are always facilitated by the village authority and often resolved. The families do not pay the authorities for building their houses.

## E. COMMUNITY ACTIONS TO SUPPORT CLAIMS

The main threats to fisheries are the use of illegal fishing gears, the conflicts with fishing lot owners, the increasing number of outsiders who fish in the CF and the continued use of the bia. Related to farming, the main threats include natural disasters like flood and draught, low agricultural price and the increasing use of pesticide.

The main response to these threats, particularly to fisheries problems, is the establishment of the CF.

## F. COMMUNITY RIGHTS REGIMES

When the CF was established, the following changes were reported: (a) the CF committee dares to face and protest with the power men; (b) the CF committee gets training course from VSG about fishery and other laws, and right and responsibility over fishery resource; (c) community members get information and explanation on the fishery law and the right to use fishery resources; (d) fish catch is perceived to higher so people's living standard improved, especially widows who can process more fish for pra hoc, pha ork, smoked fish, and dry fish for eating and selling; (e) cutting flooded forest for exploitation and farming land is reduced; and, (f) illegal fishing activities have decreased.



Focus group discussion – Bak Amrek Doun Ent community fisheries

Photo by: Small-Scale Fishing Communities Study Team

Despite these changes, the CF is still weak in some aspects. For example, there are insufficient finances and materials like gasoline for patrolling. The community's understanding on community management is also still limited and collaboration with fisheries authorities can still be improved.

To further improve fishery management, the community suggests the following:

- Local authorities and relevant institutions should collaborate with the community to stop illegal fishing activities.
- There should be frequent training courses for the community to get understand about fishery law, advantages of natural resources, and using the fishing gear following by-law.
- There should be dissemination about fishery law to people in the community frequently.





## G. RIGHTS AND RESPONSIBILITIES

The community perceives that fishery resource is common property and that small-scale fishing is open to all at any time of the year (Refer to Table 10). However, users of fishery resource have the responsibility of protecting the resources, using only legal gear and not fishing during the spawning season. The resources found in the community such as bird, tortoise, turtles and pythons are also accessible to users but these needed protection as well. Flooded forest use is more restricted. Along the canal, people have the right to reside there and plant vegetables. Residents along the canal have the responsibility to plant trees to prevent erosion.

**Table 10: Rights and Responsibilities of Fishers in Bak Amrek-Doun Ent CF**

| Fishery Resources and Land | Rights of Fishers                           | Responsibilities of Fishers  |
|----------------------------|---|--|
| Fish                       | Open fishing                                | Using legal gear, conservation, and no fishing in spawning season.                     |
| Bird                       | Protection and maintain                     | Protection and maintain  |
| Tortoise and turtle        | Protection and maintain                     | Protection and maintain  |
| Crocodile                  | Protection and maintain                     | Protection and maintain  |
| Flooded forest             | Restricted use                              | Maintain and protect   |
| Python                     | Protection and maintain                     | Protection and maintain  |
| Land along the canal       | Reside along the canal and plant vegetables | Plant trees to stop canal land erosion and keep the environment along the canal clean. |

**Source:** Focus Group Discussion in Bak Amrek-Doun Ent, 9 April 2006

The local people play a role in protecting and conserving the fishery resources and in reporting any illegal fishing to the CF committee. The committee, in turn, should lead in eliminating illegal fishing activity, disseminating the fishery law and making people understand about the advantages of community management. The CF committee is assisted by the Fishery Authority and the Local Authorities. The Environment officers should assist in disseminating information about the environment. Community fishery management should also be supported by the elderly people, NGOs, monks and schools.



Focus group discussion – Bak Amrek Doun Ent community fisheries  
Photo by: Small-Scale Fishing Communities Study Team



## CASE STUDY OF TUM NUP ROLOK COMMUNITY

**Photo Credit:** Small-Scale Fishing Communities Study Team



## **CHAPTER 4: CASE STUDY OF TUM NUP ROLOK COMMUNITY**

This case study describes the Tum Nup Rolok CF and in particular, focuses on the perceptions of the claims to fisheries and coastal land, community actions to support these claims, and the rights and responsibilities of the communities related to fishery resource use. This study highlights the responses of the CF to competing fishery resource claims and discusses about their perceived rights to fisheries. It also explains the people's view on open right to engage in small-scale fisheries at any time of the year.

### **A. BACKGROUND INFORMATION ON STUDY SITE**

The community is known as Tum Nup Rolok Community Fisheries and Mangrove Protection which is located in Village 1, Tum Nup Rolok Sangkat, Stung Hav Precinct, Sihanouk Ville Municipality. It is facilitated by the Municipal Fisheries Office (MFO) in Sihanouk Ville. The Municipal government and Seila program supported the CF when it was established on 23 November 2005. Tum Nup Rolok CF is composed of 4 villages with a general membership of 815 individuals (53% women and 47% men). A majority (70%) of the CF members come from poor families while the rest come from middle-income families.

Eleven (11) members were elected to the CF committee – a chief, 3 deputy chiefs and 7 committee members. One of the CF committee members is a woman. Tum Nup Rolok CF is still a young organization – only 2 years old – but it already has approved by-laws, a map and a draft of a management plan.

Total population in Village 1 where the CF is located is 7,746 - 51% of which are men while 49% are women. The total number of families is 1,415, all from Khmer ethnic group. (See Figure 4)

Community members are mainly fishers and laborers for crab and shrimp peeling activities while others are fishworkers and construction workers (See Table 11). Some of their families also engage in raising animals. Presently, non-fishing dependent families are not members of the Community Fisheries like businessmen, police, doctor, army, and civil servant families. Crab peeling is a widespread source of income among families, with 950 families engaged in it. There are families involved in other livelihoods such as fish workers, animal husbandry, construction workers, selling, farming, moto drivers, middlemen and vegetable gardening. The people in Tum Nup Rolok do not grow rice but instead plant cabbage, string beans, lemon grass and morning glory.

