TO MARKET: China's Changing Market Participation in Remote Rural Areas

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Chapter 1: Introduction to Yangjuan's Situation

Three Mountain Villagers

Shyvie,[1]a girl of the Nuosu (Yi) ethnic group lives high in the mountains in Yangjuan Village, Yanyuan County, Liangshan Yi Autonomous Prefecture, in the southwestern part of Sichuan Province of China. She is 12 years old and began the first grade this morning. She stands a full head over most of her classmates as they line up, having arrived excitedly an hour before the bell will begin the day's lessons. Although nervous about her first day of school, she is elated at having this long-standing wish fulfilled.

For a long time, her family could not afford to pay for her elementary education. Although just 100 yuan per year (around 12 US dollars[2]), one year of education for her is a luxury that consumes about 20% of her family's yearly disposable income.[3] Because boys are more likely to be able to use their education for income gains later in life, their education was prioritized over hers. With an ill father and her brothers at school, her mother needed her to help with chores in the house and in the field. Shyvie never had the opportunity to go to school before now; instead, she has laid down first-hand in the last three years a new hybrid corn, plastic mulch (*dimo*), and various fertilizers (*-fei*) that would allow for her family to afford education for their children and to buy rice, a treasured staple that does not grow at Yangjuan's 2550 m elevation. Shyvie's experience is typical of the trials and trade-offs that accompany life for most households in her village.

[1] Real names are not used.
[2] The Chinese RMB (yuan) is pegged to the dollar at 8.214 yuan to the dollar.
[3] 'Disposable income' in this case refers to available income left for farming households' personal expenditures after the necessary purchases are made for inputs for the next crop cycle.

Hxisse Adda, 37 years old, began planting hybrid corn 15 years ago when he inquired in the county seat about what agricultural products would be best to plant. He has planted various hybrid varieties off and on since then. Even without selling any livestock in 2003, his family had a yearly income about twice that of Shyvie's family – about 980 yuan. Hxisse Adda's family bought an irrigation pump in 2004, and the whole family immensely enjoys not having to tote water by shouldered buckets from the stream. They saved time and were able to more efficiently help their relatives as well.

Not all, however, have done so well by the corn. Most began planting the new corn varieties in spring, 2001, after an agricultural office representative came to the village school to teach how to plant it. After two years of suboptimal harvests, Lurggu Ashy could not continue planting hybrid corn this year. His family bought their inputs in 2003 on a loan from a vendor in a nearby town. They were unable to generate enough income to buy inputs for the next harvest cycle after they repaid the 30% interest on that loan. This family has reverted back to planting a previous traditional variety that does not need extra inputs but also does not have a high enough yield to sell much on the market – it is most likely that no middlemen will come to purchase this variety from them. They are stuck in a state of poverty with no way to generate capital or participate in the market that, while inconsistent for other farmers in the village, has largely provided at least some benefit.

Yangjuan and Pianshui villagers live in mud houses with a single lightbulb if they are lucky, and all family members share responsibilities over the farming of their families' land. While to many this conjures up a romantic view of a simple life, life in the village is hard, often subject to tough choices presented by tough economic conditions.

Many historical events have altered the farming methods and lifestyles of the villagers. In the last fifty-five years, China has collectivized and decollectivized agriculture and made countless political and economic adjustments connected with these changes. With decollectivization has come cash cropping, taking place even in peripheral areas like Liangshan Prefecture. The farmers in Yangjuan began with apples in the 1980s and, when those failed around the year 2000, they moved on to planting a non-traditional hybrid corn.

In doing so, they are moving gradually away from a subsistence farming style and a lifestyle devoid of most cash-necessary commodities but also of dependence on inconsistent rural markets. It is important to find out how this process of agricultural transition is occurring in China, and a big part of this process is to find out what has been causing farmers to make these repeated attempts to gain access to the market. An important question in the analysis of current trends of Chinese agricultural development is why farmers in Yangjuan village have begun an attempted transition to cash cropping.

From my research and the literature available, I hypothesize that the government, both local and central, has been the major force encouraging the experimentation with cash cropping, but this is an incomplete answer. It is important to note that private decisions have been important in seeking access to the markets involved with corn production, but only at the discretionary planning of the government. Seed producers and feed factories have been able to expand the availability and competitiveness of their products, guided by new government regulations that allow them to act more as private market actors. Farmers, also now acting as individual units of production, have the freedom to make decisions about what they plant to earn a higher income and raise their standard of living. Farmers, however, are

in the unfortunate position of reliance on unsteady markets around Yangjuan, but due to their own destitution and hopefulness for the future, so far they have chosen the vulnerability of an exchange economy where they become cash dependent for many goods over the stability of subsistence farming.

The question of what has caused or allowed farmers to make this switch has far-reaching consequences. It grapples with the extent to which local and national governments are involved in the economic development process in China, what the nature of development is, the extent to which remote villages rely on outside markets in the development process, to what extent this process is successful, what the primary motives are for an individual to change his or her farming habits, and what that process looks like for a village. Attention to all these questions is necessary in order to synthesize the factors involved in transformational processes like agricultural change in China into a meaningful understanding of the transformational process. To do this, in turn it is first necessary to provide a background on the theoretical discussion of development prior to understanding and contextualizing the trends in China's economic history and China's changing policy. I discuss three areas: theories of development, including Maoist communism as a critique of development; debates on the economic history, and specifically the agricultural history, of China from about 1950 to 1980; and more specific discussions of the problems with the market transition in China's peripheral regions since 1980. I then follow this with a discussion of what is missing from these various literatures.

Chapter 2: Debates Pertinent to Problems of Development in Yangjuan/Pianshui

Market Integration and Economic Development

The first step in defining economic development is to distinguish it from economic growth. Development is about creating wealth; national economic growth is simply expansion of a country's output. This does not equal development, because it may be accompanied by population growth as well; average welfare does not necessarily increase. This distinction defines the differences between intensive and extensive growth. Extensive growth represents a scenario in which both population and economic growth are occurring, leading to population growth with a continuation of the same living standards. Intensive growth occurs when population growth begins to slow as economic growth continues, representing a shift to emphasis on human capital productivity away from physical or natural capital. The switch from extensive to intensive growth scenarios is what is commonly meant by 'development' – the transition to more productive societies based on increasing the value of human capital, increasing societal benefits such as access to education, health care, water, increased real income, etc.

In order to make human capital more productive, economists agree that people must be able to specialize. Specialization and a cash medium of exchange facilitate increased trading networks and an increase in market interconnectedness. These in turn led to the ability for people to exchange across greater physical distances, temporal distances, and familiarity distances. This interconnectedness has the potential to minimize the hazards of localized disaster and to increase overall welfare by increasing the variety and quality of goods and services.

Most political economists do agree on the fact that this interconnectedness can only be effective, however, with appropriate third-party (often government) enforcement that lowers transaction costs and barriers to trade. Robert Bates, for example, describes mediating institutions as 'specialists in violence.'[4] They are proficient and credible enough in their use or threat of violence that they effectively prevent abuse, such as stealing, of productive activity. This is where issues of property rights, competition, and transfer payments come in to the equation. The goal of the government in a typical scenario of development is to facilitate appropriate incentives for economic growth and development. Governments need to define and protect property rights so that individuals retain economic rewards from productive activity and thereby, by lowering transaction costs, encourage competitive markets.

Liberal economists maintain that government should not produce entrance barriers to markets and should refrain from intervening in markets unless in special cases of limiting cartels or monopolies. After the Great Depression and John Maynard Keynes' interventionist theories and FDR's implementation thereof during WWII, many economists now believe that a certain amount of social support through transfer payments or investment in public goods is necessary to maintain a healthy economy. One such economist is William Easterly, who describes the kinds of welfare programs and investments that are necessary for the government to provide in order to develop successfully.[5] These kinds of payments allow people lower transaction costs to economic risks, since there is a 'safety net' like welfare or social security to catch them should they fail.

[4] Robert Bates, *Prosperity and Violence: the Political Economy of Development* (New York: WW Norton & Co, 2001).
[5] William Easterly, *The Elusive Quest for Growth* (Cambridge: MIT Press, 2002).

Many studies demonstrate cases where the poor do not have easy access to markets. Brazil, for example, has a large shadow economy that does not figure into its formal economy. Studies have shown that market barriers are high in Brazil, and not only do they make transaction costs high for potential market participants, but they also mean that many people cannot leverage the assets that they hold to engage in productive entrepreneurship.[6] This exemplifies a situation in which people are kept from participating in the formal economy, barring development of intensive growth.

As evidenced by the case of Yangjuan, an integrated cash economy in which farmers are dependent on cash for their basic needs such as food and consumer durables is an integral part of the path they have now chosen toward increased real income. Milton Friedman (1990) explains that while self-sufficient agriculture in China is still important, China could not raise its productivity without a common and widely accepted medium of exchange.[7] The implication here is that cash as a medium of exchange is needed for all to lower transaction costs – from enterprises in the city to farmers undergoing the process of specialization.

Friedman (1962) also argues that the way to achieve freedom and prosperity is through dependence on the market. His theory is grounded on individuals making decisions based on what benefits them, incentives in a free market being the best determinant of efficient allocation of resources. Most of Friedman's work centers around his arguments against government monetary intervention known as Monetarism. Friedman makes points that apply to places like China about economic development through the market, arguing against state market control and that "exchange is truly voluntary only when nearly equivalent

[6] Hernando De Soto, *The Mystery of Capital* (New York: Basic Books, 2000).
[7] Milton Friedman, *Friedman in China* (Hong Kong: The Chinese University Press, 1990), 6.

alternatives exist."[8] He therefore promotes liberalization of the market in which there is little government control.

Joining Monetarists in a neo-liberal line of thinking are theorists whose ideas were collectively coined in the 1990s as the Washington Consensus. This 'Consensus' focused on models of development, hoping to improve on the Harrod-Domar and Solow models of development which focused collectively on how to improve productivity but not necessarily on policies government can implement to encourage generation of capital. Washington Consensus policies consist of requirements for international loans such as fast budget balancing, privatization, and liberalization of trade and interest rates. The top-down Washington Consensus policies are largely inapplicable to China, however, because China is taking a gradual, planned-market approach to development, rather than the shock-style suggested by the Washington Consensus. Dani Rodrik points out that this gradual style has not harmed China and that development styles and speeds need not be uniform to be effective.[9]

In later chapters, I will discuss evidence collected in my data for the low availability of crop substitutes and selling options and high transaction costs in Yangjuan and how the top-down approach to market building in China has led to this outcome. An economy of exchange is what farmers in Yangjuan have begun to engage in through planting apples and corn predominantly sold on the market. What makes Yangjuan an interesting case is why villagers would leave behind subsistence in favor of the vulnerability of gambling in unsure markets; the current government is just beginning to develop markets, so there is no

[8] Milton Friedman, *Capitalism and Freedom* (Chicago: University of Chicago Press, 1962), 28.
[9] Dani Rodrik, "Globalization and Growth – Looking in the Wrong Places," *Journal of Policy Modeling*, no. 26 (2004): 515.

guarantee that these markets are successful or will have guaranteed consumers.

When saying market dependent, I use the term “dependent” because this signifies farmers’ acceptance of the risks of vulnerability – if they choose dependency on an exchange system, they risk the stability their own subsistence farming provides. From the farmers’ point of view, they essentially become dependent on the market to treat them favorably or at least fairly so that they can secure a high enough expected income on which to live.

Yangjuan, however, is an example of an underdeveloped area in which the market is unreliable and there are few opportunity substitutes – an area in which, even when searching for and attempting to utilize comparative advantage, farmers have not managed to develop a steady increase in income. Farmers must therefore settle for whatever benefits might be obtained by available resources. This problem inherently leads to inequality when they are left on their own in a market with few support structures in place.

This paper deals mostly with the causes and motivations of the changes taking place in and around the villages rather than the effects. I therefore focus on these economic and institutional debates in my later discussion of the changes in Yangjuan and how the development of its market integration is affected by government policies rather than on issues of economic and ecological sustainability, which will be reserved for another paper. While the latter are important for an understanding of where Yangjuan is heading and what issues will be important for the government to keep in mind, they are not a major factor of consideration to the parties directly involved in the current transition in Yangjuan and Pianshui.

Maoist Communism – A Vastly Different Form of Economic Strategy

Liberal market ideas are generally based on creating incentives for individual production or work within the construct of a free-will market. In contrast lie systems of centrally planned communism. This kind of system was the major characteristic of the USSR and PRC for much of the 20th century.

The Maoist collective system differed from previously discussed economic strategies in two stark ways. One reason lies in the system of planning – Maoist communism inherently relies heavily on central planning. Most of Mao's speeches rely heavily on how the central government enables collectivization and how local governments are responsive to the central government and its planning. This is a basic divergence from essentially market-based economic strategies such as those advocated by Friedman or Keynes.

The second divergence is the emphasis on the type of motivation that increases labor output. Louis Putterman (1988) describes two schools of thought regarding the motivation of workers to produce – intrinsic motivation and extrinsic motivation. While most theories of economic growth and development discussed above work within the assumption that motivation is extrinsic (work is done because of a seen connection between work and reward), Maoist Communism relies on intrinsic motivation – motivation to do work based on the satisfaction of doing the work and the glory of the communal ideology, not material gain.[10] Mao Zedong delivered a report in 1955 stating that "certain things are essential in order to increase [agricultural] yields: first, insistence on the principles of voluntariness and mutual

[10] Louis Putterman, "Group Farming and Incentives in Collective-Era China," *Modern China* 14, no. 4 (Oct 1988): 420.

benefit…"[11] This is the first and foremost ideology of Maoist collective agricultural development; by working for the betterment of all, each individual produces more and therefore leads a more comfortable life. The pure form of Maoism rules out the need for market exchange and a cash-dependent economy – theoretically, all communes are largely self-sufficient, and within each commune, all work and reward is communal.

Two radically opposed models of development: plan-based and market-based, both failed to raise the income or food security of places like Yangjuan much above a subsistence level. China moved radically from a society with a growing and decentralized, if unequal, market system to a planned economy and planned production. From there, it has been transitioning gradually to a market-based system, but this system is still marked by great disparity, both regional and between rural and urban. This system has not yet succeeded in alleviating poverty in Yangjuan and Pianshui.

Chinese Economic History

Pre-Collective Structure

This time period representing the beginning of the demise of imperial rule catalyzed changes that set up the political economic situation in collective-era China and beyond – namely, the establishment of a centralized, top-down, and bureaucracy-heavy system of government.

With the end of the Opium Wars (1839-42), the Qing Dynasty, recognizing its weaknesses, took on several reforms aimed at opening, Westernizing, and modernizing China, including the Hundred Days' Reform in 1898. These attempts ultimately failed, however,

[11] Mao Tse-tung, *The Question of Agricultural Co-operation* (Beijing: Foreign Languages Press, 1956), 15.

and dynastic rule ended in 1911 with the establishment of the Republic of China which itself lasted turbulently until 1949, when Communist rule began and the Chinese Communist Party (CCP) established the People's Republic of China. Because trends towards cash cropping and increased agricultural technology during this period were more similar in structure to today's agricultural system than the socialist[12] era in between, it is important to note that agricultural productivity began to increase by the early twentieth centuries.

It is important to note that there was much debate on whether agriculture was stagnant (Elvin, Huang[13]) or not (Perkins[14], Rawski[15], J.L. Buck[16]) prior to the formation of the PRC, because this debate signals whether this decentralized system (by current Chinese standards) was successful. Perkins points out problems in the pre-collective era with declines of arable land[17], but that positive impacts on output included technological gain, especially in potato and corn varieties. Mark Elvin argued that China's relative technical advancement led to a 'high level equilibrium trap' – cultivation was near its limits and on the verge of "sharply diminishing" returns.[18]

Increasingly efficient processing and transportation systems led to increasingly complex cropping systems, specialization, and commercialization,[19] but the agricultural economy of China before the collective period was still largely subsistence-based. While some minimal

[12] The system at this time was indeed socialist by Marxist classifications, despite the party name of Communist, which is still the ruling party of China, even if current economic policies differ immensely from policies during this socialist era.

