

Chapter IV

PORTRAIT OF RESEARCH AREA

This chapter discusses physical and socio-economic conditions of study area and Xishuangbanna, history and present socio-economic background of study sites.

4.1 Brief Introduction to Xishuangbanna

Xishuangbanna Dai Autonomous Prefecture is located in the south of Yunnan province (Figure 4.1), from 21°10' to 22°40' of latitude north, from 99°55' to 101°50' of longitude east. And the elevation range is 477 m to 2,429 m. Its neighbors, Simao County and Jiangcheng County are in the northeast, Lancang county is in the northwest, Laos in the southeast, and Myanmar in the southwest. There are three counties in Xishuangbanna Prefecture: Jinghong, Menghai and Mengla. Total land areas 19,700 km², which takes 5% of the total land area of the province. There are more than 20 indigenous and immigrating ethnic groups living here.

4.1.1 Natural Conditions

Main mountain system in Xishuangbanna belongs to the south part of Hengduanshan mountain, and it inclines from north to south. The mountain system is separated into two sub-systems by Lancangjiang River, Nushan mountains on the west of Lancangjiang river and Wuliangshan mountains on the east. Wuliangshan are very cliffy with a lot of stone area and thinner soil layer while Nushan mountains are more gently with thick soil layer. The mountain area in Xishuangbanna is more than 18,000 km², covering

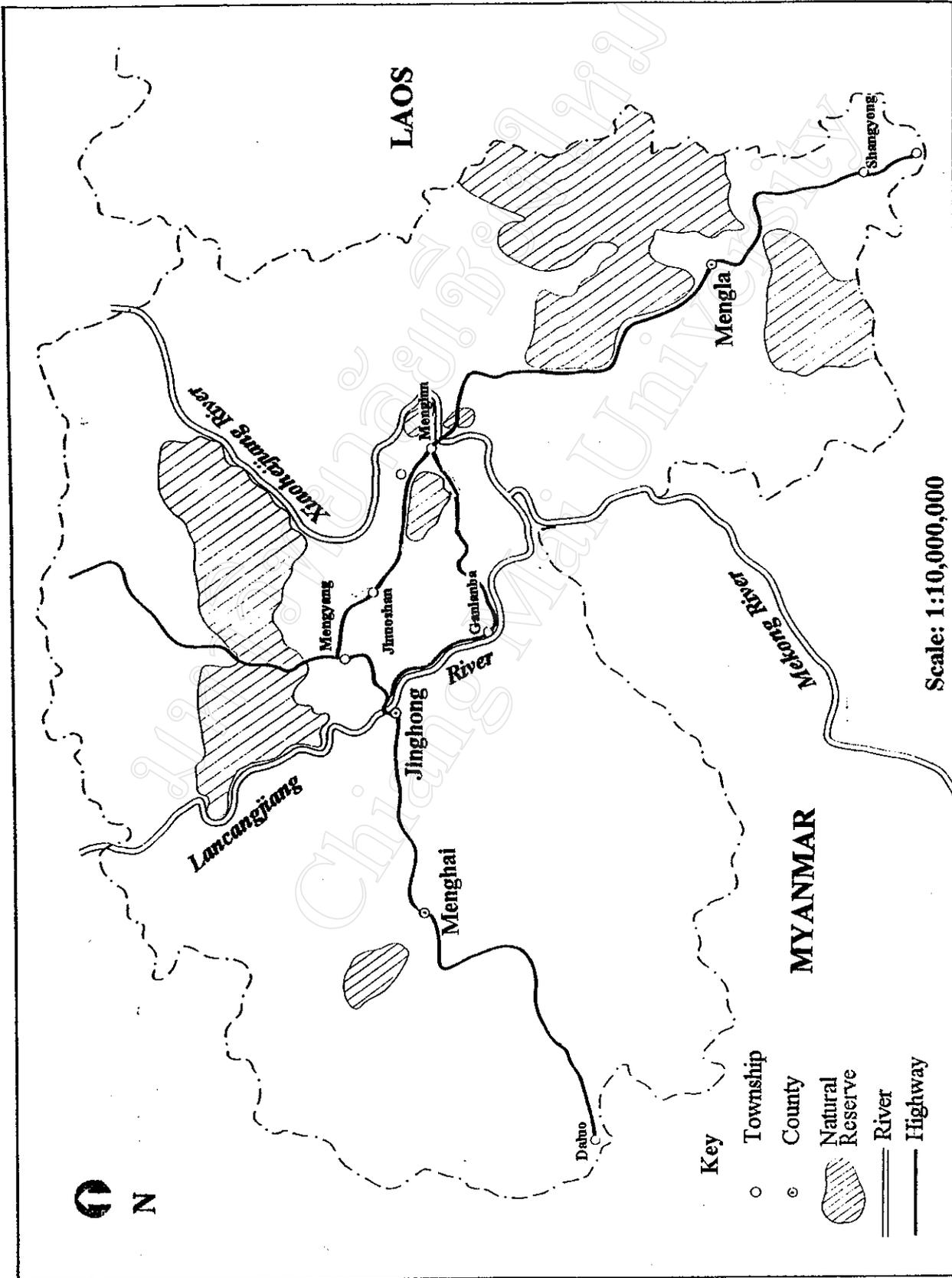


Figure 4.1 Map of Xishuangbanna Dai Autonomous Prefecture

Source: Adopted from Xu et al., 1987.

95.1% of the total area. There are 49 Bazis (small basin among mountains) in Xishuangbanna covering a land area of 978 km² or about 4.9% of the total land area. Among these, 34 Bazis are bigger than 10,000 mu (6.67 km²).

Main river system in Xishuangbanna is Lancangjiang River (upper reach of Mekong river) system. It is 1,612 km in China of which 1,050 km are in Yunnan.

