

School consolidation in Rural Sichuan: Quality vs. equality¹

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Introduction

In the year 2000, Yanyuan County, a poor, mountainous minority area in southwestern Sichuan, conducted a rapid consolidation of its elementary schools. The county closed 90% of village primary schools and expanded “key-point” schools located in townships and the county-town. The purpose of the consolidation was to allocate education resources more efficiently in response to greater financial pressure on the local government and a rising number of failing village-level primary schools.

This study looks at the impact of this new policy, to examine whether it has been beneficial to rural students. We examine the situation of the local education system both through aggregate data and through comparison of five local elementary schools. Each field site is differentiated not only by administrative level (county, township, or village) but also by its position in the county’s economic structure, using a model loosely based on G. William Skinner’s model of hierarchical regional space (HRS) (Skinner, Henderson, and Yuan 2000).

If we examine aggregate education data for the county as a whole, Yanyuan County has had many triumphs in recent years: enrollment has reached record highs (from 25,057 primary students in 1990 to 40,352 in 2003), and there are adequate numbers of teachers (over 1 teacher per 20 students). However, the aggregate time-series data do not reveal how recent educational benefits have been distributed within

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the county. National and provincial government data use the term “rural” to blanket agricultural regions at the sub-county level, thereby hiding emerging disparities among townships and villages. When we examine these disparities more closely, we find that within Yanyuan County, although the new school consolidation policy has increased the average quality of basic education², schools have become less accessible to students living in remote areas. Students living in mountainous villages far from township centers face higher transportation costs for attending school, and are thus less likely to attend. In addition, the few village schools left after the 2000 consolidation have had to become self-reliant in order to maintain school facilities and quality.

Villages situated in the vicinity of key-point schools do reap the benefits of greater efficiency gained from consolidation. Yet some villages are being left out. With poor infrastructure connecting villages with township centers, this new consolidation policy exacerbates the polarization between remote villages in the county periphery and developing areas in the county core.

China's Rural Education Situation Post Mao

By the late 1970s, China's education system resembled neither the traditional examination based system of imperial times nor the modern, science-and-propaganda based system established by Republican and Communist Governments through the mid-1960s. Under Mao's leadership, in the name of deprofessionalization and radical local reform, the entire system had been decentralized (Pepper 1981, Mauger 1983). Communities were expected to run their own schools and curriculum was geared towards political and moral indoctrination. Scientific education was deemphasized, and

² Quality was evaluated in terms of number of teachers, building maintenance, school facilities, and learning conditions.

college students were “sent down” to the countryside to participate in glorified manual labor.

After Mao’s death, party leaders hoped to close the development gap between China and first world countries such as the United States. By the late 1970s, scientific education was seen as the key to reform. In 1976 the education bureaucracy was re-centralized in Beijing and traditional teaching methods resumed (Pepper 1981). Shortly thereafter, the competitive entrance examination system was re-established at all levels of schooling. A new generation of scientists, engineers and academics was created.

Consolidation of Secondary Education

A major component of the first wave of education reforms was the consolidation of secondary education³ in order to increase the average quality of basic education. Education resources were concentrated in key-point middle schools (*zhongxin xuexiao*), resulting in the closing of most village and vocational secondary schools. The secondary school consolidation of the 1980s would become the model for the subsequent primary school consolidation examined in this chapter.

In reality, key-point secondary schools became overcrowded and overwhelmed. Local elementary schools strived to qualify all of their students to enter secondary education, but building sizes and the number of available teachers for secondary schools severely limited the number students who graduated from elementary to secondary education. (Thøgerson 2002) Schools had to rely heavily on untrained (*minban*) teachers, usually residents of the village who had graduated from the local

³ Secondary education consists of grades 7 through 12 and primary education consists of grades 1 through 6. Children typically enter primary school at age 6, but in rural schools there is a large age range. Some older children will enter elementary school as education becomes available to them. Although current policy stipulates that 9 years of education are compulsory, it is necessary to take an entrance examination before being accepted to a particular secondary school.

school. Unlike state-paid teachers who receive training at prefectural vocational schools and on-going county seminars (Mauger 1983), *minban* teachers usually had only a secondary level of education. Because of limited resources, secondary curriculum was kept to the basic requirements of high-school and higher education entrance examinations.

Certain key-point schools are in higher demand than others. In poor minority regions such as Liangshan, there is typically one key-point secondary school for an entire county located in a county-town. This school receives the most in education funds and its teachers are renowned for being the best in the county. The location within the county-town also gives county-town schools quick access to administrators and economic resources to support programs beyond the typical curriculum. As a result, the quality of education is higher compared to township secondary schools, in the end attracting more students.

Impacts of the 1986 Nine-Year Compulsory Education Law

In 1980 the Chinese Communist Party (CCP) declared that all provinces must be prepared to make nine years of education universal. Areas of differing development levels were given different target dates. (Lewin et al. 1989) Developed areas were given until 1985, while more rural areas were given until 1990. (Thøgerson 2002) The success of the 9 Year Policy is strongly correlated to the development level of an area. (Hannum 1999)

The Central Government has identified impoverished rural areas as the weak link in China's education system. Particularly in minority areas, government officials

continue to reset the deadline for erasing illiteracy.⁴ Funding for the 9 Year Policy comes from national and provincial levels and is transferred down the bureaucratic chain. Inevitably, different levels of government siphon off portions of the education fund for their own jurisdictions. (Bahl 2003) By the time the money reaches the schools themselves, there is often only enough to cover schools' basic maintenance and teacher salaries.