[13] Philip C.C. Huang, *The Peasant Economy and Social Change in North China* (Stanford: Stanford University Press, 1985), 295.

[14] Dwight H. Perkins, *Agricultural Development of China: 1368-1968* (Chicago: Aldine Publishing Co., 1969), 78.

[15] Thomas G. Rawski, *Economic Growth in Prewar China* (Berkeley: University of California Press, 1989), 3.

[16] Nicholas Lardy, *Agriculture in China's Modern Economic Development* (Cambridge: Cambridge University Press, 1983), 11.

[17] Perkins, 29.

[18] Mark Elvin, *The Pattern of the Chinese Past* (Stanford: Stanford University Press, 1973), 299.

[19] Lardy, 10-11.

specialization and cash cropping occurred before 1910, only about 5-7% of agricultural output was sold more than 100 miles away from its origin.[20] Foreign interests maintained an economic interest in investment and in developing an economic system based on specialization for increased output for export.[21] Victor Lippit (1978) takes a negative outlook on these activities in describing his 'development of underdevelopment' thesis – a weak Chinese government allowed the 'rapacious' West's imperialist interests to cause the underdevelopment of China.[22] Bailey, et al (2001) adds that native cultivation of opium in China began in the late 1860s and offered strong competition to India in the 1870s and 1880s, suggesting colonial influence in the development of opium as a cash crop.[23] There is evidence that some of the opium cash cropping even occurred in peripheral areas, such as locations in Yunnan Province and Liangshan Prefecture.[24,25] Yi in Yunnan participated in a feudal system amongst Han neighbors prior to the Communist Revolution,[26] but despite some evidence of cash cropping, farmers' subsistence came largely from their own farming. Further evidence exists that Liangshan was involved in the tea trade with imperialist powers between 1900 and 1930 – Ann Maxwell Hill draws maps of trade routes between Liangshan and southern Yunnan Province.[27]

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[20] Perkins, 136.

[21] Jurgen Osterhammel, "Imperialism in Transition: British Business and Chinese Authorities, 1931-37," *The China Quarterly*, no. 98, (June 1984): 1-5.

[22] Victor Lippit, "The Development of Underdevelopment," *Modern China* 4, no. 3 (July 1978): 323.

[23] Warren Bailey and Lan Truong, "Opium and Empire: Some Evidence from Colonial-Era Asian Stock and Commodity Markets," *Journal of Southeast Asian Studies* 32, no. 2 (June 2001): 173.

[24] Ann Maxwell Hill and Eric Diehl, "A Comparative Approach to Lineages Among the Xiao Liangshan Nuosu and Han," in *Perspectives on the Yi*, ed. Stevan Harrell. (Berkeley: University of California Press, 2001), 62, 65.

[25] Erik Mueggler, "A Valley-House: Remembering a Yi Headmanship," in *Perspectives on the Yi*, ed. Stevan Harrell. (Berkeley: University of California Press, 2001), 153.

[26] Margaret Byrne Swain, "Native Place and Ethnic Relations in Lunan Yi Autonomous County, Yunnan," in *Perspectives on the Yi*, ed. Stevan Harrell. (Berkeley: University of California Press, 2001), 184.

[27] Ann Maxwell Hill, "Chinese Dominance of the Xishuangbanna Tea Trade: An Interregional Perspective," *Modern China* 15, no. 3 (July 1989): 321-345

Also emergent at this time were economic discrepancies between different regions, urban and countryside, minority and Han. Perkins and Huang both point out inequalities. Perkins points out that in the Southwest, including Sichuan province, some specialization occurred and surpluses existed because the area was fairly commercially developed just prior to 1900. The coming of the railroad in the twentieth century increased the north's dependence on the south's surpluses and gave the south more incentives to cash crop prior to 1949.[28] It is not clear, however, how much of Sichuan was involved in producing this surplus for domestic trade; it is likely that mountainous areas were not involved in that process at all, especially given their distant relation to locations downriver on the Yangzi River, the easiest avenue of trade. This growth mostly benefited places favorably located for transportation systems, but not peripheral places such as Liangshan Prefecture.

Major differences, of course, between the former decentralized system and the current transition lie in the fact that there is no more imperialism or feudalism in China, as there was in the pre-collective era. The Maoist era, however, was a backlash to this relatively uncentralized system and therefore established the precedent for China's current governmental and economic structure.

Mao Reversal of the Trends in Economic Growth

"According to Chinese views, in 1949 China was liberated from three major evils: feudalism, imperialism, and bureaucratic capitalism."[29,30] The Communist Party with Chairman Mao Zedong as its head set out the First Five Year Plan starting in 1953 - along

[28] Perkins, 167.

[29] These three evils are outlined plainly in Mao's speech, "In Commemoration of the 28th Anniversary of the Communist Party of China, June 30, 1949," recorded in *Selected Works*, vol. 5, three months before the CCP gained official control over China. The term 'liberation' (*jiefang*) is everyday vernacular for the 'liberation' brought by the CCP.

[30] Osterhammel, 260.

with centralizing the government, the CCP gradually instituted a radically different structure of agrarian economy – the collective. The collective system lasted from 1956 until about 1979. Land was owned by People's Communes of up to several thousand households, and land was controlled and worked by Production Brigades of several hundred households and Production Teams of 20-40 households. There was little personal profit in this time – perhaps some from selling livestock on the side. Most revenues were collected by the production team; the production teams distributed income based on workpoints earned.[31]

Collectives used controlled markets to buy necessary capital supplies from state-owned corporations with excess revenues but were based largely on self-sufficiency. Literature varies greatly on whether Mao's policies and the imposed market structures were beneficial (Rawski[32]) or not (Putterman[33]) for the agrarian economy and is also punctuated by discussion regarding the pronounced spatial disparities during this time.

Most of the problems with the collective system lay in the loss of incentives because, as work did not yield self-evident returns, people became disenchanted, if not with the Party, then at least with the value of hard work. Harrell says this Chinese[34] work ethic is likely due to the perceived benefit in the future for self, and family, this explains why the Chinese worked hard even throughout the Great Leap Forward[35] (1958-1960) when there were no immediate economic gains for individuals.[36] During the Great Leap Forward, 15 to 30 million

[31] Victor Lippit, "The Commune in Chinese Development," *Modern China* 3, no. 2 (April 1977): 229-255.

[32] Thomas Rawski, "Recent Trends in the Chinese Economy," *The China Quarterly* no. 53 (Jan-March 1973). 1-33.

[33] Putterman, 447.

[34] 'Chinese' is not a term that necessarily includes minority cultures such as the Nuosu. This same concept of work ethic cannot be applied to the Nuosu.

[35] The Great Leap Forward was a campaign launched by Mao to accomplish economic and technical development presumably to catch up to Western levels at a rapid pace by encouraging people to work harder than before, dig deeper than before, etc. This resulted in famines when soil productivity plummeted, exhaustion, demoralization, and poor-quality goods became rampant.

[36] Stevan Harrell, "Why do the Chinese Work so Hard?: Reflections on an Entrepreneurial Ethic," *Modern China* 11,

died of starvation, even as, noted by Selden (2002), "party propagandists were trumpeting claims of unparalleled production achievements" they thought existed due to local inflation of recorded agricultural output.[37] William Joseph (1986) speaks of The Great Leap Forward and the Cultural Revolution (1966-1976) as: "two periods…when extreme Leftism dominated the Chinese Communist Party and brought the country to the brink of political and economic ruin."[38] He highlights that even the CCP in 1981 recognized the Cultural Revolution as responsible for the worst setbacks suffered by the Party. The Cultural Revolution caused uncertainty and fear by the extreme promotion of ideological orthodoxy and fervent purging of land-holders, imperialists, and capitalists. With a less motivated work force, there was little way to improve productivity.

Selden continues his discussion of the detriments of the state planning of the CCP by pointing out the severe restrictions the CCP placed on rural-urban mobility after the Great Leap Forward; these restrictions served to institutionalize urban-rural disparity and blocked development.[39]

Scholars differ on the effects of collectivization on different regions and different areas. Lippit (1977) contends that the collective period did succeed in its development goal of equalizing the countryside with the urban areas.[40] Others, like David S.G. Goodman, argue to the contrary that the rise of Mao increased the regionalism felt in China.[41] Audrey

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no. 2 (April 1985): 203-226.

[37] Mark Selden, "The Political Economy of Socialist Transition: Restructuring Inequality," in *China's Communist Revolutions*, ed. Werner Draughn and David SG Goodman. (New York: RoutledgeCourzon, 2002), 94.

[38] William Joseph, "A Tragedy of Good Intentions: Post-Mao Views of the Great Leap Forward," *Modern China* 12, no. 4 (Oct 1986): 419.

[39] Selden, 97.

[40] Lippit (1977), 247.

[41] David S.G. Goodman, "The Political Economy of Regionalism in China: Economic Development and the Prospects for Political Disintegration," Asia Research Centre on Social, Political, and Economic Change Working Paper No. 26. (November 1993): 5.

Donnithorne writes about Sichuan's agricultural and economic hardships between 1957 and 1979. Donnithorne states that Sichuan's agriculture was harder hit by collectivized agriculture; the rate of expansion of the grain market in Sichuan, once an exporter in China, was slower than other areas around the country. By the end of the 1970's, Sichuan was a net importer of grain.[42] During the Cultural Revolution, the Southwest region was the only region in China whose grain deficit grew consistently.[43] Collectivization certainly did not deliver on all of its promises for equality and increased agricultural development.

Woo (1999) summarizes two schools' thoughts on the importance of the collective era and subsequent reforms: the Experimentalist School and the Convergence School.[44] The former points out where gains were made in the collective period, and that through structural experimentation, productivity gradually increased. The latter disagrees and points out that only reforms initiated after 1978 and the transition to a liberalized economy is responsible for China's recent economic gains (usually estimated as a quadrupling of GDP between 1978 and the late 1990s). The end of the Mao collective era signaled a reestablishment of market liberalization but with much more centralized Chinese control than before the collective era.

Post-1978: China's Modern Planned Transition to a Market Economy

The 3rd Plenum of the 11th National Party Congress Central Committee in December 1978 marked a major turning point in Chinese policy – economic growth would rule over ideological fanaticism and class struggle as the mark of national success. While still wary of pseudo-capitalist and "greedy" systems, the CCP, now led by reformer Deng Xiaoping

[42] Audrey Donnithorne, "Sichuan's Agriculture: Depression and Revival," *The Australian Journal of Chinese Affairs* 12 (July, 1984): 63-71.

[43] Robert Ash, "The Cultural Revolution as an Economic Phenomenon," in *China's Communist Revolutions*, ed. Werner Draughn and David SG Goodman. (New York: RoutledgeCourzon, 2002): 143.

[44] Wing Thye Woo, "The Real Reasons for China's Growth," *The China Journal* no. 41 (Jan 1999): 116.

after Mao's death in 1976, began to slowly decentralize local agricultural systems, and by 1984, previously collectivized agriculture was back in the hands of individual village households.[45] From larger administration to smaller, the township replaced the commune, the administrative village replaced the brigade, and the natural village replaced the team. Families now made decisions over their own plots of land (although "owned" was still questionable). Decollectivization, along with increased availability of inputs, opening of free produce markets, diversification of cropping patterns, and increases in the state procurement prices for major crops, all led to the agricultural growth and increased rural income between 1979 and 1984.[46] These kinds of structural economic changes are what *allow* for market liberalization and specialization and therefore *allow* integration of peripheral areas into the market and allow for dependency on a cash economy to occur.

In addition to land and property reform, the state has loosened some control of the market, and markets have been developed and opened, especially after further fiscal reforms in 1993 and the subsequent establishment of the "Chinese socialist style market economy" (*zhongguo tese shichang jingji*).

Before 1978, farmers were allowed to sell grain only after fulfilling their quota amount to the government. Between 1978 and the early 1980s, the government lowered grain quotas to the government and allowed non-state buyers to engage in extra-quota grain markets; farmers could now sell their extra grain to non-state entities. After 1984, the central government eliminated most mandatory quotas and replaced them with voluntary advance contract procurement for grain at negotiated prices, the result of which being a rather fuzzy

[45] Jonathan Unger, "Ideology, and Personal Interests in a Chinese Village, 1960-1980," in *Chinese Rural Development: The Great Transformation*, ed. William L. Parish. (Armonk, NY: ME Sharpe, Inc., 1985), 117-132.

[46] Kang Chen, *The Chinese Economy in Transition* (Singapore: Singapore University Press, 1995), 21.

line between plan and market.[47] The effect of these changes was not to abolish government involvement in the grain trade, but to increase non-state market activity.[48] Terry Sicular related government swings in regulations in the first two decades of reform to imperfect knowledge about what farmers' incentives were and imperfect government reactions to them.[49] Her study dates to before reforms in the 1990s, meaning more research is needed regarding the mutual reactions of farmers and government in the last few years.

Throughout the beginning of the reform period, national government attention was focused on agriculture and the rural economy, but after the mid-1980s, China began focusing on export-led development as exports became the highest growing component of GDP.[50] This policy reflects a bent on implementing a market economy and pushing ahead economic growth.

Focusing on exports also meant focusing on places best situated for it; namely, the coastal regions. Reforms beginning in the 1980s that also led to some of this growth disparity are the opening of China, establishment of Special Economic Zones (SEZ's) and TVE's (Township and Village Enterprises). The SEZ's, such as Shenzhen on the southeastern coast, did much to raise the overall productivity of China by being such a large force for international commerce, but they demonstrate also the inequality in Chinese development. The goal of Chinese development has been pure economic growth, as the Chinese phrase states: "a rising tide lifts all boats." Architects of Chinese reform believed

[47] Terry Sicular, "Redefining State, Plan, and Market: China's Reforms in Agricultural Commerce," *The China Quarterly* Special Issue: China's Transitional Economy, no. 144 (Dec., 1995).

[48] Scott Rozelle, Albert Park, and Jikun Huang, "Bureaucrat to Entrepreneur: The Changing Role of the State in China's Grain Economy," *Economic Development and Cultural Change* 48, no. 2 (Jan., 2000), p. 237.

[49] Terry Sicular, "Ten Years of Reform: Progress and Setbacks in Agricultural Planning and Pricing," in *Economic Trends in Chinese Agriculture,* eds. Y.Y. Kueh and Robert Ash. (Oxford: Clarendon Press, 1993).

[50] Azizur Rahman Khan and Carl Riskin, *Inequality and Poverty in China in the Age of Globalization* (New York: Oxford University Press, 2001), 4.

all would benefit from broad economic growth.

In the last few years, China has turned its attention to international trade. China's trade volume has grown at an average rate of 15% since 1979, compared with the international growth rate of 7% in that time frame.[51] China's accession in 2001 to the WTO has been accompanied by increases in international cooperation and decreases in barriers to trade, including elimination of most non-tariff barriers and many tariff barriers. Specific stipulations of the WTO accession that impact agriculture are: 1) tariffs on agricultural goods will be lowered to an average of 15%, and 2) China will lower agricultural subsidies to less than 10% and will eliminate all agricultural export subsidies.[52] These changes will have an impact on grain markets by making imports cheaper, likely meaning there will be an increase in grain imports along with China's surging demand. By 2004, agricultural exports to China from the US quadrupled, and Gary C. Martin attributes much of this increase to China's WTO accession.[53] Due to China's as yet incomplete compliance with WTO regulations, however, Martin complains of lost ground in corn markets around the world as China continues to subsidize corn.

Fiscal Reforms

In addition, the government began many fiscal reforms in the 1990s. Christine Wong explains that the purpose of these new reforms was in part to ensure that local governments maintained adequate revenues despite the adherence to a former socialist-style form of tax

[51] Eswar Prasad and Thomas Rumbaugh, "Overview," in *China's Growth and Integration into the World Economy: Prospects and Challenges*, ed. Eswar Prasad. International Monetary Fund Occasional Paper 232. (Washington, D.C.: IMF Publication Services, 2004): 1.

