

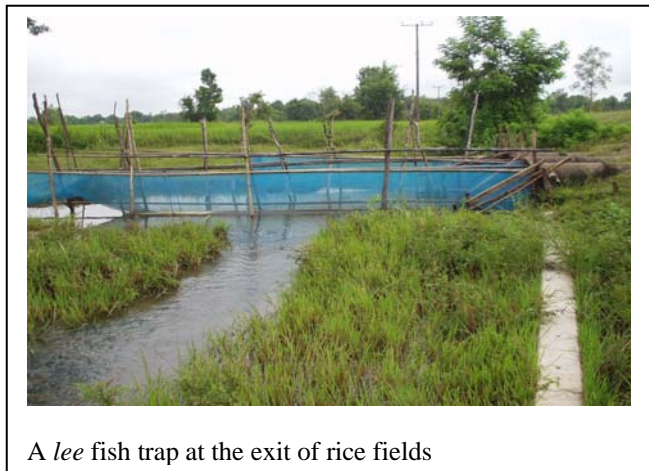


Mekong Wetlands Biodiversity Conservation and Sustainable Use Programme

Downstream Fish Migrations in the Lower Songkhram River Basin

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The late rainy season and early dry season (i.e. September to November) is a period of intense fishing activity across the Lower Songkhram River Basin. Locals view this period of receding floods before the rice harvest as a time of plenty with regards to fish and other aquatic organisms (OAO) availability, as they intercept the largest fish migration of the year with a startling variety of methods and techniques. Sometimes, just a few hours of fishing with certain gears is enough to supply a whole family with preserved fermented fish for the following year. The surplus product is sold, either fresh on a daily basis, or preserved and sold later when cash is required. Many families look forward to this season with anticipation for many months beforehand, preparing gears, mending nets and clearing fishing sites of vegetation well in advance of the start of the season, knowing that it will give them income to support themselves and provide food security into the future.



A *lee* fish trap at the exit of rice fields



The *lee* is emptied of fish several times a day or more during periods of heavy rainfall

As floodwater levels fall after the peak floods in August or early September, fish start to migrate downstream back to the tributaries, permanent waterbodies, mainstream Songkhram River and for many types of fish, back to the Mekong mainstream for the dry season. Large numbers of fish

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species have been feeding and breeding on the floodplains for the duration of the floods, taking advantage of the rich variety of habitats, including the flooded forest, to complete their life cycles. At the peak of the floods, wherever there is water there are fish and juvenile fish can be seen in water of only a few inches deep, feeding on small invertebrates and microscopic plankton. At the same time as the floods peak and fall, villagers are able to easily catch large quantities of OAO's, like aquatic insects, frogs, shrimp and crabs, which provides valuable nutritional variety to their diets and are popular food items in their own rights.

The main fishing gears used to harvest the downstream migration on a commercial scale are the barrage net fisheries (*gad dawn*); raft mounted lift nets (*yaw kan chaw*); bamboo traps (*lawp yeun*) and stationary trawl nets (*dtawng*). Most of these large fishing gears are technically illegal, but in reality enforcement of the law is haphazard and fraught with difficulty for the Fishery Department staff charged with the job. According to the state and duration of the floods, villagers will get a good idea of the likely fish catches in the proceeding flood recession period. Hence, it is only by July or August that village committees receive bids for exclusive rights to fishing lots. This form of auction of fishing rights is carried out in most floodplain communities and is a valuable source of income to the village used for communal projects like temple repairs, road building or festivals (*ngan boon*). Prime sites for erecting barrage net fisheries, such as across the mouths of tributary streams, can be auctioned for up to 450,000 baht (\$11,250). These nets are commonly made from fine nylon mesh and a collecting chamber which are able to filter out all aquatic organisms down to the size of fish fry under 1 cm long and tadpoles.



Fishermen lift their stationary trawl (*dtawng*) to check on the night's catch



A barrage net fishery (*gad dawn*) across a bridge culvert a few kilometres from Sri Songkhram

The size of the riverine floodplain fishery is thought to be immense, and although relatively little quantitative data is available to verify this there is plenty of anecdotal evidence to confirm this assertion. Mekong River Commission researchers estimated that the entire catch production of the Songkhram River Basin in 1999-2000 was between 22,000 – 26,000 tons annually (Suntornratana

et al, 2002), while Thai Department of Fisheries staff during a detailed study of large fishing gears active along the lower 170 kms of the Songkhram River, found that there was an estimated annual fish catch in six types of large fishing gear sampled of 1,400 tons (Boonyaratpalin et al, 2002). Individual fishers in Ban Pak Yam using stationary trawl nets can earn up to 8,000 baht a day from fresh fish sales alone, excluding fish preserved beneath their houses for later sale. The price of fish at this time of year slumps, due to the excess supply and even people in the village who do not fish themselves are able to buy fish at cheap prices (approximately 10 baht/kg) to make into fermented fish.

Involvement in the flood recession fishery is high, with estimates suggesting that over 70 % of the population are involved in the capture fishery in some way. Women and children are integrally involved in the fishery too. Villagers with capital and means may invest in large, commercial-type fishing gears (the price of materials for a single “*gad*” can be up to 30,000 Baht) and make massive daily catches for a few weeks, but even poor villagers can catch plenty of fish using small hand gears like lift nets (*sadung*) and gill nets (*mong*) or passive traps like cylindrical bamboo traps (*sai* and *dtuum*) when conditions are right, with very little investment. Almost every family owning rice fields will construct fish traps using bamboo and nylon netting (*lee*) at the lowest point where water exits their land and are able to catch significant quantities of downward migrating fish, especially at nights and during rainstorms. In fact, many small species of fish (e.g. *Rasbora* spp.) and larger air-breathing predatory species like catfish (*Clarias* spp.), snakeheads (*Channa* spp.) and climbing perch (*Anabas testudineus*) are perfectly adapted to life in paddy fields and make up the majority of catches.



Fish representing at least 30 species are part of the night’s catch from a *dtawng* in the mainstream Songkhram River. Up to 149 spp. were identified in flood recession *dtawng* catches during a Fishery Dept. survey in 2001-02, showing a higher Shannon-Wiener diversity index than at other times of year



Fisherwomen using lift nets (*sadung*) can fill a basket with small cyprinid fish in just a few hours fishing in receding streams and rivers



Across the Lower Mekong Basin, it is starting to be realized that the health and state of the riverine fisheries are closely linked to the extent and duration of the annual floods. The Lower Songkhram Basin, due to its peculiar topography and Mekong-linked hydrology is blessed with reliable and extensive floods most rainy seasons. They allow the amazing burst in aquatic bioproductivity that is witnessed each year as the floods recede and the local villagers take advantage of the proliferation of fish, large and small which can be caught. Local livelihoods are highly dependent on the maintenance of this natural phenomenon, which until recently has been poorly documented and understood. However, through initiatives like the Thai Baan Research in the Lower Songkhram River Basin, the myriad links between ecosystems, biodiversity and livelihoods are starting to be more systematically recorded and better understood, allowing for more informed decision-making about the management and uses of wetland resources and water development options.

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