

CASES OF LOCAL TRANSBOUNDARY ENVIRONMENTAL MANAGEMENT IN BORDER AREAS OF THE MEKONG WATERSHED IN YUNNAN, CHINA

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1. Introduction

The Mekong River (the stretch of the river in China is called “Lancang Jiang” in Chinese) is an international river that passes through six countries. It is 4,661 kilometers long with a watershed area of 795,000 sq. km. In China, the Mekong River is 2,160 km long with a watershed area of 167,500 sq. km, accounting for 1.74 percent of China’s total land area. In Yunnan, the river is 1,240 km long with a watershed area of 91,000 sq. km, accounting for 23.3 percent of Yunnan’s total land area. The remaining part of the Lancang Jiang watershed in China lies in Tibet Autonomous Region and Qinghai Province. In Yunnan, the Lancang Jiang flows through seven prefectures (Yunnan has a total of 16 prefectures).

The forest cover rate in Yunnan’s share of the Lancang Jiang Watershed is 46.1 percent (66.8 percent including shrubs). Cultivated land occupies 20.9 percent (paddy fields occupy only 3.5 percent). By the end of 1999, there were 36 natural reserves in the Lancang Jiang Watershed. The area of natural reserves (9,529 sq. km) accounted for 10.44 percent of the total watershed area.

In 1992, a project entitled the ‘Lancang-Mekong River Sub-Regional Economic Cooperation’ was launched, sponsored and supported by the Asian Development Bank. Yunnan became a part of this large-scale project, as several engineering works in the province have been included in the list of projects.

Because of the importance of the Lancang Jiang Watershed, Yunnan has given priority to the development and management of the watershed, and to international cooperation with other Mekong countries. Yunnan is actively participating in Greater Mekong Subregion (GMS) cooperation on environmental management. Yunnan’s priorities for GMS cooperation are as follows (Zhou and Yang, 2000):

- Institutional structures;
- Analysis of social and environmental issues within planning;
- Information systems to support decision-making;
- Assessment and monitoring tasks; and
- Impacts of trade on the environment.

2. Cases

The Yunnan Provincial Government also encourages local governments (at prefecture and county levels) to cooperate with the governments of neighboring countries, such as through a joint assessment of acid precipitation in the Red River Valley, a joint inventory of biodiversity in border areas of the Mekong Watershed, cooperative forest management, farmer-to-farmer exchanges, etc. However, there are still many transboundary environmental issues, including transboundary forest product trade, which require attention. This paper will show some cases of transboundary environmental cooperation and issues in local institutional contexts. These can be classified into several general types:

- Formal agreements on specific issues in which the provincial government is supportive of local government initiatives – for instance, transboundary fire control in Mengla in Case 1;
- Local government participation in joint projects – for instance, poppy substitution in Menghai in Case 2;

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- Local-level exchange within a project – for instance, farmer-to-farmer exchange in Case 3; and
- Private sector and trade issues – for instance, cross-border plant and animal trade in Case 4.

2.1 Case 1: Transboundary Cooperation between China and Laos on Forest Fire Control

The Border Contract of the People's Republic China and Lao PDR (Beijing, 3 December 1993) stipulates that governments of both sides will cooperate to protect border area forests. In order to implement this contract, Mengla County and six counties of Laos completed an Agreement of Forest Fire Control in Border Areas by Mengla County of China and Six North Counties of Laos on 17 February 2000. The agreement is not limited to fire control, but includes pest and disease control, cross-border cultivation, and forest product smuggling as well. The following is a list of detailed articles included in the agreement:

- Both sides will cooperate to protect border area forests.
- Arms and explosives are not allowed in the border area (500 m from the border) in areas where farmers practice slash-and-burn cultivation and other agricultural activities.
- Before farmers practice slash-and-burn cultivation on one side of the border, a fire prevention lane should be made and the other side should be informed.
- If there is a forest fire on one side in border area, the other side should be informed before the fire is extinguished. The other side will also have an obligation to help put out the fire if such a request is made.
- The loss caused by forest fire from one side will be paid by the government of the other side, excluding natural fires.
- A Joint Headquarters for Fire Control will be organized to be responsible for forest fire control in border areas.
- During Fire Caution Month, regular and irregular meetings will be held to exchange information.
- In Fire Caution Areas, a cooperative planned burning will be made before 25 March of the year.
- Both sides will protect wildlife. Cross-border logging, cultivation, and wildlife trade are not allowed. Information exchanges should be made.
- When it is discovered that a plant pest or disease may possibly spread to the other side, that party should be informed. The two sides should cooperate to control pests and diseases.