All fishing activities except catching common geloina, involve men. Reportedly, women can not engage in fishing because it requires hard labor and distant travel from the place of residence. The livelihoods activities involving women are crab peeling, gardening and raising animals, which are all home-based activities. Other livelihoods like selling fish and farming are done by both women and men.



**Figure 4: Map of Tum Nop Rolok CF**



**Source:** Fisheries Administration, 2006

The main fishing gears in the community are trawler, gill net, trap and hooked long line, hand fishing along mangrove forest and shallow water. The catch is composed of various species of fish, shrimp, crab, and squid. The fishing gears are used according to the season and the gears are used both inside and outside community fishing ground. About 190 families use a variety of seasonal gear such as fish gill net, shrimp gill net, shell long line, and ray hook and line, 283 families operates a trawl while 115 families operates crab traps. Fewer families catch common geloina by hand (50) or use hand push nets (25). More expensive gears like purse seines and gill net are used by 5 families.





**Table 11: Livelihood Activities of Women and Men in Tum Nup Rolok CF**

| Livelihood Activities  | Number of Families Involved | Men only participate (√) | Women only participate (√) | Men & women participate (√) |
|--|-----------------------------|--------------------------|----------------------------|-----------------------------|
| Trawler  | 283                         | (√)                      |                            |                             |
| Crab gill net  | 28                          | (√)                      |                            |                             |
| Fish gill net, Shrimp gill net, Shell long line, Ray hook and line, Seasonal gears | 190                         | (√)                      |                            |                             |
| Crab trap  | 115                         | (√)                      |                            |                             |
| Push net by hand   | 25                          | (√)                      |                            |                             |
| Purse seine  | 5                           | (√)                      |                            |                             |
| Collect common geloina   | 50                          |                          |                            | (√)                         |
| Crab peeling   | 950                         |                          |                            | (√)                         |
| Moto taxi  | 15                          | (√)                      |                            |                             |
| Selling  | 22                          |                          |                            | (√)                         |
| Fish middlemen   | 14                          |                          |                            | (√)                         |
| Construction labor   | 35                          | (√)                      |                            |                             |
| Farming (Average size of farm land: 650 square meters)                             | 16                          |                          |                            | (√)                         |
| Vegetable gardening  | 10                          |                          |                            | (√)                         |
| Animal husbandry   | 65                          | (√)                      |                            | (√)                         |

**Source:** Draft CF Area Management Plan, 2007

It is the perception of the community that fish catch has declined by as much as 20-25% from 1984 to present and some fish species have disappeared. Decline in fish catch is caused by the increase in the number of fishers and the use of more efficient fishing gears, and the cutting of mangrove forest. Villagers reported that some fish species have already disappeared such as dugong and sea otters. They believe that these species have been disappeared because of over-fishing and the noise population from engines of big fishing boat.

## **B. COMMUNITIES: STRUCTURAL AND INSTITUTIONAL ASPECTS**

In the community discussions, the people reported that about 53% of the families in Tum Nup Rolok come from the middle-income group, 39% are poor families and 8% are rich families.

Poor families earn an average income of 2000R (0.5USD) daily. For fishing, they use long wooden boat or row boat, fish or crab nets that are less than 300 meters, and crab traps less than 100 meters. Others simply use their hands for collecting marine resources. A majority of them are elemen-



tary school graduates but illiteracy rate is 65%. Poor families usually have small wooden houses with a few household utilities. The number of children of poor families ranges from 4 to 6.

Middle-income families earn an average of 4000R/day (1USD). They use fishing boats with less than 15 Hp machines. Usually, they use trawler nets, crab nets less than 1,500meters and crab traps that are less than 500 units. A majority is schooled up to secondary level of education and illiteracy rate is only 15%. They have better living conditions with more sturdy houses made of wood and galvanized iron. The number of children of middle-income families ranges from 2-4.



Focus group discussion – Tum Nup Rolok community fisheries  
Photo by: Small-Scale Fishing Community Management Team

The rich families in Tum Nup Rolok earn an average income of 8000R/day (2USD). They use bigger wooden boats with 33Hp machines. They have trawler nets with freezing machines and other modern fishing gear. Around 95% of the rich families are educated and they have cemented houses with sufficient household utilities. Their number of children ranges from 2 to 4.

In the community discussion, insufficient income, low education, lack of livelihood options and having too many children are the reported reasons for having many poor families in Tum Nup Rolok. The lack of livelihood options is acknowledged as the principal reason for remaining poor but this is not easy for the poor families because they do not have the capital or the knowledge and skills required to venture to other livelihoods.

## **Groups and Associations**

There is a patrolling group and a savings group established in Tum Nup Rolok but the savings group was discontinued because of lack of fund support. The patrolling group in the CF is working closely with commune council, police and MFO and led by the CF committee.

Women in the CF participate in some of its activities. There is also a woman member of the CF committee. However, she has not really participated community activities and plans to resign from the committee.

The main religious group is made up of Buddhists (99%) and only a negligible number of villagers are Catholic.





## **Conflicts in the Community**

Conflicts exist among fishers in the community. Fishers using trawlers are in conflict with users of nets and traps because the former sometimes run over the nets and traps. Users of these fishing gears are not only from the community. There are also conflicts between local community members and outside fishers from Sre Ambel.