Abundant rainfall, megathermal climate, clear wet season and hot season, and unclear four seasons are climatic characteristics of Xishuangbanna. Generally, Bazi and valley area where the elevation is lower than 800 m is in tropical monsoon climate; the area where the elevation range is 800 m to 1,500 m is in southern subtropical monsoon climate; and mountain area higher than 1,500 m has mid-subtropical monsoon climate. Average annual temperature range is 20°C to 22°C, and average annual rainfall is within the range of 1,200 mm to 1,900 mm. Most areas in Xishuangbanna have neither frost nor snow. Dry season is from November to April, and wet season from May to October. July to August has the most rainfall in the whole year, during this period, average rainfall per month is more than 250 mm. But the rainfall in whole dry season is 170 mm to 280 mm, only accounts for 15% to 18% of the total rainfall amount in the whole year; and the least rainfall is 20 mm in February.

From high elevation to low elevation, from North to South, soil changes from red loam to lateritic soil, and purple soil and limestone soil are intermingled.

Hydroelectric power is very rich in Xishuangbanna. The theoretical reserves of hydroelectric power in Lancangjiang River system is calculated to be 4,370,000 kilowatt, in which the exploitable reserves takes 37.6%.

In addition, plant, animal and mineral resources in Xishuangbanna are also very rich. There are more than 4,000 higher plants (accounting for 1/7 of those in China), and 539 land vertebrates (accounting for 1/4 of those in China).

4.1.2 Socio-economic Conditions

According to the statistic data of 1993 (YBS, 1994), population in Xishuangbanna is 798,100, which takes 2.1% of that in Yunnan, and density of population is 40.5 per km². Dai is around 35%, Han is almost 30%, and other ethnic groups is slightly more than 35%. Agricultural population takes 82.7% of that in Xishuangbanna, and there are 111,000 households and 281,600 labors in rural area.

Agriculture is the most important sector in Xishuangbanna. In 1993, agricultural output value is 126,840,000 Yuan, contributing to 74.6% of the GNP. In agricultural product value, crops share 38.5%, forest 46.3%, husbandry 13.4%, and fishery 1.8% (YBS, 1994). Meanwhile, agricultural production in Xishuangbanna takes a important position in Yunnan especially rice production which shared 7.1% of planted area in the province in 1993 (Figure 4.2).

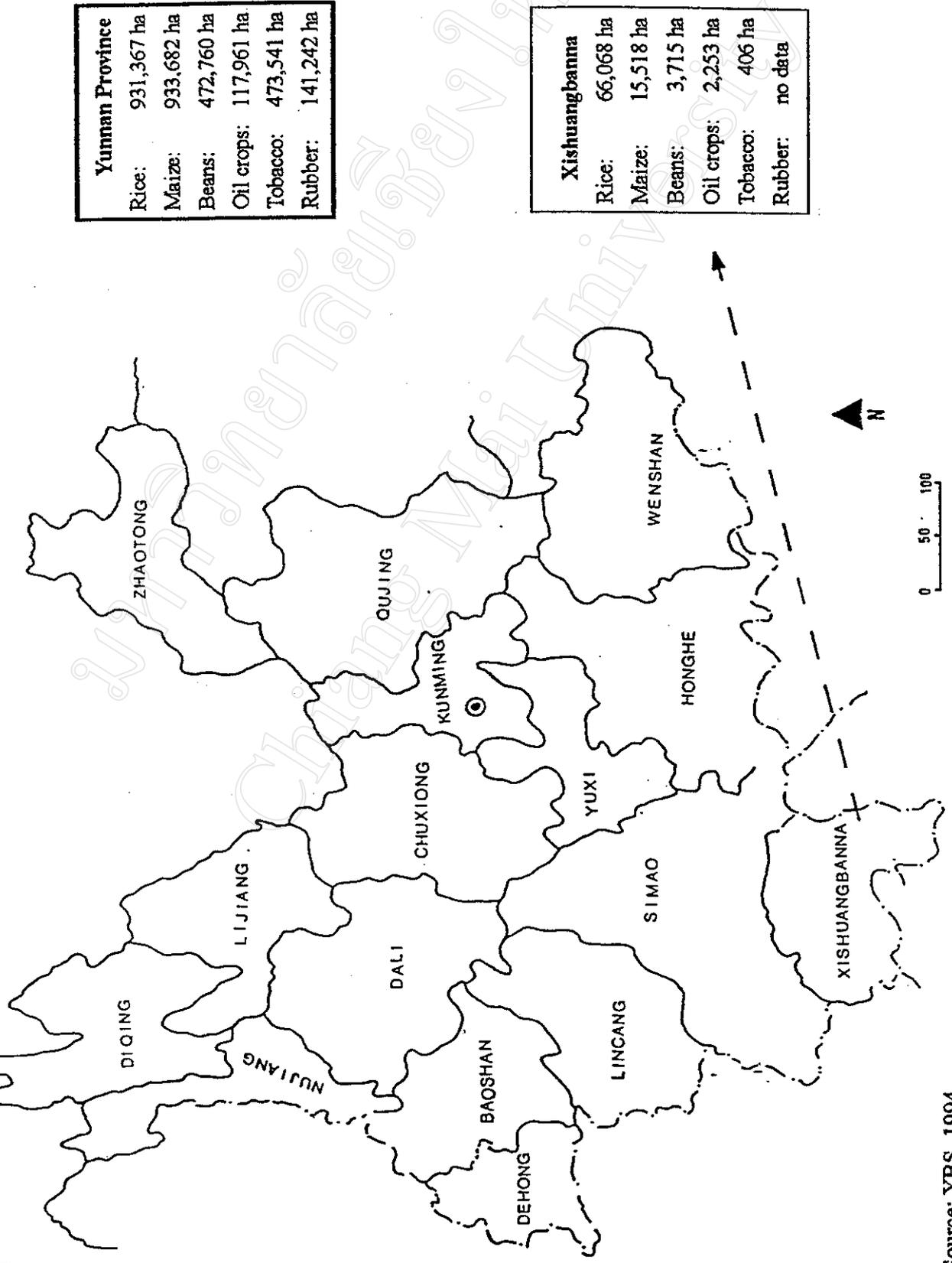
Arable land is 103,440 ha, covering 5.25% of the total land in Xishuangbanna, in which paddy land is 43,050 ha taking 41.62% of the arable land. The effective irrigated area is 33,760 ha or 32.6% of the arable land. Area under crops is 113,490 ha in 1993 (Table 4.1).

