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“The Songkhram River wetlands of Northeast Thailand and participatory resource research initiatives”

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Introduction

The 480 km long Songkhram River of Northeast Thailand, rises on the forested slopes of the Phu Phan mountain range and rapidly descends to the broad floodplain of the Sakhon Nakhon Basin. Over the lower 300 kms or so of the river’s course, it gently traverses some of the most significant wetland habitats in Northeast Thailand (a region more commonly referred to by Thais as “*Isaan*”), before entering the Mekong River in Tha Utaen District of Nakhon Phanom Province, opposite Lao PDR. The Lower Songkhram River Basin (LSRB) forms a complex mosaic of wetland habitats, both seasonal and permanent; riverine, palustrine and lacustrine; natural and artificial; which in recent years have started to be recognized for their significance in terms of biodiversity and contribution to maintaining local livelihoods. Of particular importance is the role and function of annual flooding regimes to the locally abundant *paa bung paa thaam*³ or seasonally inundated forest ecosystem. This article explores some of the complex relationships between local people, some key institutions and the LSRB wetlands, plus the historical and present threats to the maintenance of the productivity of the wetland resources which supports the local economy.

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³ *Paa bung paa thaam* is the colloquial *Lao-Isaan* term for seasonally flooded forest, comprised of a mixture of low trees, thorny shrubs and bamboo clumps, which was at one time found in the lower floodplains of *Isaan*’s largest rivers, draining eastward to the Mekong.

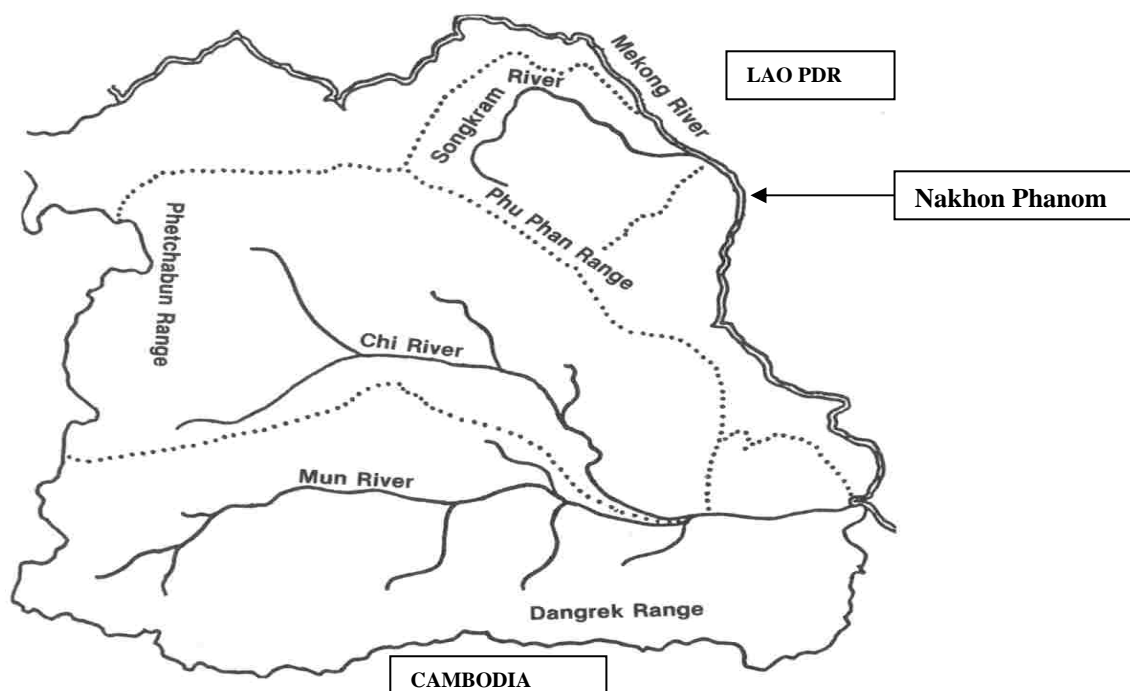


FIG. 2 TOPOGRAPHY OF NE THAILAND
(Source: Craig & Pisone, 1988)

Compared to other parts of *Isaan*, the Sakhon Nakhon Basin is subject to relatively heavy and dependable seasonal rains, ranging from 1,600 – 2,300 mm per annum, over 90 % of which falls in the six month wet season from May to October. This pattern leads to a distinct peak in run-off during August and September each year, when rivers and streams in the upper basin swell and frequently over-top their banks causing localized flooding. As the swollen tributaries merge and reach the broad, flat floodplain in the lower basin, a backwater effect is formed caused by the influence of the Mekong River's level which hinders the drainage of the Songkhram River and contributes to widespread flooding each year. In some years, when the Mekong River's level is particularly high, there will even be a reverse flow occurring with rich, silt laden waters from the Mekong flowing back up the Songkhram River for many kilometres. In the average year, the flooding in the LSRB will cover an area of nearly 1,000 km², but in an exceptional year (i.e. a 1 in 50 year flood), the area inundated could be up to twice as much as this (KKU, 1997). The flat topography means that a rise in water levels of just 10 centimetres can make a significant difference to the area of land inundated.

