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Traditional Natural Resource Use and Development in Northeast Thailand

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Traditional Natural Resource Use and Development in Northeast Thailand
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Abstract

This paper explores the effects of development projects on traditional natural resource use in three communities in Northeast Thailand, a region known as Isan. I interviewed villagers in each community and asked them to describe their environmental perceptions, management practices and livelihood strategies. Participants described several subsistence livelihoods that have traditionally been present in Isan. These include rice farming, fishing, community forestry, and wetland use.

Residents from the three communities all described various cultural activities, knowledge systems, and religious ceremonies that are closely tied to their local resources. Raising silk worms, making clay pots, and performing rituals for a spirit that presides over their rice fields are all examples of how natural resources play a part in the culture of Isan. Interviewees also noted a traditional community structure shaped by the relationships of trade, communal property, shared labor, and plentiful food sources.

Through a series of interviews with elders in each community, the change in resource use and management is described. The results show that development projects over the past fifty years have altered access to resources and the subsistence livelihoods dependent on them. The management of resources, such as forests and rivers, shifted from the community level to the national government, against the will of the people with whom I spoke. Villagers in all communities expressed a desire to be included in the decision-making process and several of them are currently struggling to regain rights to use their local resources.

Development projects discussed include the Green Revolution, the building of dams, and the creation of tree plantations. Although the specifics of each community differ, there was an overall belief that these projects have degraded the environment, the culture, and the communities themselves. Examples of impact on Isan culture include: decreased use of traditional fishing gear, loss of indigenous rice varieties, and the breakdown of traditional community structures.

The majority of villagers noted that in the past they were able to sustain themselves almost entirely from their local resources, but that no longer is the case. Urban migration has increased rapidly as rural livelihoods are less successful and young people must go to the city to find work. It is common to find a village of elders and young children, with the majority of the working class living in Bangkok or abroad.

I end my paper with a brief summary of a grassroots effort I helped to initiate in an urban community. The project was born from the comments of many Thai elders who expressed concern that their environmental knowledge would die with them. My aim was to re-integrate traditional environmental knowledge in an urban setting. I collaborated with a vibrant group of teachers and community members to plan and create a school garden. This garden now serves as an outdoor classroom where children cultivate Isan staples such as chili peppers, lemongrass, and basil. People of Isan have long been proud of their heritage as farmers, and it is inspiring to know that even for urban families this tradition has proven its resilience.

Keywords: subsistence agriculture, community forest, livelihood

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Introduction

The issue of sustainable development is a complex one. Environmental and cultural practices are intertwined; and a holistic understanding of their relationship is necessary to achieve socially, economically, and environmentally sustainable development. Research on traditional resource use may provide valuable information to address environmental problems and development decisions. Identifying the environmental knowledge of rural groups can improve their status in natural resource management.

Thailand is one of the fastest growing economies among developing countries, an economic success story of Southeast Asia (Siamwalla 1997). However, its rapid industrial development has been criticized for creating environmental and social problems (Missingham 2003). In an analysis of 74 developing countries Adelman and Morris (1973) concluded that economic

development typically results in an increase in the inequality of income distribution and a decline in the income for the lowest class. They noted that this effect is exacerbated where the initial catalyst of growth is the exploitation of natural resources in what was traditionally a subsistence agricultural economy.

This paper describes several subsistence livelihoods (e.g. rice farming, fishing, and community forestry) that have traditionally been present in Northeast Thailand, a region known as Isan. Communities in Isan have a rich history, where livelihoods, traditions, and religion are all closely tied to their local natural resources. I interviewed villagers in three communities and used this information to determine how subsistence livelihoods have changed over the past 50 years in rural Isan. I outline the history of development in the region and highlight the effect of government-instituted development projects on the environment and communities. The results show that the management of resources shifted from communal to state, against the will of the major resource-users. Development projects in the three communities affected access to local resources, thereby altering the success of traditional subsistence livelihoods and causing an increase in urban migration. The effects are not only damaging to the natural resources but also to the culture and community structures.

All three communities addressed the importance of community-based resource management in sustainable development. They expressed frustration about their exclusion from decisions regarding resource management. Several of the community members are part of a national network of farmers, community forest-users and dam-affected peoples who are fighting for political change based on the rights of communities. They advocate for respect of traditional livelihoods and the environment, and community participation in resource management.

Core concepts defined

In the field of international development, numerous terms have been used to describe peoples relationship to the environment. Indigenous and traditional knowledge are commonly used to refer to collectively accumulated knowledge

that indigenous people possess, owing to their long historical interaction with a particular type of environment (Fleming 1992, Warren et al. 1995, Berkes et al, 2000 and Zurayk et al. 2001).

A new field in international development is emerging. It is the attempt to combine indigenous and scientific knowledge for sustainable resource management. On the one hand, western science is sometimes seen as superior, while other knowledge systems are devaluated. On the other hand, in some cases, it is assumed that local or indigenous people live in harmony with nature and manage their resources prudently (Murdoch 1994 and McCay 2001). Development workers and researchers of indigenous knowledge systems have criticized both of these views (Thompson and Scoones 1994 and Luukkanen 2001).

Management is here used in a broad sense, covering the conservation and use of resources. A community has been defined as a group of people who live together in one place, who have a common religion, race, or profession or who hold certain interests in common (Oxford 2005).