Table 4.1. Crop Production In Xishuangbanna

	Planting area (ha)	Yield per ha (Kg/ha)	Production (Kg)
Rice	66,068	3,998.2	264,154,000
Wheat	210	1,604.8	337,000
Maize	15,518	2,301.3	35,711,000
Beans	3,715	845.0	3,139,000
Potatoes	847	1,022.4	866,000
Oil crops	2,253	19.9	1,396,700
Sugarcane	12,126	5,276.4	639,818,000
Tobacco	406	804.9	326,800

Source: Yunnan Statistic Report 1994.

Figure 4.2 Planted area of main crops in Yunnan and Xishuangbanna in 1993



Source: YBS, 1994.

Forest is an important income resource in Xishuangbanna. Main forest products and their outputs in 1993 are: timber 148,805 m³, rubber 76,927 ton, Chinese Cardamon 340 ton, tea 10,414 ton, fruit 22,371 ton, pine resin 469 ton, lac 97 ton (YBS,1994).

Purpose of husbandry in Xishuangbanna is to meet the demand of consumption in the prefecture. In 1993, there are 200,800 large animals of which 99% are cattle. Consumption of pig is 200,100 heads in 1993, and surviving pig is 466,900 at the end of that year. There are also some goats and fowls.

Transportation condition in Xishuangbanna is comparatively better than other places in Yunnan. Main transportation ways are road, water and air, and road is more important than others.

Xishuangbanna is one of the most important tourism areas in Yunnan. There are two kinds of tourism resource here: one is the natural landscape mainly with tropical forest, the other is folk customs of minority ethnic groups.

4.2 General Introduction to the Research Area

The study area is located in the middle part of Xishuangbanna, at the juncture of The City of Jinghong and Mengla County, including the Menglun Natural Reserve which represents a great part of this study area.

4.2.1 The Natural Reserve

Menglun Natural Reserve is one of the five natural reserves in Xishuangbanna. Each natural reserve is charged by Natural Reserve Management Office (NRMO). Menglun natural reserve consists of three separated parts. The first part is in the west of

Mengjlun town for the protection of tropical seasonal forest, the second part in the east for protecting sub-tropical evergreen broad-leaves forest, and the third part in the south to protect the calcareous sand stone seasonal rain forest. The area of each part is 6,800 ha, 2,933 ha and 1,467 ha, respectively. The total area is 11,200 ha, of which, 2,000 ha is buffer area.

4.2.2 Geographical Features and Socio-economic Situation

The area is comprised of low mountain, middle mountain, hilly land and wide valley. The altitude is from 550 m to 1,300 m. Most places are low or middle mountains. Luoshuojiang river and Nanjiemu river join here. Luoshuojiang river makes a turn and formed a plain here. The valley alluvial plains and the low terrace in this area are ideal place for tropical rain forest. But most of the forest there has been destroyed, only a small part still exists in the natural reserves and the place is far away from villages.

Because of the comparatively low elevation and special topography, there are abundant resources of light, and water in the study area. The annual average temperature is 21.4°C; and the average temperature in the hottest month is 25.3°C while that in the coldest month is 15.6°C. There are 238 days with temperature higher than 20°C. The dry season is from December to April with total rainfall of 263.5 mm, while the rainy season is from May to October with total rainfall of 1,293.3 mm. Annual solar duration is 1,787.8 hours and its percentage is 40.4%. Annual foggy time is 115.6 days, and the fog usually lasts from midnight to high noon. The fog plays a good role in adjusting the climate in dry season.

The main type of soil is red soil, laterite and purple soil.

The vegetation distribution is vertical. In most areas below 800 meters, along both sides of the river valleys, there are tropical humid seasonal rain forests dominated by *Terminalia myriocarpa* and *Pometia tomentosa*; from 800 m to 1,000 m, are subtropical monsoon forests; and above 1,000 m, are the subtropical ever-green broad-leaf forests. Now, only few of seasonal rain forests along the valleys and a part of calcareous monsoon rain forest still survive due to the cutting of large area of primary forests for farming.

The secondary vegetation is the regenerate forests in the fallow field of shifting cultivation. There are two kinds of secondary vegetation in this area: shrub vegetation and tropical mountain savanna.

