

Summary of Thai Baan Research on the Ecology and Local History of the Seasonally-Flooded Forest in the Lower Songkhram River Basin

Traditional research methods addressing natural resources and livelihood issues are sometimes limited. This is all the more the case for complex river-based ecosystems and local economies that do not fit established thinking. These ecosystems support a wealth of biodiversity and natural resources, subject to dramatic seasonal changes of flood and recession. The complexity of local livelihoods that have adapted to these environments is easily overlooked. Thai Baan research, meaning Villager's research, has been developed by local people to undertake research based on their own knowledge and experience. In doing so, Thai Baan addresses many of the limitations of traditional research approaches.

Thai Baan research illustrates that rural livelihoods are based on the combined use of a wide range of resources adapted to seasonal changes. The methodology demonstrates the capacity of local people to undertake a wide range of research activities and document the close relationship between rural livelihoods, culture and complex river-based ecosystems. The research offers a way forward for local people's wisdom and experience to be the cornerstone of natural resource monitoring and assessment, and for local people to take a leading role in local sustainable development.

The "Ecology and Local History of the Seasonally-Flooded Forest in the Lower Songkhram Basin" research, using the Thai Baan research methodology, was undertaken by 240 villagers from 4 villages - Baan Tha Bor, Baan Pak Yaam, Baan Uan, and Baan Yang Ngoy in Sri Songkhram District, Nakhon Phanom Province in Northeast Thailand. The research methodology utilises the situated knowledge of local communities on ecology, management of natural resources, local history, socio-economy and livelihoods.

The Thai Baan research in the Songkhram was facilitated by IUCN-The World Conservation Union, the Nakhon Phanom Environmental Conservation Club (NECC), Southeast Asia Rivers Network (SEARIN) and Mekong Wetlands Biodiversity Programme (MWBP)¹ .

History of the Lower Songkhram River Basin

The “Ecology and Local History of the Seasonally-Flooded Forest in the Lower Songkhram Basin” research has found that the lower Songkhram area has been the home of many different ethnic groups for a long time, as a consequence of the rich natural resources and the location which has long been a transport route between the extensive Sakon Nakhorn Basin and the Mekong River.

The village researchers report that the first groups that traveled to the area were the Khmer (called by the local as Khom) and the Lao. The Khmer traveled by Kra Saeng boat along the Mekong and its tributaries for trading items of silverware, gold ware, knives and swords, while the Lao from Savannaket and Khammuan traded their rice in exchange for salt from the Songkhram valley.

During World War II, Vietnamese people moved to some of the large towns along the Mekong in Thailand. Some of them worked as labourers with trading boats traveling along the Mekong and its tributaries, including the Songkhram. A number of them, after seeing the rich natural resources of the area, permanently settled in the area for fishing.

There have been many other ethnic groups from Northeast Thailand and Lao who have relocated to the area such as the So, Lao, Nyaw, and Chinese. These groups moved either to the existing communities or established new communities. They fished, farmed in the flooded forest, traded and worked on commercial boats.

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Accordingly, the communities where the research has been conducted are historically linked to the different ethnic groups who moved to the area at various times. The summary of each community is as below:

- Baan Pak Yaam was a stop for the Lao from Kammuan who traveled upstream to buy salt to take back to Laos. Later groups that moved to the community, such as the Vietnamese, settled during WWII, Thai from Ubon and Nakhon Phanom. These settlers made Baan Pak Yaam an important trading site on the Songkhram River.
- Baan Tha Bor community was built by merchants and fishers originating from Khammuan and Champasak provinces in Laos. During WWII Vietnamese who worked with the trading boats also moved to the community. Later Thai people from Ubon, Nakhon Phanom, and Yasothorn, together with Chinese merchants settled down, making Baan Tha Bor a large community and a center of trading in the Songkhram Basin. Presently Baan Tha Bor hosts six ethnic groups: Thai, Lao, Nyaw, Soe, Chinese and Vietnamese.
- Baan Yang Ngoy was built by Khmer merchants who sold silverware and swords. They traveled by boat along the Mekong and by foot. It was reported that the villager's first location was called "Sopamiatra" (locally pronounced as som pa mid). However, the old community disintegrated due to war and disease. Later on the Nyaw from Pong and Sa towns in Laos came to the area for trading and fishing. They relocated in the village from the old Khmer graveyard. Presently villagers in Baan Yang Ngoy still speak Nyaw language.
- Baan Uan was built by people from the confluence of the Nam Songkhram and Mekong rivers at Tam Boon Chai Buri, and Thai people from Ubon who relocated to the area for farming and fishing. Later villagers from parts of Yasothorn and Mukdahan provinces arrived, who came to purchase fermented fish, dried fish, and fermented bamboo shoots also moved to the community.

