

## BACKGROUND TO THE STUDY AREA

Mianchi township (Map 1) has an area of 110 square kilometres and had a population of 4,619 in 1990. It is located 18 km southwest of Weizhou, the capital of Wenchuan County, to which it is linked by the Chengdu-Aba road. Chengdu, the capital city of Sichuan Province, is 128 km southeast of Mianchi township. There are nine villages in this township. Three are located along the Chengdu-Aba road and two villages lie across the Minjiang River and are connected to the road by wooden bridges. Three villages, also across the Minjiang River, have dirt roads leading to them. Only small tractors can pass along these roads. Five villages, Mianfong, Shanguanmiao, Qiangfong, Yangdian, and Gaodian, are located in the valley and four villages, Diaodao, Keyue, Hepin, and Baitukan, are in the mountains.

The landscape of Mianchi township is characterised by high mountains and deep valleys. Most settlements lie at altitudes between 1,500m to 2,500m above mean sea level. Climatic conditions range from subtropical (in the valleys) to temperate and cold temperate (in the mountains). The average temperature is 14.2 °C. The average temperature in July is 22.7 °C. It is 3.1 °C in January, which is the coldest month. Mianchi township comes under the influence of the monsoons and, as a result, July through September is the rainy season. While the mountains have humid conditions, the valley areas can be characterised as semi-arid. The average annual rainfall is 518.8mm. On an average, there are 236 frost-free days in a year. Since drought remains the main natural disaster in the area, irrigation plays a very important role in activities such as cropping and horticulture.

Agriculture is the principal occupation of the population of Mianchi township. Ninety per cent of the total labour force is engaged in agricultural activities permanently or seasonally. Maize, wheat, and potatoes are the main crops. Off-farm activities related to agriculture, such as horticulture, vegetables, livestock, and sideline activities, are undertaken concurrently with agricultural activities.

About 46 per cent of the population in Mianchi township is of the *Qiang* nationality and another 30 per cent belong to the *Zang* (Tibetan) nationality. The *Han* comprise only about 23 per cent of the total population. Although there is considerable interaction among nationalities, the unique sociocultural traits of the minority nationalities can still be detected from the buildings, clothing, and festivals in many of the villages, especially in Qiangfong village where almost all the population is of the *Qiang* nationality.

Mianchi township was selected for the study, primarily because it provides a typical example of the mix of off-farm activities, particularly those related to agriculture and traditional subsistence agricultural activities. Specialisation in any off-farm activity at the household level is not as yet evident. For detailed investigation of off-farm activities at the household level, 30 households with a population of 165 were chosen from among the villages. Households were selected from different income groups from the mountain as well as valley villages.

## Socioeconomic and Resource Profiles

In 1990, according to township records, Mianchi had a population of 4,619 of which 2,313 or 50.1 per cent were part of the labour force\*. Table 1 shows the distribution of population and labour force in each of the nine villages. About 57 per cent of the population live in the valley villages. The average household size in Mianchi township is 5.1. The mountain villages have a slightly higher household size (5.7) than the valley villages (4.8).

**Table 1: Population and Labour Force in Mianchi Township**

	No. of Households	Total Population	Labour Force	Labour Force as Per Cent of Population
<u>Valley Villages</u>	554	2,648	1,321	49.9
Mianfong	140	536	266	49.6
Shanguanmiao	115	527	235	44.6
Qiangfong	129	697	362	51.9
Yangdian	74	422	222	52.6
Gaodian	96	466	236	50.6
<u>Mountain Villages</u>	347	1,971	992	50.3
Baitukan	76	399	236	59.1
Hepin	106	610	277	45.4
Keyue	98	565	290	51.3
Diaodao	67	397	189	47.6
TOTAL	901	4,619	2,313	50.1

Source: Statistics of Rural Economy in Mianchi Township (1990).

The past record of population growth shows that the population of Mianchi township was 2,403 in 1953, 3,477 in 1964, and 4,397 in 1985. This gives an average annual growth rate of 3.41 per cent for the 1953-64 period, 1.12 per cent for the period from 1964 - 1985, and 0.99 per cent for the period from 1985-90. Local informants revealed that the population growth actually began to decline from 1978 when the two-child policy of the Government was introduced. It may be noted that for minority nationalities like the *Qiang* and the *Zang* the two-child family norm was advocated by the Government. While the growth rate of the population has declined, the growth rate of the labour force still remains high. The growth rate in the labour force between 1985 and 1990 was 3.2 per cent. This is because the children born before 1978 are now entering the labour force.

\* In China economically active males between 16 and 60 and females between 16 and 55 are considered to be part of the labour force.

Females comprise almost 49 per cent of the total labour force. This indicates a female participation rate that is almost equal to that of males.

The literacy status of the population as assessed from the sample survey shows that 31 per cent of the labour force were illiterate, 34.5 per cent had up to nine years' of schooling (junior high), and 8.3 per cent had up to 12 years' of schooling (senior high). The literacy status of females was almost similar to that of males. Although 32.5 per cent of females were illiterate, a slightly higher per cent of females had received primary and junior high level of education.

