
Monitoring river fishers along the Mekong River in Lao PDR

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ABSTRACT

Thousands of people fish along the Mekong River in Lao PDR, but there is little quantitative data on their catches. This study documents catches of eighteen typical fishers from six river sites over one year (2004) at six locations along the Mekong from Huay Xai in the north to Tha Kaek, south of Vientiane. They recorded their catches daily in logbooks. The fishers all used drifting gill-nets and often used two or three nets of different sizes in layers, so they could catch fish of various sizes. They all fished the Mekong mainstream and the lower reaches of tributaries near their villages.

The fishers caught about 1.2 million fish weighing about 25 tonnes and 156 species were recorded. Eight exotic species were recorded but none was very common. Individual catches were 0.2 to 11.6 tonnes per year, the most common fish in catches were Pa soi (*Henicorhynchus siamensis* and *H. lobatus*), making up 28 per cent of all weight caught and around 90 per cent of individual fish. Other common species (>5 per cent of the catch by weight) were *Labeo chrysophekadion*, *Bagarius yarrelli*, *Cosmochilus harmandi* and *Pangasius conchophilus*. Despite the apparently heavy fishing pressure along the Mekong, these 18 fishers caught significant numbers of large fish, for about one-third of the species the largest fish they caught was more than 1kg in weight. The largest fish species included *Bagarius yarrelli* up to 134cm length and 34kg in weight, *Wallago attu* up to 135cm and 35kg, and *Pangasius* spp. up to 142cm and 61kg. Seasonal variations in catch of many species appear related to migrations with peak catches during the early flood or the flood recession.

Monitoring typical river fishers over long periods, while requiring long-term commitment from fishery staff and the fishers themselves, can provide useful information on the status of the fishery. The data in the paper will be further analysed to assist in optimizing sampling frequency and number of fishers at any location.

KEYWORDS: Mekong, river fishers, Lao PDR

INTRODUCTION

Many people's livelihoods near the bank of the Mekong River rely on fishing. The main occupation is often rice farming and other agricultural crops. However, fishing constitutes an important activity for many, and for some is the main occupation.

Fishers at six locations in Lao PDR, from Bokeo to Khammouan Province participated in a data collection programme under the Assessment Component of the MRC Fisheries Programme (AMFC). Local fishers along the Mekong mainstream volunteered to collect certain data on their catch every day for one whole year

Although the full data set from this project has yet to be analysed, it has already provided interesting information and illustrates that fisheries in the upper and southern reaches of the Mekong River in Lao PDR are extremely important to the livelihoods of local communities.

Some places in Lao PDR are famous for the seasonal capture of the now nearly extinct giant Mekong catfish, *Pangasianodon gigas*. However, the most important group of fish from a

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livelihoods perspective is the Pa Soi, or *Henicorhynchus* spp. This genus is probably the most important in the fisheries of the Mekong basin, but is mainly recognized as such in the lower reaches in Southern Lao PDR, Sjorslev (2000), and in Cambodia Lieng, Yim and van Zalinge (1995).

This study documents the catches of eighteen typical fishers from six river sites over one year (2004) at five locations along the Mekong River. The main objective is to provide information on fish species caught, and changes in gear use over the year, across a range of different locations.

MATERIALS AND METHODS

The six villages (Table 1) have a total of about 256 fishers. Fishers for the study were selected with assistance from Provincial and District officers.

Table 1. *The participating fishers age, experience, village location and gear size.*

No	Fisher names	Ages	Experience (years)	Village/Province	Mesh sizes used
1	Mr.Houmpheng	44	30	Ban Done/ Bokeo	2-8 cm
2	Mr.BounGnong	32	21		
3	Mr.Xiengpheng	57	34		
4	Mr.Thongchanh	45	29	Ban Pha O/ Luangphrabang	2-8 cm
5	Mr.Bounkhong	58	35		
6	Mr.La	33	19		
7	Mr.Khamsing	40	20	Ban Tha Muang/ Vientiane	2-12 cm
8	Mr.Sounthone	45	25		
9	Mr.Somsamay	27	5		
10	Mr.Khounsavat	41	27	Ban Sinh Xay/ Borikhamxay	2-25 cm
11	Mr.Sit	46	23		
12	Mr.Vang	66	55		
13	Mr.Sisamone	48	30	Ban Nam Ngieb/ Borikhamxay	2-12 cm
14	Mr.Bounthavy	24	9		
15	Mr.Baeng	29	15		
16	Mr.Khieo	28	14	Ban Muang Sum/ Khammuane	2-25 cm
17	Mr.Xay	45	32		
18	Mr.Anousone	30	17		

The details of the 18 participating fishers and their villages are given in Table 1. The village headmen and all fishers were interviewed in order to get general information on the fish and the fishery. The selected fishers were trained in how to record data at a workshop held in November 2003. The data entry forms were tested and revised so that fishers were able to enter data correctly. The fishers recorded all their catches daily in logbooks, which were collected by LARReC staff every three months.

Some of the participating fishers are full time fishers, while others have additional occupations like rice farming; one fisher is also a teacher. However, they all regularly go fishing using drifting gillnets. The fishermen use gillnets with stretched mesh size of 2-25 cm. The lengths of the nets are 100-250m and the depth 1-2.5m. The nets are set to drift for 30-40 minutes, which brings them about 1.5km along the river. The fishing season extended throughout the year. The mesh sizes used varied depending on the fish species and sizes present. The fishers use two or three nets of different sizes in layers, so that they can catch fish of various sizes. They all fished the Mekong mainstream and/or the lower reaches of tributaries near their villages. When major fish migrations occurred fishing took place both day and night. During spawning migrations, which occur with rising river levels, the fish tend to be bigger, and the fishers some locations used large mesh sizes, i.e. 17-25cm.