The Thai Baan research illustrates that the economy of communities in the Songkhram basin has been connected to communities in other areas for a

long time, through merchants who traveled along the Mekong and its tributaries. Local Songkhram villagers in the seasonally-flooded forest have traded their products such as fermented fish and dried fish with rice, salt and chili from upland communities. They also sold dried fish at some festivals and ceremonies such as the annual That Phanom pagoda festival.

In the early 1940s, there were Chinese sailing ships plying the river selling rice and chili, and purchasing fermented fish from the area to sell in communities along the Mekong in Nong Khai, Mukdahan, Ubon, and on the Lao banks of the river and even as far as Srisaket Province on the River Mun.

In 1950 a new road was built connecting Sri Songkhram and Tha Utane districts, minimising the role of river navigation. More and more merchants started using the road for their trading activities. Later, as roads improved and trucks were introduced, it became possible for merchants to buy fresh fish, vegetables, bamboo shoots, and mushrooms from the Nam Songkhram basin for selling in many other areas.

Apart from fish, cattle and buffalo have long been important for the local economy. The seasonally-flooded forest and surrounds of the lower Songkhram has served as the largest grazing plains in Sakon Nakhon basin. Villagers in the lower Songkhram basin have traded cattle with Thai people in Central and Eastern Thailand for over a century. Presently, they trade cattle and buffalo in the local livestock markets only, but large livestock remain a vital possession for the villagers.

Ecology of the Lower Songkhram River Basin

The research finds that the 420 kilometre Songkhram River is a most fertile river basin. In the lower reaches, stretching up to 200 kilometres from the mouth of the river, there is a seasonally-flooded forest where annual floods cover an area of approximately 500,000 – 600,000 rai for three to four months during the rainy season. Very similar to the Tonle Sap of Cambodia, in the rainy season the lower Songkhram receives floods derived from upstream runoff and backflow from the Mekong River.

Part of the unique nature of the lower Songkhram river basin is the flood-resistant forest (known in Thai as pa bung pa thaam) comprising many

tree and shrub species, including a dominant pioneer bamboo species called pai gasa, in the flood area and on the banks.

The village researchers find that the complex wetland ecosystem of the lower Songkhram river basin consists of 28 different sub-ecosystems, hosting diverse plants and aquatic organisms. The Thai Baan researchers identify 208 kinds of plants and fungi, 124 fish species, five turtle species, four shrimp species, 10 mollusk species, four crab species, and six aquatic insects.

Out of 124 fish species, 115 species are native fish. There are 58 fish species that can be found in the Songkhram River all year round. There are an additional 57 species of migratory fish that migrate from the Mekong River, including the Mekong Giant Catfish. The Giant Catfish migrated to the Songkhram River during the flood season to feed on aquatic weeds, invertebrates and saline clay soil (Dtin eudad) in the flooded forest. According to a community note, a number of Mekong Giant Catfish were caught at Kud Takla on the Songkhram River in 1952 and 1953, with a maximum weight of 270 kilograms and have been caught in decreasing numbers ever since. The last Giant Catfish caught was recorded in 2003.