Mangroves are cut by some community members to use as firewood. There are others who claim to own some parts of the mangrove area, clear them and later sell to outsiders. These incidences are reported by the villagers to the CF.

A recent conflict happened between the CF committee and an aquaculture company. The Municipal government gave an aquaculture company a permit to develop oyster aquaculture inside the CF. In cooperation with the MFO, the CF committee complained about this and negotiated with the Municipal government. Several discussions were made and the Municipal government clarified that the permit given to the company did not cover the mangrove areas inside the Tum Nup Rolok CF. The company finally conceded and said that their project development will remain outside of the CF.

The CF committee's involvement in negotiating competing claims in resources is not new. Previous to this incident, when the CF was just established in 2005, the army attempted to take a piece of land in the village for its expansion activities. The CF committee took part in the negotiation process and with support from the MFO, it was able to stop the army's activities. When the army stopped its planned expansion activities, the CF committee's immediate step was to begin the land and water demarcation of the CF. The committee members were trained by the MFO to draft its by-laws. A committee was formed to demarcate the boundaries, made up of the MFO staff, District Chief, Precinct Chief, community fisheries committee member and representatives of neighboring community fisheries. With the help a geography information system (GIS) expert from the Provincial Department of Environment, a map of the CF was produced, submitted and recognized by all levels of local authorities.

The CF committee members' capacity to negotiate, the support of the Local Authorities and MFO are reasons given behind the CF's success in acting on conflicts in the CF. The community reports that the strong coordination between the CF and the MFO in particular is one factor that helps in solving conflicts.



Small-Scale Fishing Gear - fishing net along the coastal area  
Photo by: Small-Scale Fishing Communities Study Team



## **C. PERCEPTIONS OF COMMUNITY**

The community members see themselves as community fisheries but with a special focus on mangrove protection. The protection of mangroves is something deliberate because people said it is an important resource that is tied to their fisheries. The focus on mangroves was also influenced by the Municipal Government, particularly the Governor, who encouraged the conservation of mangroves in Sihanouk Ville.

Community fisheries is led by a committee of 11 members and a general membership of 815 people. This number is only a fraction of the total population (7,746) in the CF. Presently, non-fishing dependent families are not members of the CF including businessmen, police, doctor, army, and civil servant families. Some villagers still have limited understanding on CF and thus appear to be uninterested to register as a member of the CF.

## **D. COMMUNITIES' PERCEPTION OF CLAIMS**

The community has been using the mangrove forest for firewood and doing hand fishing for a very long time. They said that they have always thought of having a right to openly fish in their community for as long as they follow the laws. Outsiders also have this right; they are free to fish the community. When the CF was established two years ago, the community created rules and regulations and they expect the community members and outsiders to abide by these rules. The community reports that they also have the right to develop aquaculture and eco-tourism activities.

It appears that the community's perception is that fishery is open access while mangrove forest use is restricted. In particular, cutting down mangroves is strictly prohibited. However, fishing in the mangroves is open to all and mainly done by the poor families in Tum Nup Rolok using small-scale gear like traps and nets or hand fishing. Gathering common geloina, small crabs and snails is also done in the mangrove areas and this activity reportedly sustains the poor fishing households' daily food consumption.

## **E. Community Actions to Support Claims**

The main threats in the community include the continued use of illegal fishing gears, in particular the use electro-fishing by villagers and outsiders. Another threat is the perceived support of some power people in pursuing business activities such as the oyster aquaculture. The community feels threatened by the possible control of power people (outside of their community) on fishery resources.

To respond to these threats, a CF was established with the intention of managing fishery resources and in particular, protecting the mangrove resources. The community reports that they were encouraged to establish a CF because they MFO explained to them the fishery policy reform.



## F. COMMUNITY RIGHTS REGIMES

Since the establishment of the CF, the community reports that indiscriminate cutting of the mangrove forest has stopped. This is a result of the increase in people's awareness on resource management and protection. Dissemination activities were done by the CF and supported by the MFO. It also helped that a patrolling group is monitoring illegal fishing and cutting of mangroves. The visibility of a CF office in the village also helped stop illegal activities. Access to man grove and fishery resources is perceived to be easier now with the establishment of the CF.



Fishers repairing their net after fishing

Photo by: Small-Scale Fishing Communities Study Team

Notwithstanding these changes, the CF is still weak in some aspects. Sustaining actions to stop illegal fishing is a main concern of the CF because it lacks funds and equipment. While some support for gasoline is given by the Municipal government, the money is not enough to sustain patrolling activities. The patrolling groups are also not equipped with radio (ICOM) and mobile phones for faster communication. On some instances, the fishery authorities cannot act on time to stop an illegal activity. In addition, the CF needs to implement more activities to increase awareness of local people on CF management and to reach out to more people in the community. The lack of access path in the mangrove areas is also the major cause for untimely action to stop illegal fishing and cutting of mangroves. Presently, fishers need to use their boat or wade in the water to get to the mangrove areas.

To respond to these weaknesses, the community offers the following suggestions:

- More support and collaboration from the government on law dissemination and enforcement and training on aquaculture to the people
- Community fisheries should establish the clear boundary of the mangrove forest to be protected and create the conservation area to improve the natural resource condition and people's livelihoods
- Replant the mangroves
- Establish an access path in the community

## G. RIGHTS AND RESPONSIBILITIES

The community perceives that everyone has the right to fish and use the mangrove resources for as long as they follow the CF by-laws. Family fishing (e.g. hand fishing) and the use of mangroves is open to all at any time. The community also perceives that they have the right to engaged in aquaculture and develop eco-tourism activities.