A livelihood comprises the capabilities, resources (natural, economic, human and social capitals) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets, and stay within limits set by the natural resource base. To grasp the concept of a sustainable rural livelihood one must analyze the range of institutional factors that influence sustainable livelihood outcomes (Scoones 1998).

According to Davies (1997): "Institutions are the social cement which link stakeholders to access to capital of different kinds to the means of exercising power and so define the gateways through which they pass on the route to livelihood adaptation." Institutional processes may act as barriers or gateways to sustainable livelihoods.

Another concept that is key to this study is environmental literacy. Environmental literacy can be gained through education but here I refer to a broader use of the term. Environmental literacy is described as comprising

environmental knowledge, awareness and concern (Hsu and Roth, 1998). Environmental literacy is built from personal learning processes, experiences, education, and ecological circumstances. People belonging to a certain group interpret the environment through their traditions, beliefs and values (Hares 2006).

3. Methodology

Ethnographic research methods were used during this study. Semi-structured interviews were the main source of information. A qualitative approach was used in all cases. These qualitative methods were developed and used principally by anthropologists, sociologists and other social scientists who have studied human cultures and behaviors (Bernard 2002). Ethnography can be a valuable supplement to research regarding natural resource management, which is also a study of human cultures and behaviors. According to Fife (2005): "The goal of ethnographic research is to formulate a pattern of analysis that makes reasonable sense out of human actions within the given context of a specific time and place." It provides a more holistic view of how human beings manage their natural resources.

Participatory Rural Appraisal (PRA) techniques were another research method employed. PRA techniques enable local people to share, enhance and analyze their knowledge. PRA has sources in activist participatory research, agroecosystem analysis, applied anthropology, and field research on farming systems (Chambers 1994). At each study site, PRA was employed during group interviews where participants were encouraged to share with each other and identify common problems and solutions. Thai culture favors methods that involve talking and discussing issues face to face.

Study participants were asked to describe their natural, human, economic and social capital and how they combine these resources to create a livelihood. Interviewees were asked to discuss their relationship to, knowledge of, and interactions with the environment. The villagers were asked to draw comparisons between the past and present. There was a set of questions developed to be

used in each interview, but the interviews were largely shaped by what the interviewees felt was important to discuss (Appendix 1).

Individual interviews were also used in two of the three study sites. Because of time constraints and the availability of translators, group interviews were the preferred method. In addition to interviews, observation (for instance of people's daily activities) was used as a supplementary research method.

Key community members who have been most active in resource issues were talked to when accessible. NGOs, community leaders and local government officials were also interviewed to gain a more holistic understanding of the issues. All of those who were interviewed did so graciously and willingly. An equal number of men and women, of varying ages, were interviewed. Elders were interviewed in each community in order to create a timeline of the events over the past 50 years.

These interviews were carried out in conjunction with the Council on International Educational Exchange (CIEE) study abroad program. This program is centered on community stays and direct exchange with villagers, community leaders, and NGOs. For the majority of interviews, a CIEE employee acted as a translator.

Secondary sources of material, often in unpublished or draft form, were essential for this study. Several locally produced reports were referenced. In particular, locally produced human rights reports written by community activists and university students were very helpful.

4. Background/ Setting

A unified Thai kingdom was established in the mid-14th century. Known as Siam until 1939, Thailand is the only Southeast Asian country never to have been taken over by a European power. The Northeast region, Isan, makes up roughly one-third of the nation's area and population. The total population of Thailand is 65 million people, and Isan's population as of 2000 was 20,825,000 (Alpha 2005).

In the 20th century the government promotion of Thai nationalism took the form of reinforcing, or creating, the Thai identity across the country. The process of Thaification is making ethnic groups on the periphery of Thailand more similar to the Central Thai. The government instituted the Accelerated Rural Development Program in 1964 which strengthened allegiances between Bangkok and Isan and de-emphasized the Lao origins of the population (McCargo 2004).

The name "Isan" itself is a reflection of the Thaification policy. Isan is derived from *Iśāna*, or "The Lord," a name given to Shiva in Hindu Scriptures and is the Sanskrit word for northeast. The name reinforces the area's identity as the northeast of Thailand, rather than it being a part of Laos. Before the central government introduced the Thai alphabet and language in schools, the people of Isan wrote in the Lao alphabet. Most Isan people still speak the Isan language which is closely related to the Lao language. Despite "Thaification" policies, the people of Isan remain culturally separated from Central Thailand. The region's poverty and the typically darker skin of its people contribute to discrimination against Isan people.

Originally forced by poverty to be creative in finding foods, the people of Isan are known for their diet which traditionally includes: lizards, frogs and fried insects such as grasshoppers, crickets and silkworms.

Agriculture is the primary sector of the Isan economy, generating around 22% of the Gross Regional Product, compared to 8.5% for Thailand as a whole. Rice is the main crop, accounting for about 60% of the cultivated land. Since the 1970s, agriculture has been declining in importance compared to the trade and service sectors. Isan farmers increasingly rely on off-farm revenues for their livelihoods, with migration to urban areas being a widespread phenomenon (Floch et al. 2007).

The population is almost exclusively Theravada Buddhist, although this is combined with elements of animism. The Buddhist temple is the major feature of most villages. These temples are used for religious ceremonies, festivals, and community meetings. The traditional Thai village was structured around the

monks living in the village temple, the elder group, and then a cooperative labor exchange group and a resource-user group which formed around common lands such as forests, rivers, and rice fields.

