

Aquatic Resources Valuation and Policies for
Poverty Elimination in the Lower Mekong Basin

Profile for Aquatic Resources Management:

Ou Ta Putt, Chamkar Youn and Prek Sromoach Villages

Kampong Khleang Commune,
Soutr Nikom District,
Siem Reap Province,
Cambodia

Danilo C. Israel, Mahfuzuddin Ahmed, Nao Thuok and Ly Vuthy



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2005

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Drawing a Village Profile for

The stage is set for the formal implementation of community-based management in the aquatic-resources dependent villages of the country with the passing of the Sub-Decree on Community Fisheries in Cambodia. Together with this welcome development, useful data and information have become even more important to support stakeholder-based planning and overall aquatic resources management at the village level.

The preparation of this village profile is one of the activities of the Aquatic Resources Valuation and Policies for Poverty Elimination in the Lower Mekong Basin Project, known as the Mekong Valuation Project. The project was funded by the DFID and implemented by the WorldFish Center and the Department of Fisheries (DoF) of Cambodia. The purpose of the profile is to gather and present important data and information useful for community-based aquatic resources management in the villages.

This publication is part of a collection of three profiles covering nine aquatic resources-dependent villages in the provinces of Stung Treng, Takeo and Siem Reap. The profiles are important because in most, if not all, of the aquatic-resources villages of Cambodia, critical data and information useful for planning and management are not available in a documented form. The development of the village profiles is viewed as a basic requirement for planning and overall management. It is only an initial step to identify future programs and projects related to aquatic resources.

The profiles depict the present state of the villages and their aquatic resources. In general, the villages have limited infrastructure and other physical resources. In the villages of Takeo and Siem Reap, total flooding occurs in the wet season and villagers must rely on transportation by boat. In Stung Treng villages, partial flooding is also a problem as it makes the few existing roads significantly impassable during the wet season.

In terms of social concerns, health care services are limited in all villages and thus sickness is common. Many households have no toilets and so water bodies and open fields are used for discharging domestic wastes. Many villagers are unable to read and write due to the lack of education, and educational services in the villages are limited to primary schools.

Most villagers derive their income from occupational sources, rice farming and fishing being the main primary and secondary occupations. Many of them, particularly those belonging to lower income groups, have few or no alternative occupations and those in dire need of money usually borrow at prohibitive rates of interest, mainly from private lenders.



Community Fisheries Management

In general, villagers are dependent on aquatic resources not only for fishing but also for other livelihood activities including fish processing and the gathering of aquatic plants, animals and wood among others. The majority of households in the villages that belong to the lower wealth category depend to a significant extent on available aquatic resources for subsistence and survival.

The villages have access to vast aquatic resources including the Mekong River in Stung Treng, floodplains in Takeo, and the Tonle Sap Lake in Siem Reap as well as other smaller water bodies. Some villages have flooded forests and fishing lots that are now either fully or partially converted for public use. Flooded forests are also sources of wood for villagers. In general, the villages that are entirely flooded in the wet season in Takeo and Siem Reap provide areas for fishing and other aquatic resources-based livelihoods for the villagers.

The villagers face important management issues related to the use of aquatic resources that include illegal fishing, increasing number of fishermen, clearance of flooded forests, poor monitoring and enforcement by authorities and other issues. They also face direct access issues related to the use of aquatic resources including the payment of access fees, the presence of fishing lots, the presence of fish sanctuaries and/or the imposition of closed seasons. For the most part, villagers are to some extent aware of overall aquatic resource conditions in their villages and have proposed certain measures to improve on their management.

At present, many of the villages have already formed Community Fisheries Committees tasked to manage these resources. However, these committees have been unable to fully discharge their intended duties and functions because of limitations in financial resources and inadequate knowledge among members in aquatic resource management. Other than these committees, the villages have existing common administrative organizational structures that attend to management matters.

In conclusion, with the inadequacy of documented data and information these village profiles, drawn from the villagers themselves, provide a clearer and more definite reflection of these communities and the aquatic resources to be managed. The data and information presented here provide a general background to the villages and their aquatic resources. It is hoped that these profiles will be useful in future planning and management activities in the villages.

Introduction

This village profile presents a summary of the demographic, socioeconomic, management and other related data and information gathered for the three villages of Ou Ta Putt, Chamkar Youn and Prek Sromoach in Kampong Khleang commune, Siem Reap province. The data were gathered using household cross-section surveys, household longitudinal monitoring, participatory rural appraisals (PRA) and provincial workshops conducted in 2003 to 2004.

The data presented in this profile as well as additional information on the villages are also contained in Israel et al. (2005a, 2005b). The objective of the profile is to provide an information base for future research and development activities in the villages, particularly for aquatic resources management. The profile reflects the collective output of collaboration and consultation with the village communities.

Siem Reap province is located in the northwestern side of Cambodia; in 2004 the population was close to 734 000 people. It is bordered in the north by Otdar Mean Chey province, in the south by the Tonle Sap Lake, in the east by Preah Vihear province and in the west by Banteay Mean Chey

province (Figure 1). With a land area of 10 299 square kilometers, Siem Reap has a population density of 71 persons per square kilometer; it has twelve districts, 100 communes and 882 villages.

Kampong Khleang commune is located in Soutr Nikom district (Figure 2). It is bordered in the north by Dan Run commune, in the south by Tonle Sap Lake, in the east by Kien Sangke commune, and in the West by Chi Kreng commune. Kampong Khleang commune has ten villages, and a population size of about 11 000 people. The commune is 78 percent Khmer and 22 percent Vietnamese, all of whom are Buddhist (Figure 3).

This profile provides a background to the three villages of Ou Ta Putt, Chamkar Youn and Prek Sromoach in the Kampong Khleang commune. The first section of the report provides a description of the physical, natural, human, financial, and social capital as well as the administrative structures of each village, the second section provides a profile of the livelihoods, vulnerability, stakeholders, and access and management issues faced by the villages. Additional data on selected household characteristics is presented in Appendix 1.

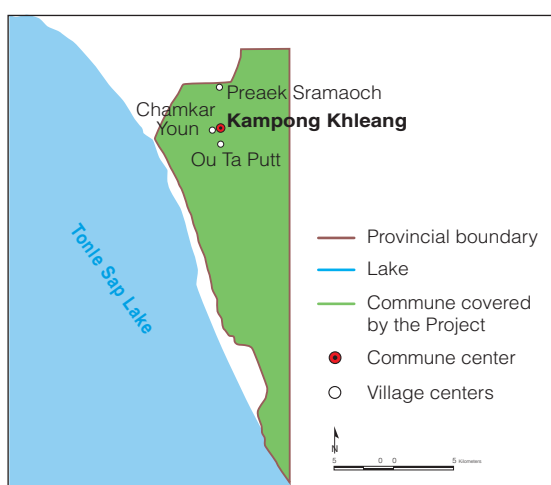


Figure 2. Map of Kampong Khleang commune

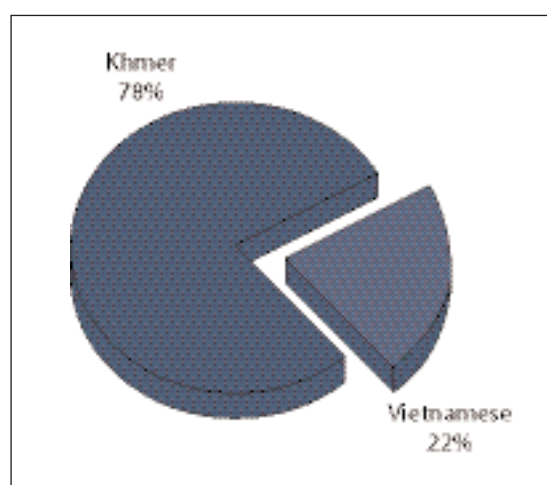


Figure 3. Ethnicity of the Kampong Khleang commune

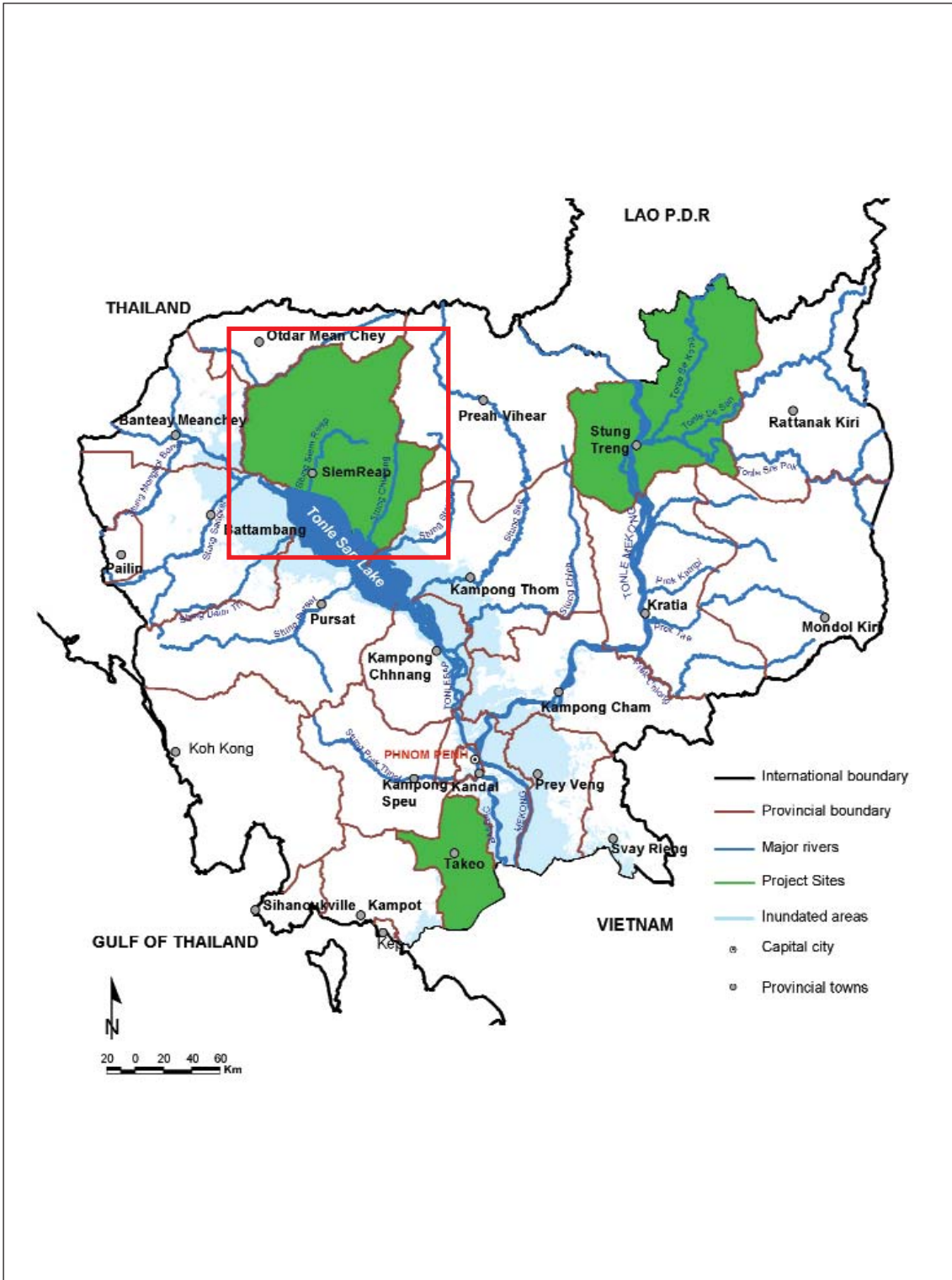
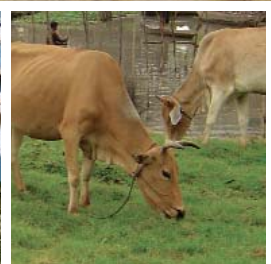
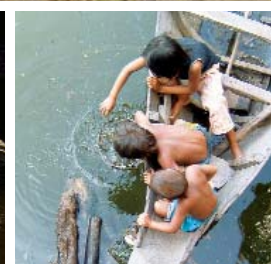