**Table 12: Rights and Responsibilities of Fishers in Tum Nup Rolok**

| Fishery Resources and Land          | Rights of Fishers  | Responsibilities of Fishers  |
|-------------------------------------|--|--|
| Mangroves                           | <ul style="list-style-type: none"> <li>- Use mangroves for the whole year</li> <li>- Replant</li> </ul>                  | <ul style="list-style-type: none"> <li>- Sustainable use, protect and conserve</li> <li>- Inform and mobilize people to plant mangroves</li> </ul> |
| Fish and all resources in the water | <ul style="list-style-type: none"> <li>- Hand fishing for the whole year</li> </ul>                                      | <ul style="list-style-type: none"> <li>- Family fishing (hand fishing)</li> </ul>  |
| Channel (1,2,3)                     | <ul style="list-style-type: none"> <li>- Aquaculture</li> </ul>  | <ul style="list-style-type: none"> <li>- legally and technically</li> </ul>  |
| Coastal land                        | <ul style="list-style-type: none"> <li>- create the eco-tourism zone</li> <li>- sell things to reduce fishing</li> </ul> | <ul style="list-style-type: none"> <li>- clean the area – sanitation</li> <li>- replant mangrove and good road for tourist</li> </ul>              |

**Source:** Focus Group Discussion in Tum Nup Rolok, 9 April 2007

Fishery management is an important objective of CF establishment because the community reports that without management, the resources will decline so there will be no fish habitat, no fish, no mangrove forest and no tourism. To manage the fishery resources, they see the need to disseminate the law to the people inside and outside the community, replant mangroves, clean the coastal land where they expect to develop an eco-tourism zone in the future, be recognized by the government to help them on fisheries management, establish a conservation area in the community and explore other possible sources of income aside from fishing.

The community, particularly the CF committee is playing the central role in community fishery management in Tum Nup Rolok. In particular, the committee is negotiating in competing resource claims and in stopping illegal fishing and cutting of mangroves. The community suggests that it is

difficult to undertake fishery management on its own; it thinks that fishery management is collaboration among communities, government (local authority and fisheries institutions) and investors i.e. financial support to supplemental jobs in the CF.



Research team discussion on field data synthesis – Sihanouk vile  
Photo by: Small-Scale Fishing Communities Study Team







## SUMMARY OF KEY FINDINGS

**Photo Credit:** Small-Scale Fishing Communities Study Team



## CHAPTER 5: SUMMARY OF KEY FINDINGS

This study offers the following key findings:

- a. Fisheries is the Cambodian people's lifeline; it is a significant source of food and income and it is integral to the people's culture and way of life. Inland fishery production is estimated at 300,000-400,000 tons which makes Cambodia's freshwater capture fisheries ranking fourth in the world (Van Zalinge et al. 2000) and the Tonle Sap has the highest productivity worldwide (Baran, 2005). The wild fishery in Cambodia has been so productive that there has been little incentive for aquaculture development. In the Mekong Basin, aquaculture represents only 12% of the fish resources basin-wide (Sverdrup-Jensen 2002).
- b. Some gaps on fisheries statistics are noted by this study. For example, marine fishery production only includes fishing effort (by boat and gear) for taxable gears which are largely confined to in shore waters. There are no estimates of effort, catches or revenue collection of offshore fishery, mainly done by international fleets that land their catch in their home ports.
- c. This study notes the insufficient information on family fisheries. In fact, family fisheries used to be excluded from the official fisheries statistics. Rural households generate cash for daily consumption from family fishing (Hori et al. 2006) and a better understanding of its importance to rural household and economy is needed to establish appropriate and rational measures for sustainable fishery management and livelihoods improvement as well as in assessing traditional rights for rural people to fish and collect aquatic species.
- d. This study offers some observations on the characteristics of Cambodian villages based on the secondary data review. In particular, it emphasizes the hierarchical nature of Cambodian villages and the persisting presence of the patron-client system in the society at large. This study suggests a more careful analysis of the patronage system as it forms part of the local people's survival network. The values of trust and cooperation are also strongly built into this system.
- e. There is little direct documentation on customary practices or traditional community management in Cambodia. There are some studies (e.g. Torell, 1998; Balzer et. al., 2002) that describe beliefs, knowledge and practices that may form part of local people's traditional management system but overall, this is a gap in fisheries data.
- f. Based on existing laws, the state plays a major role in making decisions on fishery use and management. For example, Article 9 of the new Fisheries Law states that "Fisheries domains belong to state property." The type of fishery management system in place is also a decision made by the state. Even with the establishment of the CF, decisions on fishery use and management have to be approved by the state and all CF actions have to abide by the rules of the state.



- g. Even if the state is the main player decision maker on fishery management concerns, small-scale or family fishing is an option open that has always been there and thus considered “traditional” by the local people.
- h. When the fishery reform started and the CF was established, the people in the 2 study sites said that they became more aware of their right to fish and stop illegal activities through the dissemination activities of fishery institutions and local authorities. This new awareness encouraged them to take actions to stop illegal fishing e.g. destruction of the bamboo enclosure in Bak Amrek-Doun Ent that is now a pending case in court.
- i. The CF Sub-Decree and the Fisheries Law are used as basis for determining the people’s rights to fisheries i.e. Article 11 of the CF Sub-Decree. For example, people have the right to inform the authority about illegal fishing but cannot confiscate or destroy an illegal fishing gear; only the fishery authority in cooperation with local authorities can do that. The legality of people’s action (i.e. one has to always act in accordance with the law) is an important consideration to the local people.
- j. Awareness of rights to fisheries is not enough if the people do not have the capacity to assert their right and there is guidance and support from authorities. In the case of Tum Nup Rolok, the CF successfully negotiated and stopped the expansion activities of the Army and the development of the oyster aquaculture because of the CF committee’s good capacity to negotiate and the support of the fishery and local authorities. In Bak Amrek-Doun Ent CF, the people had the support of the VSG, the other neighboring CFs and the fishery and local authorities.