[52] Thomas Rumbaugh and Nicolas Blancher, "International Trade and the Challenges of WTO Accession," in *China's Growth and Integration into the World Economy: Prospects and Challenges*, ed. Eswar Prasad. International Monetary Fund Occasional Paper 232. (Washington, D.C.: IMF Publication Services, 2004): 11.

[53] Congressional-Executive Commission on China, *Is China Playing by the Rules? Free Trade, Fair Trade, and WTO Compliance: Hearing before the Congressional-Executive Commission on China.* 108th Cong., 1st sess., 2003.

sharing between local and national governments.[54] Wong points out that one of the failures of the current government finance system is the particularly ambiguous divisions of expenditures for education and capital expenditures. [55] These are two of the most needed investments in Yangjuan.

Governance Structure and Motivations

One of Deng Xiaoping's most famous quotes demonstrates the changing Chinese emphasis on development over the ideological style of government functioning: "It doesn't matter if the cat is black or white so long as it catches mice." This quote is basically to emphasize the ideological power of the CCP leftover from Mao times but to explain that the main goal of the government should be improvement of economic conditions, no matter which methods – socialist or semi-capitalist – are most effective.

China's modern government has gone through many ideological adjustments from the Maoist system it inherited to its present system, but many basics remain the same, such as its levels of administration. China's government operates on five administrative levels, and each subordinate level must submit to the authority of the level above it. These five levels are: the central government, the provinces, the prefectures or cities, the counties, and the townships.[56] There is some discussion about how strictly subordinate levels actually need to follow rulings of levels above them. Most of the motivation to keep local governments in

[54] Christine P.W. Wong, "Overview of Issues in Local Public Finance in the PRC," in *Financing Local Government in the People's Republic of China*, ed. Christine P.W. Wong. (Hong Kong: Oxford University Press for Asian Development Bank, 1997), 31.

[55] Christine P.W. Wong and Christopher Heady, "Policy Recommendations," in *Financing Local Government in the People's Republic of China*, ed. Christine P.W. Wong. (Hong Kong: Oxford University Press for Asian Development Bank, 1997). 323.

[56] Wong 1997.

line is by enforcing career advancement opportunities for officials.[57] Part of the motivation to specialize on the local level, it seems, may have come from an administrative incentive to boost local production.

Reforms in the early 1990s now give local governments incentive to promote comparative advantage.[58] Nicholas Lardy, one of the most prominent scholars in Chinese agricultural development, explained in 1983 that, based on press articles and widespread scholarly debates, comparative advantage was not well understood in China. It was this poor understanding of the benefits of specialization and the costs of commercialization – transport costs and marketing – that presented barriers to commercialization in China.[59] Lardy suggests that local self-sufficiency held on, perhaps not as a principle, but as a matter of bureaucratic expediency.[60] This might help explain why specialization had not occurred much before 1983, but it does little to explain why specialization did indeed begin to happen shortly thereafter, even in remote places like Yangjuan, unless one assumes that the barriers Lardy speaks of specifically were in some manner lowered. I argue that the government since then has in fact done much to promote commercialization and comparative advantage.

Jean Oi (1995) describes the Chinese state as a hybrid of Leninist and capitalist principles unlike any others found in the world; the country is going through economic growth led via the government (mostly local governments that act almost like boards which review enterprises).[61] She points out that much of China's progress in the last thirty years is

[57] Yang Zhong, *Local Government and Politics in China: Challenges from Below* (New York: ME Sharpe, 2003).

[58] Marc Blecher and Shaoguang Wang, "The Political Economy of Cropping in Maoist and Dengist China: Hebei Province and Shulu County, 1949-90," *The China Quarterly*, no. 137 (March 1994).

[59] Lardy, 200-204.

[60] Ibid., 210.

[61] Jean C. Oi, "The Role of the Local State in China's Transitional Economy," *The China Quarterly* Special Issue: China's Transitional Economy, no. 144 (Dec, 1995): 1132.

actually the result of government planning, albeit a different kind of planning than in the Maoist era. She explains that "what has changed is not necessarily the personnel, but the incentives that are embedded in the institutions that shape the actions of officials."[62] Local governments could now selectively allocate funds and could encourage entrepreneurial industry. In a later work in 1999, Oi also emphasizes the slow, gradual process of formation of property rights, universally viewed as a key component to economic growth.[63] Writing in 1995, Oi admits awareness that part of the reason for China's success is that local governments are handing increased support to private enterprise, but she remains insistent that by not entirely relinquishing political power during economic transition, China, unlike the former Soviet states, has maintained economic growth.

A theme often noted by scholars is that the Chinese government remains wary of relinquishing authority over the market too quickly and ending up with a mess akin to that in many states of the former Soviet Union. The PRC's plan regarding development is to "cross the river by feeling the stones," another quote attributed to Deng Xiaoping. The government is redistributing power, but in a state-planned way that maintains authority over areas that it sees as key aspects of the economy. This resistance to fast change can be seen in the slow pace of fiscal reform and in the slow pace of property rights reform. In interviews with rural farmers, Brian Schwarzwalder noted that their primary concerns over land transactions and land investment dealt with the impermanent nature of their holdings – in light of common redistributions by village-level ownership of land, investment seems unwise and land

[62] Oi, (1995) 1136.

[63] Jean C. Oi and Andrew G. Walder, "Property Rights in the Chinese Economy," in *Property Rights and Economic Reform in China*, eds. Jean C. Oi and Andrew G. Walder. (Stanford: Stanford University Press, 1999), 6-7.

transactions costly.[64] Despite the Rural Contracting Law of 2002 that began to promise some level of permanence to individual farmers' land holdings, full private ownership still remains to be granted.

In terms of the Chinese model of gradual reforms instituted elsewhere that have failed, Uzbekistan is an example explained by Richard Pomfret.[65] It has failed for definite reasons, however, such as the government's failure to provide proper incentives – by raising much of its revenues through heavy taxation on cotton and grain farmers, incentive to produce has been lowered. This is an example then, of what China needs to avoid. It needs to maintain market incentives for its farmers and avoid setting control over prices or in any way minimizing the returns farmers get to their efforts.

Equitable Development in China's Recent History

While the national government of China focuses on economic growth and encouraging market liberalization and prosperity for the country overall, remote areas are left with little focused support for development. Local governments have been charged with that task, and from the literature, there is evidence that local governments have had reason to push forward new ways of farming, new liberalizations. Economic growth throughout China, however, remains uneven, likely due to the failure in ambiguous government tax-sharing and responsibilities to provide necessary public goods.

Even though China's economic growth is indisputable, many critics point out growing inequities between regions and between urban and rural areas, and a growth of unsustainable

[64] Congressional-Executive Commission on China, *Ownership with Chinese Characteristics: Private Property Rights and Land Reform in the People's Republic of China: Roundtable Before the Congressional-Executive Commission on China*, 108th Cong., 1st sess., 2003.

[65] Richard Pomfret, "Agrarian Reform in Uzbekistan: Why Has the Chinese Model Failed to Deliver?," *Economic Development and Cultural Change* 48, no. 2 (Jan., 2000).

agricultural practices. Riskin and Khan (2001) explain how market liberalization, while increasing overall the living standards within China, has also led to increased income inequality.[66] They point out inequalities between urban and rural areas and also between the developed coastal regions and the poorer Western interior provinces, of which Sichuan Province is one. Sichuan, the province with the largest population, had less output/capita in the early 1990s than in the 1930s.[67] The increased promotion of HYV's (high-yield varieties) then increased the productivity of agriculture, especially of the three main crops - rice, corn, cotton. Some of these deregulations were aimed at reducing the burden of taxation in order to raise the income of about 17 million farmers living at the subsistence level in Sichuan: "in the nine poor counties of mountainous Liangshan prefecture, the...procurement quota plus the farm tax for grain was reduced from 58 million *jin*[68] in 1979 to 40 million jin in 1980."[69] These policies, however, failed to assist development in Liangshan. Terry Cannon (2000) argues that the shifts to "the Responsibility System (the redistribution of the collective's land into small parcels under the control of families…) were intended to assist [poor] areas," but have not changed their situation much, "except that [the poor areas] can now export labor."[70]

Chris Bramall (1995) states that when the government pushed Sichuan to adopt household farming, Sichuan was one of the most reluctant to do so (it was not fully integrated into household farming until about 1983). The mountainous areas of Sichuan such as Liangshan Prefecture, however, were slightly quicker to experiment with decollectivization

[66] Khan and Riskin, 7.

[67] Chris Bramall, "Origins of the Agricultural 'Miracle': Some Evidence from Sichuan," *The China Quarterly*, no. 143 (Sept 1995): 731-755.

[68] The jin is a weight measurement used in China. During the European colonial era, the jin was identified with the catty, equal to 1 1/3 pounds or 604.79 grams. Today, the jin is a metric unit equal to exactly 500 grams.

[69] Bramall, 742.

[70] Terry Cannon, "Introduction," in *China's Economic Growth*, ed. Terry Cannon. (Wiltshire, UK: Macmillan Press Ltd, 2000), 17.

because the cost of failure was lower.[71] In Liangshan, 91% of teams were decollectivized by the end of 1981, contrasted with teams in Leshan Prefecture in the Chengdu Plain, where, by the end of 1982, only about 27% were decollectivized. There is less arable land (measured around 16%) and less water for rice growing; the area, being so remote, has few urban areas dependent on its production, so problems would be localized. Other counties, especially in the Chengdu plain, have a much higher arable land percentage – 90% - and provide for urban areas, leading to a high cost of failure. These facts perhaps point to a local government that was willing to facilitate and foster this transition early, knowing that other areas would be less dependent on their success.

Conclusion – Shortcomings in the Literature

The pre-collective period began trends in regional inequality and production of infrastructure to facilitate inter-regional specialization and trade, but this was retarded and in some senses reversed during the period of collective production and central planning. The same centralizing effects, however, allowed for the later shift towards cash dependency to occur under centralized Chinese control, rather than driven by outside imperialist forces as in pre-1949 China. Because of the extremely negative impacts of some of the sharper anti-market policies during the collective period, Deng Xiaoping had enough impetus to be able to implement new policies to move China away from the collective system and towards more economically liberal policies like private market involvement.

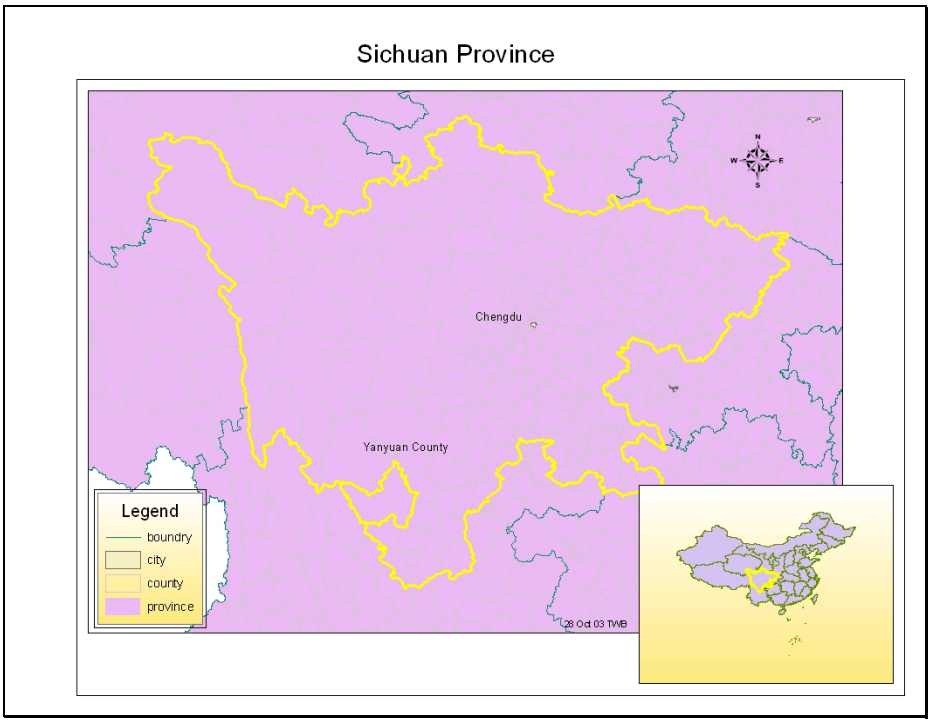
While the appearance of markets and some liberalization allow for increasing economic growth, there is little literature stating specifically why this is happening in certain remote

[71] Bramall, 745.

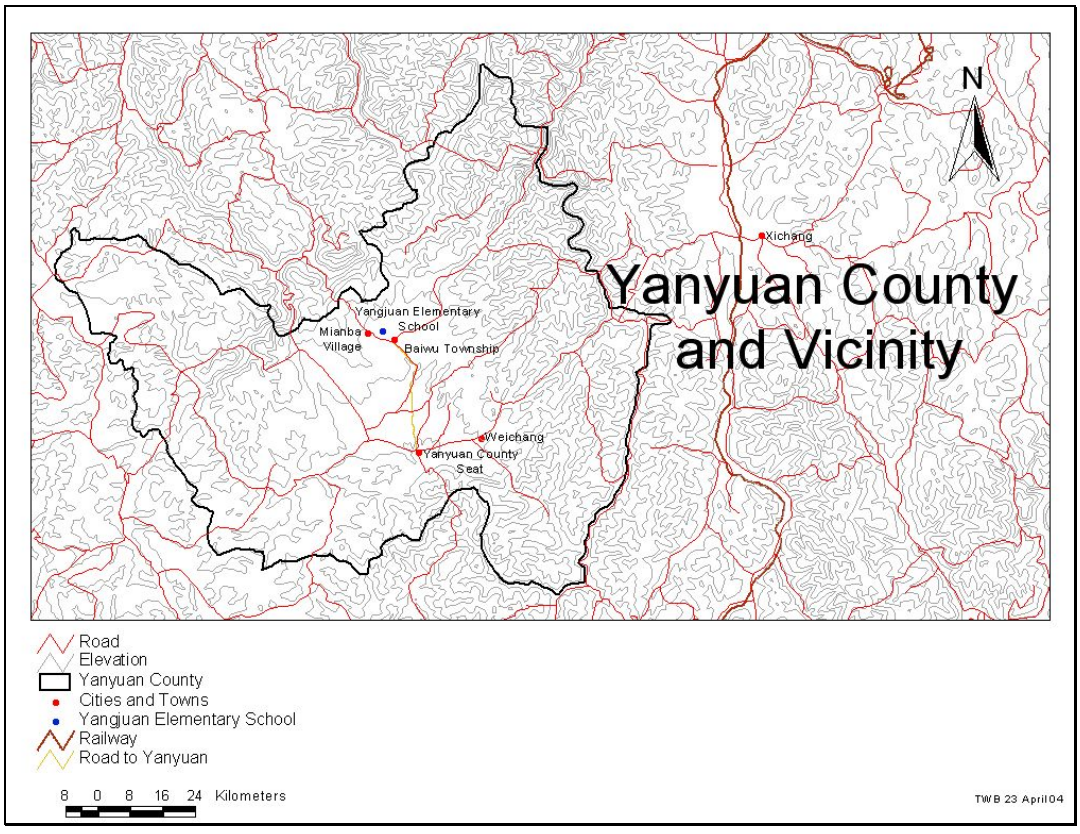
areas, especially since China's current policies seem geared towards assisting higher-profile development targets. Many of the agricultural statistics incorporated in scholars' arguments are based on provincial-level data, and for Sichuan this means they are heavily skewed towards places like the Chengdu Plain – a major high-output agricultural area. This is evident in the fact that many scholars' arguments are based on data for commodities like rice that do not generally grow well in the mountains of Yanyuan County. There is little evidence that the reasons farmers, often illiterate, are adopting these new methods in outlying areas is because of these large-scale reasons for development changes; moreover, there is certainly very little literature detailing how these national policies are implemented locally. There certainly has been no investigation as to whether the changes in Yangjuan are environmentally sustainable. In light of the extreme focus China has placed on overall national economic growth, the literature reveals a vacuum as to why farmers in underdeveloped places like Yangjuan have begun to experiment with cash cropping and market dependency. My research focuses on answering this question and discussing the consequences for farmers in Yangjuan.