Figure 1. Map of Cambodia and the provincial sites of the Mekong Valuation Project highlighting Siem Reap province



Village Resources

**Ou Ta Putt, Chamkar Youn and
Prek Sromoach**

Ou Ta Putt

Physical Capital

Ou Ta Putt is bordered by Tachra Neang village in the north, free land in the south, except for part of Tonle Sap Lake that used to be Fishing Lot No. 6, Chey Chet village in the east, and Tonle Sap Lake to the west (Figure 4). The land area is estimated at 750 hectares. The village has no pagoda, school or health center but has seven stores. There are only 1.5 kilometers of road and these are not passable during the wet season due to flooding. Villagers use water transportation all year round but more so during the wet season.

The village has 126 motorized boats and 211 non-motorized boats. The boats are used for fishing and for transporting people and goods during both the dry and wet seasons. The sources

of power and lighting in the village include kerosine lamps, torches, candles and batteries that are charged by a generator owned by a villager from the neighboring village of Tachra Neang. For cooking, villagers use wood gathered from flooded forests. The main sources of drinking water in the village are dug wells and the water bodies around the village. Some households use rainwater during the wet season for drinking. For water treatment, households allow sediments to naturally subside to the bottom of containers before drinking. In some cases, drinking water is also boiled. Some households own black and white televisions and radios. A few villagers own cell phones for communication. Four households own radio communication telephone systems, which are used for communicating with other units in the villages and the province.

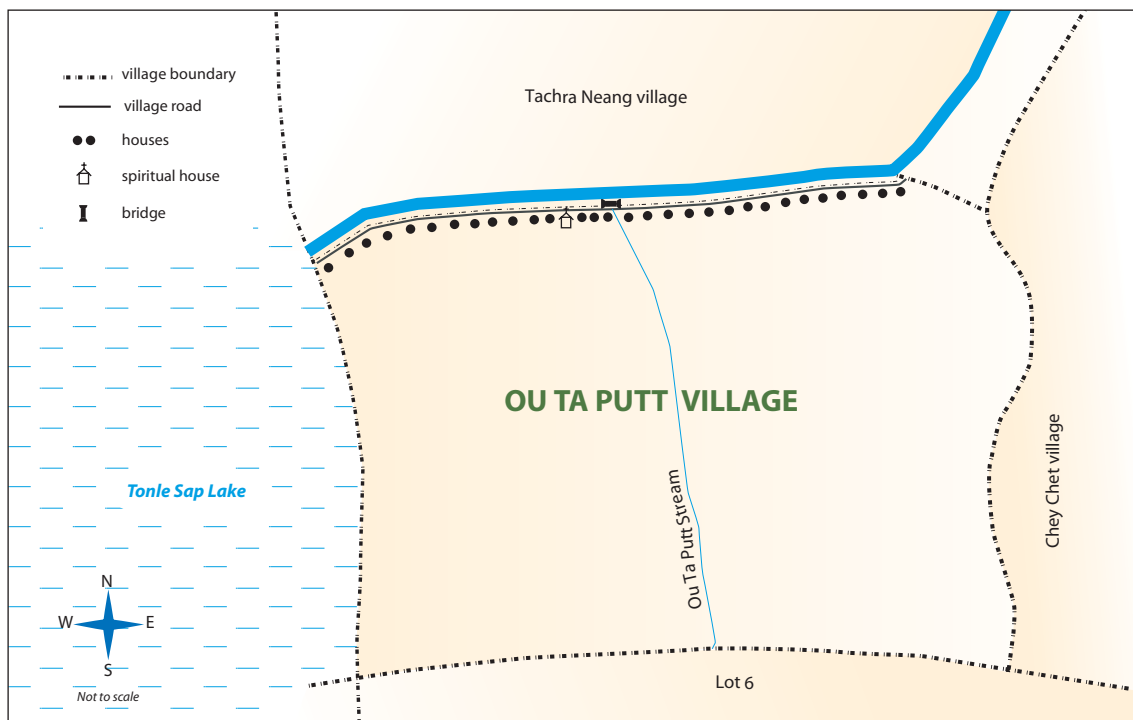


Figure 4. Physical map of Ou Ta Putt village

About 60 percent of the houses in the village are made of wood with roofs made from palm leaves, 30 percent of them are made of wood with zinc roofs, and 10 percent are made of wood with tile or fibro cement roofs. There are no toilets in any homes; villagers use fields and water bodies for the discharge of human wastes. Residential lands are generally privately owned. Some households own pigs and chickens and other animals.

Natural Capital

Ou Ta Putt has no upland forest or agricultural area (Figure 5). Its freshwater resources include the Kampong Khleang River and the Srah pond.

Villagers also have access to Tonle Sap Lake. The village has 450 hectares of flooded forests, which is a source of wood and other forest products. Freshwater resources are utilized for fishing and transportation. There used to be a fishing lot in the village, Fishing Lot 6, but it has been fully converted into a community fishery management.

The major fish species caught in the village are trey kamp lenh (55%), trey riel (20%), trey kros (10%), trey ros (10%) and trey kan-long (5%) (Figure 6). The major gears are gill net (85%), small mesh size traps (10%) and hook and long line (5%) (Figure 7). Small-scale fishing is dominant in the village, with only two percent not classified in this category.

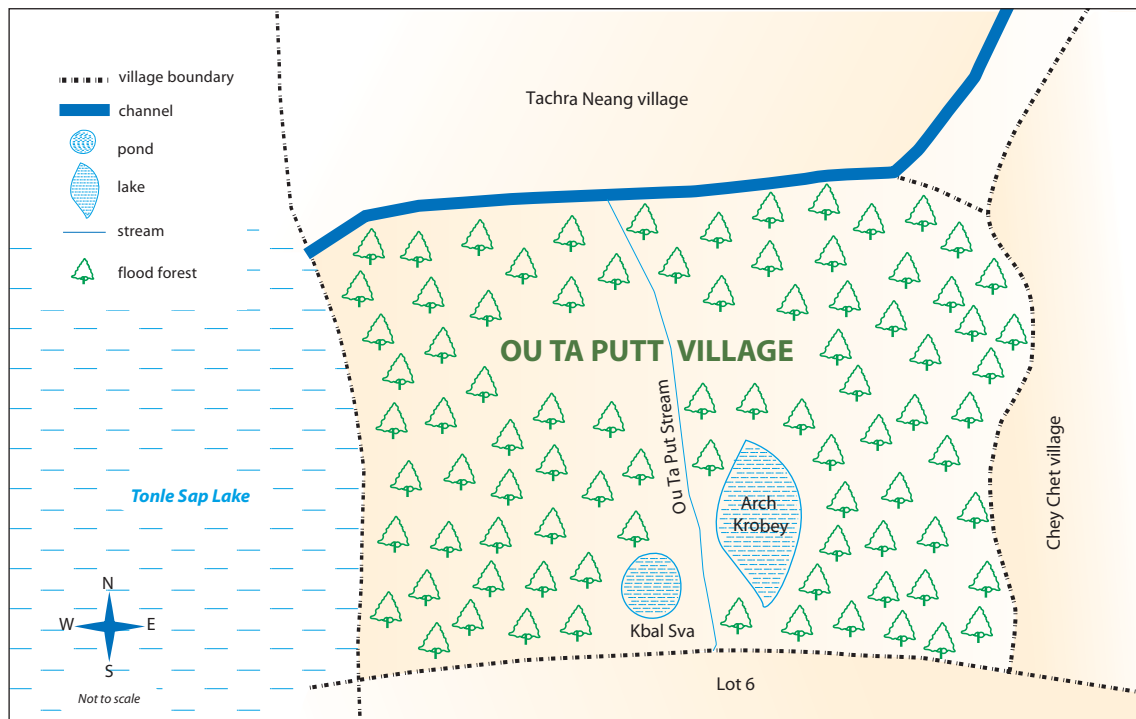


Figure 5. Natural resources map of Ou Ta Putt village

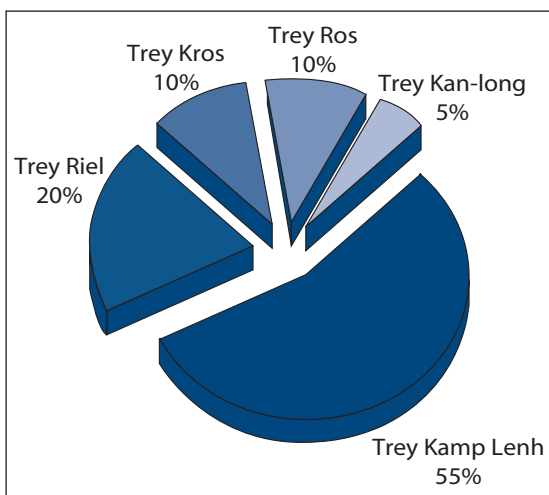


Figure 6. Main fish species caught in Ou Ta Putt

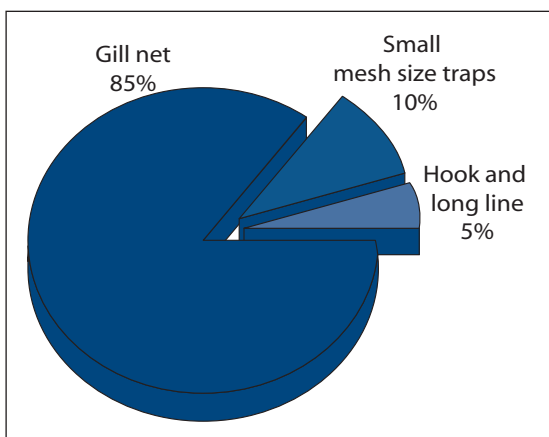


Figure 7. Type of gear used by households to catch fish in Ou Ta Putt

Human Capital

In 2004, the population of Ou Ta Putt was 1 329, of which 604 were men and 725 were women. With 249 total households, the average household size was 5.3 persons and the population density was 1.8 persons per hectare. All of the people in the village are Khmer and Buddhist.