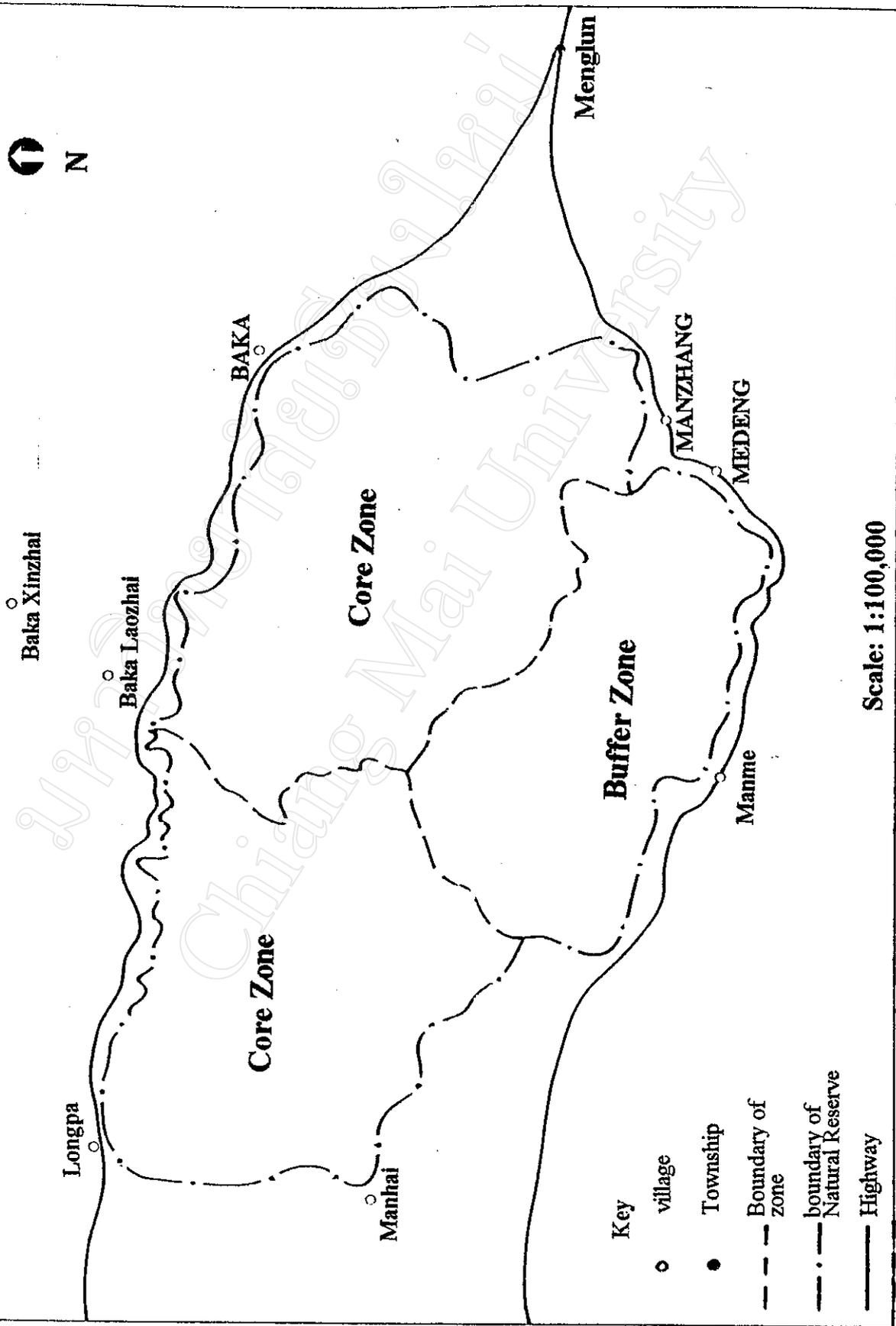
Planted vegetation includes rubber forest, fuelwood forest, home garden, upland rice field, corn field and orchard.

The population in the area is composed of Dai, Hani and Jinuo. Generally, the Dai live in the plain at the altitude from 550 m to 800 m while the hilltribes such as Hani and Jinuo live in the mountains above 800 m. Since the foundation of the People's Republic of China, the socio-economic condition has improved greatly. The government adopted a lot of measures to promote high productivity and improve people's living standard in the area. There are two highways passing through the area. One is from Mengyang to Mengla and the other from Jinghong to Mengla. In the last 15 years, rapid development of tourism also promoted economic prosperity in the area.

4.3 Background of the Study Sites

All three study sites are located near the west part of Menglun Natural Reserve (Figure 4.3).

Figure 4.3 Location of Study Sites



Source: Adopted from Xu et al., 1987.

4.3.1 Medeng Village

Medeng, is a Hani village which is 10 km from Menglun town and located beside Jinghong-Menglun highway (Figure 4.3 and Figure 4.4). It is under the administration of Daka Administrative Village, Menglun Township. In 1994, there were 60 households, totally 313 people in the village who are all Hani except three Hans who immigrated from outside for marriage. There were 198 labors or accounting for 63% of the total population. Total land area is 7.4 km², and elevation range of the village is from 650 m to 1,349 m.

4.3.1.1 History of Medeng

Medeng village moved two times after the liberation in 1949. Hani people used to live in mountains and plant mainly upland rice, maize, some cotton and bean.. After the liberation, the government encouraged and helped Hani people to plant paddy rice near rivers in 1952. After that, paddy rice became the main crop in Medeng. In 1966, the whole village moved to Majiabuqu, which is 4 km south of the present residential place, for shortening the distance to paddy land. One year later, villagers found that there were more paddy land near present place, so they moved again. A fire broke out in 1979, almost half of the houses in the village were burnt down, more than ten households moved to south-east of Medeng, and formed another village - Medengxinzhai (Figure 4.5).

4.3.1.2 Socio-economic Conditions

After 1950, living and production conditions improved greatly in Medeng village.