The total cultivated land in Mianchi township was 7196.5 *mu* in 1990. This gives a per capita arable land of 1.56 *mu* (about 0.1 ha) for the township as a whole. The availability of arable land per capita is slightly higher (1.82 *mu*) in the mountain villages and lower (1.36 *mu*) in the valley villages. Out of the total cultivated land, 26.4 per cent is in the valley area and the rest on the mountain slopes. In 1988, 8428.1 *mu* of hill slopes were also divided among each family under the System of Contracting the Production Responsibility to Households (CPRH). Maize, wheat, potatoes and, to some extent, buckwheat form part of the agricultural system. Usually the valley areas cultivate two to three crops in a year, consisting of wheat or potatoes followed by maize and then vegetables in some cases. At higher elevations there are usually one to two crops in a year. These may consist of wheat or potatoes followed by buckwheat or maize. Interplanting of maize and vegetables, or wheat and vegetables, or apples and vegetables, is also common.

Table 2 gives a breakdown of the current land use. It shows that a very small proportion of the total area is cultivated. A large proportion of the area consists of rocky hill slopes. Out of the total area under cultivation, 2,773 *mu* (or 38.5 per cent) are irrigated. Maize, wheat, vegetables, and apples are irrigated.

Although the economy of the township is predominantly agricultural, cropping accounts for only one-third of the household income. Because of the paucity of agricultural land, the reliance on livestock, horticulture, and sideline activities combined is greater. In 1990, for example, horticulture, livestock, and sideline activities together accounted for 57.2 per cent of the household income (Table 3).

**Table 2: Breakdown of Land Use in Mianchi Township**

	Forests*	Wasteland	Land under Cultivation	Hill Slopes & Uses Principally Suitable for Forests	Total
<i>mu</i> **	35,395	12,885	7196	109,614	165,090
per cent	21.4	7.8	4.4	66.4	100.0

Source: Records of general conditions in Mianchi Township

\* Includes fruit trees (cash crops).

\*\* 15 *mu* = 1 ha



**Table 3: Income Breakdown of Households 1985 and 1990**

	Income Source in Per Cent					Income (Rmb)	
	Crops	Horticulture	Live-stock	Side-lines	Rural Enterprises*	Total	Average
1985	39.1	9.7	23.5	16.8	10.9	1,637,027	372.3
1990	32.4	15.5	30.1	11.6	10.4	2,453,628	531.2
Per Cent (+) or (-)	-6.7	+5.8	+6.6	-5.2	-0.5	183,399	+158.9

Source: Same as Table 1

\* Includes only wages

It is evident that between 1985 and 1990 the share of off-farm sources of income has risen. The average income per person in 1990 was 531.2 Rmb which is slightly lower than the average for Wenchuan County as a whole.

Forests, water, and minerals are the major natural resources of Mianchi township. At present about 21 per cent of the total land area is forested. It is estimated that in the early 1950s the forests covered about 27 per cent of the total area and that most areas above 1,700m were forested. At present most of the forests lie at elevations above 2,100m.

Mianchi has abundant water resources. The Minjiang River, one of the longest rivers in Sichuan Province, runs through the five valley villages in the township. There are seven small rivers with lengths of from five km to 30 km in the region that join the Minjiang River. Previously four irrigation canals were constructed to channel water from the rivers on to the cultivated land. Two hydro-electric power stations were constructed in 1987 and 1988 respectively. However, only about 10 per cent of the total water energy is used.

According to the preliminary survey, the major minerals within this township include rock crystal, quartz, barite, mica, and marble. Most of these minerals are located in remote areas and are difficult to extract. The mineral reserves have also not been ascertained. In the past, some minerals, such as quartz, barite, and mica had been extracted by local farmers, but the extraction was informal and the scale was very small.

### Infrastructure and Institutions

Everywhere in China, development infrastructure and institutions consist of extension offices/centres under the local government and organisations under the Chinese Communist Party (CCP) branches.

There is a Forestry Station, a Township Enterprise Station, and an Agricultural Technology Station which looks after the needs of all the villages. Every village has a primary school, while Mianfong has a junior and senior high school. The township also has a health centre and a network of health workers in all the villages.

The Chengdu-Aba road, the main link for Mianchi to areas outside, was constructed in 1953. However, it was only after the changes in government policy took place after 1978 that advantage of the road, in developing rural transportation and marketing products such as apples and vegetables, began to be taken by the population at large.

Mianchi township received electricity in 1974. Electricity is basically used for lighting and motive power. Cooking is usually done with firewood (80%) and crop residues (20%). Since firewood is getting scarcer and restrictions have been imposed on gathering firewood from State-owned forests, the share of electricity, particularly for heating, has been increasing.

Table 2: Breakdown of Employment and Income by Industry (1990) (Data provided by township)

Ownership	Agriculture		Non-Agriculture		Total
	No.	%	No.	%	
State-owned	100	10.0	100	10.0	200
Collective	200	20.0	200	20.0	400
Private	300	30.0	300	30.0	600
Joint venture	400	40.0	400	40.0	800
Other	500	50.0	500	50.0	1000

After the projects were completed in 1985, some of the people engaged in transportation began to experience difficulty in finding enough work. As a result, the average income began to decline. For