Only about four percent of the villagers can read and write in Khmer and no one can read and write in English. About half the community has no formal education at all. Since the village has no primary school, children who want a primary education study at Phsa Kleang village in the same commune. The lack of money and the need to

assist in household and farming chores are two overriding reasons why many students do not seek education beyond the primary level.

The incidence of sickness reported among the villagers in Ou Ta Putt each year is roughly 10 percent for adults and 30 percent for children. The most common diseases are rheumatism, headache, fever, stomach ache, and diarrhea. When they get sick, villagers simply take a rest or try to continue their work without medication. They get medication from stores in the village or those in the provincial capital. Otherwise, they produce traditional medicine at home. Aquatic materials used for the production of traditional medicine include plants such as traok, taou, raing and morning glory and oils extracted from turtles, snakes and other aquatic animals. Doctors from outside seldom visit the village and even if they do, activities are usually related to training in the medication of the sick, and not in actual cures. Vaccination services are provided by the commune health center and some villagers avail themselves of this option.

The villagers came up with their own criteria for ranking their households in terms of wealth (Table 1). Of all the households in the village, 80 percent were categorized as lower wealth, 15 percent were of medium wealth and only 5 percent were thought to be of higher wealth. In comparison to other villages in the commune, villagers ranked themselves as being a lower wealth community.

Financial Capital

Ninety-nine percent, of the people in Ou Ta Putt derive their income from occupational sources; the others generate their income from leased properties. None of the villagers receive income support from relatives or outside sources. About fifty percent of the villagers save money, most use the funds later to repair their homes and boats, buy household equipment or make new boats. A similar percentage of villagers borrowed money from NGOs, local money lenders, neighbors and people from other villages. Villagers borrow money for various reasons, including in time of sickness or accidents, to finance a wedding, or to buy food. There are two money lenders in the village and their interest rates are reported to be high.

Table 1. Wealth ranking of households in Ou Ta Putt village

Characteristics	Higher wealth households	Medium wealth households	Lower wealth households
Area of owned land	10m x 100m	7m x 70m	6m x 50m
Type of house	Made of wood 20m x 10m area	Made of wood 15m x 6.5m area	Made of wood or tree 6m x 4m area
Type of roof	Made of zinc or tile	Made of zinc or palm leaves	Made of palm leaves
Occupation of household	Setter of cylinder traps, fish culturist, store owner, passenger boat operator, money lender	Setter of cylinder traps and nets, store owner, fish processor, pig grower	Setter of nets, hook and line, seller of vegetables, manual laborer, collector of wood for sale
Other things owned	Motorized boat, motorbike, color television, water pump, cell phone, sewing machine	Non-motorized boat or motorized boat, color television, motorbike, radio, cassette recorder	Small boat, bike, black and white television, radio, cassette recorder

In some instances, borrowing among neighbors in the village is in-kind and also paid in-kind, such as when rice is borrowed and paid for with labor service. Collateral is usually not required since agreements are conducted in good faith and trust among villagers. However, lenders assess the paying capability of borrowers by examining their income and property profiles. In households, the women usually handle the family purse and make family expenditure, but the borrowing and lending of money are mutually decided between husband and wife.

Table 2. Celebrations and social activities in Ou Ta Putt village

Month	Name of celebration	Description
February	Bon Da Lean	Celebration of rice harvest
February-March	Bon Meak Bochea	Commemoration of the spontaneous gathering of monks to listen to Buddha's preaching
April	Chol Chhnam Khmer	Celebration of Khmer New Year
May	Bon Pisaak Bochea	Commemoration of the birth of Buddha
July	Chol Vosa	Celebration of the start of the wet season
September-October	Bon Phchum Ben	Offering of food for the dead
October-November	Chenh Vosa	Celebration of the end of the wet season
October-November	Bon Kathen Tean	Contribution of money for the support of the pagoda

Social Capital

Ou Ta Putt is a socially integrated village where trust and goodwill among villagers exist. The village celebrates social activities that are similar to all other villages in the commune (Table 2). Since the village has no pagoda, the village head and Village Development Committee usually take the lead in organizing activities that are supported by the general population. The women, youth and children participate in most of these activities. In general, villagers have good relationships with each other but misunderstandings that are unavoidable are usually resolved by neighbors and village elders.

Village Administration

The village is administered by the village head with a vice chief and one member under him. Under them are ten group chiefs (Figure 8). The village has no Community Fishery Committee.

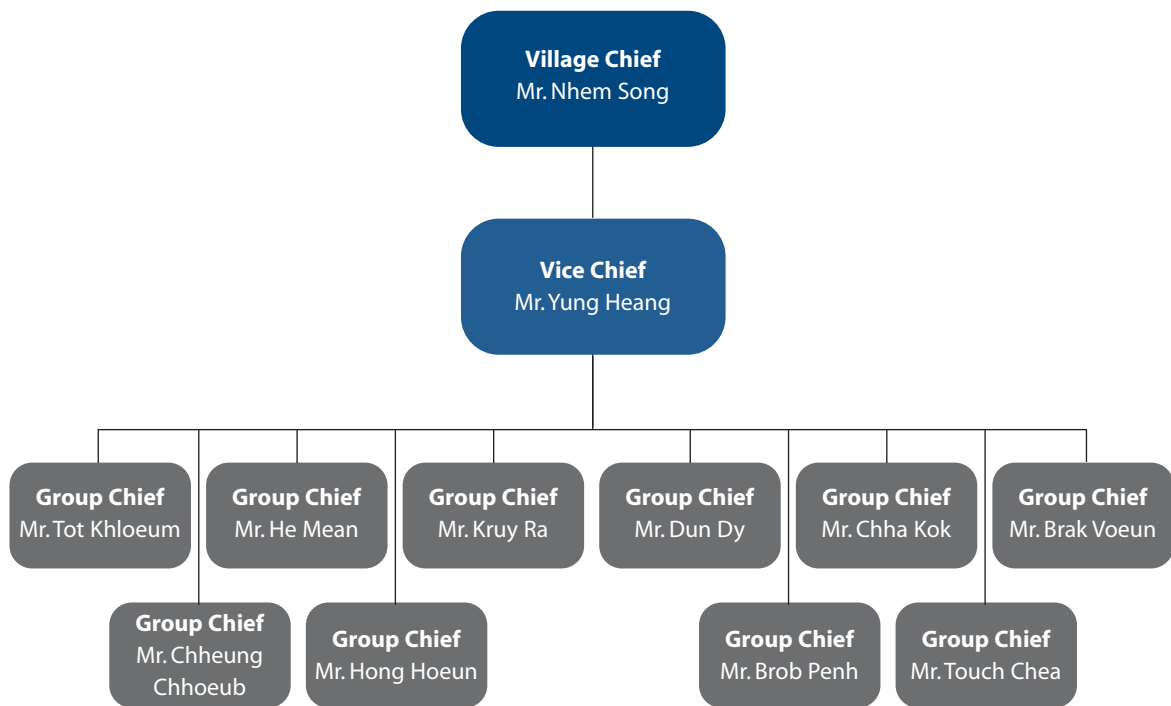


Figure 8. Ou Ta Putt village organizational chart

Chamkar Youn

Physical Capital

Chamkar Youn is bordered by Phsa Khleang village in the north, Tachra Neang village in the south, Chey Chet village in the east, and the Tonle Sap Lake in the west (Figure 9). The exact land area of the village is not known. The village has no pagoda, school or health center but has eight stores. It has 700 meters of road that are not only inadequate but rendered impassable during the wet season due to flooding. Water transportation is used by villagers all year but more so during the wet season. Of the boats in the village, 20 percent are motorized and 80 percent are non-motorized.

The sources of power and lighting in the village include batteries that are charged by a generator owned by an individual in the commune center of Phsa Khleang, kerosine lamps, torches and candles. For cooking, the villagers in Chamkar

Youn use wood gathered from the flooded forests. The main sources of drinking water in the village are the water bodies around the village. Some households also collect rainwater during the wet season for drinking. Sediments are usually allowed to gradually subside to the bottom of containers before drinking. In some households, drinking water is also boiled. Some of the households in the village own black and white televisions and radios. Two households own cell phones while seven households have radio communication telephone systems.

About 70 percent of the houses in the village are made of wood with roofs made of palm leaves, 20 percent are made of wood and have zinc roofs, and 10 percent are made of wood and have tile or fibro cement roofs. More than 95 percent of all households in the village do not have toilets; villagers use fields and water bodies

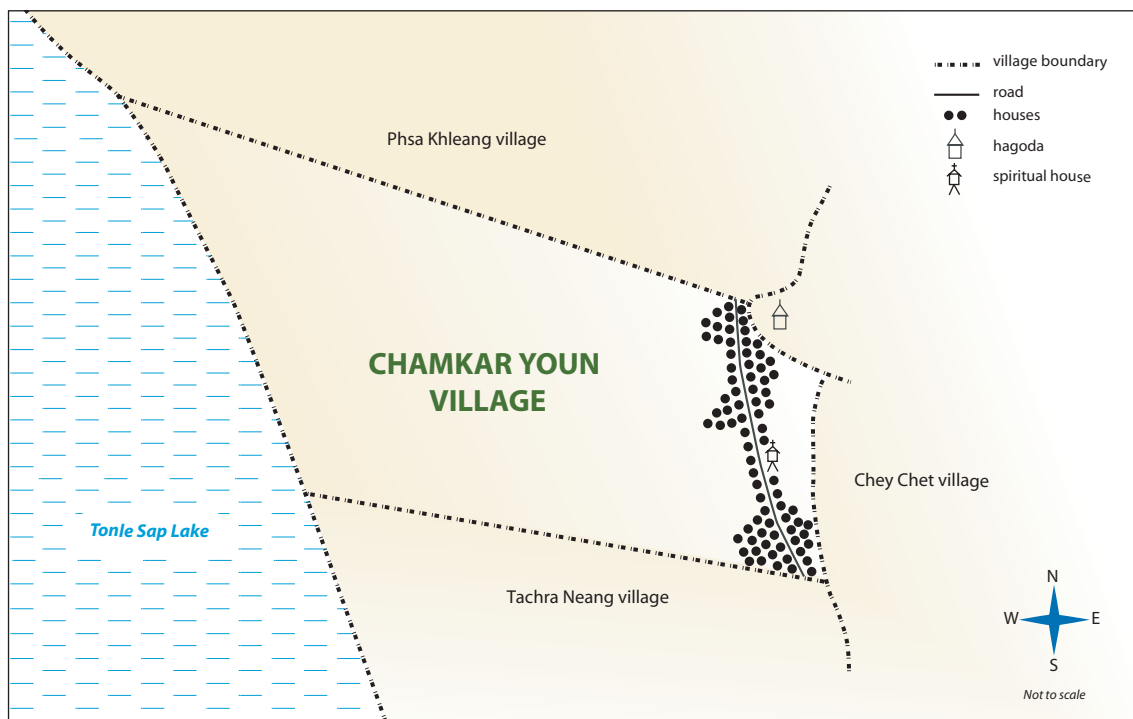


Figure 9. Physical map of Chamkar Youn village

for the discharge of human waste. Only four households have toilets. Residential lands in the village are generally privately owned, while some rent land and a few others are landless. Seventy households owned pigs and chickens as well as other household animals.