Case Study: Surin Province

National Context

Rice plays a central role in Thai daily life. In the Thai language, to eat is “gin kow” which literally means, “to eat rice.” Traditionally, rice was the staple at all three daily meals. In Isan, the predominant varieties were glutinous, or “sticky” rice which constitute the staple food of the region (Miyagawa).

Study Location: Surin province, sub-district Tahmaah, Donlaeng Tai Village

Village size: approximately 70 households

Participants: five individual interviews, one group interview (nine participants)

All interviewees were farmers. I lived with a family in this community and was able to establish a good rapport with the community members before interviewing them. The interviews were done September 19 through September 26, 2007.

Results

Donlaeng Tai Village is located near the Cambodian border in Isan. Like surrounding villages, this one has a long history of subsistence agriculture, practicing traditional farming methods, planting several varieties of rice, and saving their seeds. “Each family grew around three to six kinds of wet paddy rice and around four kinds of field rice, depending on the land. It depended on the height of the land. Where there is a depression you plant a different type of rice,” explained one villager. “We kept the seeds every year.”

Villagers described a typical traditional farm, “We would use buffalo to kill the weeds, and their manure would fertilize the field.” Each family grew or traded for everything they wanted to eat. Some foods typically cultivated in this village include: chili peppers, coconuts, green beans, papaya, soybeans, squash, and several others could be collected locally such as mushrooms, and berries.

The villagers identified the Green Revolution as the driving force of change in their lifestyle. Elders in the village remember government officials first coming into the village and recommending new types of rice seeds in the 1960s. In the early 1980s state officials came into the village and promoted Jasmine 105, along with fertilizers. Jasmine 105 is a rice variety bred by American scientists to be high-yield. However, in order to achieve high yields Jasmine 105 seeds required fertilizer. A demonstration plot was set up in the village, and the village leaders were given chemical fertilizer at no charge.

Villagers remember several chemical companies coming into the village throughout the 1980s. One reported, “Wherever the roads came together they would fertilize one plot to show what it could do.” Another said, “It looked so good we would want it.”

As the village leaders switched over their plots to solely Jasmine 105, others in the village began to switch as well. One villager explained his decision to switch, “Extension workers came in and said ‘Plant this kind. It will get a good price. What your ancestors have been planting won’t get a good price. Nobody wants it.’ We never had much money, so we thought we’d plant this new rice and get good money. And that was the beginning of the end of indigenous seeds.” Another added, “There weren’t that many people who started, but then people saw them selling their rice and having money. Slowly the indigenous rice varieties began to disappear.”

There was a similar trend across the region during this time period. Today only an estimated 27 of over 180 varieties of rice native to Isan are grown (PHRCa 2007). These varieties represent more than different food choices and biological diversity. Often a certain type of rice was used for a tradition or ceremony. “There is a kind you use when building a house to help protect it from danger. You put it around the pillars and the house will be there for a long time,” explained a villager. Another reported, “We had a type of sticky rice used for marriages. It is not grown here anymore.” An older woman added, “Our rice seeds are our culture. Like Nung Oua rice, we use this rice for ceremonies and rituals. We need this type of rice for those purposes.”

Villagers explained they have a tradition of asking the spirits when to plant before the rice season begins. “We have a community ceremony, and then you present something to the spirit of your fields on the day you want to plant.” Besides an offering to the rice spirit, the tradition also included making three circles around the field. One villager explained, “These traditions are beliefs from the old days. We did it to pay respect to Mother Nature and the land. In this new generation the traditions have died out.”

The farmers found that Jasmine 105 required the use of fertilizer because it was not suited for their specific soil. Today this community regrets ever starting to apply chemicals. Several villagers discussed the negative effects of chemicals on their land. “It wasn’t clear at first, but now we see that fertilizer degrades the soil.”

The villagers also reported having to apply chemical pesticides for the first time. One farmer explained, “There weren’t many bugs before. We suspect the bugs come with monocropping.” Another elaborated, “It’s the nature of monocropping, and the fact that Jasmine rice is more attractive to bugs. I never had to apply pesticides until I planted Jasmine because the strong smell attracted the pests.”

Several villagers noticed that the use of chemicals on their rice fields started killing off important food sources. “All our food is tied to the rice fields. The crabs, fish and shrimp we eat come from there. Before there was chemical use we could walk out there and catch frogs and fish every day.” One villager concluded, “Before, we always had food; we didn’t have to rely on outside sources for food. But with monocropping we are no longer self-sufficient.”

When asked about hardships in the past, villagers stated that drought has been a problem at times. However, if it was too dry in their area to grow rice, they would weave silk or cotton and then trade it for rice. “You could always find enough to eat by trading something,” explained a villager. “The way of life here is you have a rice season and a weaving season so you have things to trade when you don’t have enough.” However, chemical use in the area began to alter the culturally and economically important ability to weave silk. Villagers

complained, “Chemical use in the area killed our silk worms. Even if we stopped putting chemicals on our field the run-off from others was enough to kill the insects.”

Villagers also described a change in community dynamics brought on by the transformation from growing several varieties of rice to solely Jasmine 105. “In the past we had a ceremony when people in the village would come to harvest rice, and we’d make food for them. There was always someone who had a different harvest than you who could help. Nowadays we don’t have that ceremony anymore; we have to hire people to help.” Another farmer elaborated, “The type of rice we grew depended on the geographic area. The lower area gets dry really slowly so we have to plant heavy rice which lasts longer. And for the higher land where the water dries up easily we plant light rice. We would have different harvests according to these types. You harvest light rice first then go to heavy rice, and we would help each other out. Now that we all grow Jasmine rice there is one period we all harvest, so we can no longer help each other.” He added, “Besides having to hire workers, now we use machines. And this is not good because you have to depend on technology and that means you have to pay. Nowadays the costs have gone up so high when you farm.”