The “floodpulse” concept and living aquatic resources

The complex hydrological processes of Mekong backflow and regular, dependable rainy season flooding for 3 – 4 months over a wide area, is similar to the phenomenon found at the Tonle Sap and Great Lake of Cambodia, albeit on a much smaller scale. Each year there is a lateral exchange of water, nutrients and organisms between the river channel and the connected floodplain. This annual “floodpulse”, as it has been referred to by fishery scientists and ecologists (Junk et al. 1989; Coates et al, 2003; Junk and Wantzen, 1994), contributes to the richness and variety of habitats and biodiversity, both terrestrial and aquatic, which distinguish the area. Local people throughout the Lower Mekong Basin, have long harvested the abundant living aquatic resources for subsistence needs, barter trade with other local commodities and in more recent times, income too. It is near extensive wetlands like the Tonle Sap and Lower Songkhram River where the concentration of people involved in the fishery is most obvious. In both places, there are villages with economies largely depending on fishing and harvesting wetland products, and local culture, customs and traditions are closely entwined with fish and fishing practices (Petchkam, 1997; Brenner, 2003).

A brief history of wetland resource usage in the Lower Songkhram Basin

Up until the Second World War, the LSRB was sparsely settled, with villages tending to occupy higher ground nearer extensive semi-moist evergreen and dry dipterocarp forests which provided rich hunting and foraging, plus upper alluvial terraces which could be utilised for wet season paddy cultivation. The forests were dissected by many ephemeral streams and rivers, interspersed with seasonal ponds and swamps, which provided plentiful foraging for fish and other aquatic organisms. The Songkhram floodplains were mainly covered with dense seasonally inundated mixed species forests, but also areas of wide grassy plains and bamboo stands where soils were nutrient poor, which would be extensively harvested by villages nearby. However, in all probability the long period of annual flooding, isolation and prevalence of water-borne diseases and malaria, made the floodplains rather unhealthy places to live year round, so local people preferred to reside on higher ground in the wet season, but would forage and fish in the wetlands during the dry season. The plains were also important locations to raise buffalo and cattle, due to the abundant land available for grazing and water sources, and this tradition continues today with high local ownership of large livestock still evident.

Post World War Two and during the Cold War of the 1950's and 60's, Thailand embraced a semi-liberal capitalist ideology under the close guidance of Bretton Woods institutions, which encouraged the rapid opening of the rural hinterland to commerce and conversion of forested land to cash crops for export, which in turn raised funds for industrial expansion (Bello et al. 1998). The governments of the period, were almost exclusively military dictatorships which were effectively able to attract large amounts of United States and Western government aid for rural road building, irrigation and hydropower schemes, in return for following conventional development paradigms and violent suppression of communism, which was perceived by analysts as the main threat to the stability of the region (Baker and Pongpaichit, 2005).

During the mid-1960s, US military bases were permitted to be established on Thai soil, including airforce bases in Udon Thani and Nakhon Phanom, in order to expedite the growing war in Vietnam and “the other theatre” (i.e. Laos and Cambodia). This was one factor which led to a rapid population growth in urban centres around the Songkhram Basin (e.g. Udon Thani and Nakhon Phanom), which contributed to an increase in demand for natural resources, including timber for building, charcoal for fuel and fish for food. Companies bid for state concessions to clear the large hardwood trees, while local people were later given sub-concessions for producing charcoal from the remaining forest. According to one report, logging concessions peaked between 1967 – 1972, while commercial charcoal production peaked in the LSRB between 1974 – 1976 (Anon, 2004). As the road network spread and it became easier to transport natural resources from the rural periphery to the population centres, so the rate at which natural resources could be exploited and taken to markets increased. At the same time, there was a steady movement of people from other provinces in *Isaan* into the LSRB, both to take advantage of the availability of land for agriculture, but also to harvest and sell the abundant aquatic resources, especially fish.