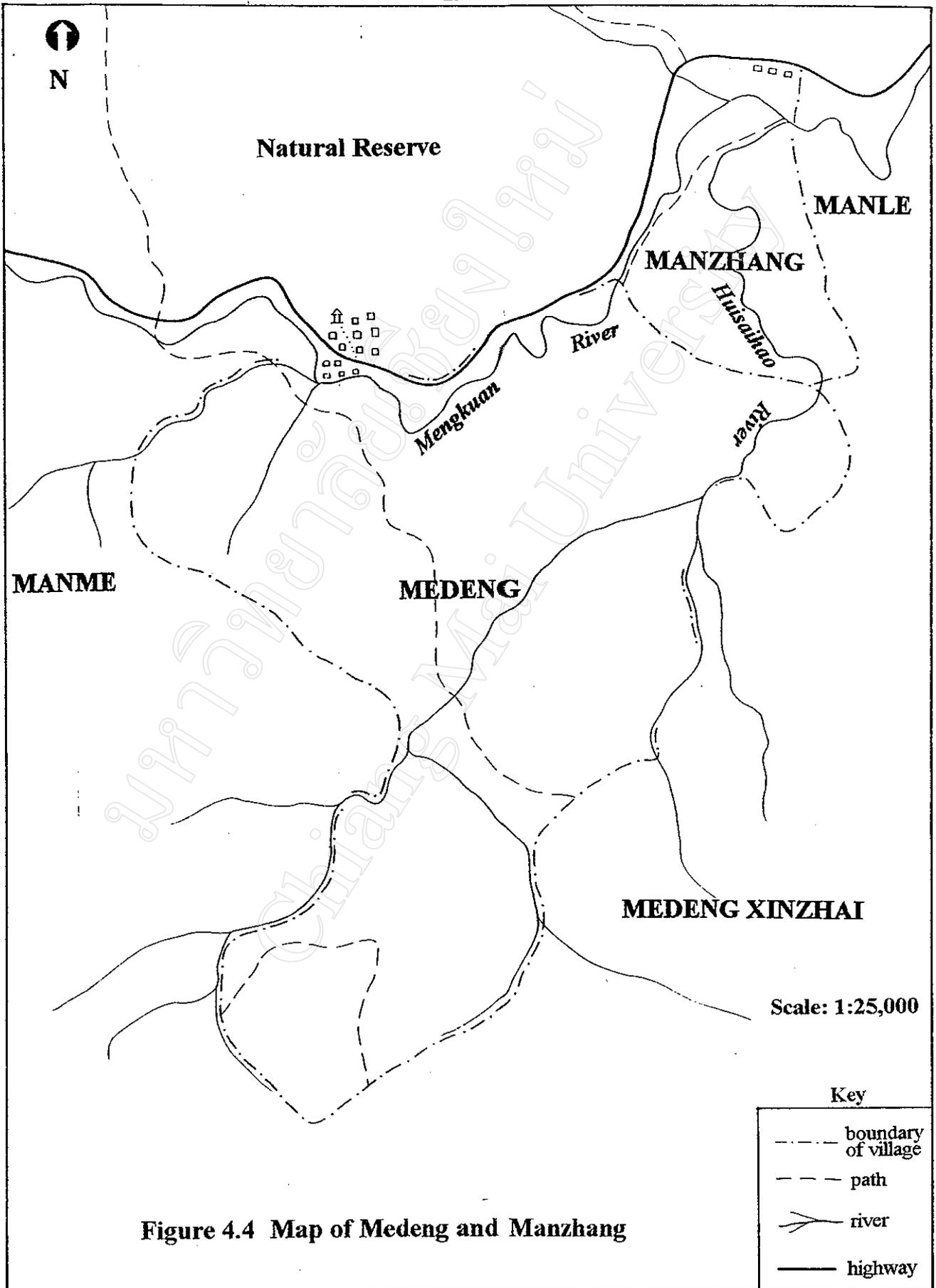


Figure 4.4 Map of Medeng and Manzhang

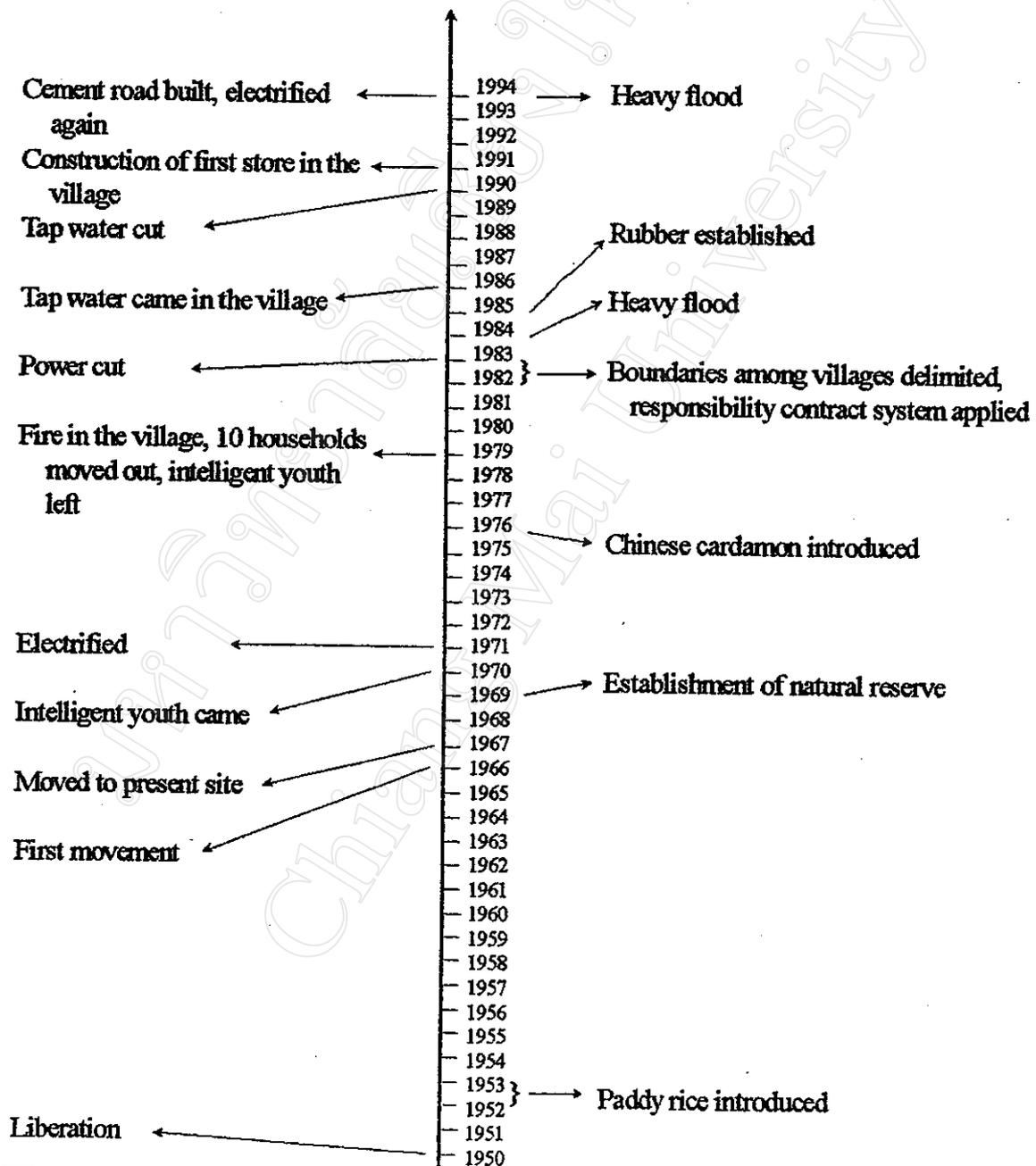


Figure 4.5 Historical profile of major processes and changes in Medeng Village
Source: Survey

Now, most of the households live in tile-roofed houses.