Within counties, there were several logistical problems in ensuring equal opportunity of education for all rural students. High transportation costs greatly impeded students' ability to receive basic education. Often rural inhabitants were scattered across the countryside, making it difficult to find central locations for schools (Pepper 1990) As a result, primary schools in remote areas in the 1980s did not have a well-defined key-point structure. Village level primary schools were scattered and education resources stretched thin.

On the demand side, the establishment of the Household Responsibility System during the agricultural reforms changed the incentive structure for children's education. The household responsibility system promoted market –oriented development of agriculture, providing farmers with more incentive to grow crops by allowing them to privately sell surplus crops on the open market. This created the perception that there were opportunity costs to agriculture of having children in school all day, and often discouraged families from sending their children to school, or from keeping them there past the first few grades. In poor and minority areas, these disincentives to education were greater, and in addition to higher fertility in peripheral areas (Skinner, Henderson, and Yuan 2000) meant fewer educational resources per child. Girls especially have

⁴ Interview with Yanyuan county official

been impacted by the new incentive system; to this day often girls are held back from school to work the fields, while their brothers are sent to school. (Hannum 2003) This means that many children in remote areas are stuck in a cycle of illiteracy and poverty.

Education Funding

One of the goals of the reform movement was to harden the budget constraints of local governments and make them more self-sufficient, gradually decentralizing fiscal responsibility. (Park, Rozelle, and Wong 1996) 70% of government budgetary expenditures are now made at the sub-national level. (Bahl 2003) County level governments and local taxes now largely finance public goods. However fiscal decentralization may aggravate regional inequalities by forcing revenue-starved rural counties to become self-sufficient. Such areas may choose to divert investment from development projects to revenue-generating industries such as local Township and Village Enterprises (TVE) (Park, Rozelle, and Wong 1996). In the education system, this means possible delays in wage payments to teachers and decreases in maintenance funds.

Unable to rely on adequate and timely support from local governments, schools in remote areas have had to become creative in finding sources of funding, often applying ad hoc methods from year to year. In Shiyan Municipality, an impoverished area of Hubei, villagers and township governments were encouraged to donate the profits from land and crop sales to local schools. (Tsang 1994) Schools have also employed private fees to cover *minban* teacher salaries, books, supplies and maintenance. This increases direct-costs to students. The self-sufficient nature of village and township elementary schools contrasts strongly to fully state funded urban

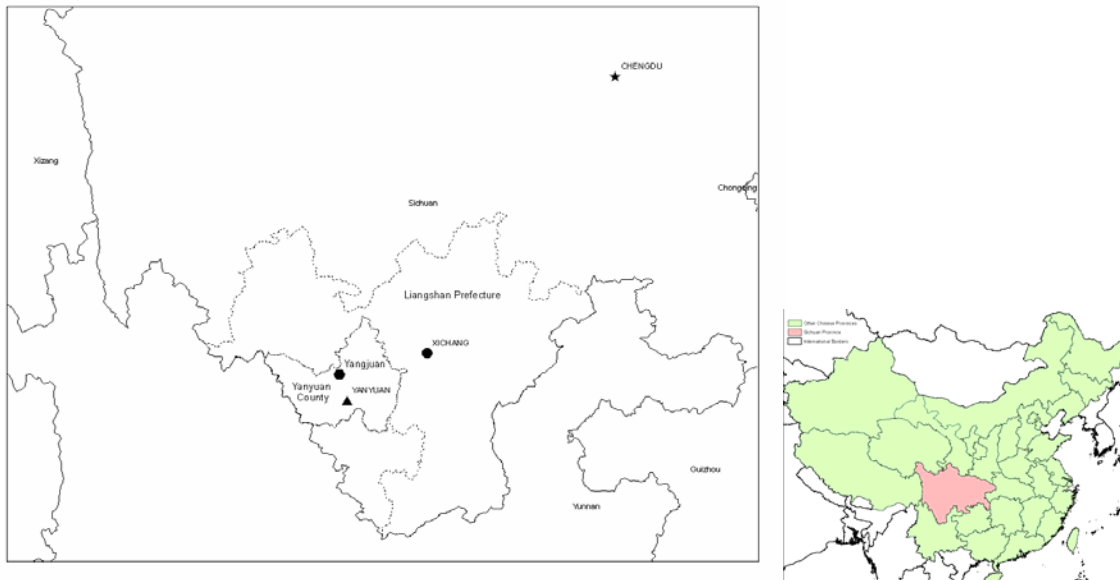
schools, raising the question: "Can China ever realistically offer equal educational opportunity to the inhabitants of remote towns and villages?"