Chapter 3: Hybrid Corn in Yangjuan/Pianshui

Introduction to Yangjuan



Map 1: Sichuan Province, Location of Yanyuan County
(Source: Worker-Braddock, 2004)



Map 2: Yanyuan County, Including Yangjuan/Pianshui
(Source: Worker-Braddock, 2004)

All residents of Yangjuan and Pianshui are Yi. The Yi are one of 55 nationally classified minority groups, and the Yi residing in the Liangshan Mountains call themselves Nuosu. Traditional Yi society was made up of clans and castes that included slave castes. Traditionally agro-pastoralists, the Nuosu migrated into their current location as more and more Han settlers moved into the area before the collective period. Throughout this time and throughout the Maoist era, there was substantial conflict between Yi and Han; the Nuosu were often targets of violence and enforced cultural assimilation during the collective period.[72]

The neighboring villages of Yangjuan and Pianshui are visually indistinguishable from the each other; the main difference lies in a separation between castes that bars intermarriage to a large extent. For convenience, I will often refer to these two villages collectively as simply Yangjuan, since that is where the village school is located. Yangjuan lies in Yanyuan County. Yanyuan County, as of 2003 data, had a population of 330,000. Yanyuan County is listed as one of the 592 Poor Counties in China.[73] According to the 2001 Agricultural Development Bank Yearbook, the net average income per person in Yanyuan is 997 yuan.[74] Yanyuan lies in the Liangshan Autonomous Yi Prefecture situated in the high mountainous regions of Southern Sichuan. Today, Liangshan Yi Autonomous Prefecture enjoys certain autonomous advantages (always within the authority of the central government).[75]

[72] Thomas Heberer, "Nationalities Conflict and Ethnicity in the People's Republic of China, with Special Reference to the Yi in the Liangshan Yi Autonomous Prefecture," in *Perspectives on the Yi of Southwest China,* ed. Stevan Harrell. (University of California Press: Berkeley, 2001).

[73] See Appendix 1 for *Map of Nationally Designated Poor Counties.*

[74] *Zhongguo Nongye Fazhan Yinhang Tongji Nianjian* 2001. (Beijing: China Statistics Press, 2001).

[75] For example, ethnic minorities are allowed different quotas for children. For rural Nuosu, 3 children – a departure from China's one child policy.

Research Methods

My research included interviews of 31 households in Yangjuan and Pianshui, 2 interviews with officials in the Yanyuan county agriculture office, 4 interviews with middlemen in Baiwu and Yanyuan, 1 interview each with a feed factory and regional seed distributor in Xichang, and one interview with the executive director of a Chengdu seed producer. I conducted interviews of farmers and local government officials on visits to Yangjuan and Pianshui for about ten days at the end of August, 2003, for one week in October, 2003, and for seven to ten days at a time in March and May. To get to this area, I took an overnight train from Chengdu to the Liangshan Prefecture capital city of Xichang, then a 4-hour bus to the Yanyuan county town, then another 2-hour bus to Baiwu, the nearest town to Yangjuan and Pianshui with bus service. When I traveled through these towns, I often took the opportunity to seek out seed sellers or government officials to interview.

My method for selecting families to interview in Yangjuan and Pianshui was as random as possible. I walked in different directions from the village school and interviewed people I came across. The average age of the interviewees (always the household 'head' or his wife) was 42.6; the median age was 43. The range was 26 to 70 years old. The households were numbered in rough geographic succession, and again the spread of numbered households interviewed was fairly even, meaning that the physical spread of interviewed households was fairly evenly distributed. Because I do not speak the Nuosu language, I asked for and received the assistance of fluent Mandarin speakers in the village, often teachers at the school, to interpret. Because the UW-Sichuan Program Professors Stevan Harrell and Tom Hinckley had already been to this village several times to collect data

and interview, I had no trouble securing interviews and interview assistance.

Accuracy problems arise throughout the interviews, as interviews relied both on my ability (and the farmers') to communicate in Mandarin and on farmers' memory. Farmers do not record purchases or sales, so they must recall prices and weights. In my graphs, most data span two harvest seasons. I felt this would be more useful than dividing graphs by season, however, because prices remained fairly stable. I also wanted to use the information that was freshest in farmers' minds at the time I interviewed them.

The interview questions covered the following areas: money flow between seed producers, middlemen, and farmers, farming methods and varieties grown in recent years, local market structure and prices, personal motivations for farming changes, and personal expectations. The interviews aimed to link all of these processes together in order to detail the changing local political economy of farming hybrid corn and to answer why farmers are making this transition. In my interviews, I also collected information regarding recent changes in the market and how companies or the government might be involved in this transition.

My interviews with Yanyuan County officials covered information on the agricultural history of Yanyuan, particularly Baiwu Township, how seed and corn distribution have occurred in the county, what officials' goals are, and what other government body the Yanyuan County government might be responsive to.

I also interviewed the middlemen – the buyers of corn and the sellers of seed to farmers – to ascertain what kinds of safety nets or loans are available, how corn is bought and what kinds of contracts exist, where seeds are obtained, and if the middlemen have any plans for

the future regarding this village and the seed stock being used.

In interviewing the seed producer, I asked questions considering their methods of seed development, testing, dispersal, and operations. I also asked how they set their goals and if the company is associated with any governmental bodies. I asked about how the market is changing and what kind of competition they face. I asked one of their Xichang distributors what their service range is and how they go about getting seed into farmers hands – who first buys their product, if there are any contracts involved, and what the costs are.

Questions asked of the feed factories included where they get the bulk of their corn from and from whom they buy and how these costs determine their purchases. I also asked about the composition of the feed they produce and what they are looking for when they purchase corn.

Interview Results

In relating the diverse information collected from my interviews, I will begin with the history of farming in Yangjuan and the changes to that structure in recent years. This description includes the experiences of the farmers, seed producers, government officials, and middlemen I interviewed. I then detail the changes in methods and quality of life farmers have experienced by switching to this cash cropping system. Throughout, I note the financial pros and cons for each party involved in this transition before moving on in the next chapter to a discussion of what forces are driving this economic change in Yangjuan. After determining the weight of the market and government respectively, I make suggestions for models for improvement in the final chapter.

<u>The Beginnings of Cash Cropping in Yangjuan and Pianshui</u>

Farmers in Yangjuan and Pianshui began attempts at cash cropping sometime in the late

1970s with apples, confirmed by my separate interviews with Yangjuan resident Mgebbu Ashy and with Ze Jungui, office manager of the Yanyuan County Agricultural Office. Apples began doing well, and by the mid-1990s, most of the farmers in Yangjuan were focusing on planting apples primarily to sell. Even though the popularity of planting apples continued to rise in Yangjuan, the prices continued to drop until middlemen did not even come to Yangjuan in 1997 to buy apples. By 2000, farmers began cutting down their trees.[76] When I arrived in Yangjuan in 2003, only a handful of farmers had retained a few apple trees for personal consumption.

Interviews with both Ze Jungui and Mgebbu Ashy provided evidence that these examples of cash cropping that coincided with the onset of the reforms were actively encouraged by the local government. The local government first encouraged apples in Yangjuan because Yanyuan County apples were already well-known. Central planning of crops was largely lifted by the late 1980s, so the local agriculture specialists decided to try growing apples in Yangjuan and Pianshui. An interview with Xie Fengjun, head of the Yanyuan County Government Seed Station, confirmed the local government made decisions about what farmers should grow. This interview, assisted by Zhao Yufan, explained that originally, apples in other provinces were doing well at generating income. Since pears were already doing well in Yanyuan County and since apples and pears need similar conditions, they would try apples in the county. Their goal, the official said, was to help make the farmers richer. At the time, residents simply did what the county government told them to do. Procurement quotas were likely used by the government as a method to encourage farmers to

[76] Joanne Ho, "Pockets of Poverty in a Fast-Growing Economy: Quantifying Market Shares in Rural Southwest China" (Jackson School of International Studies Honors Thesis, University of Washington, 2004), 21.

make this switch at the time, although I did not ask in the interview.

The earliest the county promoted hybrid corn was 1979, but it did not reach Baiwu Township until sometime later, closer to the early 1990s. The government originally made decisions about what to plant shortly after the reform period began, but has since lessened its influence to offering loans for apples in the 1990s[77] and, more recently, to planting suggestions given upon request. The local government is largely responsible for these decisions, giving annual updates to higher levels of government and likely receiving that much input from above as well. From these interviews, it is apparent that the local government had a large hand in facilitating farmers' initial uptake of cash cropping by using somewhat experimental means to determine how to make farmers economic status improve.

Current Market Structure, From Seed to Feed

Hybrid Corn Seed Development and Dissemination

Recently, the government's role in determining directly what farmers produce has changed, lessening dramatically. These changes are largely indicative of an economy in transition to a market system, moving away very gradually but remaining under control of planning government entities, from pure central planning. While the Yanyuan government has been experimenting in the last few years with growing special kinds of rice suited to its high elevation, its role is now largely to test certain crops and recommend them, rather than coordinate what farmers are to plant. The presence of a government seed station in Yanyuan still marks the government's involvement as a market agent, but it now faces heavy competition from a growing supply of independent seed providers. The China Seed Law[78]

[77] Joanne Ho, 32.

[78] *Seed Law of the People's Republic of China,* adopted at the 16th Session of the Standing Committee of the Ninth

passed in 2001 and further amended in 2004 allowed seed sellers to begin selling directly to farmers without the intervention of the government seed stations as an intermediary and overseeing provider. Previously, local seed distributors had to obtain seeds from government-controlled seed producers without any kind of direct payment.

Today, these government seed stations serve only to test seeds for quality – quality meaning adherence to government-set yield minimums. Seed is produced by entities that are beginning to enjoy freedoms more similar to those of private corporations, according to Ke Yongpei, general manager of the Sichuan Agricultural University Zhenghong Seeds Co, Ltd., a major seed producer located in Chengdu. A volume edited by Lai Zhongming of the Sichuan Agricultural University highlights four phases of corn development in Sichuan between 1949 and 1987, from the collective period to the first decade of the post-reform period. The first phase was marked by very slow growth that lasted from 1949-1964. The second phase (1965-1976) introduced hybrid corn use. While technology improved, the Cultural Revolution hampered the rate of progress. From 1977-1984, Sichuan energetically carried out "3 reforms" of corn production. These included reformation of the cropping system, increased use of hybrids and technology, and changes in farming strategies. This combination led to the most successful increases in productivity of the four stages. The year 1984 saw record production**.** Technological advancement and investment, however, slackened between 1985 and 1987. Production began to decline. In 1987, hit by natural disaster, farmers' production further decreased. Lai Zhongming's volume highlights that the technological stagnation in investment and production is a reason that more hybrids need to

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National People's Congress on July 8th, 2000. Order of the President of the People's Republic of China, No. 34, implemented as of December 1st, 2000.

be developed.[79]

Ke Yongpei said his company developed the Chuandan 15 (川单 15) variety of hybrid corn, heavily used in Yangjuan and Pianshui and, he claims, widely copied by other companies. Because there is little copyright protection, Zhonghong Seed Company is now working on a new variety that they hope will replace the Chuandan 15. The company tests its hybrids, which are developed through traditional crossbreeding methods and not through GMO[80] technology, in test centers from Xinjiang to Sichuan before selling its product throughout Sichuan and neighboring provinces such as Shaanxi, Gansu, and Tibet. This growing network demonstrates the increasing interconnectedness of inter-provincial economies. This network will also serve to disseminate market information more quickly in the future and causes both Ke Yongpei and Yanyuan government officials to be quite optimistic about the success corn can bring farmers in Yangjuan. Ke Yongpei was very adamant about the benefits these varieties can bestow on people in poor, particularly mountainous, areas.

He said that the goals and funding of the company are totally separate from the government, and that the company's primary goal is not to make money but to help the farmers. To do this, he said the company's goals are essentially to increase quantity of output and quality, resistance, etc., especially for varieties that can be used in mountainous areas. There is room for a 20% improvement in harvest output with hybrid varieties in

[79] Lai Zhongming, "Shilun Sichuansheng Dangqian Yumi Shengchan de Zhanlüe Wenti," in *Yumi Shuliang Xingzhuang Yichuan Yu Yuzhong Yanjiu*, ed. Lai Zhongming (Chengdu: Sichuan Science and Technology Press, 2003): 200.

[80] GMO refers to genetically modified organisms, which have stirred much controversy lately regarding the insertion of genes from unrelated organisms into genes of food crops. Pest-resistant genes are one example that has brought about much speculation about potential health effects.

mountainous areas of Sichuan over the previous traditional varieties of corn.[81] Farmers in my interviews, however, tended to report an approximate doubling in yield with the new corn varieties, but they also use more fertilizers with the new varieties.

Ke Yongpei reported that Yanyuan County has become a great corn producer because Yanyuan is on a plateau with plenty of sunlight, favorable temperature, and quality labor. These factors allow Yanyuan County to produce the highest amount of Chuandan 15 corn in Sichuan. Indeed, information provided by the Yanyuan Agricultural Office indicates that Chuandan 15 is by far the most popular hybrid corn to plant in Yanyuan County. Ke Yongpei indicated that production should be around 1000 kg/mu[82], or about 2000 jin/mu.[83] The corn is produced primarily for feed, for which the market in Sichuan is growing, but Ke Yongpei said it is safe to eat, despite contrary opinions from farmers who say it is hard to digest.

Ke Yongpei explained that the corn is intended to be used with fertilizers and with plastic mulch (*dimo)* in addition to usual household fertilizers. There are no kinds of environmental tests done on effects the corn or its inputs might have, however, including on its long-term effects on soil. He did mention that farmers are supposed to collect and recycle the *dimo*, but he suspects this doesn't happen much, because people in China are only beginning to think about environmental issues.

[81] Ke Yongpei, 'Breeding of an Elite Corn Hybrid Chuandan 15 and its Application," in *Yumi Shuliang Xingzhuang Yichuan Yu Yuzhong Yanjiu*, ed. Lai Zhongming (Chengdu: Sichuan Science and Technology Press, 2003): 234.

[82] A mu is a unit of land area equal to 1/15 hectare or ~1/6 acre.

[83] Information from the Yanyuan Agriculture Office indicates that the production potential of Chuandan 15 grown in the county is actually 450-950 kg/mu. This indicates that the figure given by Ke Yongpei is an optimal output.

Fig. 1: *Dimo* Shreds Blown Across the Landscape from Yangjuan Fields, 2003. Newly-laid strips of *dimo* are evident in the background
Photo Source: Stevan Harrell

The government is involved in the seed production process after the new seed hybrid is developed. One example of this involvement is the National Investigation Agency, which ensures seed meets national feed standards, such as the seed being a pure hybrid and having no other DNA that cross-pollinated. After passing inspection, seed goes to one of 10 testing areas around Sichuan province where it is tested against a preexisting type; if the new seed's output exceeds that of previous varieties, the government will then recommend the new type.

Ke Yongpei explained how in the past few years his company has been allowed increasing autonomy from the Sichuan Agricultural University, a public institution completely reliant on state funds. Formerly operating as a research branch for the university, the corporation will be opened up soon for private investment. He said that this process will be gradual. The company may first be 70/30 government/privately owned, but the percentage will likely give way over time to private ownership. Ke Yongpei said that the 2001 Seed Law ties in with the gradually increasing move away from a planned economy towards the new ideal, the Chinese Style Market Economy.