Some Donleang Tai villagers described participating in the Thai Government Jasmine Seed Program, which offered incentives for the villagers to buy Jasmine rice seeds. Starting in the early 90s, the government guaranteed to buy back 20 bags of rice for every bag of Jasmine seeds farmers bought. Several farmers expressed frustration with the government for introducing Jasmine 105 and accompanying chemical products, “They should help us farm organically so we can restore our land,” declared one villager. Another added, “I think the government should promote indigenous rice varieties because they have many purposes in our culture and also to keep a diversity of rice in Thailand.”

Discussion

By promoting the monocropping of Jasmine 105 rice, the Thai government endangered the traditional culture and way of life. Monocropping, a method of growing only one crop at a time in a given field, is a very widespread practice, but there are questions about its sustainability, especially if the same crop is grown every year. Growing a mixture of crops reduces pest problems and crop disease (Zhu 2000).

Under the government promoted program, villagers began selling rice for profit and then buying their food. The price of inputs rose as did their dependency on unstable foreign markets. Despite the rising costs of production, the prices of agricultural outputs were kept relatively low. This was part of the government's export strategy; low prices gave Thai rice comparative advantage in the free market. Today, expenditure in rice cultivation is twice the income from selling of rice. The system is only sustained with support from off-farm jobs to farmers (Miyagawa 2003).

Several indigenous rice varieties have been lost, representing a loss of biological and cultural diversity. As summarized by the Surin Rice Seed ESC Rights Report in 2007, "In agricultural communities, indigenous seeds represent a key long term relationship between people and the land. Communities base many decisions on the seeds they grow, such as when and where things are planted, how labor is organized, what religious ceremonies are carried out, and what to eat."

Current Status

Frustrated with governmental policies, debt problems, and the degradation of their community and land, several Donlaeng Tai villagers have joined the Alternative Agriculture Network of Isan (AAN). One leader of the AAN explained the network's aims, "We are trying to develop ourselves. By working together and working with the environment we want to become self-sufficient." As a result of twenty years of dedicated organizing, they have solved many of the problems farming communities in Isan battle.

Donlaeng Tai farmers also work with a non-profit, the Surin Farmer Support (SFS), which helps farmers make the switch back to organic farming. One farmer who began organic farming to reduce his expenses explained the long process, “The soil was almost ruined and I had to work hard, observing the land and adding organic fertilizers where the rice did not grow well. You have to follow many steps to bring fertility back to the soil. It takes five years to become stable. My conclusion is that organic farming lowers the cost of inputs and helps bring back all the animals and fish to the rice fields. We don’t focus on growing just one type of plant, we are trying to bring back all the local knowledge from the past. Us farmers got together and thought about what we can do to organize and manage our own business. We began a cooperative, and now we don’t have to rely on a middleman. If we don’t organize ourselves now, then in the future we may not have any rice fields left.”

Villagers credit their ability to support themselves and climb out of debt to fair trade. They sell their rice directly from their cooperatively-owned rice mill to Altereco, a fair trade company which sells the rice in Europe and the US. The AAN and SFS continue to educate farmers throughout Isan on organic and sustainable agricultural practices. They strive to gain support from middle class Thais and have organized a successful organic farmers’ market in the nearest city. To fully restore their land and culture, they began a seed-saving project to bring back indigenous varieties.

Case Study: Community Forest

National context

The issues surrounding community forests in Thailand are highly controversial and widely debated. In 1895, Herbert Slade, the British Deputy Conservator of Forests in Burma, advised the Thai King to create a national forestry service. In 1896, Herbert Slade became the first Director of the Royal Forest Department (RFD). In 1899, King Rama V formally claimed ownership of all forest land in the country (Lang 2000). When absolute monarchy ended in 1932, forest lands became the property of the state, and logging concessions

were leased to corporations. Timber production reached a peak in 1968, after which it declined, and in the mid-1980s Thailand began importing timber.

Logging had a devastating effect on the forests of Thailand. Between 1976 and 1989 Thailand lost 28% of its forest cover (Cropper 1997). During the 1980s, villagers protested against the logging companies, blocking roads, obstructing logging operations and occupying logging camps. As a result of the protest movement and devastating floods in 1988, which were attributed to logging and which killed more than 300 people, the government declared a national ban on logging concessions in 1989 (Lang 2001).

With the logging ban, the RFD shifted its focus from logging to conservation and commercial tree production. During the 1980s, the RFD set up a separate office specifically to promote commercial tree farms. The RFD has collaborated with the military and private companies in an effort to establish four million hectares of tree plantations to feed the pulp and paper industry. Through several endeavors such as the Village Woodlot Project, the RFD has encouraged Isan people to plant eucalyptus on temple, school, and village communal lands. The Population and Community Development Association (PDA) has also promoted the planting of eucalyptus, as part of the Community Forestry Project in Isan (PDA 1990). In 1991, the government revised the National Forest Policy to set a 40 % forest cover target: 25% conservation forest and 15% production forest (TDRI and TEI 1993).