Yanyuan County's Education Situation

Yanyuan County is located in the Liangshan Yi Autonomous Prefecture in a region known as Xiao Liangshan (Lesser Cool Mountains) on the border of southwest Sichuan and Northwest Yunnan provinces. The county is centered on a broad basin of about 2400 meters elevation, surrounded by mountains as high as 4100 meters and deep river valleys as low as 1200. The basin flatland, the most densely populated area, has a decent transportation infrastructure with paved roads and buses that run every ten to fifteen minutes. In contrast, the mountain townships and villages are at best accessible by muddy dirt roads and in some areas only via foot or motorcycle. There are several ethnic groups that inhabit the area. Yanyuan's population is made up of 45% Nuosu,⁵ 47% Han, and 8% Prmi and Na. The Han Chinese live mostly in the basin and in some of the river valleys, while the Nuosu villages are located primarily in the mountains. Like many mountainous areas, especially in western China, the region is quite poor due in part to its geographic remoteness. Within the county, Nuosu areas are generally poorer and have worse infrastructure, including schools, than do the Han areas in the central basin.

⁵ Nuosu, numbering about 2 million, are a subgroup of the official Yi *minzu*, or "national minority." Most Nuosu live in Liangshan Prefecture and adjacent areas in Sichuan and Yunnan. For overviews of the Nuosu and their educational system, see Harrell and Bamo 1998, Harrell and Ma 1999, Harrell, Bamo, and Ma 2000, Bradley 2001, Schoenhals 2001.

Map 1: Liangshan Prefecture, showing its location within Sichuan, and the location of Yanyuan County



The change in Yanyuan County's education system after 1978 reflects the reforms described in the beginning of this chapter. However, in this remote, mountainous region largely inhabited by minority groups, implementation of reforms rarely meets government deadlines. As a result, the county is constantly experimenting with ways that will make the provision of education more efficient.

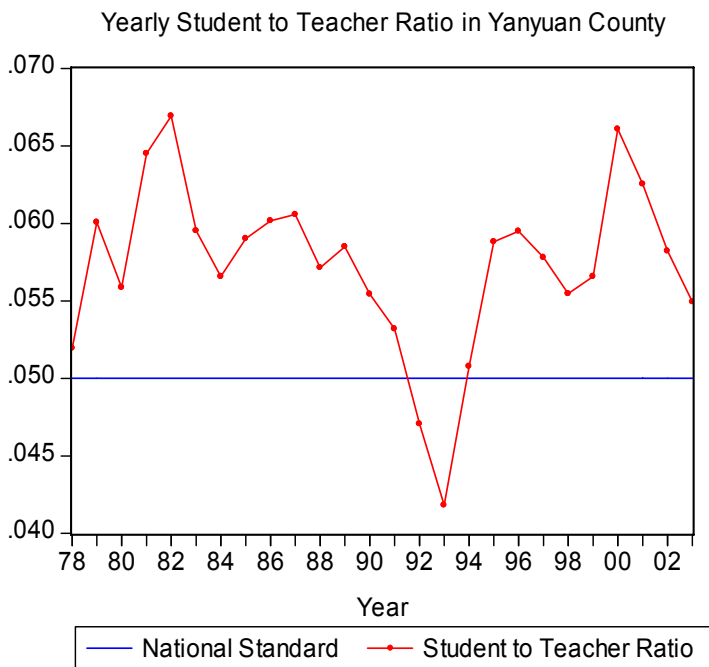
Before consolidation, primary schools were scattered throughout the county. Most villages had a small school, but conditions were poor.⁶ The typical schoolhouse was a one room building made out of mud-bricks. Moreover, education resources were not distributed based on demand; some classrooms had 60 students for one teacher while others had fifteen students for three teachers.

Teachers are the most limited education resource. Most trained teachers, even those who themselves grew up in small villages, want to teach in either a developed-

⁶ Interview with county official

township or the county town. This is due to China's social climate: after having received an education and been certified by the government, trained teachers do not want to return to their previous standards of living.⁷ Even well-funded schools in small villages are unattractive because life revolves entirely around the school; there are no other opportunities for recreation. County data indicate that there are actually enough teachers in Yanyuan. Figure 2 shows Yanyuan's county-wide student to teacher ratio to be within the government's preferred standard (1:20).⁸ Yet rural schools still report a shortage. The problem with teachers therefore lies in the distribution of teachers within the county.

Figure 1
(Source: Yanyuan Office of Education and Culture 2005)



The poor quality of village primary schools, including the shortage of teachers, has impacted the demand side of education. Without an adequate number of teachers

⁷ Interview with primary school teachers

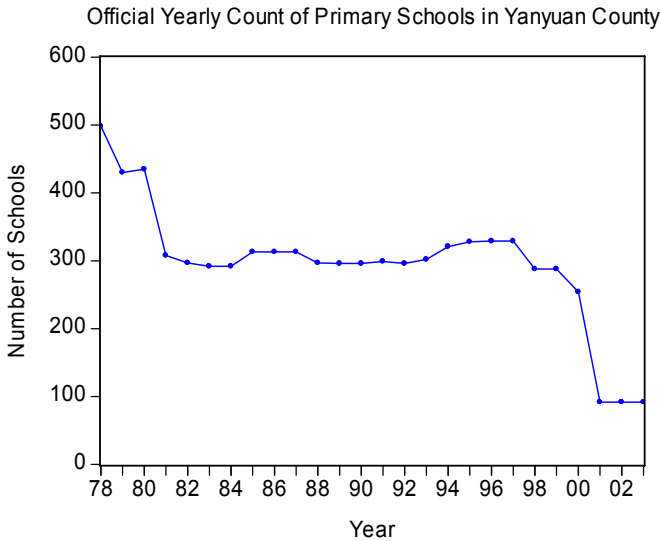
⁸ Yanyuan education office

or facilities, students are unable to compete in entrance examinations for secondary schools, resulting in low returns on education. Families who still wish their children to attend school prefer sending them to higher quality schools in developed townships. Therefore not only do village schools suffer from under-funding, but they also often suffer from under-enrollment.