Yet another factor in this melee for the natural wetland resources of the LSRB, which started in the 1950s and continued unabated for four decades was the introduction of “commercial”, large scale fishing gears, which were far more efficient than their predecessors which had been developed primarily for subsistence purposes. Firstly, Vietnamese migrants into the area introduced new gears such as large raft-mounted lift nets (*pae sadung*) and stationary trawl nets (*dtong*), placed across the flow during the flood recession, which were able to catch massive amounts of fish over a relatively short period of time. Later still, the introduction of fine meshed nylon netting onto the market, allowed villagers to string walls of netting across streams with collection points (called *gad dton*) and harvest nearly all fish moving off parts of the floodplain at the end of the flood season. Along with universally adopted finer-meshed and highly efficient, nylon gill nets, fish stocks came under increasing pressure as populations grew and more fish were being processed and sold (Petchkam, 1997). Some villages, like Ban Pak Yam and Ban Tha Bor grew rapidly as outsiders migrated in, but were constrained in growth by only limited land being available for building houses due to the annual floods entirely surrounding the villages. Up until 30 to 40 years ago, the main transport method in and out of these lower Songkhram villages was by boat, with regular passenger and small freight boats plying up and down the river from Nakhon Phanom and the Mekong bringing in supplies and taking out fish and other wetland products (Tai Baan Research Network, 2005).

The rise of agribusiness involvement in Songkhram Basin

The growth of a road network throughout Isaan facilitated traders to take away fresh wild fish in refrigerated trucks to urban centres in other provinces, where they fetched a good price sold as “Mekong fish” in markets and restaurants. Similarly, fermented salted fish (*pla daek*) in large clay jars (*ong*), fermented sour fish (*pla som*) and fermented bamboo shoots (*nor mai som*) became local wetland products which the Nam Songkhram was widely associated with and traders came from far away to purchase (Petchkam, 1997). It was not only fish and bamboo shoots that attracted the attention of outsiders, but plentiful and cheap land most of it under local traditional or common tenure, came to be regarded as another potential source of profit to outside speculators. In the late 1970s and early 80s, agribusiness companies started to express an interest in occupying large tracts of floodplain land, to be used for planting intensive cash crops and industrial tree plantations. With the assistance of certain state agencies, local officials and intermediate land agents, they were able to buy up at low cost or simply annex extensive blocks of seasonally flooded land, which was perceived as fertile and productive. Some plots of land was reportedly bought from villagers for as little as 150 Baht per *rai*⁴, with villagers often being asked to sign or use a thumbprint to relinquish their occupancy rights to the land. Using heavy machinery, the companies were able to clear the tracts of land of vegetation – mostly degraded *paa bung paa thaam* – and level it, filling in small ponds and depressions, to create broad, featureless plains in preparation for planting crops. Fences were put up, and local people were excluded from using the land for gathering wetland products, fishing and grazing livestock. Some estimates suggest that a handful of agribusiness companies occupy up to 60,000 *rai* (9,600 ha) of land in the Songkhram Basin (Watershed, 1999).

At the same time, the companies established several processing factories nearby, one located in Sri Songkhram District, Nakhon Phanom Province for canning tomatoes, and another in Segaa District, Nong Khai Province, for canning sweetcorn and tomatoes. Industrial plant machinery was imported from Taiwan at special tax-free rates, as the promotion of export-led agribusiness in Upper Northeast Thailand was in line with government policy. In the early years, large numbers of local people were employed by the companies, both in the factories and on the plantations, as tractor drivers, foremen, planters and pickers. In the mid-1990s, one of the companies – Asia Tech Group Limited promised to build a state-of-the-art pulp and paper mill for processing 150,000 tonnes/year of eucalyptus and Acacia wood, which were heavily promoted locally for farmers to plant, with their rapid growth and flood-tolerant properties (Watershed, 1996; Guayjaroen, 2001). The companies public relations efforts appeared to offer a tempting option to local people for earning a steady wage on their own land, instead of migrating to Bangkok or central provinces of Thailand, as was the norm amongst young *Isaan* people up until then.

However, the early promise of jobs and improved living standards, gradually turned to disillusionment and resentment by local communities located around the perimeter of the agribusiness plantations, mainly due to loss of access to traditional resources and a realization that they may have been swindled out of their private and common lands by the companies (Watershed, 1996). The 1997 Asian economic crisis also played a pivotal role, as the agribusiness companies had accumulated massive debts which they could not repay and projects had to be abandoned (Bello et al, 1998), including Asia Tech’s pulp and paper mill. Another factor which has been reported by some commentators (e.g. Guayjaroen, 2001) and is frequently recounted by villagers in the area, was that the agribusiness companies started to lose the good faith of farmers involved with planting tomatoes due to lower than promised prices or late/non-payment of money for produce sent to factory. The blame for financial or communication problems was often passed on to agents, who apparently acted as the middle men between the company and the farmer, but in reality had closer affiliations to the companies.