The Zhenghong Seed Company has its own distribution center in Xichang now, which

takes orders from local vendors and government seed stations all over the southwest area of Sichuan. This distribution replaces the previous system, wherein there was generally a seed producer in each county that directly supplied that county government's agriculture office without competition in a market from outside sources. Seed companies now compete for vendors to sell their products.

I spoke to the storeroom clerk at the Zhonghong outlet branch in Xichang. The outlet serves much of Sichuan's southwestern area, including some places outside of Liangshan Prefecture. The outlet in Xichang sold 300 tons of seed corn in 2003. They had a new variety when interviewed in 2004, but the most popular variety sold was still Chuandan 15. Some farmers come directly to the outlet to buy seed, but the outlet also sells to many scattered store owners who plan to sell the seed to farmers elsewhere. The clerk also mentioned that the usage of *dimo* is promoted more in some areas than others; it is up to local governmental bodies that educate farmers locally about new technologies whether to promote it or not. Generally, it is promoted more in mountainous areas than in areas right around Xichang. She mentioned that there are other seed companies offering competition, especially in Chengdu, but she expressed pride in Zhenghong because it provides a good quality for a lower price than many others.

Ke Yongpei mentioned that a number of new seed companies have sprung up in the last few years. He estimated there were about 160 companies in total. Ten to twenty of these are major or considerably large, of which this company is one. He perceives that very few will survive in the long run, however, as they will be subjected to competition from larger companies like his own that have earned sufficient funds initially as government research

entities. Some of the other major competition is from the north of China. At this point, foreign seed producers like Pioneer from the US and some from Thailand have just begun to enter the market in the last few years as well, but China has trade barriers in the form of international trade laws stipulating that China retain at least 51% of the stocks of foreign companies putting themselves on the Chinese stock market. At this point, he says, foreign competition that would drive out domestic companies seems unlikely.

Effects on Middlemen and Corn Processors

Transitional changes marking the emerging market economy affect middlemen and final processors as well. Middlemen are the link both between the farmers and the final processors and between the seed producers and the farmers. There are two kinds of middlemen – those who sell seed and those who buy corn from farmers to sell to factories[84]. Many small stores have recently begun selling new hybrid corn varieties in Yanyuan and also in Baiwu. Seed providers also sell the additional fertilizers that have been recommended by agriculture agents.

Middlemen, like farmers, have no contract system with factories or with primary seed vendors. They rely on the ebb and flow of market demand. Seed sellers and corn buyers tend to be two exclusive groups. A requirement for the corn buyers is that they need to front the transportation costs – for example, a truck – to take the corn to larger towns like Xichang where it can be processed. The two middlemen I interviewed who fill these functions made 11% and 13% profits on their expenditures in 2003 by selling hybrid corn to factories, amounting to profits of 7500 yuan and 18,000 yuan respectively. These are quite

[84] As a side note, the pronunciation for 'buy' and 'sell' in Chinese vary only by their tones. In Sichuan, the tones are backwards from standard Beijing dialect, making distinction between these two often trying as an interviewer.

considerable sums, especially considering that the income per capita in Yanyuan County was less than 1000 yuan per year in 2001.

Fig. 2: Corn Buyer Preparing to Transport Corn from Baiwu, 2003

Because there is no system of contracts or contract enforcement, however, middlemen are highly vulnerable to market changes. For example, middlemen in 2003 bought more corn than they were able to sell to factories, meaning that they lost money on their efforts.[85] This kind of downturn makes it likely that they will be less willing to buy as much corn from farmers the next year. Farmers, however, would likely produce even more corn, since they were able to sell so much the previous year, demonstrating the vulnerability of farmers in this dependency on a market which has no contract enforcement or precedent of security. The middlemen would at least have a choice the following year about where they want to purchase corn and how much they want to purchase. This kind of imperfect flow of information on the market, coupled with a lack of contracts for both farmers and middlemen leads to the volatile market situation evidenced previously by apples and potentially by corn,

[85] Data collected by Li Xingxing, Oct.-Dec., 2003.

although it is still early to tell for the latter, since most farmers and middlemen have gone through only 2 or 3 harvest cycles.

Seed sellers have also been affected by governmental regulations through the 2001 Seed Law. Private vendors have begun selling seed not only in the Yanyuan County town, but also in places like Baiwu, the nearest town to Yangjuan with any storefronts. One of these vendors says he buys seed directly from a company in Chengdu and also from a company in Yunnan Province. Another buys seed from other vendors in the town of Yanyuan. These vendors' decision to supply seed and fertilizers appears self-motivated. They said that they recognized it was convenient for farmers to be able to buy seed in Baiwu rather than in Yanyuan. A vendor can earn a profit between 1000 yuan and 3000 yuan in a year in Baiwu, provided that the vendor is able to sell all of the seed and fertilizers that he purchases. The market is new, however, so it is difficult to tell what the demand will be with each new planting season. One vendor overestimated on the amount of seed he bought in 2003 and therefore had expenditures that year that cut significantly into his revenue. Many seed sellers are also finding niches in providing loans to farmers for agricultural inputs. Because there are no clear government loans available in the immediate area, seed sellers in Baiwu have begun to offer in-kind loans, expecting to be paid back after the harvest. The interest rates they charge are high – up to 30%.

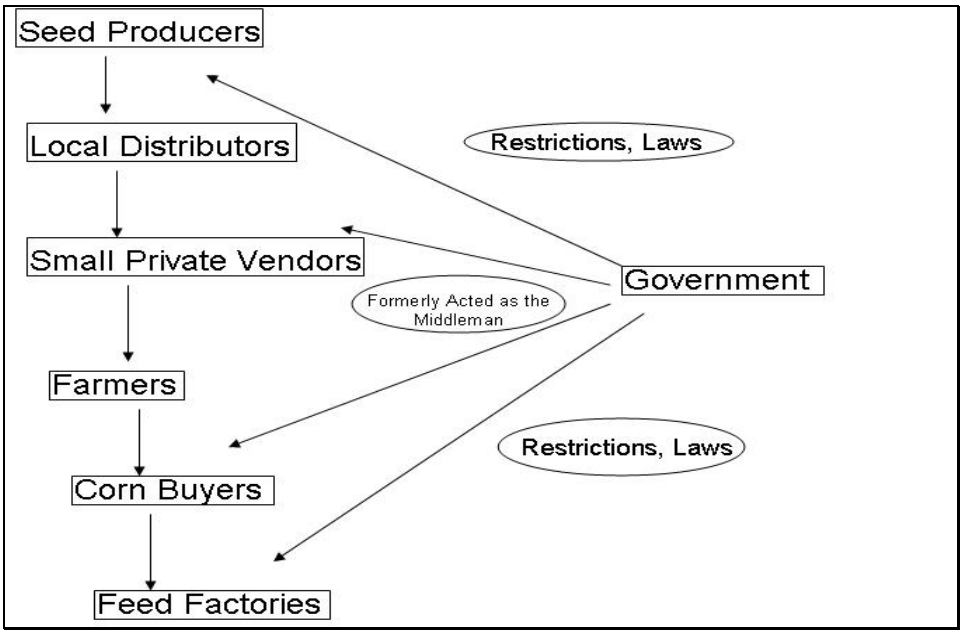


Diagram 1: Market Steps from Seed to Feed and Government Involvement

While many people in Yanyuan County are finding niches in the transmission of seed to farmers and bringing corn to factories, the market is still somewhat unreliable in that no contracts exist, transport costs remain high, and information on year-to-year changes in demand are unavailable. Becoming a middleman in this scenario can be profitable if one already has the start-up capital and can afford to lose money in any given year due to market fluctuations.

Factories' Role in the Transition Process

Middlemen sell corn to the last stage of its production cycle; in the Liangshan Prefecture, this is usually to feed factories. In interviewing Du Dan and two Mr. Tangs of the Xichang Xiwang Feed Co., I discovered that Yanyuan County's share of the feed factories' supply has been growing quickly in the last few years.

The Xichang plant is part of a large conglomerate called the New Hope Group in Shanghai, run since 1981 by four brothers. The owner of the agricultural branch in Xichang is the youngest brother, Liu Yonghao. It was built in 1997 on 50 mu of land that they got in a

sweetheart deal in 1995.

In the feed that they process, corn constitutes a hefty ~55% of the bulk, on average, for their 100 different feed formulas for chicken and pig feed. Only ~28% is soybeans; the rest includes minerals, micronutrients, and other additives like growth hormone. The corn is primarily added for energy. As far as what types of corn they use, they said that they do not use white corn – at least not for chicken feed, because the egg yolks would not be yellow enough for consumer preferences. Also, farmer preference is for yellow feed, not white. A significant portion of their inputs, therefore, are the yellow hybrid corn varieties.

The company's market is all within 300 km, which means it is almost completely within the prefecture. High transport costs and lack of any substantial local comparative advantage for feed means that there are 13,000 feed factories in China – factories exist in almost every county.

Until 2000-2001, the company purchased almost all of their corn from Gansu, Henan, and the Northeast. But since that time, they have been relying increasingly on Yanyuan for their corn supply for several different reasons. They now (2004) use ~33% of their corn from Yanyuan County.

One reason for increased purchases from Yanyuan relates to transport costs. Transporting corn to Xichang from areas within Liangshan Prefecture is cheapest for the factory. They extolled Yanyuan County corn and said that no other counties within Liangshan have corn that is any good, causing the factory to rely heavily on Yanyuan specifically. The poor quality of corn from other counties is a question of both varieties and soil. Also, other areas of Liangshan are not as densely populated, which is less appealing

for corn buyers seeking to minimize their transaction costs. Low population density makes travel difficult to collect enough corn from farmers in spread-out regions.

Another reason for Xiwang's increasing purchase of corn produced in Yanyuan County is Yanyuan County's corn quality. To the naked eye, they said, Yanyuan corn does not look as good as the corn from north and northeast of China because the grains are irregular sizes. This is merely indicative of the Yanyuan County farmers having small, scattered plots and therefore no machinery, the interviewees said, and is not because the corn is of a lesser quality. Lab tests revealed that varieties raised in Yanyuan, including Chuandan and Zhongdan varieties that have a long growing season, have a higher protein content, up to 8.2%, compared with 7+% for the northern varieties. They also have a higher sugar content than corn that comes from the north. Reasons for this higher quality have to do with the soil and topography of Yanyuan – soils are deep and there is a considerable amount of flat land.

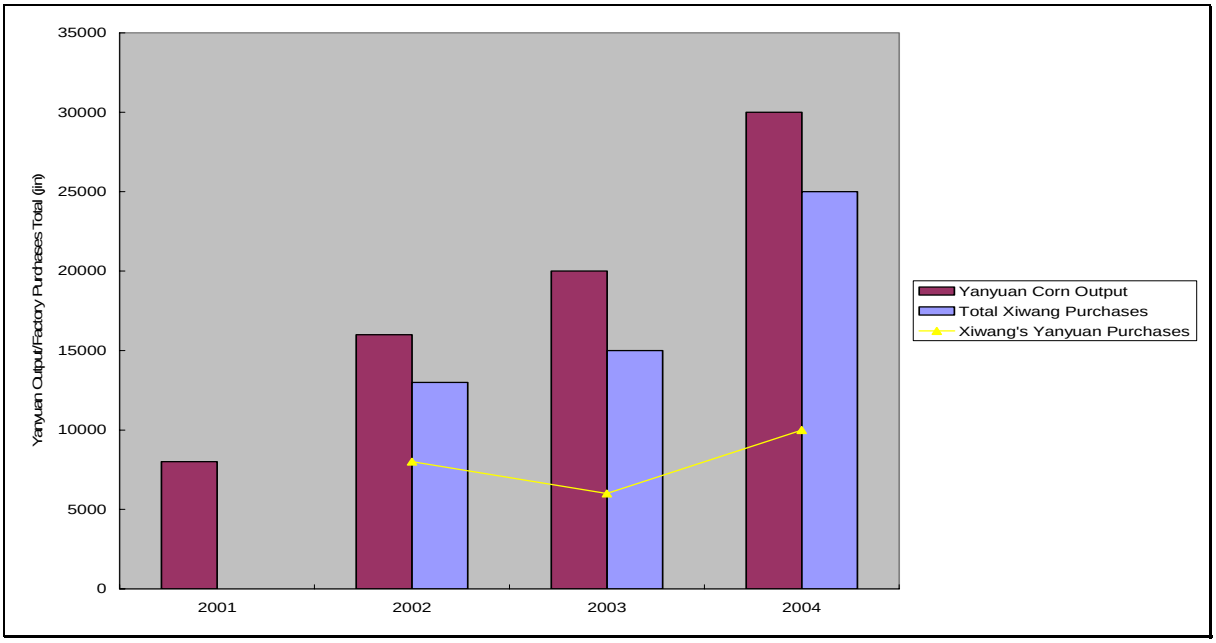


Chart 1: Yanyuan County's Corn Output, Xiwang Company's Purchases
Source: Personal Interview with Xiwang Company

While the amount of Yanyuan corn is generally increasing, Xiwang bought less corn

from Yanyuan after the 2003 harvest than previouslybecause farmers were only partially drying it. By selling it moist, the value of the corn decreased. Year-to-year changes like this demonstrate the effect that imperfect information farmers have has on market prices. These effects in turn affect the readiness of middlemen to purchase and the overall effectiveness that the cash crop market dependency structure can have on raising farmers' income levels.

Despite the increase in Yanyuan corn output over the last few years, prices have continued to rise rather than fall. The company representatives highlighted several reasons for this:

1) Chinese agriculture has, in general, been experiencing an overall decline in production of grain over the last few years.
2) There is a combined shortage of feed in the immediate area relative to demand.
3) Farmers have changed their selling habits. Farmers have begun to hold back some grain after the harvest to see if the price will rise. In 2004, there was a dramatic rise between October and December, from at most .5yuan to over .6 or even .7yuan per jin.

Recent changes in market regulation include a directive issued in 2004 from the Party Central Committee concerning agriculture, which lifted remaining regulations requiring government agencies to deal with unprocessed grain. The effect, as explained in the interview, is that the market for corn is now completely free, open to private buyers. The interviewees said this change has had no effect whatsoever on the company's business – they will continue to buy from anyone, middleman or government agency.

Changes from the Farmers' Perspectives

The structure of ownership in Yangjuan and Pianshui has remained fairly stable since the 1980s – each family has an official paper in its home that states how much valley land they cultivate, but these documents are not specific about where this land is or how it is partitioned. It is unclear how the land was originally parceled out, but because the productive valley land is so scarce, it was divided fairly equally among the households at the advent of the Household Responsibility System. While each household has a paper enumerating the amount of taxable land they cultivate,[86] this paper is used mostly for the purpose of taxation and is not a clear deed of ownership. Families keep track of their land, which gets reshuffled with deaths and marriages. Each household cultivates anywhere from 5-25 mu of land in total, with an average of about 14 mu.[87] Their land is divided between alluvial land in the valley and dry, undulating land in the surrounding hillsides.

Figure 3: Flat Valley Land in Foreground, Hilly Land in Background. *Dimo* strips in foreground indicate Hybrid Corn.

Farmers say that the land in the valley is much more fertile – currently, hybrid corn is planted only in the valley, demonstrating the corn's new status as the primary profit bringer as

[86] Taxes are based on the amount of land the household cultivates and the number of people in the household. Sichuan Minorities Institute researcher Li Xingxing estimated the tax rate to be around 5% of yearly income in Yangjuan village in 2003 (printed with permission).

[87] Data collected by Li Xingxing, Oct-Dec, 2003.

well as the greater ease with which it is irrigated in the valley. Most families also plant potatoes, beans, and buckwheat in addition to hybrid corn, mostly as subsistence crops. Some families occasionally sell potatoes but not enough to make much of a contribution to income. Many families also still plant previous varieties of corn or have a few apple trees remaining, along with some Sichuan pepper (*huajiao*), an emerging cash crop.