The current situation of the Lower Songkhram Basin

The local economy is still heavily dependent on products originating from the seasonally-flooded forest including fresh and fermented fish, wild plants and cultivated vegetables and large livestock. The number of families who own cattle or buffaloes has increased, while the number of animals per household has decreased due to communal grazing plains have often been occupied by agribusiness ventures. In the last three decades several large agribusiness ventures have established a presence in the area, buying up large amounts of land at cheap prices and occasionally encroaching on common land, which has led to many instances of conflicts between local communities and the companies, some of which have ended up in the courts.

The research finds that there are 79 kinds of traditional fishing gears, but eight of them are no longer in use. A number of large scale commercial fishing gears were introduced by the newcomers to the communities and widely adopted over the last 40 years or more.

For agriculture in the seasonally-flooded forest and surrounds, there are various kinds of rice cultivation including lowland paddy fields and terraced rice fields. The rice is produced mainly for household consumption. In some years if conditions are right, high yields are possible and villagers can get a reasonably high income from selling rice.

The researchers found that there were once 47 different variety of rice grown by villagers. Following introduction and promotion of commercial high yielding rice varieties by state agencies the number of varieties has fallen. Currently there are only seven varieties of native rice grown in the area. The villagers also grow various kinds of vegetables for household consumption in upland fields and along the river banks during the dry season.

An important concern coming out of the Thai Baan research is the decline in productivity of the seasonally-flooded forest as a result of the use of destructive commercial fishing gears, coal making, and commercial farming operations owned by agribusiness companies. The companies use significant amounts of chemical fertilizers and pesticides in their farming practices leading to reported instances of fish kills around the intensive farming plantations and concerns about human health risks.

At Sub-district level there is a fishing auction system run by local administrative organizations (TAOs) to raise funds for community development locally, reflecting insufficient funds provided by the state. This may lead to over-fishing in the area. The productivity of the lower Songkhram River has been further impacted by dam construction upstream. The dam headponds created have raised water tables that may cause salinisation around the surrounding area and kill riparian vegetation.

Importantly for the last three years unusual water fluctuation has been observed in the Songkhram basin. Such unusual water fluctuation has only ever been observed within the last 3 years, and has been reported in many parts of the Mekong. While the exact causes may be in some doubt, such unusual water fluctuations are consistent with the development and operation of dams in the upper reaches. When the river ecosystem is affected by unusual water fluctuations, migration pattern of fish may also be affected. There are widespread invasions of aquatic weeds such as mai arab (Giant

Mimosa). The villagers complained they could not organize a ceremony on the riverbanks due to the unusual water fluctuations at Baan Pak Yaam

The degradation of the seasonally-flooded forest is affirmed by the increasing number of local fish species that are becoming rare, or that might even already be extinct. There are 14 fish species that are nowadays considered to be rare, and 11 fish species that appear to be extinct locally as they have not been found in the Songkhram River for over 50 years. These locally extinct species are migratory fish that migrate between the Songkhram and the Mekong.

Amidst the environmental crisis in the Songkhram basin, the villagers have tried to solve the various problems that have arisen. For instance, they have set up many fish conservation zones, establishing community rules prohibiting destructive fishing gears, and building habitats for fish. Local communities have taken on these management responsibilities themselves. These activities have been supported by district state agencies and temples.

Local community management activities have ensured equity with poorer people being allowed to fish in conservation zone on some occasions. Importantly, it was found that a type of fish conservation by the community has been practiced for a long time in the form of “sacred areas” where access to fishing is restricted, but is still respected by villagers.

The Thai Baan research in the Lower Songkhram River Basin has generated a wealth of information on the ecology and livelihoods in the basin. Local people have led and carried out every step of the research—identifying research issues and questions, gathering and analyzing data, and producing final reports. The research is based on local knowledge and experience, and displays local people’s sophisticated understanding of the area’s ecology, as well as their capacity to manage their natural resources.

The Songkhram River has long been a rich and productive resource but is increasingly under threat. The Thai Baan research provides a mechanism for local people to present their insights and values to ensure the long-term sustainability of their river.