A final factor, which called into question the original rationale for locating the agribusiness factories in the LSRB, was the decline in production of the tomato plantations and factory, apparently caused by low competitiveness and high production costs of Songkhram Basin canned tomatoes on the world market (interview with factory manager of Suntech Group Company Limited, Ban Don Daeng, Sri Songkhram District, March 30, 2005). It appeared that the floodplain land was not as fertile as had earlier been assumed, and needed heavy soil amendments in the form of lime and chemical fertilizer to produce high yields. Pests were another recurrent problem which were summarily treated by chemical

⁴ Up until 1997, \$US 1 was roughly equivalent to 25 Thai baht. A *rai* is the common unit of land measurement in Thailand, with an area equal to 1,600 m² i.e. 1 ha = 6.25 *rai*.

pesticides, at first sprayed over crops by plane, but in later years as cultivated areas fell, the application method changed to spraying from tractors or hand application. In any case, in 2005 only 1,000 out of 8,000 rai (1,280 ha), reportedly owned by Sun Tech Group Company in Sri Songkhram District were being cultivated for tomato production, the rest abandoned to the invasive alien weed *Mimosa pigra* which dominated the floodplain vegetation over large tracts (author observations).

Land reform and resource degradation

It was not only private business interests which were gradually encroaching on the *paa bung paa thaam* wetland habitats of the LSRB. The Agricultural Land Reform Office (ALRO), a state agency originally established in 1975 with the main purpose to redistribute large land holdings to the landless poor. However, ALRO has never successfully accomplished this task and ALRO land has frequently been implicated in large land scandals involving politicians and business interests (Bello et al, 1998). In the Lower Songkhram River Basin, the Nakhon Phanom provincial ALRO has jurisdiction over at least 45,000 rai (7,200 ha) of floodplain land, originally officially designated as “degraded forest” or “vacant wasteland” (ALRO, 2004), but in actual fact comprised most of the land area formerly occupied by the biologically diverse *paa bung paa thaam*. Once land was declared ALRO administered, it was usually bulldozed clear of vegetation and allocated to local families who had registered, at the rate of 18 rai (approx. 3 ha) per household, with a land document issued that allowed the land to be inherited, but forbid the selling of the land plot or use as loan collateral. Following distribution to local households, other state agencies would often come in to the area and construct public infrastructure, such as roads, weirs and dams for irrigation. Hence, as the land was not considered by the state to have any value as a forest or wetland, the main policy thrust was to convert it to agricultural land, principally for dry season rice cultivation (Blake, 2001). Ironically, within a few years much of the ALRO land allocated for irrigated rice cultivation had been abandoned, often due to withdrawal of state subsidies or failure of the water delivery system and the flooded forest vegetation started to regenerate. An early dominant colonizer, which seemed to thrive in the new conditions was the bamboo species (*Bambusa* sp.), known locally as *pai gasa*.

From about 1980 onwards, as the nation concentrated on building up its status as a leading exporter of agricultural produce, including rice, cassava, sugar cane and jute sourced from the agricultural frontiers of Northeast Thailand, the rate of forest clearance increased. Between 1961 and 1985, the overall forest cover in Northeast Thailand reportedly declined from 42 % to 14 % and remaining large forest pockets were mostly confined to upland National Parks (Vitayakorn, 1993). However, there is evidence to suggest that the most rapid clearance and wholesale conversion of the LSRB floodplain land came at a slightly later stage to other parts of upland *Isaan*, as indicated by the table below.

TABLE 1. Land Use Changes across 739 km² of floodplain land in Lower Songkhram River Basin between 1989 and 1998 (Source: Chutiratanaphan and Patanakanok, 2001)

Land Use Types	1989		1998		Land use changes (%)
	Area (km ²)	%	Area (Km ²)	%	
1. Urban land	10.27	1.39	16.11	2.18	+ 57.38
2. Paddy	348.12	47.12	353.81	47.89	+ 2.26
3. Field crop	59.03	7.99	67.38	9.12	+ 14.02
4. Forest	113.70	15.39	73.58	9.96	- 35.33
5. Disturbed forest	33.62	4.55	9.60	1.30	- 71.30
6. Bamboo forest	22.98	3.11	12.12	1.64	- 47.13
7. Disturbed forest	-	-	4.51	0.61	-
8. Idle land	105.94	14.34	138.89	18.80	+ 21.16
9. Marsh & swamp	21.65	2.93	13.30	1.80	- 38.69
10. Water Resources	23.49	3.18	49.50	6.70	+110.73
TOTAL	738.80	100.0	738.80	100.0	

Table 1 shows that landuse categories of “forest”, “disturbed forest” and “bamboo forest” (this latter category almost entirely relates to seasonally inundated forest area) have declined by a total of 35 %,