Natural Capital

Chamkar Youn has no upland forest area or agricultural area (Figure 10). Its freshwater area includes the Kampong Khleang River, the Sras Chik pond and access to Tonle Sap Lake. Flooded forests total about 35 hectares, it is the source of wood and other forest products for the villagers. Freshwater resources are mainly utilized for fishing and transportation. The village has no fishing lot.

The major fish species caught in the village are trey chang-va (60%), trey kros (15%), trey riel (10%), trey bra (10%), and trey kamp lenh (5%) (Figure 11). The most commonly used fishing gears

are gill net (90%), small mesh size trap (7%) and scoop net (3%). In the village, 98 percent of the fishing is small-scale (Figure 12).

Human Capital

In 2004, the population of Chamkar Youn was 933, of which 453 were men and 480 were women. There are 154 households for an average household size of 6.1 persons. All of the people in the village are Khmer and Buddhist. Of the villagers in Chamkar Youn, 80 percent can read and write in Khmer but no one can read and write in English. Since the village has no primary school, children who aspire for primary education study at Phsa Kleang village in the same commune. Those who seek a secondary education travel to Dam Dek commune or the provincial capital. The lack of money and the need to assist with household and farming chores are two overriding reasons why many students do not seek education beyond the primary level.

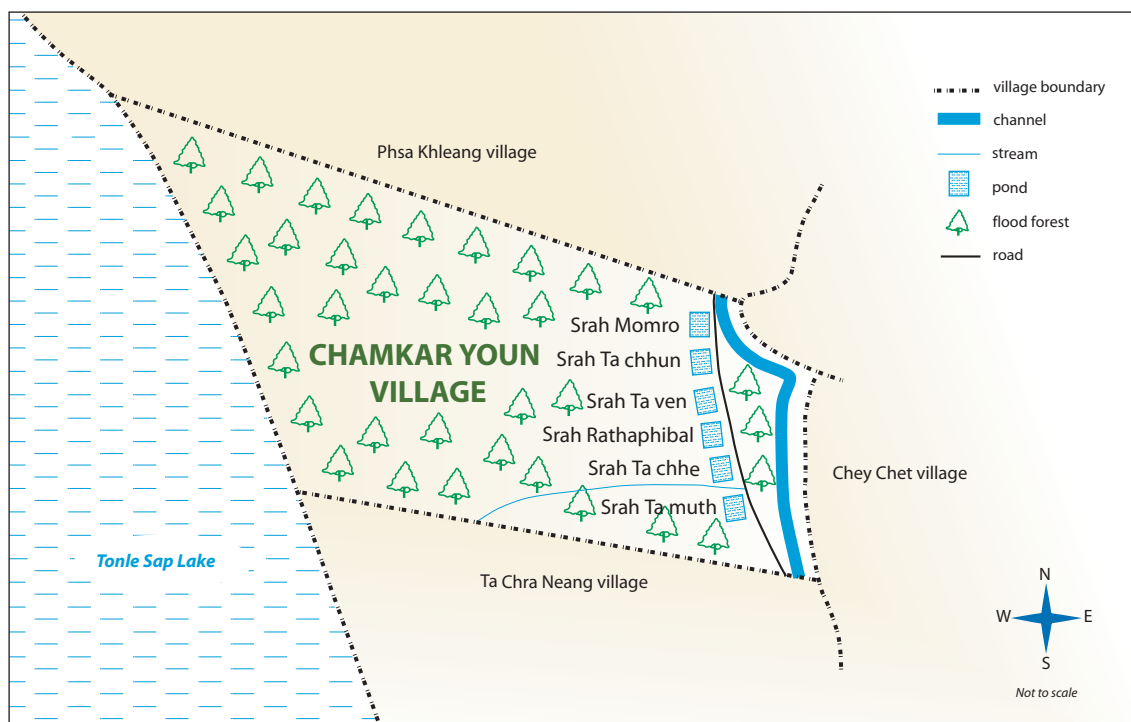


Figure 10. Natural resources map of Chamkar Youn village

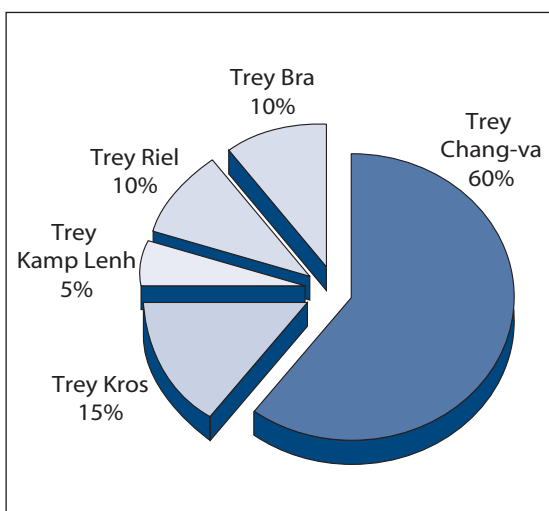


Figure 11. Main fish species caught in Chamkar Youn

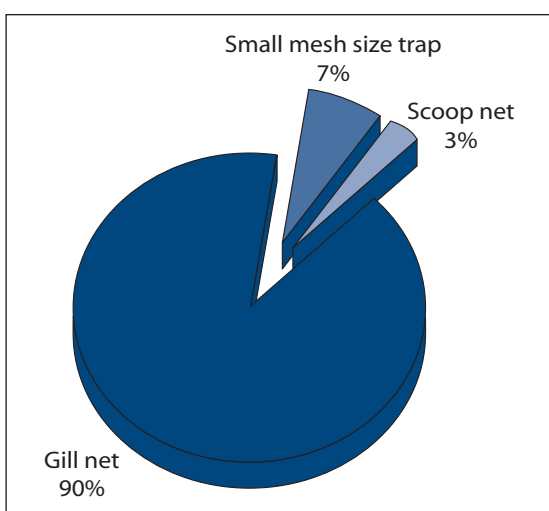


Figure 12. Type of gear used by households to catch fish in Chamkar Youn

The incidence of sickness among villagers each year is only at about 5 percent for adults and 25 percent for children. The most common diseases are rheumatism, headache, fever, stomach ache, and diarrhea. When they get sick, villagers take a rest or try to continue work without medication. They acquire medication from stores in the village or in the provincial capital. Some produce traditional medicine at home. Some aquatic materials are used for the production of traditional medicine, plants like traok, taou, sam rok, raing and morning glory, and oils extracted from turtles and snakes. Both men and women have

equal access to the different forms of medication available for the sick in the village. The staff of the commune health center sometimes visits the village. Vaccination services are provided by the commune health center and some villagers take up this option. In general, however, the health center is usually short of medicine needed for curing the sick in the village.

The villagers provided their own criteria for ranking the households in terms of wealth (Table 3). Of all the households in the village, 50 percent were considered of lower wealth, 30 percent of medium wealth and 20 percent of higher wealth. In comparison to other villages in the commune, the villagers ranked themselves as a medium wealth village.

Financial Capital

Nearly all, 98 percent, the people in Chamkar Youn derive their income from occupational sources. Three households generate income from property holdings while one household receives income from relatives outside the village. About 40 percent of the villagers save money, most use the funds later to repair their houses and boats, to buy household equipment or make new boats. Approximately 80 percent of the villagers borrowed money from NGOs, money lenders and neighbors. Borrowed money is used for various reasons, including in times of sickness or accident, to finance a wedding, or to buy food. The interest rates set by money lenders, especially from other villages, is reported to be very high.

In some instances, borrowing and payment among neighbors in the village is in-kind, such as when rice is borrowed and paid for with labor service. Collateral is usually not required since borrowing agreements are conducted in good faith and trust amongst villagers. However, lenders tend to assess the paying capability of borrowers by examining their income and property profiles. In households, the women usually handle the family purse and make the family expenditures, but borrowing and lending money are mutually decided between husband and wife.

Table 3. Wealth ranking of households in Chamkar Youn village

Characteristics	Higher wealth households	Medium wealth households	Lower wealth households
Area of owned land	30m x 10m	12m x 8m	4m x 3m
Type of house	Made of wood 25m x 10m area	Made of wood 10m x 7m area	Made of wood or tree 4m x 3m area
Type of roof	Made of zinc, tile or fibro cement	Made of zinc	Made of palm leaves
Occupation of household	Large scale fisher, store owner, passenger boat operator	Fish trader, medium scale fisher, store owner, fish processor, fish culturist	Small-scale fisher, setter of net or hook and line, manual laborer, maker of fish paste, collector of wood for sale
Other Things Owned	Motorized boat, motorbike, color television, water pump, telephone, cell phone	Motorized boat, black and white television, motorbike, radio	Small boat, bike, black and white television, radio

Social Capital

Like Ou Ta Putt, Chamkar Youn is a socially integrated village where trust and goodwill among villagers exist. The celebrations and social activities observed by the village are the same as those in Ou Ta Putt and the other villages (refer to Table 2).

Village Administration

The village is administered by the village head and assisted by the vice chief; under them are ten group chiefs (Figure 13). The village has no Community Fisheries Committee.