By the end of the century, it had become apparent to education officials from both the provincial and the county levels that the system of scattered primary schools was not adequately serving the rural population. In the year 2000 Yanyuan County, along with many other rural counties in Sichuan, followed national policy and conducted a massive consolidation of primary schools. The primary education system was to be modeled after the secondary education system, that is, a system of well-funded key-point schools. Village-level schools were to be closed and key-point schools built in townships and the county-town. By 2001, 66% of all elementary schools within the county had been closed.⁹

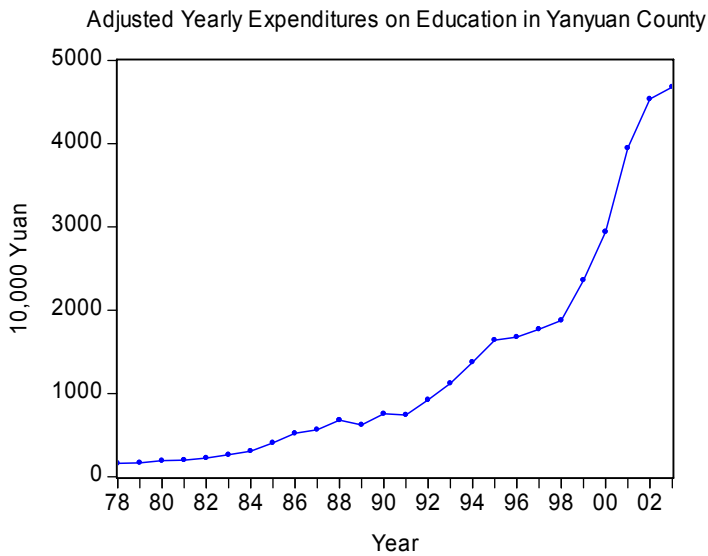
⁹ In truth, the consolidation of the primary school system had already been slowly occurring since the early 1990s. Throughout the 1990s, many village primary schools were shut down or downsized due to a lack of funds, teachers and students. Yanyuan County had been experiencing a decline in the number of schools despite an increase in education funds. Education administrators over the years decided that funds were better used in schools that were already successful while allowing failing schools to close. However it was not until 2000 that it became official policy to concentrate all funds on key-point schools while providing only basic maintenance funds to other schools.

Figure 2
(Source: Sichuan Statistical Yearbook 2003)



* The official count of Yanyuan schools is based on the number of full primary schools (grades 1-6) receiving government funds and is not reflective of the number of fully functioning schools.

Figure 3
(Source: Yanyuan Office of Education and Culture 2005)



According to county officials, consolidation has had a number of advantages: First, concentrating investment in a select number of schools ensures that these schools meet national standards and are well equipped for students wishing to be competitive in national exams. The county, on average, is able to provide a higher

quality of basic education. Second, consolidation solves the teacher distribution problem. Key-point schools are located in more developed areas and are more attractive to teachers.

The Effects of Consolidation: A Comparison of Key-point schools and Self-Sustaining village schools

In order to show concrete differences between key-point and village schools, fieldwork was conducted in two key-point schools, Yanyuan Government Street Elementary located in the county-town of Yanjing and Baiwu Township Elementary; and three non-key-point rural schools, Shaba Elementary School, Yangjuan Primary School, and Mianba School.¹⁰ Both of the key-point schools are in local economic centers but on different administrative levels: Government Street School is an example of a county-level key-point school and greatly benefits from direct access to the Education Department and county resources. Baiwu Elementary is an example of a mountainous township school serving as a key-point school for surrounding villages. Both schools have their respective areas of influence from which they draw their students and resources. Government Street attracts students from relatively wealthy neighboring townships, while Baiwu serves as the main school for nearby and remote villages under its jurisdiction.

The centralization of elementary education in key-point schools located in economic centers provides numerous benefits. The developed local economies surrounding key-point schools provide diverse sources of funds, not only from agricultural production but also from tourism and a small amount of primary industry.

¹⁰ Christina Chan conducted all the fieldwork in these schools except for Yangjuan. Stevan Harrell was a founder of the Yangjuan School, and the material on Yangjuan is a combination of both of our experiences.

Economic centers also receive greater attention from the county-level government; the top-down nature of the Chinese government means that the county government's information network extends reliably to townships but not necessarily to villages. Village schools must deal with an extra layer of administrative bureaucracy when communicating with the county government. Therefore, being located in a township or county-town strengthens key-point schools' connection to decision makers.

These key-point schools can be contrasted to self-sustaining village elementary schools. Two of the three village schools studied here were able find independent sources of funds and avoid closing during the 2000 consolidation. A village counterpart of Yanyuan Government Street Elementary, is Shaba Elementary, located a half hour drive away. Shaba has been receiving corporate funds from China Telecommunications as part of the company's development financing project. One village counterpart of Baiwu Elementary is Yangjuan Primary School, in a village close to the township center. Yangjuan has benefited from funds raised by foreign researchers and philanthropists. Another nearby village school, in Mianba, has received no domestic or foreign assistance, and is thus perennially on the point of closing altogether.