RESULTS

The fishers caught 156 species across the six locations. The combined total catch of all fishers was about 1.2 million fish weighing some 25 tonnes. The individual fish catches were 0.2-11.6 tonnes per year. The peak catches occurred in July (Figure 1).

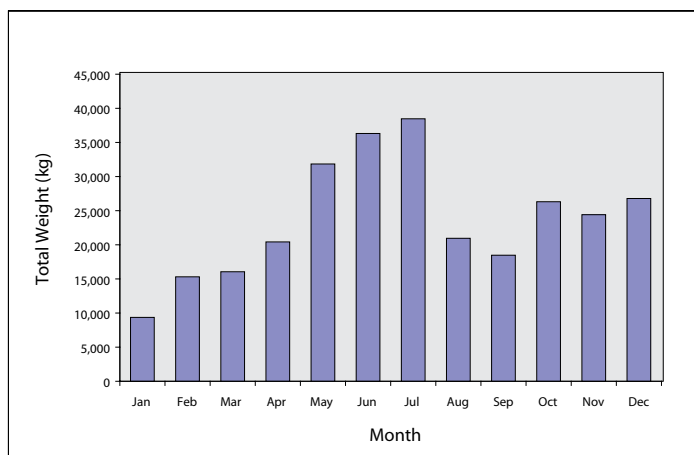


Figure 1. Total weight of fish caught.

For about a third of the species the largest fish caught weighed more than 1 kg. The catch was dominated by 'Pa soi' (*Henicorhynchus siamensis* and *Henicorhynchus lobatus*) making up 28 per cent of total weight caught and around 90 per cent of numbers of fish. Other common species (each contributing >5 per cent of the catch by weight) were *Labeo chrysophekadion*, *Bagarius yarrelli*, *Pangasius djambal* and *Pangasius conchophilus* (Figure 2). The largest fish species included *Bagarius yarrelli* (up to 134cm length and 34kg in weight), *Wallago attu* (up to 135cm and 35kg), and *Pangasius* spp. (up to 142cm and 61 kg). The seasonal variation in catch of many species is related to migrations with peak catches during the early flood recession. The Catch Per Unit Effort (CPUE) was estimated to 3.8kg/fisher/day, 1.35kg/net/day and 0.15kg/m²/day.

Eight exotic species (*Cirrhinus cirrhosus*, *Labeo rohita*, *Catla catla*, *Hypophthalmichthys molitrix*, *Aristichthys nobilis*, *Ctenopharyngodon idella*, *Cyprinus carpio* and *Oreochromis* sp.) were recorded, but none was very common.

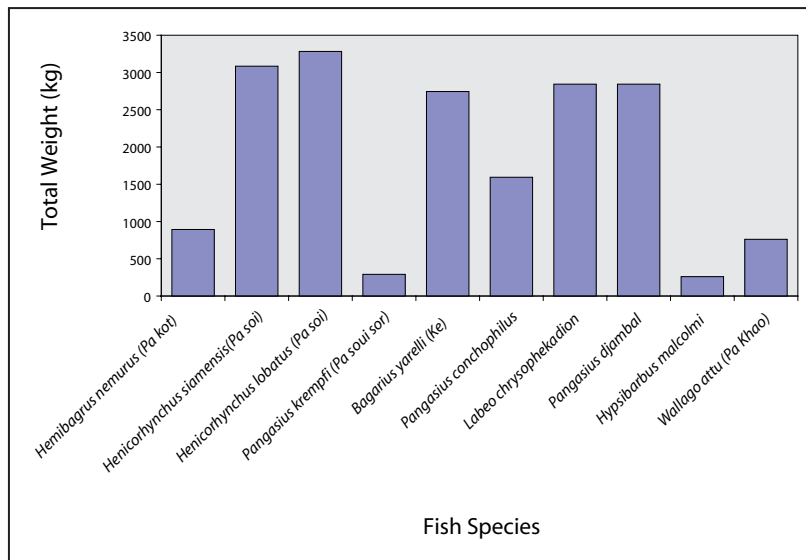


Figure 2. Total weight of the ten most important fish species.

DISCUSSION

Some larger scale fisheries, e.g. the *Dai* fishery in Cambodia are well defined and the landings take place over a limited time period at a few places that are relatively easily monitored by fisheries agency staff. However, small scale fisheries like drifting gillnets are ‘diffuse’, so that the landings are dispersed along the river. The combined catch of a very large number of small-scale gears are believed to be part of a major component of the annual yields, and it is important to monitor and assess these fisheries. The use of fisheries agency staff to monitor small scale fisheries is expensive, and is therefore usually limited to ‘snapshots’ (sub-sampling), which may or may not identify important properties of the fishery. The use of fishers to monitor their own catches, as with this study, has potential advantages. Fishers are present at the river continuously over time and can observe and record events that would often be missed in sample based surveys. Also, the cost per sample will be much lower than for surveys carried out by fisheries agency staff.

There are also potential disadvantages with fishers recording data. Fishers often have only basic education, and it may be difficult to instil the need for accuracy and precision in the recording of data. There is also a risk that fishers get bored with the additional work of data recording, and therefore invent ways of ‘simplifying’ the task so that the data becomes biased. However, experience has shown that by careful selection and training fishers, they are quite capable of recording useful data that can be used to assess the fishery.

CONCLUSIONS

- *Henicorhynchus* spp. (Pa soi) was the dominant fish species caught and also the most important food of the local people.
- The total catch was 25 tonnes and about 50 per cent were catfish.
- The CPUE was 3.8kg/fisher/day, 1.35kg/net/day and 0.15kg/m²/day.
- Data collecting by local fishers is low cost and saves time.

ACKNOWLEDGEMENTS

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