In addition to this agreement, a specific agreement on the organization of the Joint Headquarters for Fire Control has also been made to clarify the responsibility of each side. Every five years the two sides will renew their agreement. The Yunnan Provincial Forestry Department sent a deputy director as representative to witness the entire agreement process. According to the assessment of Mr. Yao Minggang (Director of the Forest Fire Control Office in Xishuangbanna Prefecture), in past five years, joint prevention has been extremely effective. Before 1992, in Mengla County there were many "imported forest fires." In 1988, among the ten large cases of forest fire, five cases originated from the opposite side. Since 1995, when the first agreement was signed, there have been no large (more than 1 hectare) cases.

Due to the success in Mengla County, Jinghong County also plans to cooperate with the local Myanmar government on cooperative planned burning (200 hectares) for fire prevention. The Forestry Police has also decided to cooperate with its counterparts to control the illegal wildlife trade.

2.2 Case 2: Transboundary Cooperation in Poppy Substitution in Menghai

Before 1990, poppy plantations were popular in the opposite side of Menghai County. In the Forth Special Administration Region (FSAR), there were 2,716 acres of poppy plantation in 262 villages, and opium production reached as high as 90 tons. Poppy plantation and drug production have also had a negative influence on Menghai's development. In 1992, the FSAR government formulated a six-year Drug Control Plan. One of the important components of this plan is an initiative to help villagers find crops to replace poppy.

At the request of the FSAR government, the Menghai County government has organized various governmental departments to participate in the Project of Alternative Plantation to Poppy (PAPP, also called Green Drug Control Project), a part of the Drug Control Plan.

The components of PAPP include:

- **Pilot Tea Plantation** (100 *mu*²). For tea production in the area, a build, operate, and transfer (BOT) style cooperation was arranged. FSAR provides land, labor, and investment, while Menghai provides techniques and management. The pilot tea plantation was started in December of 1992 and transferred in January 1997. The United Nations Drug Control Programme (UNDCP) has given a positive evaluation of the pilot tea plantation. By 2000 the area under tea plantation had expanded to 225 *mu*.
- **Pilot Hybrid Rice Extension**. In the past, villagers in FSAR did not have enough rice, and had to rely on poppy as a cash income to buy rice. In 1991, the Agricultural Extension Division of Menghai County performed an experiment with 10 *mu* of hybrid rice. In 1992, the experiment expanded to 500 *mu*. The yield was 514.8 kg/*mu*, three times the yield of local varieties. In 1993, the hybrid rice crop had expanded to 10,000 *mu*, and the average yield was 350 kg/*mu*. Now, the rice is not only sufficient for local consumption, but can also be sold to other areas. In addition to rice, other cash crops were also introduced, such as soybeans, peanuts, and watermelon. Watermelon was cropped to utilize the rice fallow during the winter season. In 1999, 3,000 *mu* of watermelon was cropped, and the yield was 1.5 ton/*mu*, from which villagers were able to gain considerable income.
- **Pilot Sugarcane Plantation**. In addition to FSAR and Menghai, a sugar factory based in Guangdong Province also plays an important role in the pilot sugarcane plantation. In 1995, the Guangdong sugar factory helped FSAR establish a sugar factory. Menghai provided technical support to FSAR (e.g., provided seedlings, technical training, etc.). Now, the area of sugarcane plantation in FSAR is already 12,000 *mu*, producing 50,000 tons of sugarcane. The goal of plantation is 30,000 *mu*.
- **Rubber Plantation**. In 1994, Farmers from Menghai, encouraged by the government, leased 225,000 *mu* of land for rubber plantation. By the year 2000, 8,000 *mu* of rubber seedlings had been planted. Led by Menghai farmers, FSAR farmers have also started to plant rubber (the area of rubber plantation in FSAR is already 3,000 *mu*).

In six years, PAPP has made remarkable achievements. Poppy has been replaced by various agricultural crops, both in terms of land use and income. In practice, however, Menghai County still has some difficulties. Although FSAR is close to Menghai Market, trade in agricultural products requires quota permission. Otherwise, a high tariff will be charged on the goods.

2.3 Case 3: Transboundary Farmer-to-Farmer Exchange³

The China-Lao border harbors extremely rich biological and cultural diversity. The governments of China and Laos and international agencies have promoted economic development and biodiversity conservation in border areas. However, the lack of transboundary coordination and cooperation in biodiversity management and an effective strategy for integrating conservation with development are critical issues for biodiversity management and economic development.

The China-Laos Biodiversity Management and Development Project (CLBMD) is a three-year program (1998-2000) to integrate biodiversity conservation with rural development, and to initiate transboundary cooperation on biodiversity management in the China-Lao border area. These include holding joint workshops and maintaining regular dialogue, collaboratively compiling biological inventories, developing transboundary networks, establishing training programs, and conducting strategic studies as to how to integrate community development with protected forest conservation. The most institutionally innovative activity in this project is transboundary farmer-to-farmer exchange. The Xishuangbanna Tropical Botanical Garden, Xishuangbanna Natural Reserve Administration Bureau, and Xishuangbanna

² 1 *mu* = 0.165 acres

³ This case is provided by Chen Jin.