Operating under the RFD is the Forest Industry Organization (FIO) which was established in 1947 as a state-owned forestry enterprise. Until the ban on timber concessions, the FIO's main activity was logging. Today, the FIO sells illegally felled logs that have been confiscated by the police, operates sawmills and furniture factories, and has established plantations covering approximately 160,000 hectares (Rajesh 2000). The plantations grow primarily teak in the North, rubber in the South and eucalyptus in the northeast and east of Thailand (Chittiwat 2000).

The FIO has often come into conflict with rural communities in Isan where people have protested against the presence of eucalyptus plantations in their

community. One FIO employee believes that their projects help rural people explaining, "Once the pulp mill had been established it would have benefited the local people and they could have had more jobs, and at the same time can create more forest cover. Even if it was eucalyptus" (Chittiwat 2000).

Another leading cause of deforestation in Thailand is the Green Revolution, when large tracts of land were cleared for the cultivation of cash crops. The World Bank played a key role in promoting cash crops in Thailand. Among the organizations set up at the Bank's recommendation is Thailand's National Economic and Social Development Board (NESDB), which oversees all public investment planning. Since its establishment in 1959, NESDB has been a major promoter of cash crops grown for export. Conflicts developed over land as agricultural companies encroached on forests that villagers had traditionally used (Lang 2001).

A major issue that communities have confronted is that only private or state ownership of land is recognized. Therefore, the RFD is legally in control of forest land and can make management decisions without consulting surrounding communities. The RFD has repeatedly designated community forest land to be replaced by commercial tree plantations. Increasing demands from communities to designate the forests as "community forests," led to a draft of the Community Forest Bill in 1994. However, the bill has gone through several drafts in Parliament and has still not been passed (PHRCb 2007).

Study Site: Surin Province, Tadum district, Nong Bua village

Village Size: approximately 100 households

Participants: one group interview (eight participants)

I lived in Nong Bua Village from Saturday September 22 through Monday September 24. The group interview was held September 23rd, followed by a tour of the forest where I was shown several forest resources and told about their traditional uses.

The Phanom Din forest is a 3,400 rai (1 rai is equal to 0.4 acre) forested area in Isan. It has traditionally been the source of natural resources for 10

surrounding villages. Similar to other villages in the Northeast, these villages were autonomous, and their traditional practices guided the management of the forest. The forest is currently under the jurisdiction of the Forest Industry Organization.

Results

For generations the surrounding communities lived off natural resources from the Phanom Din forest, some surviving completely from what they could forage or cultivate within it. Villagers in the group gave examples of common forest-derived resources: grasses used in roofs, roots made into rope, tree bark and other plants used as dye, and herbal plants used as medicine. Besides growing rice within the forest, families gathered food sources such as: red ant eggs, bamboo shoots, mushrooms, wild tubers and forest fruits. Villagers noted that in the past, mushrooms from the forest were an important source of income, second only to rice. The villagers agreed, "In the old times almost 100% of the food we ate came from the forest. We went into the forest everyday."

Things began to change in the 1950s. Roads were built into the forest and the surrounding communities as the Government promoted farming of cash crops, such as kenaf and cassava. In Nong Bua, almost every family began growing kenaf, which produces a fiber used for rope, twine and coarse cloth. At first, one villager remembers, most people just grew small plots of kenaf, but after a few years some families were growing virtually only that one crop. "People stopped thinking of the forest as something, and started thinking in terms of making money."

The forest was closed to the villagers in 1974. The government's declaration of the forest as a "reserve" meant they could no longer farm within it. Villagers recounted that they were no longer allowed to cut down trees to grow their own food; they would get arrested if caught. "Things changed; we couldn't be together as a big family. People had to migrate to city," they reported.

The villagers said that despite ongoing protests, today there is still no area within the forest where they can farm. Villagers reached consensus that their

community had been permanently changed. “Before we did not have debt problems. We relied on ourselves, the forest, and our rice fields. After we had the forest taken away from us, our system collapsed,” lamented one villager. Another villager echoed this same problem, “What is most clear is increased debt because our main income source was the forest. When that disappeared, people began to go into debt and the migration of labor increased.” Another added, “Now there are only old people and children left.”

In 1975 the villagers learned that a concession had been granted to a private company to grow eucalyptus trees, which would then be sold to paper factories. “They just came and took the land and said they were going to create a plantation there. We were never consulted about it,” complained one villager. Villagers remember protesting, demanding continued access to a resource that they had communally managed for years.

Despite protests, eucalyptus production in the area went on. The villagers described the negative effects of large stands of eucalyptus trees, “The soil became dry and other plants stopped growing there. Where ever there was eucalyptus, there were no resources.”

In 1984 the villagers were told they could begin planting in the forest again. They cleared the land in preparation for rice farming. However, before they planted, the government announced they would be planting more eucalyptus trees. The villagers began a renewed effort to organize in hopes for restored access to the forest. They registered their names in an attempt to acquire legal land titles. Only 10% of the people who registered from the ten surrounding villages, and twelve people from Nong Bua ever received a paper copy of their land title (PHRCb 2007).

Discussion

The history of Nong Bua village is similar to countless communities in Thailand. In 1995, a study done by Jirawan et al. (1995) in Roi-Et Province concluded that access to community forest lands is essential for rural livelihoods:

"The destructive effects of this deprivation on the local economy are immediate and clear. For examples, we need only look at Kampaeng subdistrict villagers who had previously been able to earn 200-300 baht per day per individual from gathering and selling forest mushrooms; or who had grazed some 900 cows and buffalo, each carrying a price of 5,000-8000 baht, in local woodlands; or who had earned 3,000-4,000 baht per year by making charcoal from branches and fallen wood".