The following introduction on socio-economic condition is obtained from survey in the village.

Income and expenditure. Average income per household in Medeng is around 5,000 Yuan per year. There are more than ten rich households earning more than 10,000 Yuan per year. Four or five households are poor with an average income of 3,000 Yuan. Farmers thought that the fee for schooling is the biggest expenditure, and other expenses are for living and productive costs.

Electricity. Benefited from a small hydroelectric station near the village, Medeng was provided with electricity in 1971, but the station stopped its operation in 1983. With 70,000 Yuan which was collected by villagers and supported by the government and bank, electricity was transmitted from Menglun Town in 1994. At present, villagers bought and owned six television sets, six video and 20 radio cassette players altogether.

Water supply. With the help of the government, Medeng got the tap water in 1986. But in the last few years, some people stole water pipeline to sell and now the tap water can not be used any more.

Education. A primary school with only one teacher and one class was established in 1960s. After finishing two years of study in the village, children move to Menglun township to continue their study. The tile-roofed house of school was built in 1993 with villagers' collective money.

Medical and health condition. Malaria is the common disease in the village, its attacking time is in July and August when there is the most rainfall. It is said that 1/3 of the villagers get malaria every year. There are two doctors in the village. If the health problem was serious, villagers would go to the hospital in Menglun.

Others. There is a cement road in the village which was built with the funds from villagers.

4.3.2 Manzhang Village

Manzhang is also located beside Jinghong-Menglun highway which is 6 km from Menglun town (Figure 4.3 and Figure 4.4). It is governed by Man'e Administrative Village, Menglun township. Total land area of the village is 1.22 km², and elevation range is from 600 m to 821 m. There were 20 households in the village in 1994, all the villagers are Dai. Population is 98, of which 75 are labors or 76.5% of its.

4.3.2.1 History of the village

In Dai language, "*Man*" means village, and "*Zhang*" means elephant. It is said that the village historically was in charge of feeding elephants for rulers. About 200 years ago, the village was first located at the present place, the whole village moved to 1 km eastward on the southern bank of Mengkuan river about 120 years ago; but villagers lived at lower reach believed that moving dead people in Manzhang across the river had the impact on holy and pure water so that the lucky of the villages at lower reach was influenced, so Manzhang village had to move to 200 m easterly, on the northern bank of the river about 80 years ago. In 1957 or 1958, government planned to build a reservoir near the village, but the village would be flooded after it was finished, so Manzhang had to move to Manle village. But the plan of the reservoir was abandoned at last. Villagers of Manle were not satisfied with immigrants from Manzhang because the consequent decrease of land per

person led to the food scarcity, so three households moved back to the present place and formed Manzhang Village again in 1963 (Figure 4.6).

4.3.2.2 Socio-economic conditions

Like in Medeng, most of the households in Manzhang are living in tile-roofed house.

Income and expenditure. Average income per household is 5,000 to 6,000 Yuan per year. The rich households can get more than 10,000 Yuan but the poor just have 1,500 to 2,000 Yuan income. Apart from expenses for living and production, every family has to spend a lot on clothing especially for women because each Dai woman should have at least one new dress each year. The expenditure in Dai new year is also a big amount for each family.

Electricity. The village was electrified in 1992 with farmers' collective funds. And half of the households owned television sets already.

Water supply. Tap water was established in 1988 with farmers' collective funds.

Others: Because Manzhang is a small village, there is no school, doctor nor temple in the village. Children go to school in Man'e, and villagers go to see doctor in Menglun. There is a cement road in the village which was constructed with collective funds.

4.3.3 Baka Village

Baka, also known as Baka Xiaozhai, is a village of Baka Administrative Village, Jinuo Township with total land area of 4.1 km² (Figure 4.7). There were 255 Jinuo people and 2 Han Chinese composed 56 households in the village in 1994. The Mengyang-