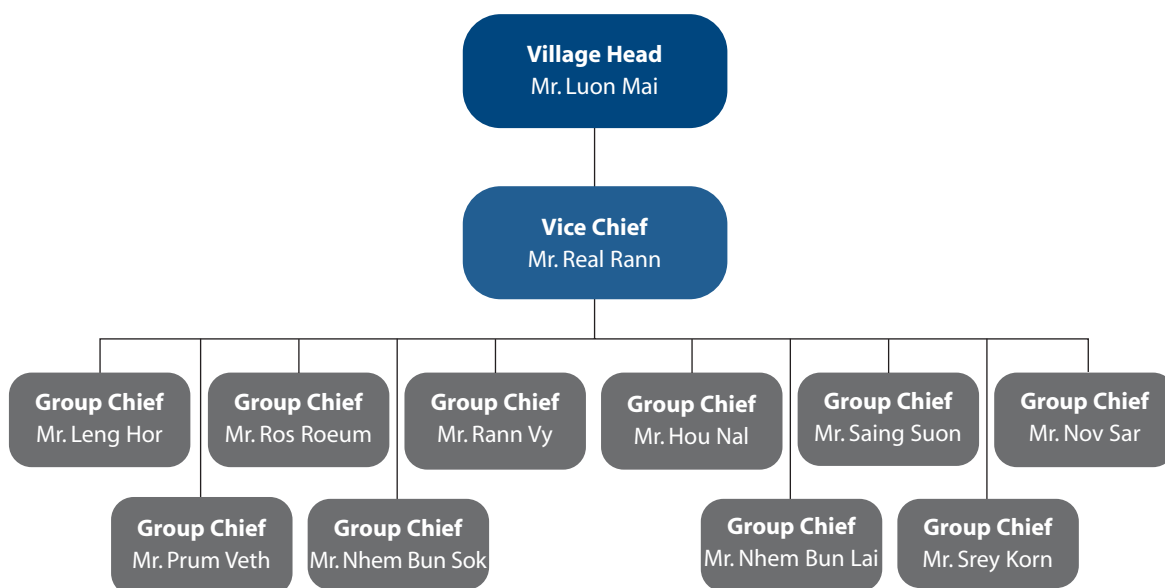


Figure 13. Chamkar Youn village organizational chart

Prek Sromoach

Physical Capital

Prek Sromoach is bordered by Dan Run commune in the north, Spean Veng village in the south, Kean Sangke commune in the east, and Sromo Thum village in the west (Figure 14). The estimated land area of the village is 861 hectares. The village has one primary school and 18 stores but has no pagoda and other establishments. The village has 2.46 kilometers of road. Only half a kilometer is passable during the wet season due to flooding. Water transportation is used by villagers all year but more so during the wet season. Of village boats, 15 percent are motorized and 85 percent are non-motorized.

The sources of power in the village include a privately owned generator that is used to charge batteries that are utilized by some households. As an alternative, many households use kerosine

lamps and torches for lighting. For cooking, villagers use wood gathered from the flooded forests. The main sources of drinking water in the village are from water bodies around the lakes, including man-made ponds constructed for aggregating water in the dry season. Some households also use rainwater during the wet season for drinking. Sediments are usually allowed to naturally subside to the bottom of containers before drinking. In some cases, drinking water is also boiled. Some village households own televisions, usually black and white, and some radios. A few villagers own cell phones for communication.

About 50 percent of the houses in the village are made of wood with roofs made of palm leaves, 20 percent are made of wood with zinc roofs, and 2 percent are made of wood with either tile or fibro cement roofs. Only three households have toilets; the rest use fields and water bodies for the discharge

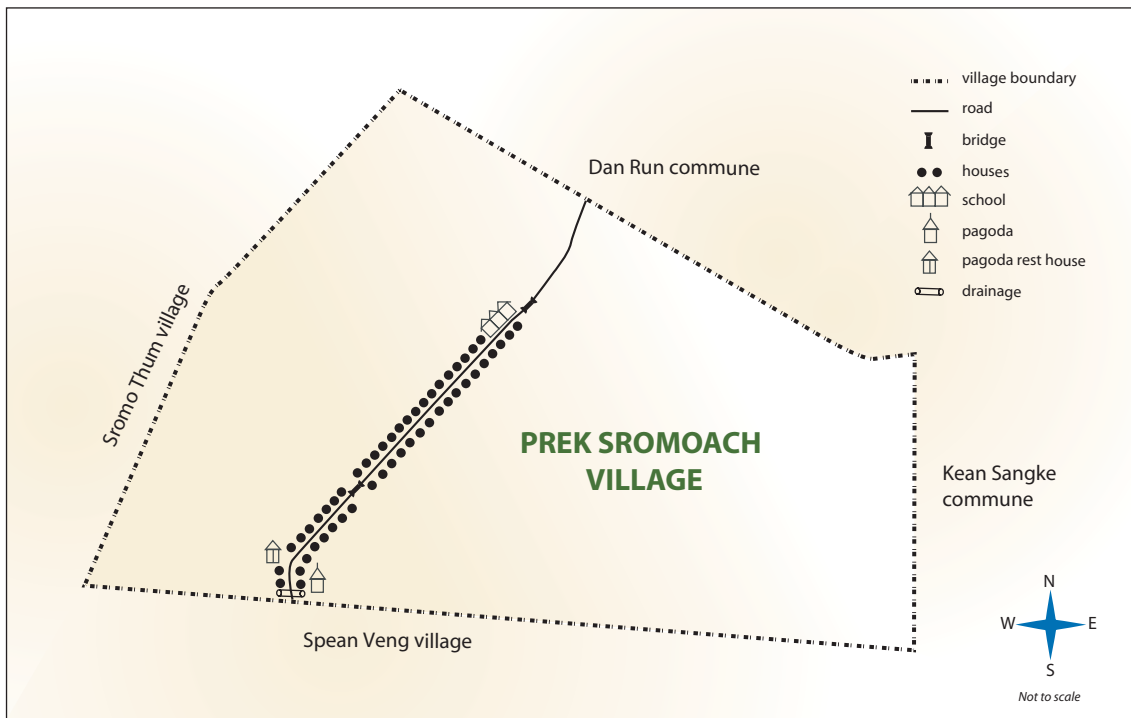


Figure 14. Physical map of Prek Sromoach village

of human waste. Residential lands in the village are generally privately owned; some households own pigs and chickens.

The major gears are gill net (65%), traps (30%) and hook and long line (5%) (Figure 17). Fishing in the village is 100 percent small-scale.

Natural Capital

Prek Sromoach has no upland forest area or agricultural area (Figure 15). Its freshwater area includes the Prek Sromoach River and Boeung Chhouk Lake. Total freshwater area is about 20 hectares during the dry season and 172 hectares in the wet season when the village is partly flooded. Flooded forest areas are sources of wood and other forest products for the villagers while freshwater resources are mainly utilized for fishing and transportation. There used to be a fishing lot in the village but it is not fully converted to community fisheries management.

The major fish species caught in the village are trey chhpin (40%), trey iel (25%), trey kros (20%), trey kamp lenh (10%), and trey ros (5%) (Figure 16).

Human Capital

In 2004, Prek Sromoach had a population of 1440, of which 733 were men and 707 were women. There were 310 households for an average household size of 4.6 persons. With the land area of the village, the population density is 1.7 persons per hectare. All of the people in the village are Khmer and Buddhist.

Of the villagers, 60 percent can read and write in Khmer and at least five persons can read and write in English. About 30 percent of them have no education. The primary school has 3 teachers and 244 students. Students who aspire to attain a secondary education travel to Kampong Khleang and Dan Dek communes. The lack of money and the need to assist in household and farming chores are the two main reasons why many

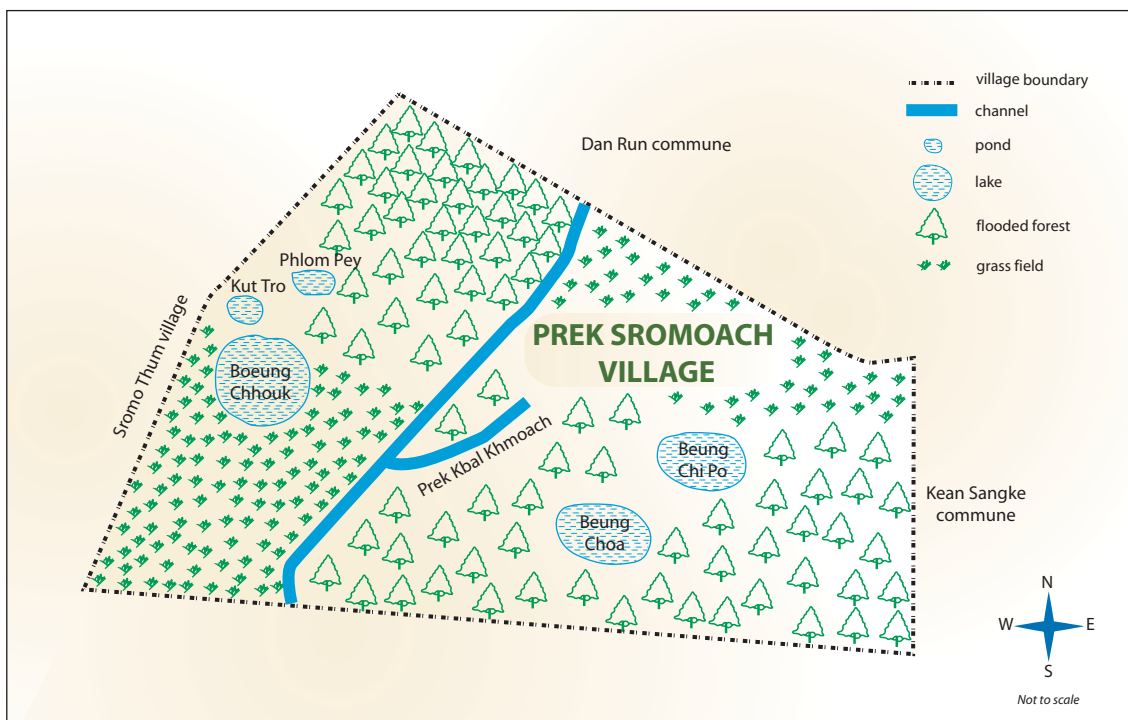


Figure 15. Natural resources map of Prek Sromoach village

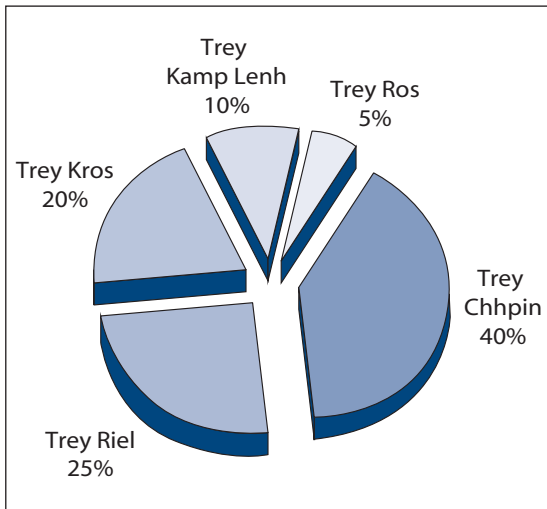


Figure 16. Main fish species caught in Prek Sromoach

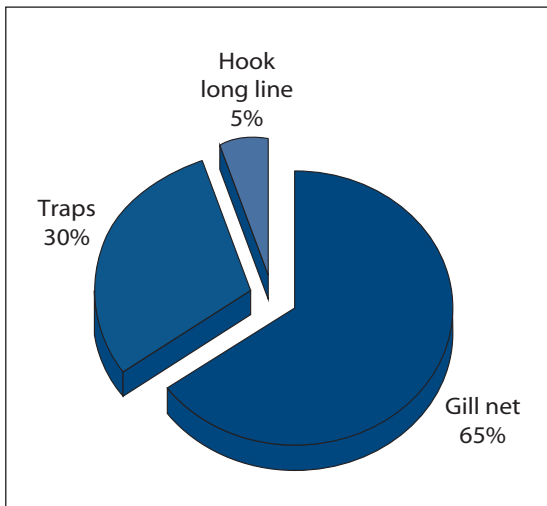


Figure 17. Type of gear used by households to catch fish in Prek Sromoach

students do not seek education beyond the primary level. It is more difficult for girls, beyond the age of 12, to seek higher education because they are expected to assist in various household activities.