Out of convention, students are more attracted to key-point schools than to village schools. The mindset is that attending a key-point school is equivalent to working towards higher social-economic status.¹¹ Students will often walk two to three hours to attend key-point schools. Another deterrent to attending village primary schools is that they are more likely to charge attendance, book, and/or boarding fees due to their self-sustaining nature. Although the county is in the process of

¹¹ Interview with Yanyuan education official

implementing the policy of *liang mian yi bu*, or "two waivers and one stipend," that is, eliminating book charges and miscellaneous fees, and helping with living expenses, many village schools have not totally abolished fees. Therefore, although village schools provide an alternative to key-point schools, they are disadvantaged in attracting students and trained teachers.

Flatland versus Mountains

There is also a geographic dimension to the consolidation efforts. Key-point schools have been built mostly in flatland townships. These townships have the economic resources to support larger schools and also have higher population densities. Moreover, the transportation costs for financial and human capital are much lower in the flatlands than in the mountains. It only takes a bus ride to experience the difference in transportation costs: flatland townships have buses that run every ten minutes and travel on relatively smooth paved roads. Mountain township buses run at most once an hour, and sometimes only once a day, visit only the most accessible villages, and must endure bumpy, winding dirt roads.¹²

Flatland areas are also more likely to attract trained teachers due to the higher standards of living and low transportation costs. Teachers in mountain areas can often only afford to travel to the county-town once a week, while flatland teachers can go perhaps every other day.

Flatland vs. mountain is thus another spatial dimension we can use to compare schools. Regardless of whether a school is a key-point or a village school, its geographic location has a large impact on what resources are available to that school.

¹² It is quite common, especially in the rainy season, for buses on such roads to get stuck in the mud, and for passengers to have to get out of the bus in the pouring rain to gather rocks from the side of the road and fill in potholes, or to wait for hours while traffic jams or landslides are cleared away.

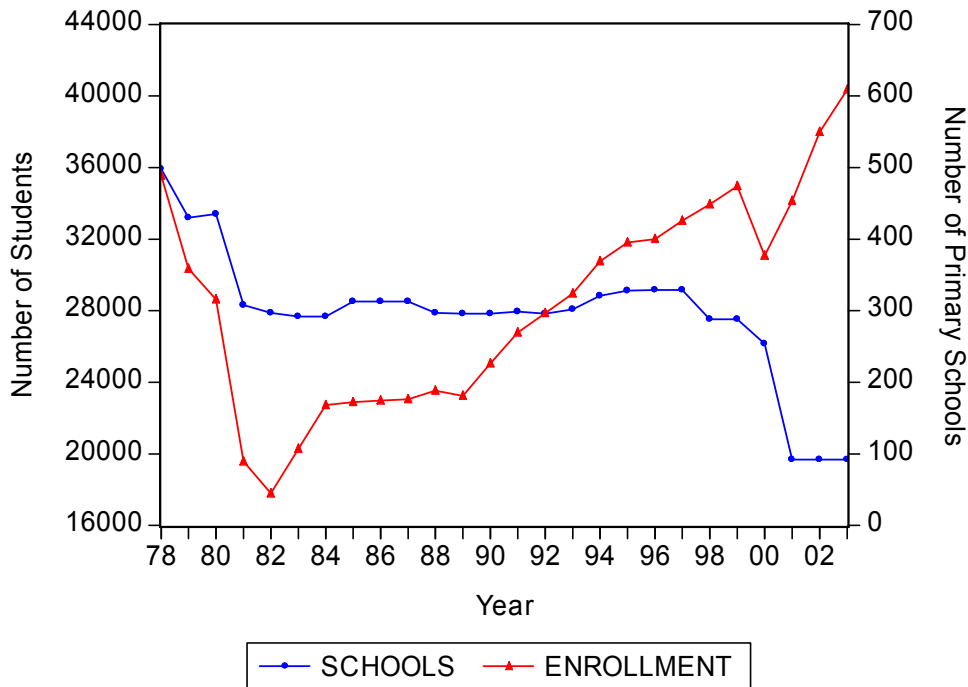
Shaba village and the Yanjing county-seat are both located in the flatlands, in this case the central Yanyuan basin. Baiwu Township and Yangjuan village are located in a mountainous region north of the county seat, and require a 90 minute bus ride from the county-seat.

A Problem with Consolidation?

Several teachers interviewed about the consolidation effort initially feared that the closing of so many primary schools would result in some students losing access to education. County officials rebutted this by pointing out record high enrollment rates. In looking at aggregate county data during the early 1980s to 1990s (Figure 5), enrollment had a strong positive correlation with the number of schools (R-squared value of 0.86). After 1990 enrollment no longer strictly followed the number of primary schools, but instead rose steadily at a rate faster than the construction of schools. By the late 1990s the enrollment was increasing despite the steady number of primary schools. After the 2000 consolidation, enrollment rose at an even higher rate than during the 1990s. Moreover, post-1990 there is evidence of negative correlation between primary enrollment and the number of schools (R-squared value 0.45). That is, despite a decrease in the number of schools, enrollment rates still rose. In fact, after 1997 there is even evidence that as the number of schools decreased more rapidly from year to year, enrollment rose faster.¹³

¹³By examining the data points that make up the outliers from the regression line we can clarify the timing of structural changes. These outlier points occur during the years 1990 to 1997, when the changes in the numbers of schools were very small (5-20 schools), but closing one school in the county could impact thousands of students. Therefore if we run regression for only the years 1990 to 1997, using smaller intervals for the number of schools, we find there is a strong positive correlation between enrollment and the number of schools (r-squared value of 0.86). This implies that the structural change occurred around 1997, which corroborates qualitative data stating that around 1997 the government began concentrating funds in key-point schools.

