

This document is an extract from:

Liu Yonggong, Wang Xiaoli, Li Jian, Wang Li, Xiao Chuan, Baas, Stephan (2009): *Final Technical Report “Strengthening Disaster Preparedness of Agricultural Sector in China TCP/CPR 3105”*, Beijing.

2.2.4 Project Pilot Villages; Key Features of Agriculture and Hazard Exposure

(1) Nancao Village : The village of Nancao is located in the southeast of Qilin Township. The village has a total population of 945, of which 300 are labour force. Most of the young people of Nancao Village go outside and work in the cities, and the remaining women and elderly at home are responsible for the agricultural production. There is 1470 mu of arable land in Nancao, of which 1200 mu have been planted with fast-growing poplar trees (occurred since 2003) and 270 mu is used for growing cotton and winter wheat (inter-cropping). Farmers selected the poplar trees because they recognized that they are highly resistance to floods, need less labour input and have a relatively high market price.

The major income sources of Nancao include: forestry, animal husbandry and migrant work. The average annual income per capita by the end of 2006 was about 2200 yuan RMB. Floods disasters have a remarkable negative economic impact on farmer's livelihoods since they cause huge losses in agriculture production.

Since the 1980s, there has been a great change in the pattern of land use and the cropping system in Nancao. This has occurred due to a number of factors, the main one being the worsening effects of the floods disasters and migration. However, even so agriculture in Nancao is still important. Various of the main crops such as cotton, wheat, maize, and beans are sensitive to floods due to their growth period or the topography of the land.

A farmer's cooperative (FC) has been established and registered in Nancao with the support of the County Agricultural Bureau and TCP project. The Nancao FC has played a very active role in cleaning the village drainage canals, building mini drainage culverts and other community based irrigation and drainage infrastructures, and training farmers in livestock production.

(2) Liuxi Village: The village of Liuxi is located in the southwest of Qilin Township and has a total of 330 households. The total population is 1483, of which 783 are labour force and among these, 400 are males and 383 are females. In Liuxi 600 people work outside the village, which accounts for about 77% of the total labour force. There is 1,500 mu of arable land, with 800 mu for growing Poplar trees, 300 mu for cotton, 300 mu for wheat, and 150 mu for vegetables. By the end of 2006, the net income per capita was 2,500 Yuan, and this was mainly generated from agriculture, working outside, livestock raising etc.

In terms of the vulnerability of the farmland to floods and other natural disasters, the land in the village can be classified into three types:

- 93% is under severe threat of flood as it lacks adequate drainage infrastructures;
- Only 7% is located in higher areas with less threat of flood disasters;
- Farmers have also small courtyards that are used for cash crop production.

(3) Qianfengqiao Village: The village Qianfengqiao is located in the northwest of Qilin Township and has a population of 860. The village has about 400 labours, of which 200 go out of the village for work and the others engage in activities such as farming, livestock breeding and construction. The total area of arable land is 836 mu and the major crops are

wheat and cotton. Among the crops, it is corn, cotton, and soy beans that suffer the most from natural disasters: after a flood there is almost no harvest for these three crops.

In Qianfengqiao about 400 mu of arable lands (57% of the total arable land) suffers from flood disasters. The 300 mu area of arable land without the threat of flood is higher than the villages of Nancao and Liuxi. In Qianfengqiao, the areas of farmers' courtyards were about 200 m²/household, the same as Nancao village, though almost all courtyards were hardened with cement. Therefore no crop or vegetable production occurred in the courtyards of Qianfengqiao.

(4) Caolou Village: Caolou Village has the population of 3000 and 740 households. The number of labours in Caolou is 1500, and more than 700 of them go outside the village to work. There are 3160 mu of arable land of which about 1000 mu is located in the southeast of Caolou and is affected by floods. In 2008, the per capita net income was 3000 yuan, 65%-70% of this is from migrant work and 30%-35% is from agriculture and farming. Just like the other three pilot villages of Qilin Township, the drainage and irrigation infrastructures were built in the 1970s during the collective economic period. Most of these infrastructures are now out of work, because systematic cleaning and improvements have never been carried out since the rural reform of 1982. This village has a long history and successful experience of aquaculture, and therefore could be a good demonstration for other villages. Although aquaculture is developing rapidly it does get animals escaping in the flood season.

(5) Yaoqiao Village²: The village Yaoqiao is located in the middle part of Qilin Township. The Zhu Shui River passes through the village. There are a total of 210 households and 743 people in this village. There are 1128 Mu of arable farmland with major crops of cotton, wheat, vegetable, beans and poplar trees. By the end of 2006, the average net income per capita in this village was 2,000 Yuan, with the major sources of the income including: agricultural, working outside, and livestock raising. The most serious natural disaster in Yaoqiao is flooding and it occurs here almost every year.

The details³ of agricultural production in 2007 for the five pilot villages are summarized in table 2.3.2.

Table 2-3-2 Production scale of crops⁴ and fishery in Pilot Villages (2007)

Products	Liuxi	Nancao	Qianfengqiao	Caolou ⁵	Yaoqiao ⁶
Wheat (mu)	500	270	600	1400	700
Cotton (mu)	500	270	200	700	700
Corn (mu)	-	200	500	300	-

² Yaoqiao village has been selected as pilot village in 2007 and launched the greenhouse vegetable production activities in the first project year. But it was replaced by Qianfengqiao Village due to the change of the village election.

³ More details of the social economic features, and hazard exposure of these villages have been documented in the baseline survey reports and the reports on risk related land use planning.

⁴ In the farming practice, there are intercropping between wheat and cotton, wheat and corn, corn and soybean. The average cropping index in Juye is 1.5-1.7, since the cumulative annual temperature and frost free days are suitable for more than one crop harvests.

⁵ Caolou Village was selected as pilot village in 2008 for demonstrating the fishery production component.

⁶ Yaoqiao Village was replaced by Qianfengqiao Village as pilot in 2008 since the change of the village committee in Yaoqiao. Baseline survey was conducted in 2007, therefore, the data is presented in this summary table.

Vegetable (mu)	200	50	-	-	128
Soybean (mu)	-	200	100	200	200
Poplar trees	800	1200	30	200	300
Fish pond (mu)	-	60	13	400	-
Total Land (mu)	1500	1470	850	3020	1128

Source of data: Collected through interviews with village leaders in 2007.

Local risk mitigation strategies

To reduce the livelihood risks caused by natural hazards, many households are engaged in small-scale economic activities, such as livestock raising (rabbit or birds), handicrafts, or the use of greenhouses to produce vegetables. At the moment farmers' cooperatives are still in the early stages of their formation and they need to be strengthened so that they can support livelihoods as well promote disaster risk reduction measures.