In 1990, a research team from the Thai Development Research Institute, led by Dr Dhira Phantumvanit, concluded, "The promotion of fast-growing trees, particularly the eucalyptus, will not help solve rural poverty nor improve distribution problems. Concessions for large-scale planters to grow commercial forests in degraded forests will aggravate rural poverty rather than easing it." (Bangkok Post 1991)

The complaints of the villagers that eucalyptus plantations damage their ability to grow other crops *are* justified. One report concludes that large eucalyptus plantations deplete underground water sources; eucalyptus leaves decompose slowly and toxins in the leaves inhibit the growth of other crops; and a eucalyptus plantation uses a higher overall volume of water than other crops (Usher 1990).

In 1999, Pitaya Petmark, an official at the RFD, told the Bangkok Post, "To me, between eucalyptus and rice, it's better to grow eucalyptus because they grow fast and need no care. Northerners may disagree because of their old-fashioned thinking that they should be able to reap their crop every year." (Onnucha 1999)

This opinion is contradictory to the experience of many of the farmers. One farmer interviewed in the Bangkok Post explained, "Growing eucalyptus doesn't put food in our stomachs. We have to wait three or four years before we can harvest the trees and make any money. It's better to grow rice because we can sell it right away or keep it for our own consumption. Growing eucalyptus, we must wait three to four years before they are big enough to cut. What will we eat while waiting for the trees?" (Onnucha 1999)

An active protester sums up the issue in an interview with Watershed Magazine, "Most of the officials have never been in a forest, so they don't know the important benefits of a forest. They have never seen a eucalyptus plantation and don't understand the problems. They only know it makes paper and money. If there's no forest, we can't live" (Watershed 1998).

The RFD appears oblivious to these problems and has never produced a study of the environmental impacts of eucalyptus plantations on an area larger than 160 hectares (Tunya 2000). Through subsidies, pro-cash crop and plantation policies, and tax relief, the Thai government has actively supported the development of the pulp industry (Lang 2001).

Current Status

Villagers in Nong Bua and neighboring villages continue to actively demand the rights to what they feel is their land. As part of a national peoples' movement, the Assembly of the Poor, they have repeatedly protested, marched, and petitioned the government. In 1997 they secured an agreement from the government to promote sustainable forms of agriculture, and in 2001 the Sustainable Agriculture Project was launched in Isan. 16 families from Nong Bua participated in this three-year project. The project helped create a forum for the villagers to discuss sustainable management practices and representatives from all 10 villages collaborated to create a management plan for the entire forest. While the plan was recognized by local governmental authorities, the villagers have yet to gain control of the forest. In 2007 a road and office building were built on the villagers' land. The FIO announced that the entire forest would be cleared to plant economic trees. The villagers continue to organize and protest the proposed tree plantation.

Case Study: The Mun River

National Context

Thailand's Water Bill declares that "water is the state's property." The nation's control over water has led to large-scale development projects such as

dams. The Khong-Chi-Mun irrigation project began in the early 1960s when American engineers working with the Mekong Committee designed a series of dams to be built along the Mekong River and its tributaries (Floch 2007). Construction on the dams began in the late 1980s. Since that time, villagers in rural communities have strongly opposed this construction. Villagers who opposed one of these dams formed a committee and were soon joined by other dam-affected peoples. This new group was the foundation for the Assembly of the Poor.

Study Site: Rasi Salai village, and Pak Mun village, Ubon Ratchatani province

Participants: five individual interviews, two group interviews (16 participants)

I spent one night in the Pak Mun village and did a group interview on October 5, 2007. I lived with a family in the Rasi Salai village from October 5 through 11, 2007. The group interview took place on October 10. I returned to Rasi Salai alone in December and lived with the same host family from December 22 through 26. I established a very good rapport with this community and talked extensively with two villagers in their 70s, and three in their 40s. I did the individual interviews independently because by this point I had reached near fluency in Thai.

Results

The Mun River is a tributary of the Mekong. It flows east until joining the Mekong in the Ubon Ratchatani province of Thailand. The topography of the region creates fertile floodplains and flooded forests with natural depressions that absorb the rising waters in the rainy season. The local people cultivate rice in these areas when the floodwaters recede.

Villagers described their long-standing livelihoods living in the riverine habitat. They traditionally relied on the river ecosystem for their subsistence lifestyles. When the Mun River floods, its water deposits rich silt across the landscape, resulting in nutrient-rich soils. Fields were prepared, planted and harvested before the flood season. After the rice harvest, the fields would

become covered with water and the local people could then catch fish. As the dry season approached, the floodwaters would recede, leaving naturally rich soil, and the rice growing season would begin again.

The seasonally flooded forests and floodplains surrounding the Mun river are both incredibly important for local livelihoods. The floodplains are used for rice and vegetable cultivation. The seasonally flooded forest contains over 90 species of plants that are used as medicinal herbs, as well as a diverse array of fruits, insects, fish, mollusks, and other wildlife. Resources from the floodplains were used as food or bait and in the construction of traditional fishing gear, rope, mats and other local crafts. In the past there have been over 75 different types of fishing gear, reflecting an intimate understand of local ecology.