Figure 4
 (Source: Sichuan Statistical Yearbook 2003)



It is clear from these aggregate figures that the major challenge for Yanyuan County no longer lies in creating incentives for the majority of children to attend school. The county must now ensure that the opportunities for education are equally accessible. The gross numbers depicted above do not reveal where the increases in the number of students come from, whether they are mostly from market centers or the flatlands. Although the recent consolidation is economically more efficient, there has been a trade-off between quality and accessibility. Consolidation has changed the spatial structure of inequality. Resources and opportunities are clustered in certain areas, increasing transportation costs for those who lie on the far peripheries of these development centers. We will examine two dimensions of this spatial inequality: an economic dimension in which resources are concentrated around market centers, and a

topography division between flatland and mountainous regions. These dimensions are analogous to the dimensions employed on a much larger scale in G.W. Skinner's model of Hierarchical Regional Space: the market center vs. village dimension is analogous to his Urban-Rural Continuum, while the basin-mountain dimension is analogous to his Core-Periphery Zones (Skinner, Henderson, and Yuan 2000). Using this kind of model helps us get beyond the misleading dichotomy between "urban" and "rural."

Methodology

To determine the difference between the catchments areas of key-point and village schools, and of flatland and mountain schools, in access to education, both time series quantitative data on numbers of schools, enrollments and budgets, and local interview data were gathered. Time series quantitative data came from a variety of sources, as most compilations were incomplete. The main source of quantitative data were the Yanyuan County 1990 Book of Statistics for figures before 1990, and unpublished data kept in Yanyuan County government offices, primarily from the Education and Culture office. Data from villages, particularly villages in Baiwu Township, came from one-on-one interviews with village-heads, school principals, and officials at the township party headquarters.

In addition to quantitative education data, we also draw on interviews with the head of the Education and Culture office of Yanyuan, tax officials, and party leaders. At each field-site we also interviewed the school principal and several teachers, as well as drawing on long-term acquaintance with the details of the situations in Yangjuan and Baiwu. In these conversations the local leaders were asked to reflect on the reasons for recent education reforms and their effectiveness. They were also asked how the

reforms have affected their schools and whether these changes were good for their local community and for the county as a whole.

A Description of Field-sites

Yanyuan's Government Street Elementary – A County-Seat School in High Demand

Yanjing, key-point school, flatland

Yanyuan's Government Street Elementary School (GSES) is located directly in the center of Yanyuan's government district in Yanjing, surrounded by government officials' houses and administrative buildings. It is one of three elementary schools located in the county town, serving a population of around 30,000. GSES is known for having the best teachers in the county and also has the smallest number of *minban* teachers of any of the schools sampled in this study.

As of early 2006, GSES served 1100 students, half of whom traveled from outside the county-town of Yanjing. The ethnic composition of student body is 60% Han Chinese, 35% Yi, and 5% other minority groups.¹⁴

The main problem facing GSES is over-enrollment. As it is a county town school, many families from outside the county town try to enroll their children there. Currently there are 60-70 students in one classroom. Other schools in this study, such as Yangjuan, Baiwu and Shaba, are also facing the same problems with over-enrollment, but unlike Yanjing's school, their problem lies in the lack of teachers and not in the lack of space.

¹⁴ Other ethnic minorities are primarily Zang-zu (Prmi) and Menggu-zu (Na). These local ethnic groups were assigned to the Tibetan and Mongolian *minzu*, or "nationalities" respectively as part of the Ethnic Identification (*minzu shibie*) processes in the 1950s and 1980s.

Shaba Village –Benefiting from Corporate Funding

Meiyu Township, village school, flatland

The village of Shaba lies in the developed basin township of Meiyu, a half hour bus ride away from Yanjing town. Shaba makes up the largest administrative village in Yanyuan county, with a population of over 5000 people. The average per capita cash income is 1000 RMB, very high for Yanyuan County. The original school was built in 1956 as a *minban* school, entirely supported by the community. In the 1990s, the county education bureau had plans to shut down the school and transfer the students to the primary school in Meiyu Township.

However, in the year 2000, a Yanyuan vice county-executive, a graduate of Shaba Primary, negotiated with China Telecommunications to incorporate the Shaba primary school in its rural development program. Although the company representatives originally wanted to give the money to a more mountainous region, China Telecom granted 700,000 RMB directly to Shaba Elementary. The school now runs on the China Telecom funds and its own revenue. The school has a few fields of apples and corn planted by students and teachers; the output is sold and profits are used to pay *minban* teachers and maintenance fees.

Shaba Primary is now the largest village-level elementary school in the entire county. In 2005-06 there were 927 students, about a 300% increase from before the school was rebuilt. The school building is actually capable of holding 2200 students, but education services are limited because of the lack of teachers.