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## **APPENDICES**

### **APPENDIX 1: STUDY OUTLINE**

#### **ASSERTING RIGHTS, DEFINING RESPONSIBILITIES: SMALL-SCALE FISHING COMMUNITIES AND FISHERIES MANAGEMENT PERSPECTIVES IN ASIA STUDY IN CAMBODIA**

##### **A. STUDY SUMMARY & BACKGROUND**

The study in Cambodia will be conducted by the CBNRM Learning Institute in collaboration with key partners. The study will focus on small-scale fishing communities, primarily focusing on a selected coastal area of the country, while providing a broader overview based on published literature.

The study objectives are as follows:

- To document and explore the understanding that fishing communities have about their rights to fisheries and coastal resources, as well as the obligations and responsibilities associated with these rights.
- To document and discuss the initiatives being taken by fishing communities to assert their rights and to fulfill their responsibilities.

The study will draw on:

- Published information
- Other literature (unpublished articles, campaign material, petitions...)
- Discussions with key organizations working with fishing communities
- Field work in one or two locations in the country (Koh Kong and Stung Treng are tentatively selected sites)

The study will first collect country-level information (such as statistics on the population dependent on fisheries fish production, relevant legislation, management measures, overview of community-based systems, overview of issues, etc). There will also be 1-2 case studies conducted in a particular location (to be selected by the study group after consulting with key stakeholders and partners). Refer to the attached study framework for more details.

The study will be conducted from February to May 2007 and will include the following main activities (refer to the study schedule for more details on specific timing):



1. Finalize study plan and agreement between ICSF and CBNRM Learning Institute
2. Planning meetings with key fisheries stakeholders and research working group
3. Desk study: synthesis and analysis of secondary sources
4. Field research at two selected case study sites
5. Analysis of information and prepare first draft of report
6. Verification and reflection workshop
7. Incorporate comments and revise study report
8. Prepare for presentation and finalize study report
9. Presentation of study results to regional forum

The results of this study will be presented at a regional forum organized by the International Collective in Support of Fishworkers (ICSF) in May 2007 (refer to workshop prospectus for more details).

## **B. SUMMARY OF MAIN ACTIVITIES**

1. Finalize study plan and agreement between ICSF and CBNRM Learning Institute:

The proposed budget and Study schedule will be finalized by CBNRM Learning Institute and sent to ICSF on the first week of February, 2007.

2. Planning meetings with key fisheries stakeholders and research working group:

After finalizing study plan and agreement between ICSF and CBNRM Learning Institute, a planning meeting will be prepared to be conducted in the second week of February, 2007, with partners such as AFSC, PMCR, CEPA, FACT and World Fish at CBNRM Learning Institute office to i) introduce the scope of study project to partners ; ii) ask for comments from partners on the Study Outline (for the input to the questionnaire); iii) discuss about the specific location for study activities with partners and iv) identify key fisheries stakeholders and respondents to fill out research requirement.

The questionnaire (s) will be developed by the study team with the comments of the research partners from the planning meeting. If possible, the study team will check the availability of time to conduct the pre-test of questionnaire to improve the questionnaire.

3. Desk study: synthesis and analysis of secondary data:

From second week of February until the first week of March, the study team will conduct the desk study to collect the Country-level information, including statistical information (in brief) on i) population dependent on fisheries (inland, marine); ii) fisheries products (inland, marine), main species iii) Status of fisheries resources (particularly any evidence of overfishing); iv) fisheries, coastal and other relevant legislation and v) key fisheries management measures in place (including the use of MPAs as a fisheries management/ conservation measure).



After the secondary data collection, the study team will synthesize and analyze those secondary data into a written synthesis paper.

#### 4. Field research at two selected case study sites:

The field research will be conducted during March, 2007. Before the field research, there will be a research working group meeting conducted to insure the research working group's understanding on the research process.

During the field research the study team will conduct the introductory meeting with provincial partners and with the study location on the study outline.

The selection of the sample will be done according to the time and the group members. After selection of sample the research working group will conduct the interview. Photos and some short video will be taken during the field work for an evidence or reference.

#### 5. Analysis of information and prepare first draft of report:

The study team will enter the data from the field research into computer and analyze in order to write the first draft report of the study with combination of the secondary data analysis and synthesis paper.

#### 6. Verification and reflection workshop:

After the first draft report of the study has been done, in early April, the study team will prepare a reflection workshop at its office to i) reflect on the process of the study; ii) present the result and first draft report of the study to the partners and iii) to clarify with partners on research findings.

#### 15. Incorporate comments and revise study report:

After the comments were provided by the research partners at the reflection workshop, the comments will be used to revise to improve the second draft to get feedback for a final draft and circulate among partners.

#### 7. Prepare for presentation and finalize study report:

A presentation of the study results will be prepared by using the study report and based on the experience of the study team while they are in the field, then send for final comment from ICSF before presenting to a regional workshop.

#### 8. Presentation of study results to regional forum



The study team will contact with the workshop organizer in advance for the workshop agenda and identify the participants from Cambodia study team to join the workshop.

The study team will use the presentation of the study results prepared to present to the Regional ICSF workshop on Reassessing Rights, Stating Responsibilities, will be conducted on 3-5 May 2007 in Cambodia.