71 % and 47 % respectively over a mere nine year period. At the same time, marsh and swamp areas (i.e. natural wetlands) has declined by nearly 39 %. Looking at the other categories, maximum growth over the same time period was seen in “water resources” (i.e. artificial reservoirs), which increased by 111 % to almost 50 km², urban land went up by 57 %, followed next by “idle land” increasing by 21 %. This latter category attests to the high rate of abandonment of agricultural land by both local villagers and agribusiness interests, following conversion from forest or wetland, which is still a predominant feature of the LSRB. Interestingly, while the sharp increase in water resources appears to be closely correlated with declines in forest and natural wetland resources, there has not been a corresponding increase in productive paddy land as a result of more irrigation sources available. Yet, the most common justification for construction of water storage reservoirs given by state agencies responsible (like the Royal Irrigation Department and the Accelerated Rural Development Office) has been provision of water for “agricultural use” in the dry season. The increase in “field crops” of 14 % is likely to be attributable chiefly to non-irrigated cash crops such as sugar cane and cassava grown on upper alluvial terraces and to a lesser extent, some irrigated high value crops (such as tomatoes and sweetcorn).

Villagers begin to assert their rights

As competition for land and natural resources intensified, in what previously had been a rather sparsely populated area, a growing number of villagers started to feel negative impacts from declines in availability of previously common products. In particular, several villages located nearby to the large land holdings of agribusinesses, were subject to loss of access to wetland resources and hence suffered a decline in livelihood (Guayjaroen, 2001). One village in particular, called Ban Dong San in Agaad Amnuay District, Sakhon Nakhon Province, has attracted a fair amount of attention due to a land conflict between villagers and one of the large agribusiness companies, leading to a protracted court case. In 1990, Sun Tech Group Limited started buying up large plots at cheap prices via brokers from villagers on the *Tung Phan Khan* floodplain near to Ban Dong San using dubious means of acquisition (Anon., 1996). The company’s president justified the decision to plant eucalyptus in the floodplain during an interview thus: “*The Songkhram River has a problem with flooding in the rainy season. Other crops or trees cannot be grown on the lands.....My objective was to experiment with eucalyptus, because I had an idea that eucalyptus could grow in areas where other crops could not grow. My objective was to change the flooded areas to forest by planting eucalyptus.*” (Watershed, 1996).

The company bulldozed and planted about 4,000 rai (640 ha) of land at *Tung Phan Khan* to eucalyptus and *Acacia mangium* plantations, but only 1,500 rai became established, due to protracted flooding each year (Guayjaroen, 2001). *Tung Phan Khan* floodplain had previously been a fertile site for fishing, gathering of many edible and useful wetland products and an important dry season area for livestock grazing. Following the acquisition and conversion of the floodplain to industrial tree plantation, a group of Ban Dong San villagers challenged the rights of the company to ownership of the area that had hitherto been public lands with no land title documents. After many petitions to government agencies at all levels of government and a six year court battle that ended with the Sakhon Nakhon provincial court finding in favour of the villagers, the company was ordered to return the disputed land to Ban Dong San village as public benefit land. The company felled and removed most of the eucalyptus plantation in 1998, leaving the remaining trees to be harvested by the villagers of Ban Dong San and added to the village development fund. In 2004-05, the returned land on *Tung Phan Khan* floodplain was divided into sectors by the village committee, with over 2,400 rai being converted to rice fields and split amongst village households at a rate of 20 rai per family, while the other 2,000 rai or so being preserved as community forest (author observations).

During the 1990’s, the Songkhram river itself, the diverse fringing floodplain wetland ecosystem and livelihoods of local communities started to face new threats from another direction. There had been grand plans to build a series of dams to create a massive irrigation project across the Songkhram Basin since at least the early 1980s, when the Interim Committee for Coordination of Investigations of the Lower Mekong Basin (a forerunner of the Mekong River Commission) commissioned a set of studies for consultancy companies to look at the potential for regulating the Songkhram’s flows for irrigation and flood control (NEDECO/TEAM, 1983). However, the ambitious original project proposal to develop seven smaller dams on tributaries and the upper mainstream, reclamation of floodplain lands by poldering, plus a large “regulator” watergate structure near the Mekong confluence, was not adopted at the time. But later, an adapted proposal involving a dam near the confluence forming a large shallow

reservoir of 255 km² to provide pumped irrigation to over 900 km² of surrounding land was taken forward by the Department of Energy Promotion and Development (DEDP) for further study and possible development at a projected cost of approximately US\$ 400 million (DEDP, 1995).