Baiwu Township – A Key-point school for Rural Students

Baiwu Township, key-point school, mountainous

The township of Baiwu is the economic and political center for 12 administrative villages in its mountainous Yi region, encompassing numerous local settlements, including the two field-sites of Yangjuan and Mianba. According to the secretary of the local party, Baiwu is a very poor township that is struggling in development. Therefore at this time, the provision of public goods such as education in Baiwu is almost completely dependent on the county government, making the town especially vulnerable to economic downturn.

Despite the poverty of the surrounding area, Baiwu's key-point elementary school is relatively well equipped. The school, established in 1957, serves as the education center for the entire township administrative region. The local villages are in mountainous areas, and except for two, they have only small elementary schoolhouses with grades 1-2. To access higher grade levels, students must travel up to 2-3 hours to attend Baiwu Elementary. Baiwu Elementary currently has 1500 students, of whom 35% live at the school.

The size and the facilities of Baiwu Elementary are the most impressive. The school covers the largest amount of area of any in this study. Since 2000 the school has been undergoing expansion; there are now 15 new classrooms and one new administrative building.

The main challenge Baiwu Elementary now faces is the increasing number of students who wish to attend. The school is experiencing a shortage of teachers; the

current student-teacher ratio is far above the ideal of 1:20 students. Also, many students who wish to attend the township school cannot endure the daily commute to school.

Yangjuan Village – The Fortune of Foreign Funding

Baiwu Township, village school, mountainous

The villages of Yangjuan and Pianshui are hidden in a valley between the mountains surrounding the small river plain near Baiwu Township. Inhabited entirely by Nuosu people, Yangjuan village is distinct because it receives outside funding from international donors. This was the result of the close contact between Ma Lunzy (Ma Erzi), a native of the village and a prominent international scholar, and several Chinese and foreign anthropologists and other researchers. At Ma's instigation, some of those foreign associates raised money to build the school, which opened in Fall 2000, just as the consolidation policy was eliminating other elementary schools in places like Yangjuan. Before the local school was built, students from Yangjuan commuted to Baiwu Township. Before the year 2000, approximately 26% of primary age students attended school, but after the opening this increased to 83% (92% of the boys and 76% of the girls).

Under Yanyuan's education plan, students from Yangjuan village are meant to attend Baiwu Elementary. However, the principal believes that his students benefit from foreign funding in ways beyond basic education. The principal takes pride in his students for being more worldly and able to learn curriculum beyond examination materials. In addition, in 2006 the top seven 6th-grade graduates of Yangjuan had higher test scores than the highest-testing graduate of Baiwu, despite the larger enrollment at

the Baiwu School. Due to the unique aspects of the school, Yangjuan Primary has become an untraditional magnet school for the surrounding mountainous area, mitigating the problem of over enrollment in the Baiwu Township School.

Mianba Village – Neither key-point nor outside-aided

Baiwu Township, village school, mountainous

An hour and a half hike from Yangjuan village, through fields of buckwheat and potatoes, up herding pastures for sheep and goats, is the Nuosu village of Mianba. There is no main road to Mianba, making it almost inaccessible to motorized vehicles. Before 1994, the school provided classes up to the 5th grade (good compared to other small villages). Mianba had a very influential and gifted teacher who attracted students to the school. After 1994 this teacher left the village and the school quality began to decline, exacerbated by the cutoff of government funds during school consolidation. Currently there are only two teachers, neither of whom is supported by the government. There are 38 students in the first grade and 8 students in the second grade – no other grades are taught. The lack of students is by no means due to a lack of demand for education. There are enough students in Mianba to fill the school to its original capacity. Most parents, however, choose to send their children to Yangjuan or Baiwu Primary.

Key-point and Village School differences

Figure 6

Comparison between Key-Point and Village Schools

	Key-Point School	Village School
Average Number of Students	1300	610
Average Ratio of Minban to Official Teachers	0.23	0.39
Average Salary of Official Teachers	1150 RMB	1000 RMB
Average Salary of Minban Teachers	300 RMB	225 RMB
Government Funded Items	all teacher salaries, maintenance, libraries, laboratories	official teacher salaries, basic maintenance, textbooks since 2006
Other Sources of Funding	None	China Telecom grants, animal husbandry, foreign funding, farm plots

It is clear that already-overcrowded key-point schools would be under even greater enrollment pressure were it not for the existence of local village schools. Key-point schools are already complaining of crowded classrooms and a shortage of teachers, especially in mountainous townships like Baiwu. Village schools help siphon off enrollment by providing an alternative option to key-point schools. Often, a village school will serve not only its own village but also students from surrounding villages who do not wish to commute daily to the township.

The average number of students that attend key-point schools is still almost double that of village schools. Yanjing GSES and Baiwu are purposefully equipped by the government to serve over 1000 elementary students each. These schools have larger buildings and also additional facilities such as libraries and laboratories.