Methods associated with planting these hybrid corn varieties vary greatly from methods used with the previous varieties of corn. For one, many more inputs are purchased, as a recommendation made by agriculture extension agents. The Yanyuan government Agriculture Office said that no pesticides are used unless disease is noted early in the corn's growth, and no farmer I interviewed in Yangjuan or Pianshui had ever used pesticide. A urea-based fertilizer (*huafei*) is applied two to three times, and a phosphate-based fertilizer (*linfei*) is applied once. Both of these fertilizers are used in addition to traditional, home-made types of fertilizer. Because these are hybrid varieties, seed must be purchased every year. The fertilizers and seed are bought by the bag, the *dimo* by the roll.[88]

[88] See Appendix 2.

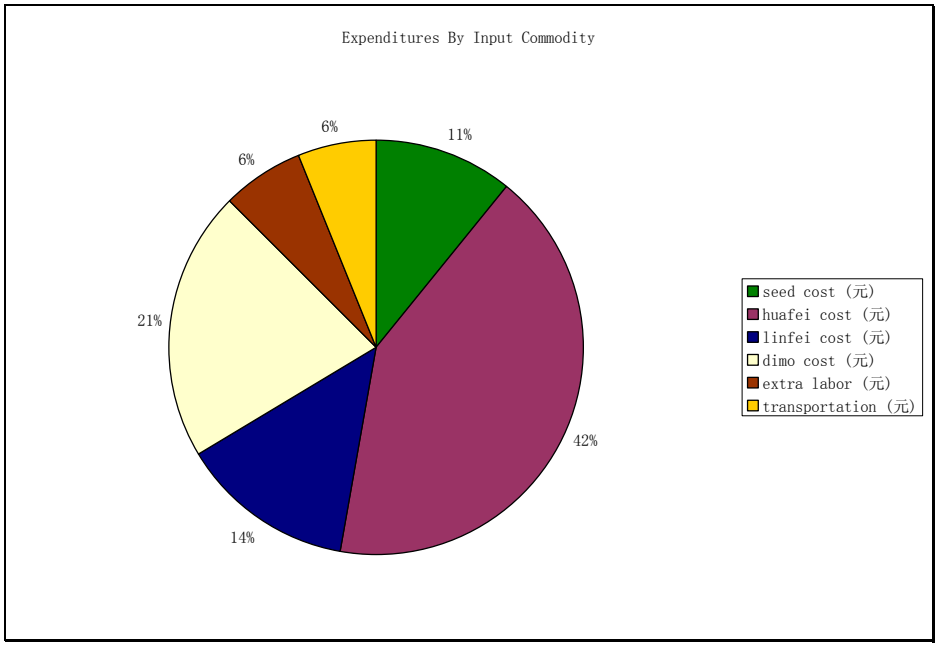


Chart 2: Farmers' Input Cost Proportions

Planting occurs near the end of March. Irrigation is done by hand at the beginning of the planting, which is carried out by hauling buckets of water from nearby streams. One household I interviewed recently used savings to purchase a hand-pump to aid with irrigation. Irrigation and laying of seed, *dimo*, and fertilizer is largely done with the help of relatives and friends. Most families rely on this kinship network for labor. A few families may 'hire' excess labor by providing them with meals.

Fig. 4: Irrigation by Hand in Pianshui. Relatives Help with Heavy Labor. Work Is Usually Divided Based on Gender.

Transportation is not only costly to middlemen; it can be for farmers as well. Some

farmers pay to carry back heavy bags of fertilizer and seed by bus back from Yanyuan or may hire a car. Many farmers take their corn to Baiwu to sell it to middlemen, mostly by horse cart. Infrastructure is poor and roads are rough between Yanyuan and Baiwu and from Yangjuan and Baiwu; even a horse cart is fraught with high transaction costs.

Fig. 5: Transport by Horse Cart from Yangjuan to Baiwu Carries High Transaction Costs

Farmers use other fertilizers with the hybrid corn in addition to the 'household fertilizer' – fertilizer created from livestock manure, crop residues, straw, and household wastes. The extra fertilizers they use are purchased from the same places farmers buy seed. Most families apply a urea-based fertilizer twice – once at the beginning of planting, and again in May or June, and a phosphorus-based fertilizer at the beginning of planting. A few households lay the former three times and the latter twice. The variance is due to a household's ability to afford these inputs.

One of the first planters in Yangjuan and Pianshui included the town Party Secretary**.** This is consistent with the analysis that the local government has been instrumental in suggesting crops to farmers; he likely had more frequent communication with higher

government officials and was one of the first to hear about them promoting the corn. He also mentioned that after 3-4 years of planting the corn, the soil begins to harden and potatoes must be planted in that field for a year or two. This hardening is likely due to the added fertilizers. Furthermore, several varieties of seed bags display a skull-and-crossbones symbol, presumably warning against toxicity, recommending that handlers wash their hands after use.[89] I do not know what chemical is added to the seed, but the effects these chemicals have on soil and water in the area needs further investigation to ensure that these new methods are not doing long-term damage to their fields, to the surrounding agroecosystem, or to villagers' health.

According to the resident who claimed to be the first to begin planting hybrid corn, the government seed stations in the county seat of Yanyuan 15 years ago served as an adviser when the farmer asked what crops might boost his production. The agricultural agent recommended hybrid corn, and this farmer has been planting hybrid corn on and off since then. He says that the soil needs time in between the intensive cultivation of the hybrid corn, which is why he did not plant continuously. He has been planting hybrid corn consecutively for the last 3 years.

Most farmers, however, did not go to Yanyuan themselves but heard of a class at the village school in 2001 about how to plant hybrid corn and get the highest output. The class was put on by the local Agriculture Technology Office from Baiwu, arranged by well-educated people from the village who now live in Yanyuan and Xichang**.**

Many farmers who took the class at the school three years ago planted 3 mu of corn

[89] See Appendix 3.

within the next year or two. They heard about the class and the new crop through word of mouth from relatives and friends who had heard about its higher yield and higher potential to bring in revenue. When asked, farmers unanimously said they looked into planting hybrid corn because of the likelihood of becoming richer. Wealth might be indirectly shared amongst relatives, but these are individual motivations to seek ways in which to earn a better living. The Yangjuan village school principal, who does not plant any corn himself but is inherently knowledgeable about many of the economic situations of families in the villages, confirmed that many village residents started planting this new corn because of increased access to information regarding agriculture, provided by the class at the school.

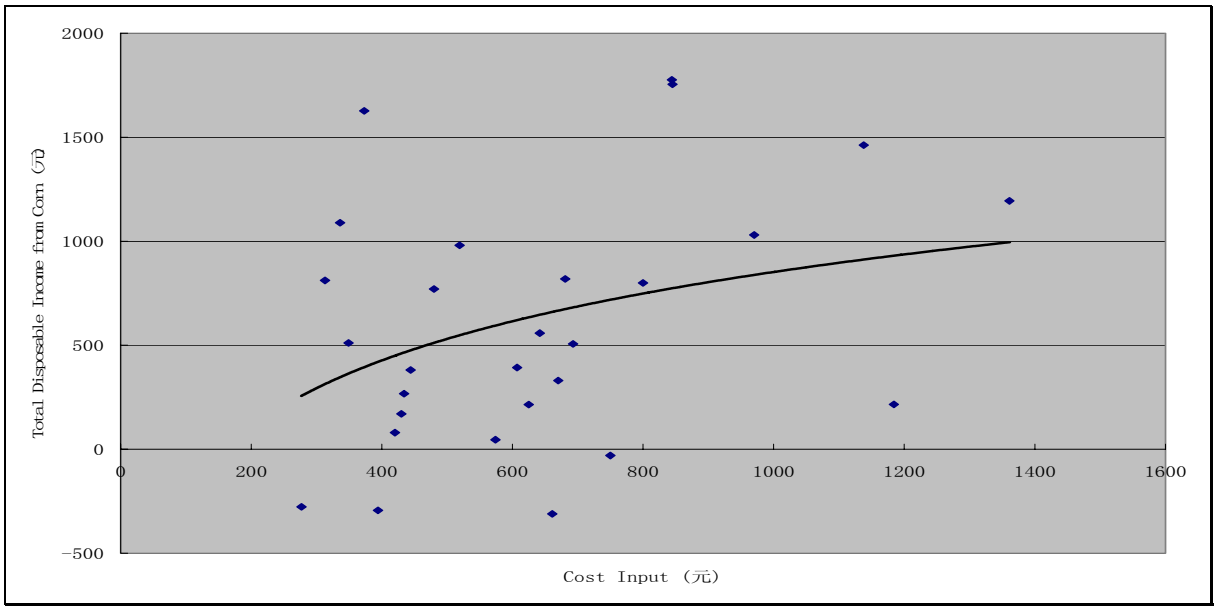
Data from researcher Li Xingxing confirmed data collected in my interviews that corn and pigs are the biggest source of income in Yangjuan in a study in Oct 2003, but since one household can generally sell only one pig per year, farmers have been relying mostly on corn.[90] Most farmers were ready to say that they have benefited from the switch to cash cropping this hybrid corn.[91] A few farmers this year, however, are switching either back to old corn, to other new corn varieties, or to a new cash crop – *huajiao*. They give reasons for their lower success such as having poorer soil on their plots of land than others. Some of these farmers use fewer inputs, which fits what the local Party Secretary said that those who can afford the extra inputs do well by the new corn.

By numbers, income is changing, but only slightly. Farmers are using the revenue, they

[90] Li Xingxing, Oct-Dec 2003 data.

[91] The average revenue of 28 households from 2003-2004 earned from the corn and from livestock was around 1240 yuan. The average cost was around 636 yuan. This leaves a disposable income of slightly over 600 yuan per year. This represents the average, however, which does not give a complete picture of the wide spread of financial situations in the village.

say, to buy rice, children's education,[92] and household items, in descending order of significance expressed by the farmers. According to most farmers' recollection, the amount paid for the next year's crop inputs accounted for nearly half of the income reaped by the corn.[93] In other words, income equaled roughly the amount spent on field inputs.



Graph 1: Farmers' Disposable Income (After Purchase of Next Year's Field Inputs) Vs. Total Expenditure on Inputs

Another change that has occurred for farmers is diet. Before planting hybrid corn, which farmers say is hard for humans to digest and is distinctive with its yellow color, farmers planted a different variety of corn which they distinguish as being white and edible with a purple tint on its leaves. Another distinction is that the old variety produces only one ear of corn per stalk; the new variety produces two. This may account for the difference in output, as might fertilizer inputs. One primary feature of this new, hybrid corn is that people do not consume it directly. There is some household consumption as livestock feed. Other

[92] The cost of one child's education for one year at the elementary level is 100 yuan. For above-elementary levels at schools outside the village, the cost increases. Being a rural minority, the Nuosu are allowed 3 children per family. Most of the 32 households I interviewed had 3 children.

[93] The amount of disposable income per expenditure on inputs from 2003-2004 was .996, giving nearly a 1:1 ratio of disposable income (revenue from corn minus the cost of its inputs) to input costs. This is how revenue earned from corn each year is divided – half to disposable income, half to inputs for the next cycle. This does not, however, account for the very wide variation of this ratio from household to household.

uses of corn include distilling into alcohol – the corn can be sold to feed factories or to distilleries – and burning of the dried husks as kindling.

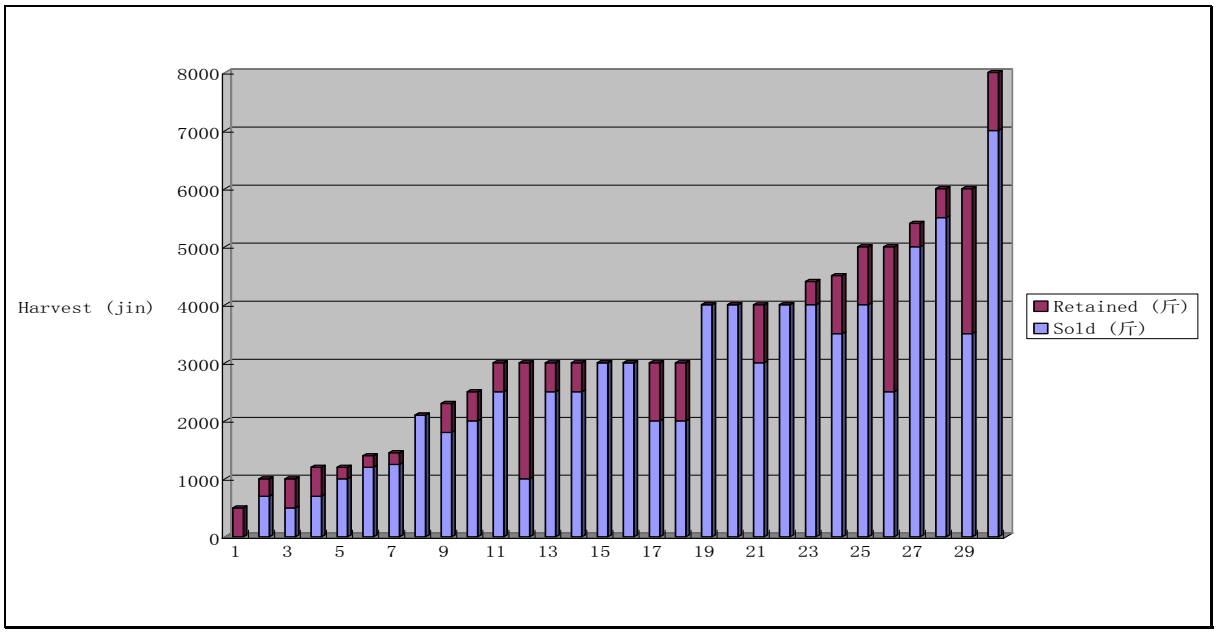


Chart 3: Harvest Retention of Corn as Feed in Yangjuan

In any case, the main way that farmers use this hybrid corn is by selling it, retaining some amount as feed for their own animals which can provide additional income, and using a menial amount of stalk material for burning. After beginning to plant hybrid corn, however, most farmers claim to have more money available to buy rice to supplement diets heavy in potatoes and buckwheat.

Based on the graphs, the disposable income earned did not greatly correlate with an increasing amount of inputs per mu. This supports the statement that farmers will only benefit if they can put in a certain key about of inputs, but that after a certain point, farmers may experience diminishing returns for their yuan in field inputs. This decrease is likely due to two factors: 1) after a certain amount of fertilizer or *dimo* has been added, more will not boost the yield, 2) after a certain amount of mu have been planted, a greater volume of harvested corn will cost more for hired help and for transportation. Because there are no

replacement crops that provide cash income, however, farmers have no incentive to plant another crop in place of the excess mu of corn if they want to afford rice – prized more as food than any crop they can plant at their elevation, education, and household items.

Land Area Hybrid Corn Planted (mu)	3.73
Harvest (jin)	3298.33
Harvest (jin)/Area Planted (mu)	831.81
Total Revenue from Corn – Sold Corn and Animals	1238.97
Corn Input Expenditure (yuan)	636.21
Net Income (yuan)	602.75
Income/Input Expense	1.997
Net Income/Input Expense	.997
Children's Education, 2 Children, 1 Yr. (yuan)	200
Rice, Clothing, Household Items, Medical Expenditures (yuan)	402.75

Table 1: Average Family's Yearly Budget, Yangjuan and Pianshui

Interviewed farmers seemed enthusiastic about changes this new crop will bring, having planted the corn already for 2-3 years. Most are still planting it and some are even planting more. Farmers resoundingly said that their motivation for planting new corn varieties is that they hoped they will provide greater income. Most are pleased with the increased income they have seen from this new corn; as one 82 year-old man put it: "we can now eat rice and we don't go hungry." For many in the village, however, it seems that even this transition is an inaccessible luxury.

Summary

In sum, the government during the beginnings of decollectivization provided a centrally planned means of deciding what farmers would plant. This has been phasing out slowly as farmers and middlemen have been given more autonomy over what to plant and produce. This is by no means to say that the central and local governments have not maintained control over market functions through laws and market presence, however. Agriculture offices have continued their guidance, adopting roles as quality control for seeds and in providing

suggestions to motivated farmers about what crops might provide higher revenues.

