

BACKGROUND TO THE STUDY AREA

The town of Shuimo is located on the southern edge of Wenchuan County about 79 kilometres from the town of Weizhou which is the county capital (Map 1). The township covers an area of 79,500 *mu* or about 53 square kilometres. An 11 km narrow dirt road connects Shuimo with the Chengdu-Aba road. The township consists of 14 villages. In 1990 it had a population of 7,039.

Like most of Wenchuan County, Shuimo is a mountainous area that encompasses the Qiong-lan mountain range. Altitude ranges from 900masl at the lowest to 2,297m at the highest. Most of the land consists of hill slopes of over 30 degrees. The Shoujiang River, which is a tributary to the Minjiang, passes through the centre of the township from the southwest to the northeast. The valley formed by the Shuimo is narrow, only a kilometre at its widest. This valley has the most productive agricultural land and therefore the population density here is quite high. Out of the total of 14 villages in the township, seven are completely mountainous.

The average yearly temperature is 13.8 °C. The maximum average temperature in July is (23.4 °C) and the minimum average is in January (4 °C). An average of 271 days in a year are frost-free. The annual rainfall ranges from 960-1,450 mm. This township has the heaviest rainfall in Wenchuan County. Continuous spells of wet weather and floods often cause natural disasters.

Agriculture is the major occupation for over 93 per cent of the population. Maize, wheat, and potatoes are the principal crops.

Most of the population of Shuimo are *Han*. Tibetans, *Qiang*, and *Hui* are the main minority nationalities in the township. Because of the *Han* majority, there is little difference between the culture and lifestyle of the minorities and the *Han* people.

Shuimo township was selected for the case study on off-farm employment because, unlike other areas, it is not regarded as a favourable area for horticultural development. Construction and livestock are important off-farm activities. In terms of access, Shuimo is the only area among the case study areas which is not located along the Chengdu-Aba road. A sample of 48 households, representing the mountain and valley villages as well as different income levels, was selected for the household study.

Socioeconomic and Resource Profile

In 1990, Shuimo township had a population of 7,039 of which 3,332 or 47.3 per cent were considered to be part of the labour force. It may be noted that in China, economically active males between the ages of 16-60 and economically active females between the ages of 16-55 are regarded as belonging to the labour force. Table 1 presents the distribution of population and labour force in each of the villages of Shuimo.

Table 1: Population and Labour Force in Shuimo Township, 1990

Settlements	Total Population	Labour Force	Labour Force as Per Cent of Population
<u>Valley Villages</u>	<u>4,042</u>	<u>1,941</u>	<u>48.0</u>
Yu Fengyuan	670	318	47.5
Naoren	720	342	47.5
Zhai Zhiping	410	200	48.8
Heitupo	263	142	54.0
Maopinzhi	329	174	52.9
Majiaying	756	363	48.0
Guojiaba	894	402	45.0
<u>Mountain Villages</u>	<u>2,997</u>	<u>1,391</u>	<u>46.1</u>
Dachaotao	516	213	41.3
Lingganggou	357	147	41.2
Huanyjiaping	393	217	55.2
Dayandong	362	179	49.4
Lianshanpo	445	188	42.2
Tengchaoping	351	184	52.4
Liu Jiagou	573	263	45.9
TOTAL	7,039	3,332	47.3

About 57 per cent of the population lives in the valley villages. Shuimo has the second largest population in Wenchuan County, second only to Weizhou. Township records on the past population show that the population in 1965, 1978, and 1985 was 5,605, 6,508, and 6,412 respectively. This gives a growth rate of 1.15 per cent per year for the period from 1965-1978. There was, apparently, a negative growth rate in the population between 1978 and 1985. The absolute decline in population during this period was a result of the migration of young males and females to neighbouring counties from mountain villages such as Tengchaoping, Lianshanpo, and Dayandong where living conditions were very poor. This migration was associated with marriages. Because of poor living conditions, young women from other villages did not want to marry men from these villages. As a result, the men moved to their wives' houses after marriage. However, the population growth rate has gone up since 1985. Between 1985-90 the annual growth rate was 1.88 per cent which is a high growth rate in relation to other areas in Wenchuan County. Women make up 47 per cent of the labour force.