The incidence of sickness among villagers is relatively low with only 10 percent of adults and 20 percent of children reportedly getting sick every year. The most common diseases are rheumatism, headache, fever, stomach ache, and diarrhea. Two persons in the village were reported to have died of AIDS over the last two years. When villagers fall

sick, they take a rest or try to continue their work without medication. Medication is available from stores in the village or the provincial capital. Some villagers produce traditional medicine at home. Aquatic materials used for traditional medicine include the plants traok, taou, raing and morning glory and small aquatic snails. Doctors from outside seldom visit the village and usually only provide training in medicating the sick, not in curing ailments of villagers.

The villagers provided their own criteria ranking of their households in terms of wealth (Table 4). Of all the households in the village, 50 percent were of lower wealth, 30 percent were of medium wealth and 20 percent were of higher wealth. The village is considered a higher wealth village compared to other villages in the commune.

Financial Capital

All of the people in the village derive their income from occupational sources. None of them receive income support from relatives and sources outside the village. About 80 percent of the villagers are reported to save money that they later use to repair houses and boats, buy household equipment or make new boats. Nearly half the villagers borrow money from NGOs, lenders and neighbors for various needs, including in time of sickness or accident, to finance a wedding, or to buy food. Interest rates charged by the three money lenders in the village are reported to be high.

In some instances, borrowing and payment among neighbors in the village is in-kind, such as when rice is borrowed and paid for with labor service. Collateral is usually not required as borrowing agreements are conducted in good faith and with trust among villagers. However, lenders assess the paying capability of borrowers by examining their income and property profiles. In households, the women usually handle the family purse and take care of family expenditures, but borrowing and lending money are mutually decided between husband and wife.

Table 4. Wealth ranking of households in Prek Sromoach village

Characteristics	Higher wealth households	Medium wealth households	Lower wealth households
Area of land owned	12m x 15m	20m x 6m	15m x 5m
Type of house	9m x 7m Made of wood	6m x 4m Made of wood	4m x 5m Made of wood or tree
Type of roof	Made of zinc, tile or fibro cement	Made of palm leaves or zinc	Made of palm leaves
Occupation of household	Money lender, fish trader, store owner, generator owner, fish culturist, passenger boat operator	Fisher, fish trader, store owner, fish culturist, motor taxi operator, passenger boat operator, fish processor	Fisher, laborer, smoked fish processor, fish paste maker, installer of fish gears and traps
Other things owned	Motorized boat, non-motorized boat, motorbike, color television, CD player, cell phone, radio, cassette player	Motorized boat, non-motorized boat, color television, cassette player, motorbike	Small boat, bike, radio, black and white television

Social Capital

Like other the villages in the commune, Prek Sromoach is a socially integrated village where trust and goodwill exists among villagers. The celebrations and social activities observed by the village is the same as those of other villages (refer to Table 2).

Village Administration

The village is run by a village head and is assisted by two vice chiefs: under each vice chief are five group chiefs (Figure 18). The village has a Community Fishery Committee headed by the chief who is assisted by two vice chiefs. The first vice chief heads six survey groups, while the second vice chief is in charge of seven extension groups. (Figure 19).

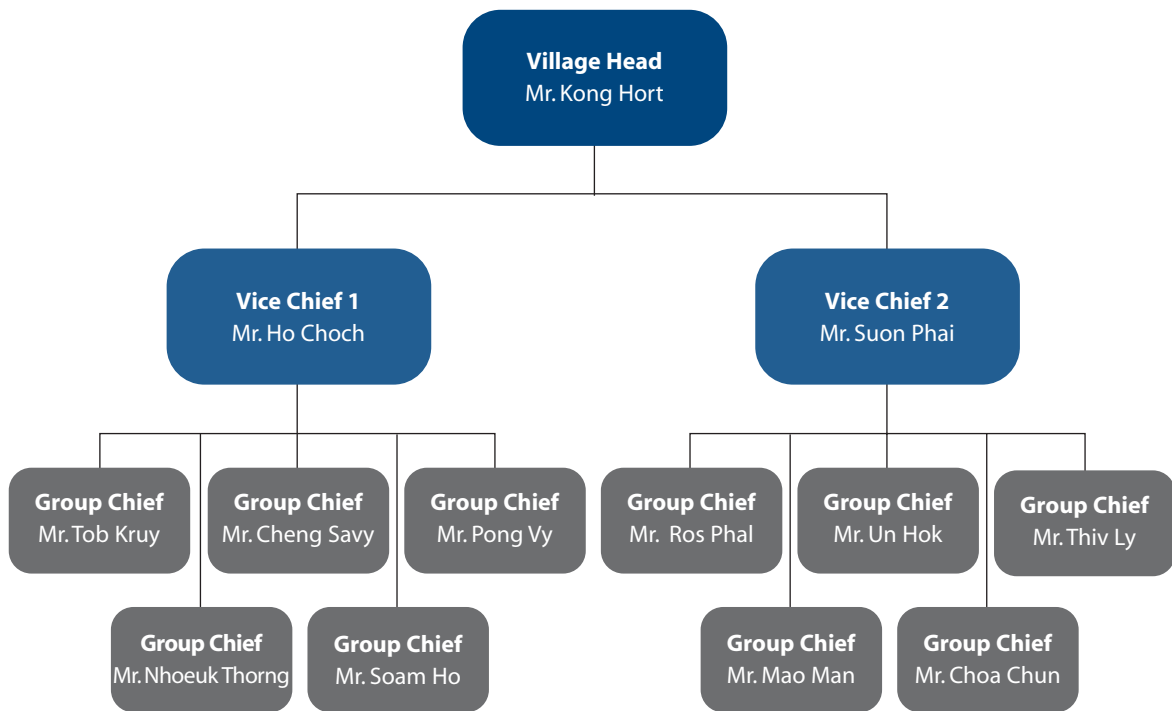


Figure 18. Prek Sromoach village organizational chart

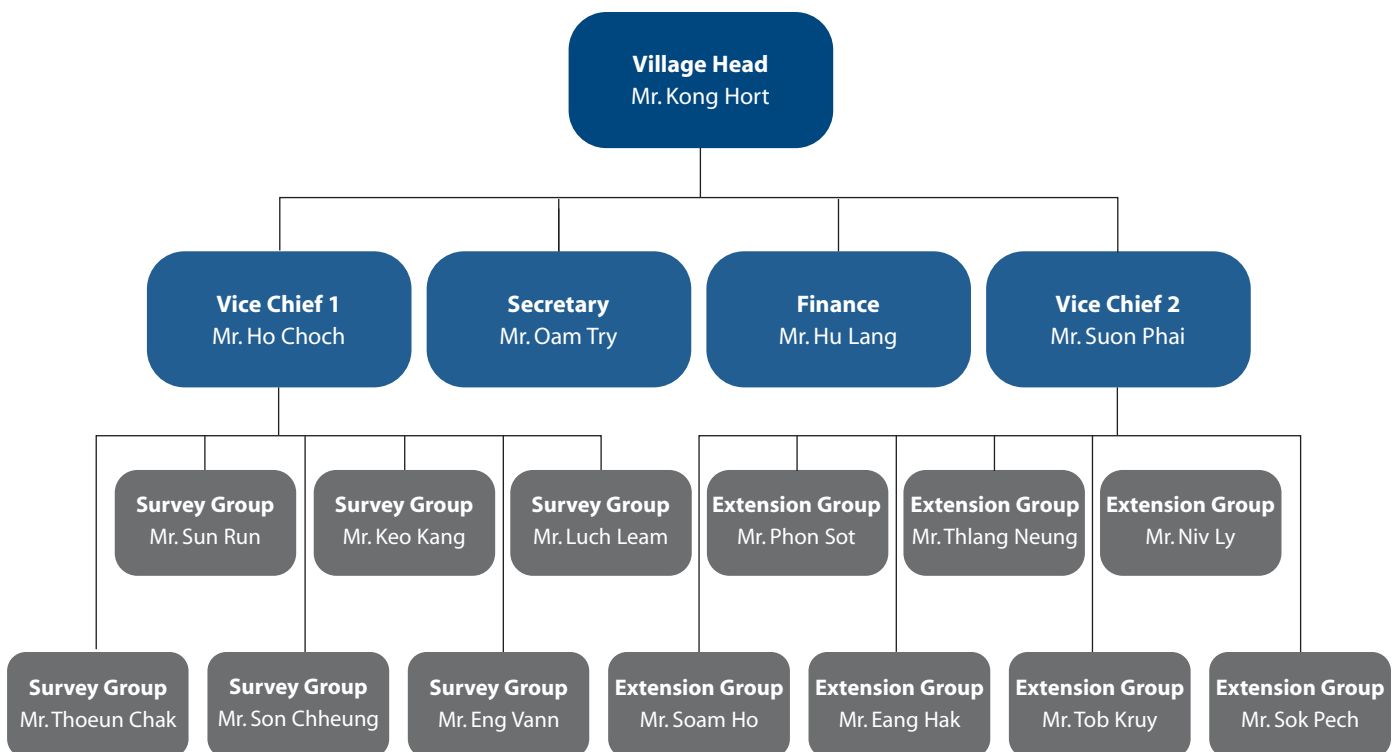


Figure 19. Prek Sromoach village community fishery committee



Village Profile

Livelihoods, Vulnerability, Stakeholders and Aquatic Resources Management

Livelihoods in the Villages

Fishing is the main livelihood in the villages of Ou Ta Putt, Chamkar Youn and Prek Sromoach. Many households have fishing and fisheries related activities as primary and secondary occupations (Figures 20 and 21). Other than fishing, other important aquatic resources-based activities supplement their daily household income such as gathering of plants, animals and wood (Table 5).