Farmers are switching to cash cropping not only because they are destitute and look for any possibility of change, but also because the government is providing a push to increase productivity and the standard of living by investing in corn technology, allowing increased market competition, and by emphasizing regional comparative advantage through cash-cropping specialization.

Chapter 4: *The State of the Chinese Market and Its Relation to Yangjuan*

Yangjuan and Pianshui residents have readily taken up attempts at cash cropping in the last few years. They have taken risks by planting inedible crops that no one has a contract to sell; seasonal harvests have no guarantee of a buyer. They have taken risks by spending more than they can afford – often, more than they have, with the help of informal loans – on seed and inputs. Farmers risk much time and effort in this endeavor – they are dissatisfied with the limits subsistence farming sets on their educational opportunities and diet. They have continuously adopted new crops and new technologies as market rules and regulations around them have changed. The market is expanding and tenuously extending to Yangjuan, but only in increments allowed by the government. While there are no longer procurement or quota restrictions in Yangjuan, development is still primarily undertaken through semi-planned means. The local government no longer has authority over what crops are raised and sold, but farmers still rely on direction from the local government. Furthermore, the market structure for corn is changing as the government gradually lessens restrictions one at a time.

What this Answer Means

The government, local and central, is largely responsible for the changes that are occurring in China's countryside and in Yangjuan. From the information I collected from farmers and other market participants, it does not seem that the size of government is necessarily a problem, but obstacles remain within the system that deny to participants the full benefits of China's transition to a market economy.

While some farmers often answer with alacrity that they are now better off than before,

many farmers diffidently disagree. All too often, farmers have met with an inability to make this kind of farming benefit them. Some switch back to subsistence farming; some try other crops. Most say they are now able to eat rice – a standard of improving conditions. Most can afford to have a couple of their children attend elementary school. Attending middle school in Baiwu, however, is still often out of the question, especially for more than one child in a household. Farmers' financial situations are unlikely going to change in the long run if their children can not attend school and if households have just enough money each year to buy rice and next year's field inputs.

In addition, farmers experience diminishing returns on their corn crops, but they do not have a substitute crop that will earn cash income. If they were to plant entirely inedible cash crops like corn, however, they would become dependent on the market's ability to function every year in order to buy food in addition to 'luxury goods' that cash can buy them such as rice, education, and household items. However, they cannot plant entirely corn, because they still rely heavily on their own subsistence crops as a secure source of food. This reliance comes from the unpredictability of local market structures as demonstrated by the apple crops.

Crop suggestions, for example, have not made Yangjuan rich, nor will they if the proper institutional and financial frameworks are not established. The transitioning market structure bringing change to farmers' lives may make them somewhat better off, but China should not call it a mission completed. Instead, China needs to look at where the shortcomings in the market structure lie that will keep farmers in this state of poverty, keeping its food productivity low and its people trapped in a growing income disparity.

Effects of Changes Since 1978, Applied to Yangjuan and Pianshui

New laws were passed in 2001 that allow seed producers more freedom to act as corporations. Over the 1980s and 1990s, the government gradually lifted quotas and below-market procurements. No quotas exist anymore. In January 2005, the central government has taken another step by eliminating agriculture taxes to alleviate the burden on farmers. The government hopes that these changes in quotas, procurements, seed marketing, and tax system will free up more capital for farmers to invest in better fertilizers that will increase their productivity.[94]

Perhaps most importantly, no longer is production centrally planned; local governments are given much more autonomy to pursue local comparative advantages. As a motivation for the local governments to take an active role in this potentially lucrative crop promotion, Blecher and Shue noted in their region of investigation that in the developmental model, often the political attention officials might receive (and hopes of promotion), rather than money profit, are the drive of the developmental state.[95,96]

In the diagram below, I demonstrate how the developmental state has been involved in the farmers' decision process in Yangjuan and Pianshui. The influence of local governance structure is further evidenced if it is considered that the provision of education and infrastructure improvements are not explicitly the responsibility of local governments, as I explain later.

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[94] Joseph Kahn, "China to Cut Taxes on Farmers and Raise Their Subsidies," *New York Times*, sec. A, February 3, 2005, late edition – final.

[95] Marc Blecher and Vivienne Shue, "Into Leather: State-led Development and the Private Sector in Xinji," *The China Quarterly*, no. 166 (June 2001).

[96] Blecher and Shue describe 4 kinds of states embodied in local governance in China: entrepreneurial, clientelist, predatory, and developmental. A typical developmental government actively encouraged entrepreneurs in a selected industry and got support of upper government bodies. Yanyuan most closely resembles this type of governance in that it makes agricultural recommendations and does not impose a heavy burden on peasants through taxes as the predatory government would, nor is it directly involved economically as an entrepreneur in local agricultural industry.

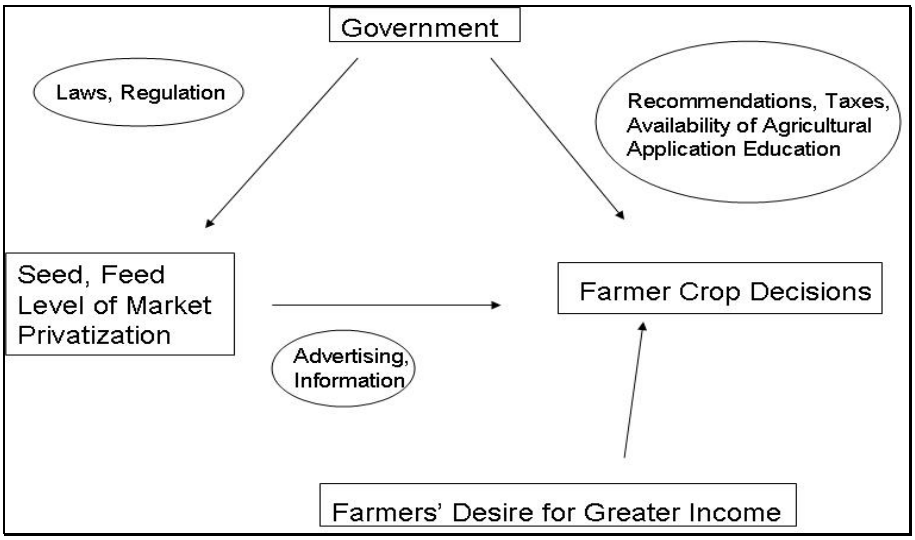


Diagram 2: Ways Local Government Has Directly and Indirectly Influenced Farmers' Decisions

Corn, in addition to being well-situated for a mountainous area, is promising to government officials in Yanyuan because of the rising demand for corn domestically for feed. Promoting various crops since the 1980s, Yanyuan's government has been acting as a developmental agency as other governments may do with TVEs, selecting crops to promote rather than industries. First they chose apples because of Yanyuan's record with pears. After those failed for Yangjuan and many other areas, they promoted corn because of the mountainous topography of the area and the appearance of several new varieties. In addition, they are taking advantage of the well-known increasing market for feed corn. Yangjuan also seems well situated to supply feed corn to Xichang factories, especially when considering its proximity to major hog-producing areas of Sichuan.

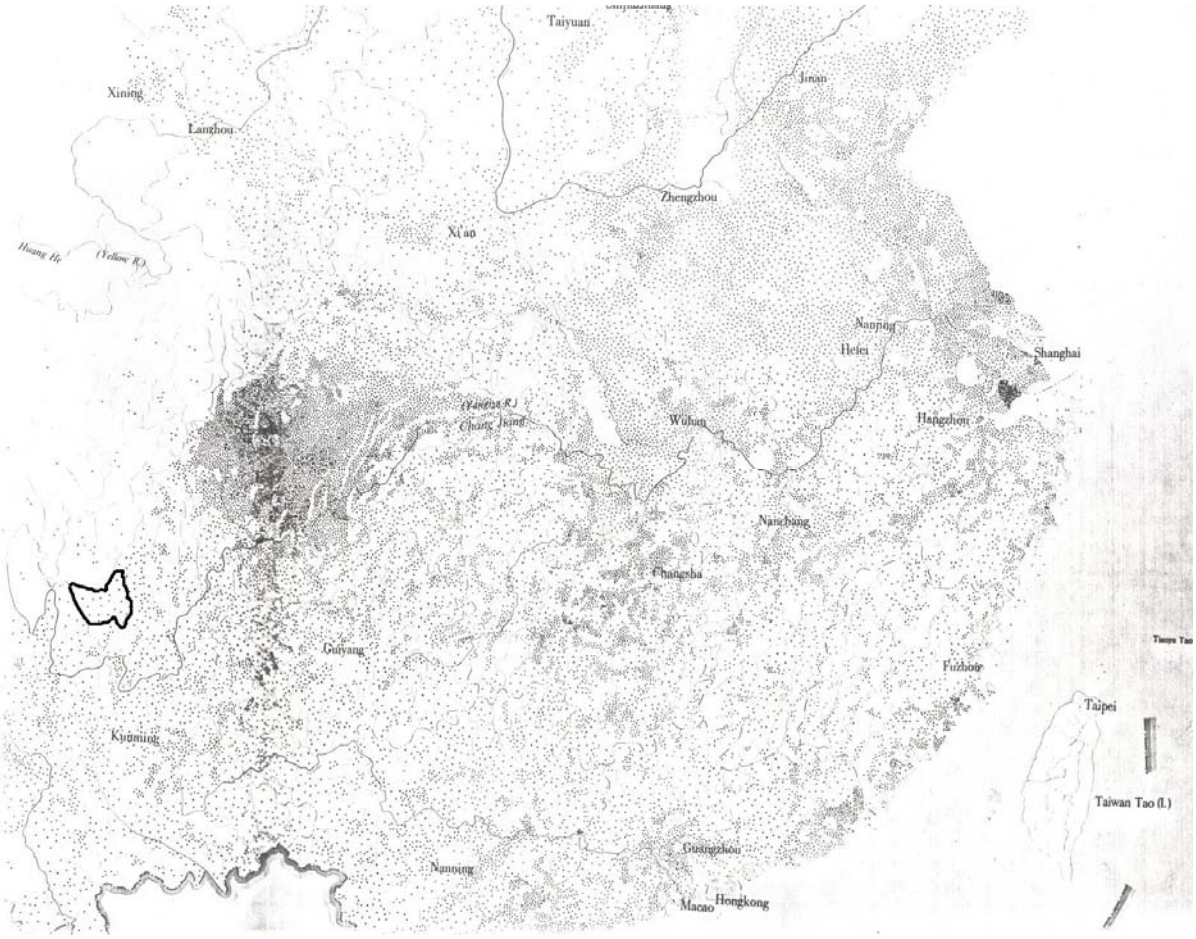


Fig. 6: Pigs, 1994. 1 dot= 10,000 head. Yanyuan County is outlined in black.

Source: Economic Atlas of China

Demand for high value added agricultural products in China is increasing along with average incomes – foods such as meat, edible oils, and fruit, to a lesser extent.[97] To fuel a growing meat demand, increased feed production is essential. A 1996 report by Wu Yanrui also discusses specifically the rising demand for alcohol consumption in rural areas of China and the corresponding increase in demand for grain. Corn is a major contributor to alcohol production in China.[98]

China's feed demand is growing so fast that even if the domestic supply of corn increases, by the end of the first decade of the twenty first century, 'almost all of China's cereal import

[97] Xuguang Guo, Thomas A. Mroz, Barry M. Popkin, and Fengying Zhai, "Structural Change in the Impact of Income on Food Consumption in China, 1989-1993," *Economic Development and Cultural Change* 48. no. 4 (Jul. 2000).

[98] Yanrui Wu, "Changing Patterns of Alcohol Consumption in Rural China: Implications for the Grain Sector," Chinese Economy Research Unit, University of Adelaide, Working Paper No. 96/7. (July 1996).

needs will be for maize."[99] Zhang Xiaoyong highlights 6 different models (CCAP, IFPRI, OECF, USDA, Michell, and Nyberg), showing that they all form a consensus on one point – China will either become a corn importer or at least its export to import ratio will decrease greatly by 2020.[100]

China's WTO accession in 2001 theoretically ensures that China lowers its trade barriers. This will likely accelerate China's transition to being a net corn importer within the next few years. Markets are looking up for corn for now, especially as a crop that carries considerable comparative advantage for mountainous areas. This trend will continue to help farmers only marginally, however, unless certain institutional changes are made to the system in which the farmers are attempting this transition.

[99] Scott Rozelle, Jikun Huang, and Mark W. Rosegrant, "China's Food Economy in the Twenty-First Century: Supply, Demand, and Trade," *Economic Development and Cultural Change* 47, no. 4 (Jul., 1999).

[100] Zhang Xiaoyong, "A Comparative Study of Projection Models on China's Food Economy," in *Rural Development in Transitional China*, eds. Peter Ho, Jacob Eyferth, and Eduard Vermeer. (Portland, OR: Frank Cass Publishers, 2004).

Chapter 5: Suggestions for Economic Advancement in Yangjuan/Pianshui

Even though there is a substantiated drive amongst local officials to improve economic conditions within the county, there are specific reasons that Yangjuan has not become rich enough to cease being considered one of the poorest areas of China.

Part of the problem is the attention China and the international community have focused on the rapid economic development of China's eastern seaboard and its designated SEZs. In doing so, many of the growing disparities between these places and the western provinces have been overlooked. For example, responsibility to local development is unclearly divided between local and central governments in a variety of respects. This management problem leads to a variety of issues.

Necessary Institutional Reforms

The Chinese government is largely responsible for making sure that these changes and adjustments occur, since most of the changes involve public investment or provision of public goods. More can be done to streamline the system and provide safety nets for farmers in such a precarious position.

Justin Yifu Lin and Liu Zhiqiang (2000) conclude that "institutional arrangements matter" and that decentralization has contributed to economic growth, mainly by increasing the efficiency of resource allocation.[101] Lin and Liu make the argument that subnational governments are better informed of local affairs and are also under closer scrutiny of their constituents and are therefore better able to make appropriate decisions over local matters. They also say that the resultant tightening of budgets of local enterprises serves to improve

[101] Justin Yifu Lin and Liu Zhiqiang, "Fiscal Decentralization and Economic Growth in China," *Economic Development and Cultural Change* 49, no. 1 (Oct 2000): 18.

their efficiency. In addition, Lin makes the assumption that local governments are responsive to their constituents and not to their own wealth, since many of them have preexisting stake in certain private enterprises. In Yanyuan's case, it is unclear what industries or private enterprises these might include.

But what of public goods? How can the local government provide these if it does not have the funds, or more clearly – if no government entity is required to take responsibility for local public goods, no one will empty their coffers to do so. And if it is entirely up to local entities to fund projects based on taxes they collect from their constituents, then inequality will persist as a path-dependent trap. As Christine Wong writes in 2000, "To reduce horizontal disparities more quickly, the central government must be able to use an increasing share of the tax refunds for equalisation in order to finance improvements in service delivery in poorer provinces."[102] More decentralized may be better than more centralized, but the fiscal relationship between the various levels needs to be clarified in a way that creates a larger burden on the central government to support poorer localities if places like Yangjuan ever hope to be able to make improvements in infrastructure and education.

While Lin's regression analysis shows a positive correlation between decentralization and economic growth, he fails to substantiate why, which leads me to wonder how much decentralization is therefore beneficial, and what aspects of decentralization are – I doubt that it is ambiguous fiscal sharing between the local and central entities. It is clear that regional disparities are growing, despite economic growth on the national scale; the division of governmental responsibilities is clearly not working to soothe over these disparities.

[102] Christine P.W. Wong, "Central-Local Relations Revisited: the 1994 Tax-Sharing Reform and Public Expenditure Management in China," *China Perspectives*, no. 31 (Sept-Oct 2000): 62.