Forestry Bureau, supported by the MacArthur Foundation, have cooperated with Lao counterparts on this project since 1998.

The operating principle behind transboundary farmer-to-farmer training is that conservation projects should be integrated with sustainable rural development. Previous experience had shown that transboundary farmer-to-farmer training was a very promising and practical model for rural development. There are about eight ethnic groups in the China-Lao border area that have settled cross-border, and the same ethnic groups from China and Laos can communicate with few language barriers. Different experiences accumulated in rural development are important knowledge resources for facilitating farmer-to-farmer training.

A program was established for the tour of Lao ethnic minorities to Yunnan. A total of four villages in Xishuangbanna were arranged for the visit, which are home to four different ethnic groups in Xishuangbanna—the Dai, the Aka, the Yao and the Jinuo. Among the 21 visitors, there were several Aka and Yao people. They were excited to communicate in their own languages with villagers of their same ethnic backgrounds. When the group visited the four villages, several (5-10) villagers from the visiting villages were invited to join the activities, which included an informal meeting, farmer-to-farmer discussions, village inspection, examining a special cash generating program, etc.

Field training by China's experienced Aka villagers in Luang Namtha was also conducted. Most Aka people in Northern Laos immigrated from Yunnan some 150 years ago; some moved to Laos in 1960s. Aka people in the area traditionally practice shifting cultivation, and until recently were not familiar with paddy rice cultivation. However, after nearly 30 years of experience and sustained encouragement and assistance from the Chinese government, Aka people in Xishuangbanna are now much more knowledgeable about paddy rice cultivation. Two villagers with solid experience in paddy field cultivation from Mengla County, Xishuangbanna were invited to Laos. Lao villagers from the two target villages were delighted to have Aka villagers from China in their village and show their experience and skills.

2.4 Case 4: Cross-Border Forest Product Trade

Transboundary trade is a specific pattern of international trade in China, which is well suited for poor transportation conditions and small trade companies with limited capital. In addition to general international and cross-border trade, cross-border marketing has also existed for a long time. Apart from economic needs, cultural and social linkages also support the existence of cross-border marketing, as many ethnic groups live cross-border. In all, there are 15 ethnic groups straddling the border between Yunnan and its neighboring countries.

Cross-border trade is conducted by specific companies that sit on border areas. Favorable tariff and tax conditions are provided by the government. Instead of using the U.S. dollar as an accounting currency, the Chinese *yuan* may be adopted for account settlement. Key companies doing cross-border trade are established by local prefecture and county governments, while cross-border market exchange is done by individual local people who live in border areas. Most of these people are farmers from ethnic communities. Tariffs and taxes of cross-border market exchange are exempted. Most of the products traded by cross-border market exchange are agricultural and forestry products.

In 1998, there were about 150 plant and animal species worth over US\$10 million passing through the border. The main flow of trade is from Northern Laos to Yunnan, and then to coastal areas in Southeast China and even to Japan. The high profit from price differentials is the main drive for transboundary trade. The local collectors also receive high profits in terms of returns to labor, compared with other agricultural activities in this area, although they receive only a low percentage of total trade profits. In 1997, in Hekou (opposite Vietnam's Lao cai), major commodities in shops along the 'Vietnamese Streets' (where many shops are run by Vietnamese businessmen) were:

- Baskets, mats made from rattan or bamboo;
- Wood carvings, cutting boards;
- Fresh and pickled fruit;

- Plant medicines and plant spices; and
- Turtles, tortoises, snakes, okays, etc.

Chart 1: Imports from Cross-border Trade with Myanmar, Laos and Vietnam (1991-1995)

Import	Value (0000Yuan)	Proportion (percent)
timber*	188,227	49.66
uncut jade	57,097	15.06
metal ore	30,135	7.9
fish	16,190	4.3
fruits and nuts	14,695	3.9
rattan	13,391	3.5
dry beans	11,326	3.0
leather	9,875	2.6
sesame	9,148	2.4
dry shrimp	8,742	2.3
medicinal plant	8,152	2.1
dry pepper chili	7,085	1.9
cotton	4,984	1.3

*2518 thousand cubic meter

Source: *Yunnan Outward Economics*, Dehong Nationality Press, 1997

3. Implications and Discussion

3.1 Needs of Trans-Boundary Environmental Management

Local governments in Yunnan have many opportunities for cooperation with neighboring countries on the basis of shared culture, history, and economies, as well as shared ecosystems. The cases here have shown that there is a need for transboundary environmental management in neighboring countries in this region. The main issues that demonstrate the need for transboundary environmental management are:

- Illegal forest product trade;
- Forest fire;
- Forest pest and disease;
- Other illegal trade (such as smuggling, drug, garbage, etc.);
- Information shortage (such as the inventory of transboundary elephants);
- Illegal human migration; and
- Social marginalization and poverty.