Table 5. Aquatic resource-based livelihoods for villages

Livelihoods	Percent of households		
	Ou Ta Putt	Chamkar Youn	Prek Sromoach
Fishing	96.7	63.3	66.7
Aquaculture	16.7	13.3	16.7
Fish processing	26.7	6.7	10.0
Gathering of aquatic plants and animals	86.7	96.7	63.3
Gathering of aquatic wood	56.6	86.7	83.3

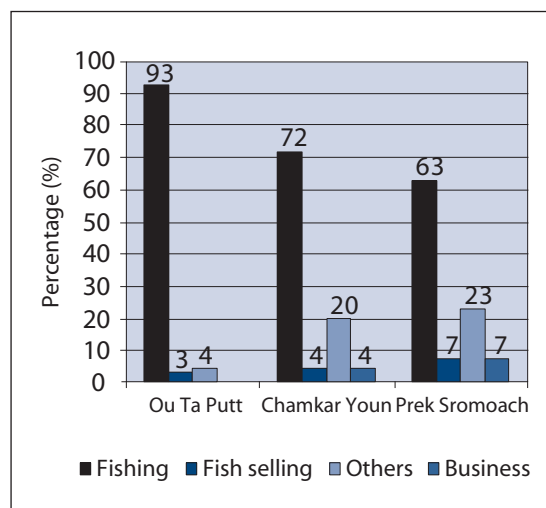


Figure 20. Primary occupation of heads of households

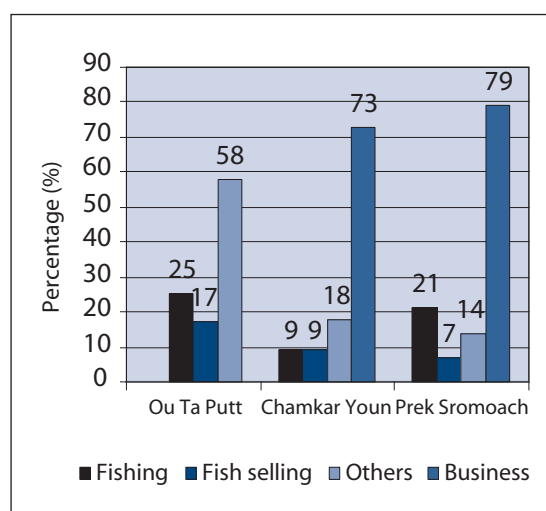


Figure 21. Secondary occupation of heads of households

Vulnerability of the Villages

Trends

The population in the villages has changed over the years. In 1980, there were only about 80 households in Ou Ta Putt, 134 households in Chamkar Youn and 202 households in Prek Sromoach. However, due to in-migration and population growth the number of households continues to increase. By 2004, there were already a total of 249 households in Ou Ta Putt, 154 households in Chamkar Youn and 310 in Prek Sromoach.

As in other rural villages in Cambodia, health care and nutrition are serious problems in the three villages. During the time of the Khmer Rouge, many people died due to a lack of food and medicines brought about by civil conflict. Even afterwards, food was still lacking in villages because of poor agricultural production brought about by climatic changes particularly floods and droughts. Doctors seldom visit the villages and people do not have enough money to buy medicines when they get sick.

The villagers believed that population growth was a key factor that led to the over exploitation and degradation of forest and aquatic resources in their village. They also think that poor nutrition and health is directly related to their poor economic situation and that they lack information and awareness on such problems.

Shocks

Alternating climate-related events of droughts and floods cause problems in the villages. Though villagers do not recall the exact years these events occurred in the past, big floods occurred in the villages in 1992 and 2000. Villagers managed to cope with floods by moving their houses and animals to higher ground, moving to other higher

villages, or by raising the floor of their houses. Droughts occurred in the villages in the early 1990s and also in 1998. The drought had little effect on agriculture because the villagers do not grow rice but it had an adverse effect in lowering the fish catch. The villagers compensated for this by working in other jobs in the district or province or by fishing outside the village. The villagers considered droughts and floods and the subsequent outbreaks of various diseases as highly critical negative factors affecting their lives and the condition of their village. They realized that not much could be done about droughts and floods since they are natural occurrences. However they hoped that health concerns resulting from these events would be addressed.

Seasonality

Fishing in the villages is influenced by the water level and the fishing season. Fish catch is high in the months of April and May when the water level is low and fish move to other areas due to the dry season. Catch is low in the wet months of June to September during the closed fishing season when the water level is high. When the water starts to recede in October to December, fishing season is open again and catch is moderate. Catch is relatively low in the months of January to March.

The average annual fish catch per household in the three villages is significantly higher in the dry season (3 889 kg or 60%) compared to the wet season (2 532 kg or 40%). Over 80 percent of aquatic plants per household in the three villages are gathered in the wet season as compared to the dry season. On average, villagers collect 445 kilograms of aquatic animals per year with a slightly higher percentage (52%) gathered in the wet season (Figure 22).

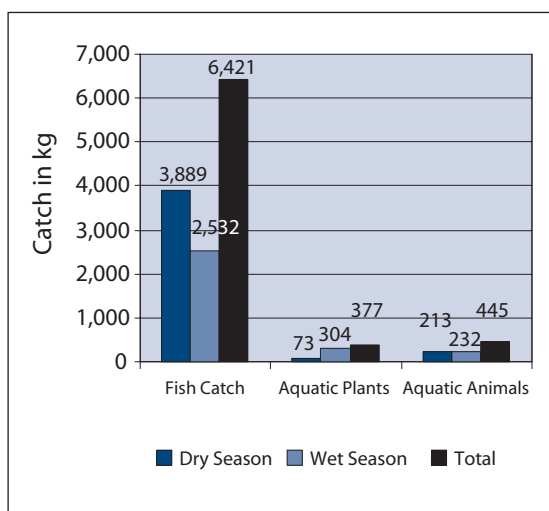


Figure 22. Seasonal and annual fish catch and aquatic plants and animals gathered in Siem Reap province

Fish prices coincide in reverse with the fishing season in the village. During the peak fishing months, fish is abundant and the price is lower compared to other times of the year. When fish catch decreases, fish prices tend to go higher.

To address the problem of fish availability during lean months, villagers usually process catch into dried, salted and other processed forms to ensure supplies when fish catch in the villages dwindles. The availability of work in villages also coincides with fishing activities. When fishing is at its peak, villagers usually work in fisheries related jobs. But when the fishing season slows down or is over, work opportunities are scarce, especially since the village does not have an agricultural or rice farming sector.

Villagers tend to believe that the lack of employment during the slack period of fishing activities in their village is a major factor affecting their incomes and lives. They hope that by creating some form of alternative income opportunities for the people, their situation would be improved. They also think that the changes in fish prices in the villages can be significantly minimized through the development of better marketing and processing systems for their fish products.

Village Stakeholders

The primary stakeholders in the utilization and development of aquatic resources in the commune are the different households involved in fishing, fish culture, fish processing, and the gathering of aquatic plants, animals and wood. Secondary stakeholders comprise government agencies and organizations involved in the village and private entities, based outside, that have direct or indirect impacts on the exploitation of the aquatic resources in the village. Government agencies include the national and provincial DoFs, district, commune and village administrative organizations, and the police and military units. Private entities include NGOs, fishers from outside who fish in village waters, fish traders who buy from villagers, the sellers of boats, fishing gears, and other fishing materials and the money lenders (Figure 23).

Given their functions related to fisheries and aquatic resources management, the provincial and national DoFs play relevant roles in the management of aquatic resources in the villages. They play an important role in the organization and development of community fisheries management in the villages. However, due to limited staff and financial resources they cannot effectively exercise their functions across the large number of villages in the province.

Local administrative organizations and officials in each district, commune and village also play a key role in the management of fisheries and aquatic resources in the villages. As in the case of national and provincial administrative agencies, they are constrained by limited manpower and resources in the discharge of their functions.

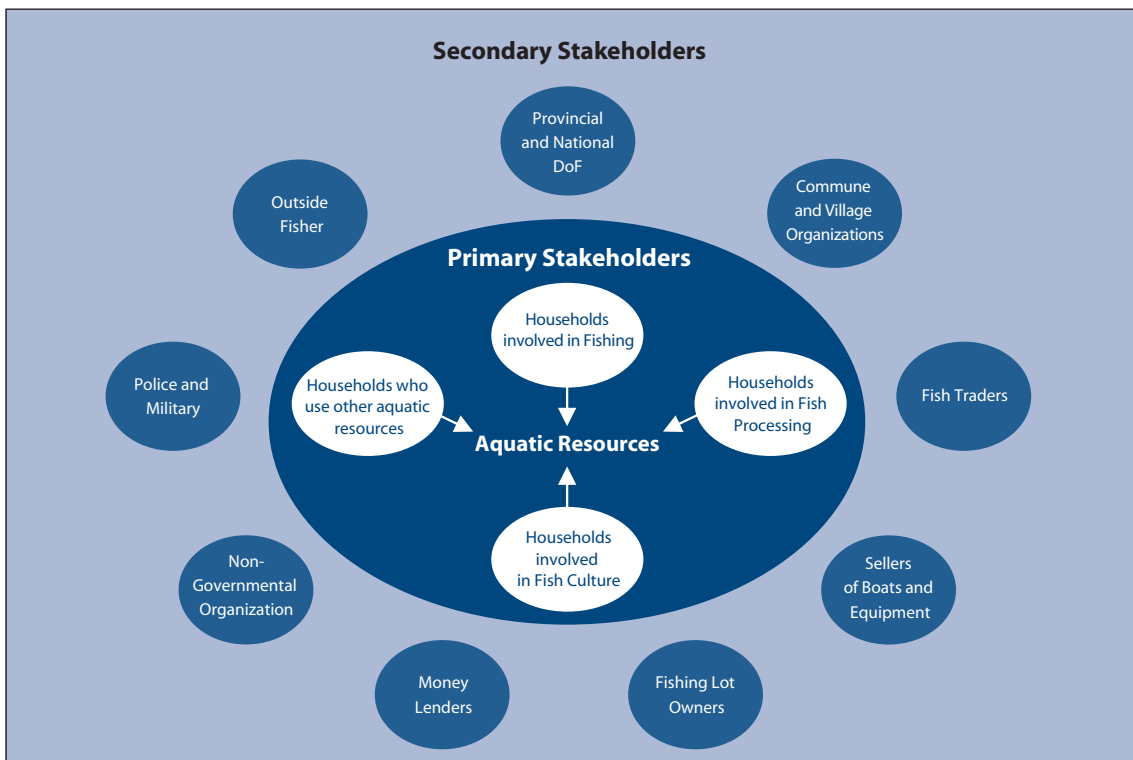


Figure 23. Stakeholders of aquatic resources in the villages of Siem Reap

The community fisheries committees, in particular, are lacking in resources to effectively perform their functions and for the most part are not fully operational at present. The contribution of the military and police units in the villages to current aquatic resources management have been unclear since they also have general police duties to attend to.