Due to its size, the Nam Songkhram Project (as it was known) required an Environmental Impact Assessment (EIA), before it could proceed. The initial project plan, carried out by a consultant company, was rejected by the National Environment Board in 1994 leading to a reduction in the height of the dam crest by three metres (KKU, 1999). The new project design prompted a second EIA to be carried out by a team of consultants from Khon Kaen University. Although this recommended various environmental mitigation measures, the report still concluded that the project would have a beneficial impact on capture fisheries and the loss of forest resources was not critical, as the large reservoir would provide new livelihood opportunities in irrigated agriculture to those villagers formerly dependent on the *paa bung paa thaam* (KKU, 1999). The studies were almost entirely carried out by academic experts from outside the Songkhram Basin, who mainly used formal and inflexible data collection methodologies (with heavy reliance on questionnaires) which minimized the role of local participation and indigenous knowledge in the process and reports produced. Information was extracted and not fed back to villagers, leading to suspicions that the project would not necessarily reflect their aspirations or potentially harm their livelihoods. As communities were heavily dependent on fishing for food and income many started to ask questions about whether the dam really would provide more fish, or whether it might cut off the migration route of fish between the Mekong mainstream and flooded forest habitats where numerous species spent the wet season to spawn and feed, before returning downstream in vast numbers during the flood recession (Watershed, 1999). In addition, there were seven villages expected to be flooded by the reservoir and would have to be relocated, but suitable alternative locations could not be guaranteed by the government.

Emergence of a local environmental conservation movement

A group of villagers from some of the communities that would be directly impacted by the Nam Songkhram Project joined together with support from a local NGO and formed a “Songkhram River Conservation and Rehabilitation Club” (Watershed, 1999). This villager-led movement became a powerful local voice in opposing the Project and joining a coalition of other state infrastructure project-affected villagers in other river basins of *Isaan*. In 1998 a public hearing was held to hear the arguments for and against the Nam Songkhram Project, and it became clear that there were serious, unaddressed deficiencies both in the Project’s rationale and EIA conclusions (Lohmann, 1998); eventually leading to the Project being shelved in March 2002 by a Cabinet decision which cited environmental problems and poor value for money as being the main reasons (Anon, 2004). Around the same time, the DEDP was dissolved during a restructuring of the Ministry of Science, Technology and Environment which became the Ministry of Natural Resources and Environment. Despite the apparently final decision to shelve the Nam Songkhram Project, two years later a consultancy company report for the Department of Water Resources was still considering the merits of building the Nam Songkhram Dam at the river’s mouth and estimated that there was potential to bring 1,036 km² or 33.8 % of the entire LSRB under irrigation (Department of Water Resources, 2004) and the Thai Prime Minister also gave weight to resurrecting the dam project, during a speech at Sri Songkhram District in August 2005. The actual Project plans are now under the stewardship of the Royal Irrigation Department, which has shown interest in proceeding with it at some point in the future. There is also a plan to include the Nam Songkhram Basin, in the so-called “Water Grid Project” currently being considered by the Thai government, which would potentially involve inter-basin and trans-national boundary movement of water from Laos into Northeast Thailand (Samabuddhi, 2005).

Songkhram wetlands importance are recognized internationally

By the turn of the millennium, there were growing concerns amongst diverse actors about the future health and status of the Mekong River, its major tributaries and the riparian communities. This coincided with an increasing awareness of the role of living aquatic resources in the diets and livelihoods of local people and the potential threats posed by upstream water development projects were more widely publicized (Osborne, 2000; Roberts, 2001; Sverdrup-Jensen, 2002; Bush, 2003). More studies and projects addressing natural resource conservation and sustainable development concerns, especially surrounding water management in its many guises were started during the last decade, while civil society in Thailand progressively strengthened. During 2003, the LSRB was

selected as the Thailand “Demonstration Site” for piloting good wetland conservation practice under the national component of the Mekong Wetlands Biodiversity Conservation and Sustainable Use Programme (MWBP)⁵. A core component of the Demonstration Site’s early priority in dealing with some of the issues facing local people dependent on wetland resources for their livelihoods was to trial a participatory, grass-roots approach, called “Tai Baan Research”. Tai Baan⁶ Research represents a methodology which draws on local people’s wisdom, experience and traditional culture in (first) assessing and (later) monitoring natural resources and livelihoods at the community level for improved planning processes.

Tai Baan Research originated as a distinct methodological approach to record local knowledge in 2001, amongst communities impacted by the notorious Pak Mun Dam, a World Bank supported and financed hydropower project built in Northeast Thailand in the early 1990s. Previously vibrant fishing communities lost their chief means to make a decent livelihood, following serious declines in fish populations after the completion of the dam, acting as a major barrier to fish migrations and the permanent flooding of numerous sets of rapids which had previously acted as important fish habitats (Amornsakchai et al, 2000). Local people had earlier lost faith in state-led pre- and post-impoundment social and environmental studies at Pak Mun, feeling they inadequately reflected their own indigenous observations, concerns and accumulated wisdom about the river and its aquatic life. They expressed keen interest to conduct their own research when offered the chance and were subsequently assisted by a Thai-based NGO called South East Asia Rivers Network (SEARIN) (Tai Baan Research Network of the Pak Mun Assembly of the Poor, 2002). The villagers that conducted the research were termed the “Researchers”, with help in recording the data from a few NGO staff and student volunteers, who were termed “Research Assistants”. Over the course of a year coinciding with a trial opening of Pak Mun’s gates, the Tai Baan Research was able to effectively document the rich body of local ecological knowledge that existed and note the rapid recovery of the rapid habitats and fish populations that occurred once the river was allowed to flow freely. Despite the evidence presented by the Tai Baan researchers about the impacts of the dam on their livelihoods and local ecology, and the ability of the riverine ecosystem to partially recover if the dam was opened, the Thai cabinet decided to resume power generation operations in 2002 for eight months of the year, only allowing the river to run freely for four months as a minor concession to long-running local protests calling for the dam gates to be opened permanently.