3.2 Local Governmental Capacity for Trans-Boundary Environmental Management

Generally speaking, environmental governance in China is relatively new and compared to economic development and natural resource management regimes. Hence, there is a gap in transboundary environmental management. In 1996, the Yunnan Provincial Government promulgated a specific regulation on border areas (Regulations of Yunnan on Environmental Protection in Border Gate Areas). However, this regulation has been difficult to implement due to organizational limitations. So far there are no deputies in border gate areas from environmental bureaus.

Capacity-building of local institutions will convince the central government to empower local governments through decentralization. The central government worries that if it loosens the border control, problems will come in and threaten the security of greater China.

Constraints of environmental management (EM) in Xishuangbanna Prefecture, Yunnan

Xishuangbanna is a Dai autonomous prefecture in the most southern part of Yunnan with a population of 800,000. There are three counties in the prefecture. The prefecture-level EM system has 69 staff members—15 in an environmental protection bureau (EPB), 17 in a monitoring center, 8 in a supervision and administration station, and 29 in a natural reserve management station. In the county-level EM system, there are 21, 16, and 9 staff members, respectively.

In this prefecture, there is no organization qualified to conduct environmental impact assessments (EIAs). If an EIA is requested, the project managers have to invite qualified organizations from Kunming (the capital of Yunnan), and, because of the distance and time, the cost is relatively high.

Staff in the prefecture EPB also complain that national environmental standards are not well-fitted to local situations. For example, even though rubber planting and processing has many kinds of environmental impacts, because rubber only exists in two provinces, there is no national standard for rubber planting and processing.

3.3 Institutional Constraints for Transboundary Environmental Management

Although local governments have done work on transboundary environmental cooperation, they still face many problems. To local governments, transboundary issues are diplomatic issues that should be solved by the central government. To the central government, however, these are local issues. On the one hand, Yunnan wishes to obtain greater authority from the central government. On the other hand, Yunnan wishes to win recognition as an equal partner from neighboring countries. For instance, in the fire control case, Menghai County made an agreement with six neighboring Lao counties.

3.4 Multi-Sectoral Cooperation in Transboundary Trade

There is currently no government authority on ports (Custom, Plant and Animal Quarantine, Commodity Quality Inspection and Health and Human Quarantine, Border Security Check, etc.) to stop the entry of protected plants and animals (Chart 1). The authority over cross-border marketing management is the Industry and Commerce Administration Bureau (ICA). Partly because of their duty to maintain good business practices, ICA officials have no official concern for wildlife protection. The Forest Department is the legal authority responsible for the protection and patrol of roads for rare and endangered plants and animals. At the county level, most officials lack sufficient awareness, interest, knowledge, and incentive to conduct market inspections. The duties of the Forest Department include forest conservation and regeneration and timber production. While forest degradation is a tangible and visible issue, the more nebulous concept of biodiversity loss is intangible to many people. And again, the environmental bureau is absent at the border gate.

Chart 2: Main Government Agencies at the Border

Sectors	Responsibility	Place of Duty
Customs	Entry/exit permission; tariff collection	Port
Commodity Inspection Bureau	Commodity quality inspection	Port
Animal and Plant Quarantine Bureau	Prevention of entrance of pests and diseases	Port
Border Security Bureau	National defence	Port
Railway Bureau	Rail transportation	Port
Industry and Commerce Administration	Good business practices, fee collection	Market
Forestry Department	Enforcement of laws/regulations, related forest management, natural reserve management, plant and wild animal protection	Roads, field
Trade Bureau	Quota distribution by general category	Office

3.5 Local and Public Participation in Trans-Boundary Environmental Management

Many of the cases have shown that local governments in the border areas have space for cooperation in transboundary environmental management. In the border areas, people (even those who live in different countries) have common issues and interests. The boundary line of China stretches 4,060 kilometers in Yunnan Province, where eight prefectures border on Myanmar, Laos, Vietnam, and where 15 ethnic groups reside both in China and in neighboring countries. Because of this, cross-border exchange, trade, and marriage have been going on since ancient times.

Local-level environmental management challenges cannot (and maybe should not) always wait for national institutions to take care of them. Local governments and people should be encouraged to manage their own environments. Greater China's interests are not necessarily Yunnan's interests – and Yunnan's interests may not be of high priority to China's central government. Yunnan's increasing economic integration and commercial ties with the other countries of Southeast Asia seems to be key in defining how much freedom the provincial government is granted. It would seem that there is much potential for local-level collaboration on environmental governance challenges. At one level, the GMS (in which China and Yunnan can both play roles) provides potential and an approach for increased exchange and cooperation among researchers and decision-makers from Yunnan and the other countries of the GMS.

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