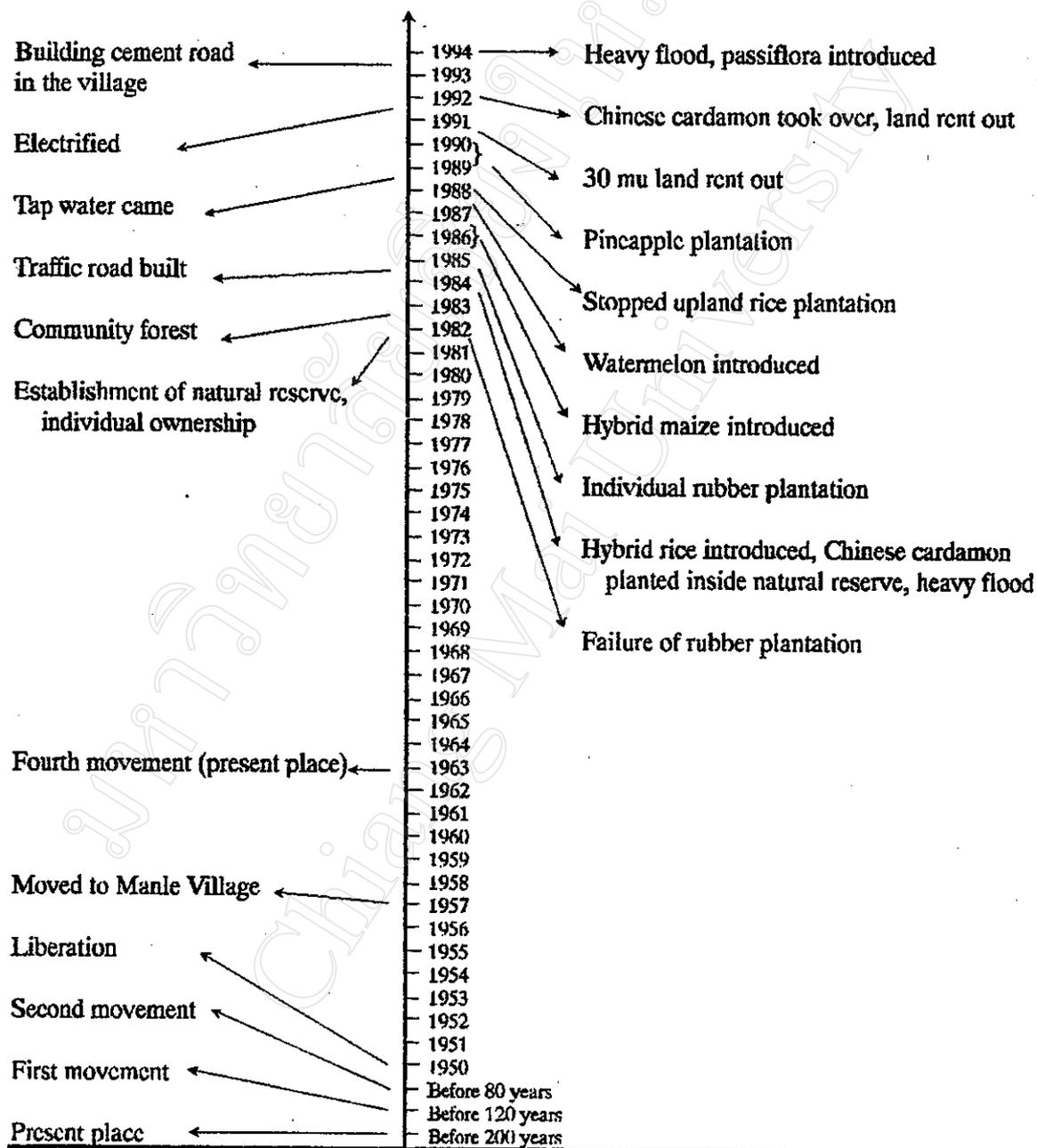
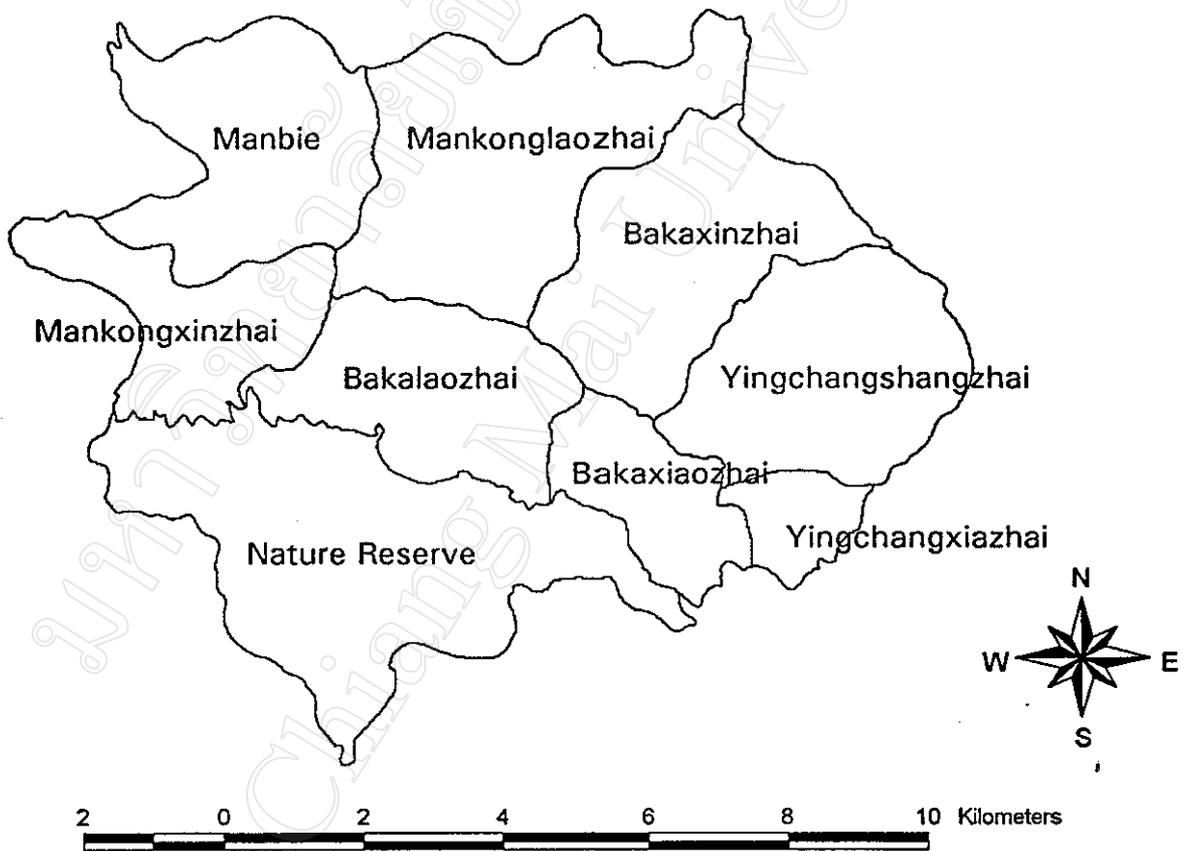


Figure 4.6 Historical profile of major processes and changes in Manzhong Village
 Source: Survey

Figure 4.7 Baka Administrative Village



Mengla highway passes through the village and wanders along the Manka river. The village is 6 km from Menglun Town.