Tai Baan research is adopted at several sites across Thailand and Cambodia

In 2002, the Tai Baan research methodology spread to villager groups at Rasi Salai, a dam located further upstream on the Mun River from Pak Mun, and to Chiang Khong District next to the Mekong River in northern Thailand, where villagers were being negatively impacted from changes in river levels caused by upstream developments related to mainstream hydropower dams and a navigation improvement scheme. The following year, a Tai Baan Research Network group was established in four villages next to the lower Songkhram River, with guidance from SEARIN and the locally-based Nakhon Phanom Environmental Conservation Club, and funding from IUCN’s Water and Nature Initiative (WANI), under Thailand’s MWBP Songkhram Demonstration Site. Since then, Tai Baan research models have been adopted at other sites in Thailand, including the Salween River and Yom River in northern Thailand, and most recently in 2005, on the Mekong at Stung Treng in northeastern Cambodia. Hence, there is now an active network of groups participating in river-based research and exchanging the results of that research across the Lower Mekong Basin and further afield. While the concept and rationale for Tai Baan Research is easy enough to grasp, the actual practice and steps involved are relatively complex and take a lot of time and contact at the village level. A summary of the main Tai Baan Research steps are presented in Box 1 below. It is important that the villagers themselves decide on the research agenda and issues, to adequately reflect what local people consider as significant. In the case of the Songkhram Tai Baan researchers, the villagers chose to research six

⁵ MWBP is a joint programme of the four riparian governments of the Lower Mekong Basin – Cambodia, Lao PDR, Thailand and Viet Nam – managed by the United Nations Development Programme (UNDP), The World Conservation Union (IUCN) and the Mekong River Commission (MRC), in collaboration with and other key stakeholders. With core funding from the Global Environment Facility (GEF), the programme aims to address the most critical issues for the conservation and sustainable use of natural resources in the Mekong wetlands (www.mekongwetlands.org)

⁶ Tai Baan is a term common to the Lao ethnic groups of the Mekong Basin, from Yunnan Province in China to as far downstream as Stung Treng in northern Cambodia, literally meaning “villagers”.

issues: i/ ecosystems; ii/ fish species; iii/ fishing gear; iv/ flooded forest vegetation; v/ floodplain agriculture and water management; and vi/ livestock raising.

It should be stressed that there also has to be a suitable enabling environment for Tai Baan Research to succeed and gain acceptance, with sufficient involvement of stakeholders and actors from local and national government agencies, NGOs and civil society groups at key stages. Hence, there has to be a regular series of progress workshops and events which allow the Researchers to present their findings to non-local audiences and receive feedback, ranging from an annual Fish Festival in Sri Songkhram District, to an international gathering at the IUCN's World Conservation Congress in Bangkok in November 2004. Publication of peer-reviewed books, whether presenting an overall description of the research findings or focusing on particular research issues, allows another important route of knowledge dissemination and increases local ownership. In the last year, the MWBP Thailand Demonstration Site has published two books in Thai language: one titled "**The Ecology and History of the *paa bung paa thaam* of the Lower Songkhram Basin**" (Tai Baan Researcher Network of Lower Songkhram Basin, 2005a) and a second more recently released book titled, "**Fish species in the *paa thaam*: local knowledge of fishers in the Lower Songkhram Basin**" (Tai Baan Researcher Network of Lower Songkhram Basin, 2005b). These books have been recognized by local stakeholders as important sources of indigenous knowledge on cultural and biological diversity and are now being considered by local educational authorities for future inclusion in local curriculums for schools at primary and secondary level. This would clearly provide a counterbalance to the present strong influence from outside, remote and often irrelevant information sources for children, while the immediate society, culture and environment has remained largely unexplored as a valuable source of learning material to foster understanding and interest amongst the next generation.