Non-governmental organizations have contributed to health care in the village but their scope has not included specific work on aquatic resources management so far. The non-government organizations that provide loans to villagers help because the interest rates they offer are generally lower than those provided by the other money lenders. The loans should help households improve their economic conditions if the money borrowed is used properly in income generating activities.

Fishers from other villages reduce the total catch of local village fishers, increase the total number of fishers, and add to the further exploitation of fisheries and aquatic resources. These outsiders may also be less concerned about maintaining resources for long-term sustainability since they are non-residents and their main interest is to catch as much fish as they can. Local fish traders who buy fish from the village make positive

contributions to the operations of fishers in the village because they provide an easy and convenient channel for the marketing of fish.

Boat, fishing gear and other fishing material sellers also make positive contributions to the development of fishing villages. They help to bring in better equipment and new technology that leads to improvements in the total fish catch. Despite these positive aspects for fishers, the assistance of these stakeholders may intensify the exploitation of aquatic resources in the long run. Money lenders in the village help by providing fishers with the capital needed to purchase equipment for fishing. However, these positive measures can be diminished if interest rates are set too high, making it difficult for poorer fishers to pay their loans.

Finally, fishing lot owners, who live outside the village, are important stakeholders of aquatic resources. These lot owners collect fees or rent from medium and large scale fishers. The payment of these access fees impinges on the earning potential of villagers as compared to having open access areas. On the other hand, fishing lots help to prevent the over-exploitation and degradation of aquatic resources that are common in open access environments.

Aquatic Resources Management

Access and Management Issues

There are several aquatic resources related management issues that affect the villagers of Ou Ta Putt, Chamkar and Prek Sromoach. These are as follows:

- Fishing using electrocution and other devices.
- Overfishing due to the increasing number of fishers within the village and those from other villages.
- Increase in modern gears like push nets, round nets and seine nets that catch fish too efficiently.
- Fishing conflicts between small-scale and large-scale fishers.
- Chemical pollution of water that affects aquaculture, animal raising and water for household use.
- Destruction of flooded forests because of illegal gathering of wood.
- Lack of awareness among villagers about natural resources management.
- Lack of alternative employment opportunities among villagers.
- Poor monitoring and enforcement by the authorities.
- Lack of funds for aquatic resources management.

In addition to the management issues, there are other issues that directly affect the access of villagers to the aquatic resources in their villages. These access issues are the payment of access fees, the presence of fishing lots, the presence of fish sanctuaries and the imposition of closed seasons. Overall there is a general awareness among villagers on all of these issues, although less than half knew about or had no opinion about access fees. However, the presence of fishing lots was the key reason stated why access to fisheries resources is restricted - with 63% of the villagers in agreement. A minority of villagers (26%) thinks that the payment of access fees increased

or decreased their access to aquatic resources. Many did not feel fish sanctuaries (51%) or closed seasons (90%) increased or decreased access (Table 6).

Table 6. Aquatic resources related access issues in the villages

Access Issues	Percent of households
Payment of access fees	
Issue recognized by	46
Effect on households:	
Reduces access	24
Increases access	2
Remains the same	19
No opinion	54
Presence of fishing lots	
Issue recognized by	77
Effect on households:	
Reduces access	63
Increases access	1
Remains the same	13
No opinion	23
Presence of fishing sanctuaries	
Issue recognized by	59
Effect on households:	
Reduces access	2
Increases access	6
Remains the same	51
No opinion	41
Imposition of closed seasons	
Issue recognized by	92
Effect on households:	
Reduces access	1
Increases access	2
Remains the same	90
No opinion	7

Illegal Fishing

Illegal fishing is the most often-cited aquatic resource management issue in the villages. Thus, the villagers analyzed the causes, effects and potential solutions to this problem. Among the causes identified were : a) the lack of clear rules and regulations for local fisheries; b) poor monitoring and enforcement by the authorities; and c) indifference of villagers to problems around them and their inability to confront illegal fishers.

Several effects resulting from illegal fishing were identified by the villagers such as the decrease in fish stocks and conflicts between legal and illegal fishers which could lead to violence in the village and destruction of fish habitats.

Overall these consequences of illegal fishing worsen the poverty level in the villages and make it extremely difficult for the next generation to progress.

Villagers made several suggestions for solutions to thwart illegal fishing and create opportunities to improve current circumstances. These include the following:

- Provide strong monitoring and enforcement efforts.
- Impose effective punishment for illegal fishers.
- Provide effective control of powerful people who support illegal fishers.
- Control the production and selling of illegal fishing gears and other devices.
- Create alternative livelihood opportunities like fish culture and fish processing.

Village Projects

As part of the project, group discussions among villagers were conducted to come up with specific projects to be undertaken at village level. The villages of Ou Ta Putt, Chamkar Youn and Prek Sromoach identified the need for the construction of water catchment ponds and conservation posts which would be carried out as a community effort towards improving aquatic resources management in their respective villages. These projects were intended to: a) create awareness amongst the villagers as well as outsiders on the importance of aquatic resources in their area; and b) encourage the participation and empowerment of communities in the management of aquatic resources.

These initial projects were undertaken with funding provided from the Mekong Valuation Project. The main objective of the conservation posts was to increase the awareness on the importance of protecting conservation areas within the village boundaries. Two conservation posts were set up in Ou Ta Putt, one in Chamkar Youn and two in Prek Sromoach. In addition, water catchment ponds were dug out to provide shelter for brood stock during the dry season and for spawning during the initial periods of the wet season. Three ponds were built in Ou Ta Putt, one in Chamkar Youn and one in Prek Sromoach.

The villagers also proposed the following additional measures for the improvement of overall aquatic resource management in their villages such as:

- Provide for the protection of flooded forests and aquatic resources.
- Protect spawning areas, including designation of a spawning season.
- Strengthen the Community Fisheries Committee.
- Train villagers on fishery rules and regulations and overall natural resource management practices.

Summary of Key Findings

This profile provides a comprehensive background of the three villages of Ou Ta Putt, Chamkar Youn and Prek Sromoach in Siem Reap province. On-the-ground findings give substantial insights into the utilization and management of aquatic resources in the villages. The following summarizes the findings:

Socioeconomics

- Villages have limited physical infrastructure and other physical resources. The villages and many roads are flooded during the wet season; therefore, villagers must rely on transportation by boat.
- Most village households derive their income from occupational sources which include fishing and selling of fish. Those in dire need borrow money at prohibitive rates of interest, mainly from private lenders.
- Most households rely mainly on fishing as the primary or secondary occupation.
- Villagers are dependent on aquatic resources based activities including gathering of aquatic plants, animals and wood to supplement their daily household consumption.

Natural Resources

- Villagers in general have access to aquatic resources within their areas and also the Tonle Sap Lake. The aquatic resources of the villages increase in size during flooding in the wet season.
- Some villages have forest resources such as flooded forests and none have upland forests and agricultural areas.

Social Aspects

- Health care services are extremely limited in all villages; thus sickness affects the ability of villagers to generate income and obtain food.
- Most households have no toilets; hence, the river and open fields are used for discharging wastes.
- Many villagers are unable to read and write and have no education or a primary one at best. Educational services in the villages are limited to primary schools.
- The villagers celebrate various social festivities that promote unity and harmony among community members.

Organizations

- Villages have common administrative organizational structures that tend to management matters of the villages.
- Only one village has a community fisheries committee assigned with the function of managing the fisheries and aquatic resources while others do not.
- The fisheries community committee is wanting in terms of financial and human resources capacity to effectively discharge its functions.

Management and Access Issues

- Several access issues were identified. These included the payment of access fees, the presence of fishing lots, the presence of fish sanctuaries and the imposition of closed seasons.

- Of all the access issues, only the presence of fishing lots is considered by a majority of households as constraining their access to aquatic resources.
- For villagers, broader management issues affecting aquatic resources include illegal fishing, the increase in the overall number of fishers, as well as other issues.
- For the most part, villagers are aware of overall aquatic resource conditions in their villages and have proposed certain measures to improve their management.

In conclusion, the current trend and initiatives by the Department of Fisheries and local agencies to strengthen the development of community fisheries management in these villages provides an avenue for sustainable development and management of their aquatic resources. The data and information captured from and the discussions held with village communities represent a critical first step to identify and document stakeholder concerns and recommendations. These profiles set the foundation for future research initiatives and development activities towards effective management of aquatic resources and improving the livelihoods of the people in the province.

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APPENDIX - I

Additional characteristics of households of Ou Ta Putt, Chamkar Youn and Prek Sromoach villages in Kampong Khleang Commune, Siem Reap Province (2003-2004)

	Siem Reap	Ou Ta Putt	Chamkar Youn	Prek Sromoach
Types of land owned by households (%)				
Residential land	82	90	57	80
Farm land	54	70	0	3
Household ownership of house (%)				
Self- owned	89	93	93	80
Rented	1	0	0	3
Status of house of household (%)				
Permanent	90	90	97	83
Temporary	10	10	3	17
Others	0	0	0	0
Sources of drinking water of households (%)				
River/ lake	94	100	83	100
Rain water	69	43	73	90
Treatment of drinking water by households (%)				
Boiled	83	83	83	83
Filter	47	0	43	97
No treatment	64	97	47	50
Means of disposing waste by household (%)				
River/lake	98	97	100	97
Field	23	3	0	67
Pit	1	3	0	0
Others	64	87	100	7
Source of animal protein of households (%)				
Wet season				
Fish	89	94	87	84
Other aquatic animals	5	3	6	7
Other meat	6	4	7	9
Dry season				
Fish	88	94	88	83
Other aquatic animals	6	6	5	7
Other meat	6	1	7	10
Sources of vegetables of households (%)				
Wet season				
Aquatic vegetables	53	31	58	69
Non-aquatic vegetables	47	69	42	31
Dry season				
Aquatic vegetables	15	25	54	55
Non-aquatic vegetables	48	75	46	45
Source of data: Household Survey 2003				
*Note: A household survey was conducted on 30 households per village.				