“We used different kinds of equipment depending on the season. In the dry season we’d go out looking for fish in the rocks and rapids. We’d look for vegetables and plants to eat along the river. This was our way of life, passed down from our parents. We never thought of selling our fish for money. Here were a lot of fish and over there was rice it could be exchanged for. We’d exchange for clothes, vegetables and other things too,” reported one villager.

Local communities have enacted independent small-scale irrigation projects to deal with water shortages. They used traditional water wheels or built small dykes to transport water from the nearest source to their fields. They also built small weirs out of bamboo to store water in natural ponds and divert it into rice fields.

The Pak Mun and Rasi Salai Dams were both completed in 1994. The large-scale dams have prevented many species of fish from traveling down the Mun River to spawn. Villagers reported a decline in fish catch ranging from 50 to 100%. One villager explains how the fish decline affects community relationships, “If we didn’t go fishing today, the neighbors would go fishing, and they would share with us, or if they didn’t go fishing, we’d share with them. But now, after the building of the dam, people compete with each other, because there’s nothing to eat. “

As species were lost so was the knowledge about creating specific fish traps out of locally available materials. “Many of the traps my parents used are gone; when we lost the fish there was no reason for them. Now you see fishing poles shipped in from the first world,” explained an older fisherman.

Not only was the river a source of food and income, but it was also central to many religious and cultural traditions. Ceremonies once held at the at the most productive fishing spots ended when fish could no longer return to their natural spawning grounds. “We have many ceremonies that have to do with the river. The word for river in Thai, *Mae Nam*, means ‘Mother Water’. We have a belief in ‘Mother Earth’ as being made up of soil, water, and land,” shared a villager.

The local people have repeatedly tried to get their voices heard on these issues. They discussed several protest tactics they’ve used in the past such as a 99-day march, a hunger strike, and the creation of a “protest village” at the base of the dam. There was consensus among the villagers that the gates to the dam should be left permanently open, to allow fish to pass and the ecosystem to return to its natural state. One villager active in the protest movement declared, “If you close the gates of the dam, you are cutting off the hands and feet of the villagers.”

In addition to the loss of fishing, loss of access to common property such as forest and grazing land has drastically changed the communities. Villagers with riverbank dry season gardens were not compensated. “Before the dam I didn’t need money. I got everything from the wetlands and my backyard,” admitted one villager.

Fishing and rice farming is no longer a viable livelihood for these people, so most young adults move to the city to try to find work. All villagers agreed that their lives had been changed against their will, however, there was a wide variety of opinions about what should or could be done about it.

Discussion

The dam projects have drastically affected the local livelihoods, damaging farmlands as well as fisheries. They destroy small-scale irrigation systems and

cause extensive environmental damage. Current issues include loss of fisheries, flooding and salinization. A large portion of the Northeast contains layers of rock salt below the soil and the digging of canals for irrigation has caused the water to be so salty in some areas it is unusable on farmlands.

Dam projects in Thailand have received harsh criticism on an international, national, and local level. In one study a proposed dam's purpose was stated to be irrigation for 300,000 rai. However, researchers found that only 40,000 rai in the area was under cultivation, and most of the area already had small-scale irrigation in place (Kamkongsak 2001).

Dr. Prakob Wirojangud studies the affects of dams on the Mun River and said, "Large-scale irrigation projects cannot be efficient because those who manage the irrigation system are not those who use the water." He also stated that the ecology of the river changed, fish were unable to migrate, and the forest and rice fields in Rasi Salai were flooded.

The Pak Mun Dam was built in 1994 by the Energy Generating Authority of Thailand, with funding from the World Bank. The Pak Mun Dam has received the greatest international attention out of all of Thailand's dams, notorious for the disparity between its projected costs and benefits and what actually occurred. In 2000 the World Commission on Dams reported, "The absence of comprehensive assessment of the households whose fishing occupation, fishing income, and subsistence was affected by the dam meant considerable unplanned cost escalation in terms of compensation. In the Environmental Impact Assessment prior to its construction, it was projected that the Pak Mun Dam would displace 241 households. Actually 1,700 houses were displaced and roughly 6,000 livelihoods were ruined." The report went on to say, "One of the key conclusions emerging from the study is that if all the benefits and costs were adequately assessed, the study team believes it is unlikely that the project would have been built."

A fish ladder was incorporated into the Pak Mun Dam to allow fish into the Mun River to spawn. However, the ladder was unsuccessful. The ladder was built based on those that have been installed in Northwest US. Because the design is

for salmon, fish ladders have been ineffective in Thailand. (Kamkongsak 2001) The World Commission on Dams found that of 265 fish species previously found in the Mun River, at least 50 had disappeared and numbers of others had declined significantly.

Another village in the same district as Rasi Salai described a long-standing tradition threatened by the dam. Most of the women in this village have traditionally made clay pots with clay collected from the riverbanks during the dry season. They would trade the pots for rice. This community has organized against the dam by documenting local knowledge (such as techniques to make clay pots) and also community water usage (Xiong 2004). They aim to prove that they do not need water from a proposed dam and that the negative affects will outweigh the benefits.