BOX 1: Summary of Steps in Tai Baan Research

Tai Baan (TB) Research is a dynamic and frequently challenging approach to participatory natural resource research. It requires time, patience, perseverance and flexibility on the part of the facilitators and researchers to succeed. Below is a summary guide to the Research steps which occurred over two years. It should be stressed that the list is not prescriptive, but can be readily adapted to meet the differing local situations. (Source: Adapted from Baker, 2004)

STEP 1: Generate interest in TB participatory resource research amongst local target communities by holding village meetings and conducting exchange visits

STEP 2: Generate ownership of TB research as a co-learning process, between local resource users and outside facilitators

STEP 3: Hold a training workshop for Research Assistants to familiarise them with their facilitation role

STEP 4: Formulate specific research goals or issues to study based on local needs and interests

STEP 5: Set-up research schedules for each village and four village network

STEP 6: Initiate research – compile background information on each issue area

STEP 7: First progress report – presentation of initial results, to local network and to TB researchers from other river basins to provide feedback and comments

STEP 8: Second phase research – collect more detailed information on each issue area to fill in knowledge gaps

STEP 9: Encourage other related activities e.g. holding environmental awareness raising events or promotion of value adding for wetlands-derived products

STEP 10: Second Progress Report – consolidate research findings and present to diverse outside audience, including government and NGO officials

STEP 11: Third Phase of research – cross-check consolidated data, including verifying and editing draft reports

STEP 12 – Final progress report – researchers present detailed findings on all issues to diverse audience of local and non-local stakeholders. Discuss and plan next steps in implementing local natural resource management and conservation

STEP 13 – Publish and dissemination of results to all interested parties in river basin, including

Future directions

The Lower Songkhram River Basin wetlands are gradually gaining more recognition for their importance as one of the last functioning floodplain ecosystems, with the many roles and functions that they provide as a source of biodiversity and livelihood for local villagers. In February 2006, the Office of National Resources and Environmental Policy and Planning (ONREPP) announced that the government was considering proposing the Lower Songkhram River Basin as a future Ramsar Site, thus increasing the international visibility of the wetlands significantly. The current threats to the wetlands resulting from inappropriate land use, poor water management and unsustainable resource use should not be underestimated and need closer attention by relevant authorities. Tai Baan Research is one tool by which local people can participate in assessing local wetland resources and generating knowledge that can be used for more informed decision-making by local and provincial authorities. It can be fed into planning processes, in particular by Sub-District Administration Organisations (TAOs), which are increasingly being given greater authority and budgets for implementing local infrastructure development schemes, including water management.

Tai Baan Research clearly demonstrates the close links between aquatic resources and local livelihoods, economy and culture, which have been consistently ignored or downplayed in past development decisions. Tai Baan Research also builds capacity and awareness of local people, through building active resource user networks locally and nationally, allowing them to interact and exchange with groups facing similar challenges in other basins. Hence, Tai Baan Research is more than just participatory resource research at the local level, but provides an opportunity to link issues across a wider spectrum of resource users and actors than has previously been possible in the past. Such approaches may offer local authorities and more senior government planners and policy makers new options with regards to sustainable development and conservation of Mekong Basin wetlands, based on a more inclusive, holistic mix of scientific and local knowledge. The challenges facing the Mekong Basin are significant and complex, but not insurmountable with adoption of new approaches to development which learn from past mistakes, are more equitable and sustainable, while putting a more realistic value on the cultural and environmental heritage.

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Mekong Wetlands Biodiversity Conservation and Sustainable Use Programme

The Mekong Wetlands Biodiversity Conservation and Sustainable Use Programme (MWBP) is a joint programme of the four riparian governments of the Lower Mekong Basin – Cambodia, Lao PDR, Thailand and Viet Nam – managed by the United Nations Development Programme (UNDP), the World Conservation Union (IUCN) and the Mekong River Commission (MRC), in collaboration with other key stakeholders. With funding from the Global Environment Facility (GEF), UNDP, the Royal Netherlands Government, MRCS, the Water and Nature Initiative (WANI) and other donors, the programme addresses the most critical issues for the conservation and sustainable use of natural resources in the Mekong wetlands. MWBP aims to strengthen the capacity of organisations and people to develop sustainable livelihoods and manage wetland biodiversity resources wisely. It is a five-year (2004-2009) intervention at three levels – regional, national and local – with demonstration wetland areas in each of the four countries: in the Songkhram river basin, Thailand; in Attapeu province in southern Lao PDR; in Stung Treng, Cambodia; and in the Plain of Reeds in the Mekong Delta, Viet Nam. The programme aims to:

- Improve coordination for wetland planning from regional to local levels
- Strengthen policy and economic environments for wetland conservation
- Generate and share information
- Train and build capacity for the wise use of wetlands
- Create alternative options for sustainable natural resource use and improve livelihoods

MWBP is a partnership between governments, aid agencies and NGOs, and provides a framework for complementary work for wetland conservation and sustainable livelihoods in the Lower Mekong Basin.

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