4.3.3.1 History of the village

By the pressure of population growth, 50 households moved from Baka Laozhai to Baka Xinzhai in 1965; and 12 households moved again from Baka Xinzhai 10 km away to the present village site formed Baka Xiaozhai with the mobilization and help of Xishuangbanna Tropical Botanical Garden in 1971. A further 30 households moved in from the old village in 1972. There were two main reasons for the movement: the first was that the old village's population was growing rapidly, the second was the bad transportation condition at the old site. In 1973, five households moved in the village from Natural Reserve because of the establishment of Menglun Natural Reserve (Figure 4.8).

4.3.3.2 Socio-economic conditions

Education condition. There is a primary school in the village. The school has three grades, two classes and two teachers. All the children from 6 to 11 years old can go to school. People who are older than sixty are almost illiterate. The middle aged people get primary or middle school education and the younger generation usually graduate from middle schools or high schools.

Health Conditions. There is a traditional healer in the village and he collects medicinal herbs and curls to cure injuries from falls, fractures, contusions, strains and biting of snakes. The common diseases are flu and malaria. Some of the diseases can be treated by the villagers themselves with the medicinal herbs collected from the forest,

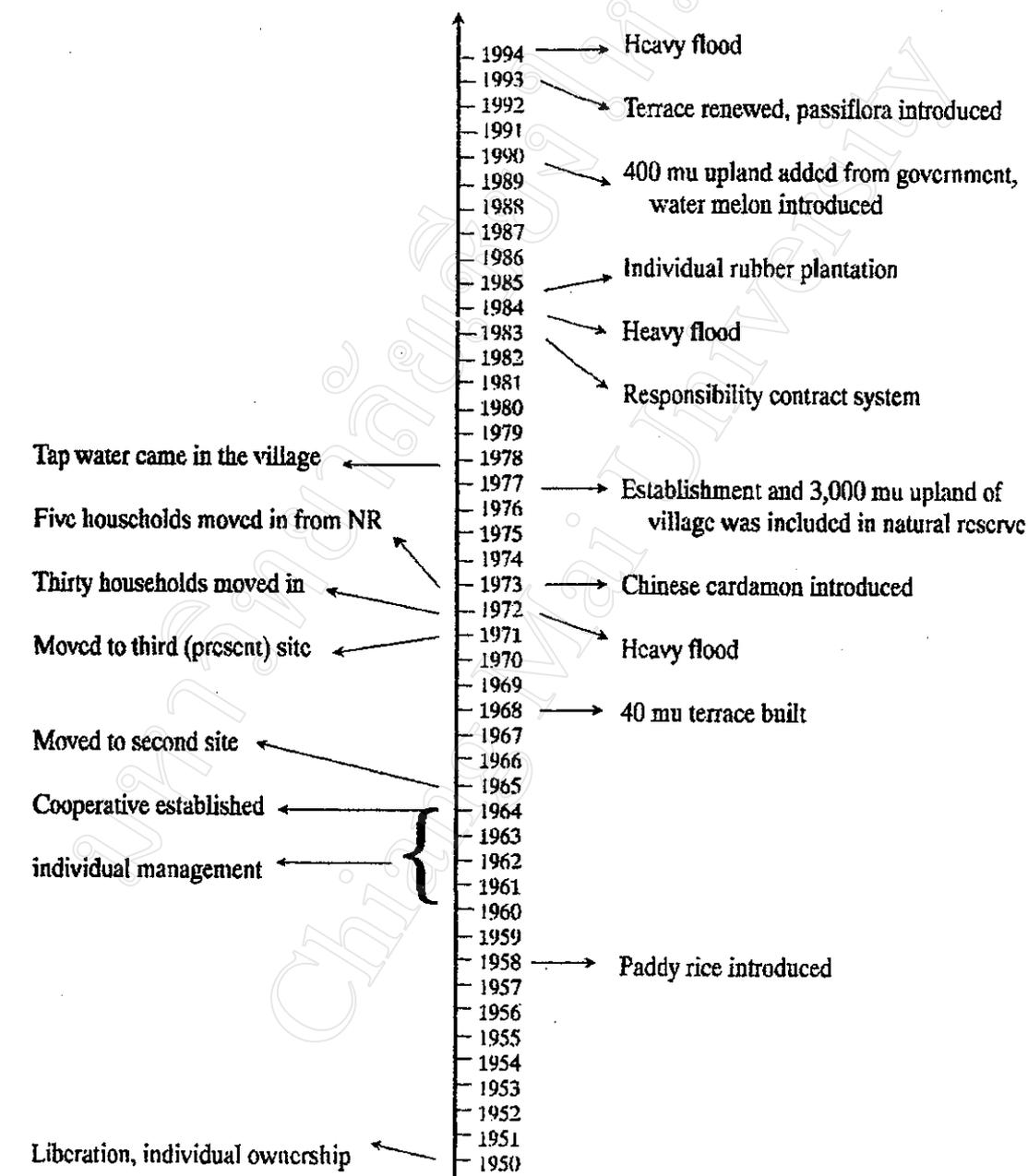


Figure 4.8 Historical profile of major processes and changes in Baka Village

Source: Survey

homegarden or field. But people usually go to the hospital in the Menglun Town. It is said that the epidemic diseases were serious when the house was made of grasses in the past. Since the middle of 1980s, most families have built wooden houses. The health condition becomes much better.

Others. The village got the electricity and tap water with the collective funds and some government support several years before.

4.4 Highlights

The general characteristics of the study sites comprise tropical agro-climatic settings, reflecting general situation of Xishuangbanna. However, in case of resource holding especially land, Medeng has wider territory and bigger cultivated land per capita than the other two village, which are 7.4 km² and 10.3 mu/capita respectively. Concerning the socio-economic and demographic status, socio-economic status among three villages are similar in terms of income, facilities, etc. And percentage of agricultural labor to total population in the study sites (63% to 76.5%) is higher than prefecture level (42.7%). All the study sites are located beside main highways and Natural Reserve in the area with similar access to the market and influence from Natural Reserve. With different ethnic background, the villagers in the study sites have different cultures, social customs and languages.