The literacy status of the labour force in Shuimo township shows that 42 per cent of the population is illiterate, 33.8 per cent have up to primary level schooling, about 21.0 per cent have up to junior high level education, and only 3.2 per cent have senior high level education.

The total area of cultivated land in Shuimo township is 12,817 *mu* or 16.1 per cent of the total land area (Table 2). About 45 per cent of the total cultivated area is in the valley villages. The average per capita cultivated land comes to 1.82 *mu*, but there are significant differences between the valley and mountain villages. The per capita cultivated land in valley villages is 1.43 *mu* while it is 2.34 *mu* in the mountain villages. Since 1983 a total of 12,766 *mu* of hill slopes (3,654 *mu* in the valley villages and 9112 *mu* in mountain villages) have also been contracted to households under the system of Contracting the Production Responsibility to Households (CPRH).

Table 2: Breakdown of Land Use in Shuimo Township

	Cultivated	Land under Forests	Land Suitable for Forests	Other Uses	Total
<i>mu</i> *	12,817	12,766	42,000	11,917	79,500
per cent	16.1	16.1	52.8	15.0	100.0

* one hectare = 15 *mu*

Shuimo is a typical agricultural township. Maize is the staple crop. Wheat was introduced only in 1952. Cash crops include yellow rape seed and "moyu" (a kind of tuber). Other cash crops include garlic and rhizome of *Chuanxiong*, which is a traditional Chinese medicine. Potatoes are also grown in the mountainous parts. The predominant cropping system is maize-wheat.

According to township records, cropping accounts for 47.3 per cent of the total output value in the township. Livestock (35.7 per cent) and sidelines activities (8.8 per cent) are the major sources of income (Table 3). Unlike in other case study areas, horticulture and off-farm activities outside agriculture have not been developed in Shuimo township.

As is evident, valley villages have a slightly higher share of sideline activities than mountain villages. Also, crops and livestock are relatively more important activities in mountain villages. The average income per capita in 1990 for Shuimo township was 651 *yuan*¹.

Land resources, basically cultivated land and forests, are the major natural resources in Shuimo. There are no mineral resources of note. The potential for hydropower development is also limited. Irrigation potential has been used to the greatest extent possible. Bamboo groves cover more than 5,000 *mu* of area in Shuimo township and occur in several species. Each household has two to three bamboo groves.

Infrastructure and Institutions

Shuimo has the basic infrastructural facilities expected of a minor township in China. All the 14 villages within the township are connected with the central location by a tractorable dirt road. There is one junior high school and eight primary schools of different grades. It also has an agricultural bank, credit facilities, supply and marketing cooperatives, a health station, a public security office, and township divisions of the industrial and commercial administration. All the villages of the township have electricity

¹ In 1987 there were 5.72 RMB *yuan* to one U.S. dollar.

Table 3: Output Value of Major Activities, 1990

	Output Value	Per Cent Contribution				
		Crops	Horticulture	Livestock	Sideline	Other
Valley Villages	2,698,662	45.2	0.7	34.8	10.4	5.6
Mountain Villages	1,885,214	50.3	5.4	37.0	6.5	0.8
TOTAL	4,583,876	47.3	2.6	35.7	8.8	5.6

Source: Agricultural Statistics of Shuimo Township.

which is used basically for lighting and some heating. The township is connected to the electricity grid through the town of Xiankao which is located along the Chengdu-Aba road. Wood is the major source of energy for cooking. Firewood (70 per cent), coal (20 per cent), and straw (10 per cent) are the basic energy sources. The town of Xiankao, 11 km from Shuimo, is the second largest town in Wenchuan County and is the most important market for the villages of Shuimo.