The biggest problem facing the Chinese government is unclear division of responsibilities between the central and local governments and unclear sharing of taxes. The tax-sharing system (*fenshuizhi*) is a system whereby local governments collect all taxes and share with the central government its allotted proportion. Extra taxes collected go to provincial and local governments. This often contributes to the budget deficits of the central government.

If China figures out a way to fund projects and focus on more important issues in local areas, then things that need to be high on the list of priorities are education, clear property rights and contract enforcement, encouragement of the availability of loans, and a safety net for farmers and transitioning labor.

Another way to ensure that farmers are given the best chance to succeed is for government to avoid being a predatory state. Li Xiande provides one example of a county in Hubei Province which collects 13% of peasants' yearly incomes through unofficial means.[103] This situation exemplifies the 'peasant burden' that prompted the Chinese government to pass a 5%-of income ceiling on taxes and fees collected by the state, even if it is not adhered to by the county in Li Xiande's study. While Li Xiande offers insight into the nature of the peasant burden and a predatory government, he neglects to mention a major reason this type of government develops: lack of financial support from the national government.

Yangjuan farmers stated that they have a tax for land but fortunately expressed no distress about it and did not make it sound very substantial. In Li Xingxing's data, the tax was around 5% of income, consistent with the national government's tax ceiling. This tax

[103] Li Xiande, "Rethinking the Peasant Burden: Evidence from a Chinese Village," in *Rural Development in Transitional Chin*a, eds. Peter Ho, Jacob Eyferth, and Eduard Vermeer. (Portland, OR: Frank Cass Publishers, 2004).

collection is based on the amount of land owned by a household and by the number of available field laborers it has. This tax, of course, does not include individuals' extra payments for education, which receives nothing from the local government in Yangjuan. Indeed, if education is compulsory, no one enforces it, because no one can enforce it at a hefty 100 yuan per child per year.

While Yanyuan's government is not predatory, neither does it have the funds to make large infrastructure improvements. Improvements have been seen in the road from Xichang to Yanyuan, but none have been seen in the last few years from Yanyuan to Baiwu or to Yangjuan. Local governments act in a predatory manner or must face the inability to provide public goods.

In order for funds to be generated at the local level to support infrastructure, education, health care, and redistributive safety nets (transfer payments), support must come from the national government, a tactic favored by Justin Yifu Lin but opposed by Christine Wong. The Yanyuan government's agricultural office has been scaling back its role in provision of agricultural goods, and its role now is only as a recommender and quality tester of certain products. This is indicative of a larger trend throughout China to scale back the role of the government, especially at the local level. The local government has a big void to fill however, in the absence of the ability of either the national government or private parties to pay for infrastructure, finance, and education.

Contract Enforcement and Well-Defined Property Rights

Farmers in Yangjuan do not make contracts nor can they depend on the arrival of buyers in the village. They do not have clear ownership over their land or therefore secure property. In addition to decreased incentives given by lack of ownership, it is difficult to appraise

assets owned by a farmer if it is not clear that his land is even owned by him. Start-up capital is essential to technological improvement and increased agricultural efficiency, especially to places like Yangjuan that have very little internally available capital.

To reconcile liberal development models and the idealist communist rejection thereof, Peter Ho seeks to answer whether China's gradual approach to market liberalization (specifically land reform) indeed has any negative effects on productivity. He notes that the government has been deliberate in its ambiguity about land ownership as a way to avoid social conflict.[104] Many farmers do not know accurately that their land does not belong to them. What level of administration owns it has not been defined by Chinese law, even with the passage of several land administration laws in the 1990s. Ho notes, however, that the lack of privatization of land has not discouraged development, as it is "found to be credible by the rural populace."[105] Like Peter Ho, I find it hard to believe, however, that this could be sustained far into the future. As economic growth increases and the market becomes far more developed, clear land ownership will need to be clearly defined; ambiguities will lead only to major lawsuits and displeasure in a populace with more at stake in the economy.

Restrictions on Mobility

In China, there are restrictions on moving from rural to urban jobs. This has two major consequences – 1) those that move to urban areas anyway are kept in poverty, 2) the economy is not allowed to restructure with less productive farmers moving to other sectors. Laborers will want to relocate as agriculture becomes more productive, and census reports demonstrate that agriculture in China currently has much room for productivity increases. A 1997 census

[104] Peter Ho, "Who Owns China's Land? Property Rights and Deliberate Institutional Ambiguity," *The China Quarterly*, no. 166 (June 2001).
[105] Ibid., 420.

showed that 90% of total agricultural households in China had under 1 hectare (~2.5 acres) of land, but that this amounted to 79% of total sown land.[106] In contrast, according to a USDA Census in 2002, only 5.75% of harvested crop farms in the US were under 10 acres.[107] There is much room for labor efficiency improvement on farms in China.

Movement into urban jobs is further hampered by education. While there are no legal restrictions, access to funding for education serves as a bar, especially as political rights are limited that would allow citizens to demand, through their vote, more equal access to education.

Public Goods: Transfer Payments, Education, and Infrastructure

While China may have been developing rural safety nets to provide for farmers, the percent of government expenditures spent on agricultural rural relief, rural science and technological improvements, and rural capital construction was less in 2003 than in any year since 1978.[108] Furthermore, poverty relief does not seem to have reached Yangjuan. In addition, many families in Yangjuan spend a hefty amount of their income on education. These are public goods that the government should be providing.

Wishing to remain anonymous, certain informed villagers expressed a wish that the Chinese government would provide better information or education about new farming methods and technologies. Destitute farmers do not have the means to find new technologies or to understand how to use them most effectively. The township level would be a good place to start outreach to remote areas, because more residents would be able to

[106] Roberto Fanfani and Christina Brasili, "Regional Differences in Chinese Agriculture: Results from the 1997 First National Agriculture Census," in *Rural Development in Transitional Chin*a, eds. Peter Ho, Jacob Eyferth, and Eduard Vermeer. (Portland, OR: Frank Cass Publishers, 2004): 21.

[107] USDA Website, "Table 9: Land in Farms, Harvested Cropland, and Irrigated Land, by Size of Farm," *2002 Census*, http://www.nass.usda.gov/census/census02/ volume1/us/st99_1_009_010.pdf (accessed May 2, 2005).

[108] *Zhongguo Tongji Nianjian [China Statistical Yearbook]*, ed. Zheng Jingping. (Beijing: China Statistics Press, 2004): 294.

access them conveniently. Due to the poverty of the county, however, and the ambiguous responsibility of the central government in providing these public goods, it seems that these problems will not be solved until the Chinese government establishes rules on equitable governmental payments for these improvements.

There are also many forms of infrastructure the government needs to be improving. Physical road conditions and communications are two important examples. The physical conditions of the roads between Xichang, Yanyuan, Baiwu, and Yangjuan are poor. The roads are still largely unpaved, resulting in frequent mudslides on key routes. No wonder middlemen have such a high transaction cost and cannot be relied upon to purchase crops from remote places like Yangjuan. If contracts were now prevalent in China, it seems that they would pass Yangjuan up, due to its isolation in regards not only to physical boundaries, but also to communication boundaries.

Let us not forget that infrastructure, in addition to transportation systems, includes electricity and communication. In Yangjuan, most houses now have a single lightbulb. No house has a telephone, although a few of the teachers in the village school have cell phones (amazingly, with fair reception if you go up to the hill behind the school). The village school has lighting in each of its rooms and a few outlets. However, most villagers can not afford cell phones, and villagers lack easy access to post, telephone, or email that would easily connect them with buyers or sellers and facilitate wise market decisions. There are simply not enough of these communication options readily available to be able to make electronic or wired communication a common activity. Without communication, fluid market flow outside of one's immediate area is impossible.

The government needs to supply to remote areas a relatively cheap communication system until farmers are wealthy enough to be able to afford their own communication methods. At that point, the government needs to be responsible for providing the necessary wiring and setup infrastructure. These kinds of public goods issues need to be worked out by the local and central governments.

Capital Opportunities and Financial Structure

Finally, farmers need to able to access loans. Formal loans, from the experience of farmers in Yangjuan, are not available, or at the very least, are not well known by villagers. Not one farmer mentioned this option in my interviews. To address the institutional lack of farmers' secured economic freedom which hinders innovation and individual debt relief, a more effective small agricultural loans system needs to be developed. Currently, much of the way poor farmers in rural China acquire loans is informally through the seed vendors from whom they purchase their farm inputs. There needs to be institutional control of debt relief and easier, more reliable ways to acquire loans so that a lack of access to funding for agricultural inputs does not act to perpetuate poverty. There needs to be more research into loan structure in rural areas. While there are reports on the overall relationship between local governments and the federal government and on the role of financing in development, there is little that shows how the financial system actually works in remote areas other than Yangjuan.

The solution to this finance problem in rural China is to develop a program that provides small loans to both farmers and entrepreneurs just leaving the farm to be able to afford agricultural inputs or inputs for generation of small businesses in rural areas; thus revitalizing

rural centers and providing a self-sufficient means for income growth.

This program is feasible based on the direction China is already going due to its trend since 1978 towards a more developed market structure. Not only are the rural areas operating increasingly in a market system, but the state is also beginning to relinquish control over state enterprises. The banks will have no trouble dealing with the autonomy that comes with the minor amounts of decentralization that are needed in order to adequately meet the needs of loans in remote areas. Christine Wong, *et al.*, advocate increased centralized control over banks in China, saying that otherwise local banks have a high incentive to offer money with little concern for how good their investments are.

I disagree with this standpoint for several reasons – 1) local banks need more control over their local branches so that they know what services to provide. In addition, 2) Wong *et al.* themselves advocate for financial institutions in China to be subjected to market forces like other sectors. This seems contradictory to their aforementioned position, provided that the central banks would ensure local bank responsibility through appropriate reserve requirements and discount rates. Justin Yifu Lin argues that decentralization has thus far been beneficial to economic growth, based on information gain and closer scrutiny of the local population,[109] a point which I concur means that further bank decentralization will at this point be beneficial. While I disagree that government fiscal decentralization of taxes and provision of public goods will provide benefits to poor areas, I do believe that bank decentralization is the way to bestow upon banks the necessary local information to provide what is needed in areas outside of the government's focus on coastal development.

[109] Lin and Liu.

Important Contributors to Economic Development Not Addressed

Two important parts to the puzzle of economic development that I am leaving out are the discussions around civil society and political rights. These two are mutually reinforcing. Guaranteed political rights, as opposed to reliance on connections to gain access to political markets (*guanxi*), is the way people can continue to secure their economic interests – as they make economic gains, they will find they have more at stake in politics. In addition, civil society is a way to protect identity and customs, particularly for groups susceptible to marginalization such as minority societies. Civil society can likewise form to help defend political rights, and if political rights are protected, so can be civil society.

Conclusion

The government has had the intention to transition to a market economy in a controlled, planned way that ensures that the overall economy keeps growing. This mix of centrally-planned and market-led development has left mixed results. The government has been doing a sound job in coastal areas and in cities, but the benefits have been lacking considerably in rural areas, leaving behind pockets of poverty in places like Yangjuan.

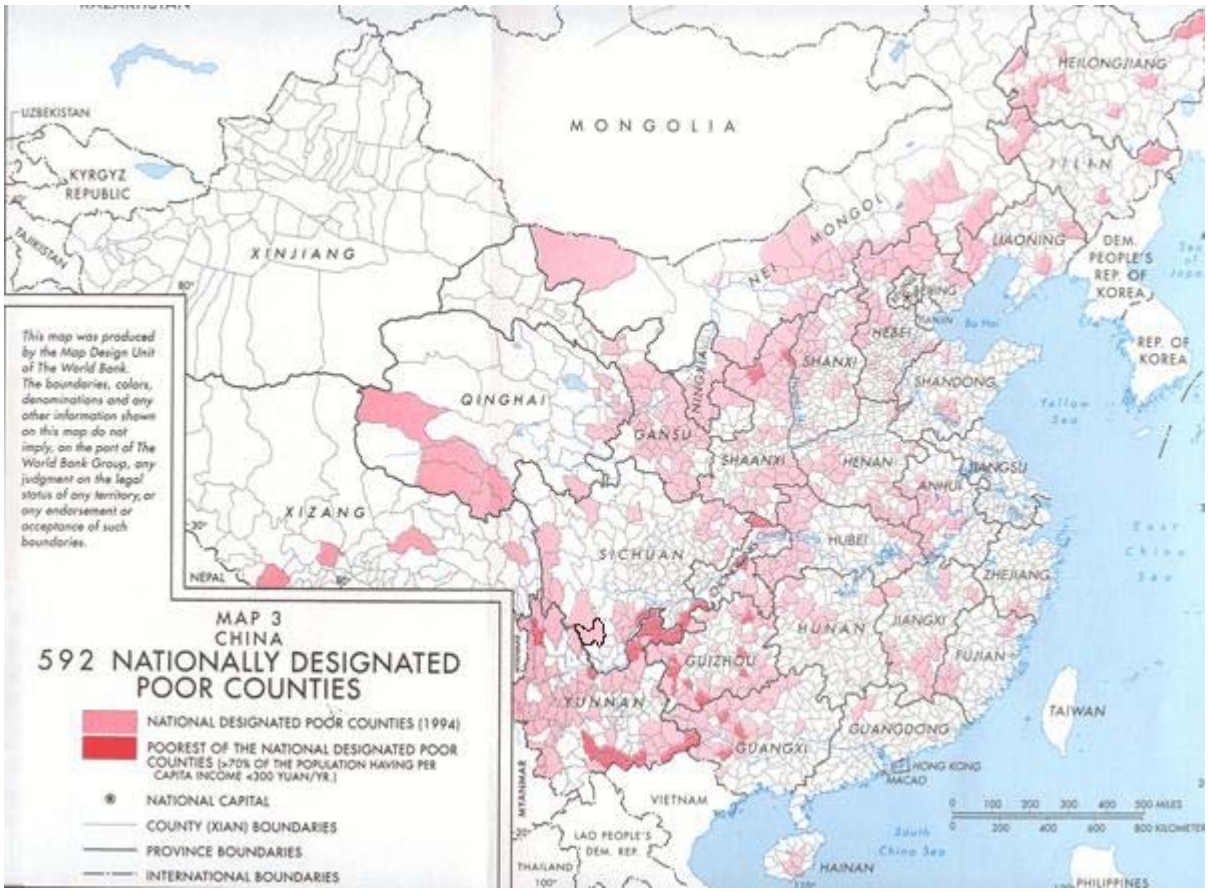
Essentially, government intervention and assistance are not necessarily counterproductive, but there are ways that the Chinese government can be redirecting its current involvement to benefit farmers in Yangjuan, rather than focusing on efforts that are not all that helpful. The government has begun to make some of these strides by allowing seed producers and feed factories to behave more like competitive companies, but the government needs to take more measures to ensure that farmers have fewer factors working against them that bar them from being able to substantially improve their economic situation in the long-term.

Because the government wants to maintain control administratively while retaining ambiguity about fiscal responsibility and certain rights, farmers in rural areas are left in a very insecure position, given little chance to truly succeed.

It's not a question of how much control, but what kind of control. The central government needs to relinquish control over certain aspects like banking and migration restrictions while tightening its responsibility for funding for poorer areas' public goods and on defining property rights.

Given a change, it is likely that farmers would do what farmers in other places with these opportunities have done – begin to learn what investments to make, use education as a way for people to use their comparative advantage off the farm, and become more efficient at integrating into the market. Only in this way can farmers in Yangjuan have the chance to lift themselves out of poverty.

Appendices



Appendix 1: World Bank's 1994 592 Nationally Designated Poor Counties. Yanyuan County is outlined in black.

Source: China: Overcoming Rural Poverty, World Bank Country Study (Washington, D.C.: The World Bank, 2001).

Appendix.2: Chuandan 15 Hybrid Corn Seed Bag from the Shanzhou Seed Co.

Appendix 3: Corn Seed Bag with Poison Symbol. Instructions to Wash Hands After Handling Are on the Back.

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