## C. STUDY SCHEDULE

| Main Activities   | Feb |    |    |    | March |    |    |    | April |     |     |     | May |
|---|-----|----|----|----|-------|----|----|----|-------|-----|-----|-----|-----|
|   | W1  | W2 | W3 | W4 | W5    | W6 | W7 | W8 | W9    | W10 | W11 | W12 | W13 |
| 1. Finalize study plan and agreements   | X   |    |    |    |       |    |    |    |       |     |     |     |     |
| 2. Planning meetings with key fisheries stakeholders and research working group |     | X  |    |    |       |    |    |    |       |     |     |     |     |
| 3. Desk study: synthesis and analysis of secondary sources                      |     | X  | X  | X  | X     |    |    |    |       |     |     |     |     |
| 4. Field research at one or two selected case study sites                       |     |    |    |    | X     | X  | X  | X  |       |     |     |     |     |
| 5. Analysis of information and prepare first draft of report                    |     |    |    |    |       |    | X  | X  | X     |     |     |     |     |
| 6. Verification and reflection workshop   |     |    |    |    |       |    |    |    | X     |     |     |     |     |
| 7. Incorporate comments and revise study report                                 |     |    |    |    |       |    |    |    | X     | X   | X   |     |     |
| 8. Prepare for presentation and finalize study report                           |     |    |    |    |       |    |    |    |       |     |     | X   |     |
| 9. Presentation of study results to regional forum                              |     |    |    |    |       |    |    |    |       |     |     |     | X   |



## APPENDIX 2: CHECKLIST FOR FOCUS GROUP DISCUSSION

### ASSERTING RIGHTS, DEFINING RESPONSIBILITIES: SMALL-SCALE FISHING COMMUNITIES AND FISHERIES MANAGE- MENT PERSPECTIVES IN ASIA STUDY IN CAMBODIA

#### CHECKLIST FOR FOCUS GROUP DISCUSSIONS

##### 1. Some Clarification on definitions before the FGD

- How do you define fishery resources? What do these include? (related to rights)
- How do you define coastal lands/fishing domain? What do these include?

##### 2. Background information on location under study

- What is the name of your CF?
- Where is it located? (Village, Commune, District, Province)
- When was your CF established?
- How many members does the CF have? How many are men? How many are women?
- What is the total population in your community (includes non member of CF)? What are their main occupations? Please use the table below (whole community not only one village)

| Livelihood Activities               | Number of Families Involved | Men only participate (√) | Women only participate (√) | Both men & women participate (√) |
|-------------------------------------|-----------------------------|--------------------------|----------------------------|----------------------------------|
| Fishing Activities                  |                             |                          |                            |                                  |
| Fish Gill nets (Mong Trey)          |                             |                          |                            |                                  |
| Shrimp Gill nets (Mong Bangkea)     |                             |                          |                            |                                  |
| Crab traps (Lorb Kdam)              |                             |                          |                            |                                  |
| Crab Gill nets (Mong Kdam)          |                             |                          |                            |                                  |
| Push net by hand                    |                             |                          |                            |                                  |
| Hook and line                       |                             |                          |                            |                                  |
| Spear                               |                             |                          |                            |                                  |
| Catch crabs by hand                 |                             |                          |                            |                                  |
| Collection of common geloina (Krum) |                             |                          |                            |                                  |



|                                     |  |  |  |  |
|-------------------------------------|--|--|--|--|
| Collection of blood cockles (Ngeav) |  |  |  |  |
| Mechanized push nets                |  |  |  |  |
| Purse seine                         |  |  |  |  |
| Set bag net (Aoun Hum)              |  |  |  |  |
| Trawler                             |  |  |  |  |
| Others                              |  |  |  |  |
| Post-Fishing Activities             |  |  |  |  |
| Middlemen                           |  |  |  |  |
| Sell fish in the market             |  |  |  |  |
| Others                              |  |  |  |  |
| Land Activities                     |  |  |  |  |
| Farming                             |  |  |  |  |
| Vegetable gardening                 |  |  |  |  |
| Animal raising                      |  |  |  |  |
| Salt farm labor                     |  |  |  |  |
| Construction labor                  |  |  |  |  |
| Store seller                        |  |  |  |  |
| Motor driver                        |  |  |  |  |
| Others                              |  |  |  |  |

f) What are the main fishing gear, main species caught and average catch per trip? Please use the table below.

| Type of Fishing Gear             | Main Species Caught | Present Average Catch/trip (In kilograms) | Season-ality |
|----------------------------------|---------------------|---|--------------|
| Fish Gill nets (Mong Trey)       |                     |   |              |
| Shrimp Gill nets (Mong Bang-kea) |                     |   |              |
| Crab traps (Lorb Kdam)           |                     |   |              |
| Crab Gill nets (Mong Kdam)       |                     |   |              |
| Push net by hand (Dun Dai)       |                     |   |              |



|                                  |  |  |  |
|----------------------------------|--|--|--|
| Hook and line                    |  |  |  |
| Ray long line                    |  |  |  |
| Spear fishing (Snor)             |  |  |  |
| Mechanized push nets (Dun Masin) |  |  |  |
| Purse seine                      |  |  |  |
| Set bag net                      |  |  |  |
| Trawler                          |  |  |  |
| Others                           |  |  |  |

- g) Is the overall fish catch increased or decreased? When? Why?
- h) Can you identify what species have disappeared? When? Why?
- i) Does the CF have by-laws or statute? If yes, what are the main rules or regulations in the by-laws?
- j) Is your CF demarcated? When was it demarcated? Who joined the demarcation?  
How was the boundary demarcated? E.g. set up buoys
- k) Does the CF have an area agreement? If yes, who are the main stakeholders that signed and recognized the agreement?
- l) Does the CF have a management plan? If yes, what are the main objectives and activities of the management plan?