Current Status

Villagers affected by the dams and academics organized in 1997 to form the Thai Ban Research Center. The Center has attempted to use scientific data on the decline of species to advocate for the gates of the dams to be permanently opened. The government agreed to open the gates of the Pak Mun Dam in June 2001 and closed them in October 2001. Researchers concluded that when the gates were open the fish returned and livelihoods were restored (Assembly of the Poor and Southeast Asia Rivers Network 2002). In December 2001 after an 800 km march protesting the dam, Prime Minister Thaksin agreed to keep the gates open for an entire year. However, in 2002 Thaksin declared that the gates will be closed for eight months out of the year. The protesters have continued to fight for the gates of the dam to be permanently open. Currently they are still only opened for four months of the year.

The villagers of Rasi Salai are still waiting to be fully compensated for the loss of their rice fields, floodplains, and seasonally-flooded forest. The government has used photos from the rainy season to assert that these lands were always underwater and therefore the villagers do not deserve repayment. The villagers are working with academics to map out the area in the dry season

and prove their case. Currently about half of the households have received compensation but most continue to protest the presence of the dam.

Conclusion

Despite differences in circumstances among the case studies there was a remarkable commonality in their concerns. Each village had developed management practices over time suited to their beliefs, traditions, community structure, and specific environment. They were all aware that governmental policies had significantly affected their social life and their environment. When the central government began to manage and privatize resources the local people were excluded from the decision-making process. Although economic gain was touted as a benefit of development projects, these communities experienced the opposite. They were worse off after the development, with debt problems and a need to send family members to the city in search of wage-labor.

Rural community members are willing and able to collaborate in the development of sustainable management plans for their natural resources. They have a keen awareness of environmental degradation and a personal investment in maintaining their natural resources. Today over 180,000 people across Thailand, as members of the Assembly of the Poor, aim to build processes of cooperation between the state and communities in the sustainable management of the environment (Missingham 2003).

The environmental literacy possessed by rural populations needs to be recognized and respected as highly as scientific knowledge gained through formal education. A balance can be struck between these knowledge systems if the development process is begun with authentic dialogue and collaboration between all stakeholders.

Lessons learned

The bulk of information came from group interviews which could be affected by the comfort level of villagers and their perceptions of what I wanted to hear. It is a common practice in Thai culture to “save face” and this may have

also affected the responses. At the onset of this study I used a translator which limited my ability to directly communicate with interviewees. I felt that the interviews without a translator present allowed the interviewee to get more comfortable with me and talk more openly.

This research project taught me the importance of researcher responsibility. I was often asked what I was going to do with the information the villagers gave me. They expressed a desire for me to help them spread the information and get their stories heard. Many of them hoped I could assist them in getting contacts that could help them with their protests.

Sustainable Agriculture and Waste Management Project

Site: Nong Waeng community, Khon Kaen City

I was so inspired by these people and I felt compelled to find a way I could fit into their movement for community rights. One issue discussed by all three communities I surveyed was increased urban migration. A high rate of urban migration into Khon Kaen meant that there was a lack of affordable housing and jobs. I was able to study several urban issues while living in Khon Kaen. Roughly three-quarters of the people in the Nong Waeng community make their living by collecting waste, or “scavenging”. They make far below the national minimum wage. The community members deal with work-related health issues, an extremely unsteady income, and high school dropout rates.

During the last month of my semester in Thailand I was introduced to someone from Thai Seeka, an NGO focused on alternative education. They introduced the Sustainable Agriculture and Waste Management Project (SAWMP) which had been proposed but never enacted. Three other students and I devoted our last four weeks to implementing a pilot SAWMP project in the Nong Waeng community.

We began by meeting with the teachers of Nong Waeng school. We presented our ideas to pilot a community-oriented development project in Nong

Weang. The teachers are already very involved in the community and agreed to collaborate with us. We created a four-week timeline and also a long-term vision.

We planned lessons for fourth, fifth and sixth graders revolving around sustainability, environmental awareness, and local knowledge. After running activities with the kids we began a discussion with them and proposed the idea of a community survey. The children came up with the questions and helped us design the survey. We gave out one survey to each child for his or her parents to fill out. We also went out with teachers and children to survey other community members. In total we had 94 surveys filled out and returned.

About three-quarters of the respondents had previous experience farming. Several of them described traditional pest management techniques and some were currently growing food. Others noted that their home or community did not have land they could cultivate. About half of our respondents indicated an interest in a community garden. Our results showed us that within the community we had the resources, knowledge, and desire to create a sustainable community garden.

On the morning that we broke ground for the garden we had a mix of school children, teachers, parents, and grandparents. Community members brought manure and tools and dedicated their entire morning to the garden project. The garden is now thriving and used as an outdoor classroom. The children learn how to prepare traditional recipes and also can bring home what they harvest. The land is also open to the public so that community members can plant their own vegetables.

I believed in this project from its onset because it was entirely driven by the participation of local people. We needed nothing but locally available resources, time, experience, and energy. I believe this garden is an important step in maintaining the environmental knowledge that has traditionally been central to the Isan way of life. It also provides healthy and free food to local families, and is an asset for the community to build upon.

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Appendix 1

Questions Prepared for Interviews:

What is your age?

How long have you lived here?

Where did your parents come from?

Can you talk about your family's history and what it was like growing up here?

Do you farm? What do you grow?

Where does your knowledge of farming come from?

What do you love most about farming?

What are the biggest struggles with farming?

What has changed the most about your way of life over the past 50 years?

What changes have you seen in the land?

Do you have children and how have their childhoods differed from yours?

Are your children involved in farming?

If your ancestors could see the land/community today what do you think they'd say?

What are your hopes for the future of your community? Your kids?