### 3. Communities: Structural and institutional aspects

- a) Describe the socio-economic class in the community according to the following sample criteria. You can add or delete criteria based on the agreement of the participants.

| Criteria            | POOR | MIDDLE | RICH |
|---------------------|------|--------|------|
| Daily Income/family |      |        |      |
| Type of boat        |      |        |      |
| Fishing gear used   |      |        |      |
| Level of education  |      |        |      |
| Number of children  |      |        |      |
| Type of house       |      |        |      |
| Others              |      |        |      |

- b) Estimate the number of families in each socio-economic class. Note that this might be a difficult task. If the numbers are difficult to estimate, draw a circle and ask the participants to divide the circle according to the 3 socio-economic classes.



| Socio-economic Class | Number of Families | Percentage |
|----------------------|--------------------|------------|
| Poor                 |                    |            |
| Middle               |                    |            |
| Rich                 |                    |            |
| Total                |                    |            |

- c) What is the socio-economic class (poor, middle or rich) of the majority of people in your area? Why?
- d) What factors help to make someone rich? Example: education, know how to save money, have capital
- e) What factors help to make someone poor? Example: lack of skills and ideas, poor fortune
- f) Are there any other associations or groups in the community? What are these? What is their composition? What do they do in the community? For example, there is a wat association composed of elderly men and male monks. They are in charged of assisting the monks in the pagoda.
- g) Are there any organizations or associations for women? What are these? Describe the women who are part of the organization.
- h) Are there any women leaders in the community? What do they do?
- i) Do you think women's interests are addressed in your community? For example, family violation is an issue for women and there are no groups that address this problem.
- j) Are there any groups of fishers who control the fisheries? Who are they? Why do they control the fisheries? For example, there are shrimp bag nets in the community and they catch most of the resources because they are owned by the rich families and power men in the community.
- k) Are there any respected elders in the community? Who are they? What do they do for the community?
- l) What are the main religious groups in the community? Who are members of these groups? For example, 10% of the people in the community belong to Islam and the members are all fishing families.
- m) Who resolves conflicts in the community? How do they resolve these conflicts?

#### 4. Conception of community

- List down the key characteristics of your community as shown in the example below

Our community is a:

- fishing community
- Cham community
- Poor community
- community of shrimp catchers



- Do you consider everyone as part of your community? Is there anybody who does not belong to your community? Why?

## **5. Communities' Perception of Claims to Fisheries**

### Claims of Fishers to Fishery Resources

- a) Do fishers have the legal rights over the fisheries in the lake, river and seas?
- b) What are these rights?
- c) Are these claims seasonal?
- d) Are those rights traditional or relatively recent? Why?
- e) Are there fishers who claim these resources even without any legal basis? Who are they and what is the basis of their claim? For example, a river section is restricted because of a claim by a long-time resident that it is part of the land that his ancestors have passed on to him.
- f) Are claims to fisheries recognized and supported by neighboring communities?
- g) Who opposes these claims to fisheries? Why?

### Claims of Other People to Fishery Resources

- h) Is there anybody in your community that is not allowed to use the fisheries in the lake, river and seas?
- i) Is this seasonal?
- j) Why aren't they allowed to use the fishery resources?
- k) When did this happen?
- l) Are outsiders allowed to use the fisheries in the lake, river and seas?
- m) Is this seasonal?
- n) Why aren't they allowed to use the fishery resources?
- o) When did this happen?
- p) Are there fishing gears allowed? Why or why not?
- q) Are they fishing gears prohibited? Why or why not?

## **6. Communities' Perception of Claims to Coastal Lands**

### Claims of Fishers to Coastal Lands

- a) How long have you been living in this area?
- b) Where did you live before?
- c) Why did you decide to move here?
- d) Do you have legal titles to your land for housing?
- e) How did you get your land to be titled (criteria)? When was it titled?
- f) If your land is not titled, do you have traditional rights to stay on coastal lands, and use coastal spaces (for drying nets/ fish etc.) that are recognized in some way by the state or local authority?
- g) Are those rights traditional or relatively recent? Why?



### Claims of Other People to Coastal Lands

- h) Is there anybody in your community that does not have any access to coastal land?
- i) Why don't they have access?
- j) When did this happen?
- k) Are outsiders allowed access to coastal land?
- l) Why don't they have access?
- m) When did this happen?

## **7. Community actions to support claims**

- a) What are the main threats to the claims on fisheries?
- b) What are the main threats to the claims for housing and occupational purposes?
- c) What did the community do to address these threats?
- d) What are the difficulties in addressing these threats?

## **8. Community rights regimes**

For example, a threat to fisheries is the increase in the number of blood cockle boats fishing near the community. To stop them, the community established the CF. Statute and by-laws have been approved and the CF area agreement was signed and recognized by stakeholders. However, some of the commune police are corrupt and they support the blood cockle boats. The Commune Chief also supports them so until now, these boats still fish inside the CF. The CF does not have enough resources to patrol and their boats are too small to stop the blood cockle boats.

- 1. What are the changes that happened to your community after the establishment of the CF?
- 2. Has access to resources improved? Why or why not?
- 3. Are there migrant fishers in your community? Who are they?
- 4. Are migrant fishers allowed access to fish in your community? On what terms and conditions?
- 5. What are your suggestions to improve fishery management and make sure that there is equity? Who should do it?
- 6. Do you support the CF establishment? Why or why not?
- 7. What are the weaknesses of the CF now? How do you address these weaknesses?





## 9. Rights and responsibilities

- Summarize the rights and responsibilities of fishers to fishery resources and coastal lands

| Fishery Resources and Land          | Rights of Fishers                    | Responsibilities of Fishers |
|-------------------------------------|--------------------------------------|-----------------------------|
| Fish and all resources in the water | - right to fish the whole year round | -not to use illegal gears   |
| Mangroves                           |                                      |                             |
| Seagrass beds                       |                                      |                             |
| Seaweeds                            |                                      |                             |
| Rivers, streams and canals          |                                      |                             |
| Coastal land                        |                                      |                             |
| Others                              |                                      |                             |

## 10.Perceptions on fisheries managementa)

- Do you think there is a need to manage fishery resources? Why or why not?
- What are the key actions needed to manage the fishery resources?
- Who should manage the fishery resources?
- What should be the role of government in managing the fishery resources?
- What should be the role of communities in managing the fishery resources?





## APPENDIX 3: STUDY TEAM

### LIST OF STUDY TEAM

The study team consists of the following personnel from the CBNRM Learning Institute and Community Fishery Development Office (CFDO):

|   | Name            | Role                                     | Phone       | Email  |
|---|-----------------|--|-------------|--|
| 1 | Sim Bunthoeun   | Study Coordinator                        | 012 918 326 | <a href="mailto:bunthoeunsim@cbnrmli.org">bunthoeunsim@cbnrmli.org</a> |
| 2 | Tep Chansothea  | Research Assistant                       | 012 705 072 | <a href="mailto:sothea@cbnrmli.org">sothea@cbnrmli.org</a>             |
| 3 | Meng Kimsan     | Research Assistant                       | 016 505 839 | <a href="mailto:kimsan@cbnrmli.org">kimsan@cbnrmli.org</a>             |
| 4 | Chap Sopanha    | FTF, Research Study Team                 | 012 630 602 | <a href="mailto:sopanha@cbnrmli.org">sopanha@cbnrmli.org</a>           |
| 5 | Tit Phearak     | Counterpart Research Assistant from CFDO | 012 843 634 | <a href="mailto:phearaktit@yahoo.com">phearaktit@yahoo.com</a>         |
| 6 | Deap Polin      | Counterpart Research Assistant from CFDO | 011 759 214 | <a href="mailto:polin_deap@yahoo.com">polin_deap@yahoo.com</a>         |
| 7 | Ken Serey Rotha | Executive Director                       | 012 404 065 | <a href="mailto:sereyrotha@cbnrmli.org">sereyrotha@cbnrmli.org</a>     |
| 8 | Toby Carson     | CBNRM Advisor                            | 012 962 092 | <a href="mailto:carson.tobias@gmail.com">carson.tobias@gmail.com</a>   |
| 9 | Becky Guieb     | Consultant Advisor                       | 012 604 135 | <a href="mailto:beckyguieb@yahoo.ca">beckyguieb@yahoo.ca</a>           |





## APPENDIX 4: STUDY PARTNERS

### LIST OF STUDY PARTNERS

The study team works closely with key partners (research working group members):

|    | Name               | Function  | Phone        | Email                    |
|----|--------------------|---|--------------|--------------------------|
| 1  | Ly Vuthy           | Head of CFDO  | 011 660 840  | lyvuthy.fia@maff.gov.kh  |
| 2  | Em Channarith      | FACT  | 012 708 193  | naith_fact@yahoo.com     |
| 3  | Yumiko Kura        | World Fish Center                                     | 012 705 312  | y.kura@cgiar.org         |
| 4  | Magnus Torell      | SEAFDEC   | 012 663 905  | magnus@seaftec.org       |
| 5  | Nen Chamroeun      | Staff of FiA Sihanouk vile Cantonment                 | 016 777 312  | N/A                      |
| 6  | Phum Hay           | Volunteer, VSG  | 012 88 21 87 | N/A                      |
| 7  | Ros Chhorvyvorn    | Executive Director, VSG                               | 012 882 187  | vsg@online.com.kh        |
| 8  | Ung Tivea          | Project Officer, AFSC, Sre Ambel                      | 012 694 460  | 012694460@mobitel.com.kh |
| 9  | Kim Nong           | Project Manager, PMCR                                 | 012 772 878  | pmmr@online.com.kh       |
| 10 | Yin Dara           | Fisheries Program Of-ficer, Oxfam GB                  | 012 895 403  | Ydara@oxfam.org.kh       |
| 11 | Tep Bunnarith      | Executive Director, CEPA                              | 012 89 5624  | tep@cepa-cambodia.org    |
| 12 | Leng Sarorn        | FACT/ Sihanouk Vile                                   | 012 556 729  | lsarorn@yahoo.com        |
| 13 | Thor Sensereivorth | National Project Coordinator, TCP/ CMB/3004, FAO/FiA. | 012 868 815  | sereywath@hotmail.com    |

#### Note:

- CBNRM LI = Community Based Natural Resources Management Learning Institute
- CFDO = Community Fisheries Development Office (of Fisheries Administration)
- FACT = Fisheries Action Coalition Team
- SEAFDEC = Southeast Asian Fisheries Development Center
- AFSC = American Friends Service Committee
- PMCR = Participatory Management of Coastal Resources
- Oxfam GB = Oxfam Great British
- CEPA = Culture and Environment Preservation Association
- FiA = Fisheries Administration
- VSG = Village Support Group
- FAO = Food and Agriculture Organization of the United Nation