One of the more striking differences between key-point and village schools, other than enrollment rates, is the percentage of *minban* teachers that make up the teaching

staff. Village schools rely much more on community-sponsored teachers. This is because the living standards and location of village schools do not attract trained teachers, and often also because education bureaus have not budgeted for teacher salaries at these schools. Although the government will allocate inexperienced teachers to teach in villages, these teachers will attempt to transfer to other schools, usually key-point schools. In interviews with village school teaching staff, many have complained of boredom, low wages, and the loneliness. One teacher in particular stated that he was getting old but still could not find a girlfriend, the main reason being that no girl would want to move out to the village. Even *minban* teachers are often unhappy at the village schools where they, on average, receive lower wages than their key-point counterparts. *Minban* teachers often have to take second jobs such as driving, as well as working on their families' farms, because they cannot support their families on teaching wages that the community provides.

Structurally, however, village schools differ most from key-point schools by where they receive funding. Key-point schools are entirely supported by the county-level government and also can receive subsidies from the prefectural level. In contrast, village schools rely heavily upon outside funding. Without outside funding, these schools would have had to close under the consolidation effort, or at best limp along like Mianba. Funds come mostly from foreign and corporate philanthropy, especially from places such as Hong Kong and Taiwan. Village schools also have many small revenue generating projects such as growing produce or raising livestock. These projects,

however, only generate only enough revenue to pay for extra textbooks or school supplies and cannot in themselves, support a school.¹⁵

Figure 7

Comparison between Flatland and Mountain Schools

	Flatland	Mountain
Average Number of Students	1010	900
Average Ratio of Minban to Official Teachers	0.16	0.47
Average Salary of Official Teachers	1150 RMB	1000 RMB
Average Salary of Minban Teachers	300 RMB	225 RMB
Total Number of Boarding Students	260	575
Total Number of Outside Students	1010	200

The comparison data between flatland and mountain schools look similar to those of key-point and village schools because the root of these differences lies both in transportation and in living costs. Flatland schools tend to serve more students. The cause and effect rationality is unclear here; it seems to be a combination of higher population density and higher quality that results in larger schools. Flatland regions tend to be wealthier and as a result can support larger schools. In Meiyu Township (where Shaba is located) the living standards provide a stark contrast to a mountainous village like Yangjuan: One family visited had a tiled, concrete-walled house not unlike those located in the suburbs of Chengdu. The living room had installed light fixtures, a television, and a phone with an answering machine. In contrast, the average house in Yangjuan is still in the traditional Nuosu style made out of mud-bricks, built around a fire-pit with one single electric bulb hanging from the ceiling, and there are no land-line telephones in the entire village.

In addition, flatland areas serve as economic centers for the county. Many farming families travel to the flatlands to sell their produce. Farmers' children will

¹⁵ Interview with Shaba principal

accompany their parents in the morning to attend the local flatland school. In the schools studied, 50% of the student population of flatland schools came from outside the locality, while mountain schools had less than 20%.

Mountain schools serve fewer students from outside their administrative areas, despite having a higher number of boarders. Boarders in these schools come from villages that are far away from the township. The only way to reach these villages would be walking for hours or hitching a ride on a horse cart. As a result families who wish their children to attend the township school will either try to have them move in with relatives who live in the township or have their children board. Boarding used to be an expensive option, but with the new “*liang mian yi bu*” subsidy, the number of student boarders is limited not by cost but by how much space is available in the dormitories.

In addition, as in the contrast between villages and key-point schools, mountain schools are heavily dependent upon *minban* teachers. This is true even for mountain key-point schools; for example, 40% *minban* teachers staff Baiwu. The reasons are the same: mountain areas do not offer the standard of living flatlands can provide. Even for teachers originally from a remote region, after having attended teaching training and passed the examinations, going back to the rural areas to teach is not their ideal situation. *Minban* teachers from flatlands also tend to receive higher wages than their mountain counterparts because wealthier flatland communities can provide more support. The *minban* teachers in Shaba make around 300 RMB per month while unofficial teachers in Mianba make only 150 RMB.

The Skewed Distribution of Education Opportunities

The benefits that households reap due to the improvements made to the education infrastructure depend on geographic and economic factors of the region. The Chinese government has concentrated developmental efforts entirely on local economic centers, neglecting the most remote villages.

These inequalities are evident from the case studies above, but here we reinforce our findings with quantitative data from Baiwu Township, which can serve as an example of emerging geographic disparities in education opportunity. As described in the previous section, Baiwu Elementary is a well-funded key-point school, one of the largest in the county. The surrounding villages, except for Dalin, which was formerly a township center before being amalgamated with Baiwu, have had education funds cut as part of the consolidation program. Families are told they can move closer to the township center so that the school is more accessible. This suggestion is not really a feasible option for local families, so students who wish to continue in school either walk to school, stay with relatives or board. Many, however, simply do not attend school.

Obviously, the transportation costs increase the farther away a household is from the township. As a local teacher described, "Getting to school for many students means they must wake up in the morning, and before the sun has even risen, take a two to three hour walk to the township. The road goes up and down and it is not easy. Then in the afternoon they must make the same trip back to their homes. By the time they reach home, in the winter especially, it may already be too dark to study. Such conditions naturally affect the incentives for students to attend school."

Figure 8

Baiwu Administrative Township, Yanyuan County			
Village	Number of Primary Students	Village Population	Ratio of Students to Population
Dalin	389	2853	0.17
Yangjuan	300	900	0.33
Baoqing	149	868	0.17
Changma	29	1401	0.02
Changping	143	2959	0.05
Mianbah	37	1716	0.02
Zumo	36	1427	0.03
Maidi	111	1861	0.06
Shanmen	90	854	0.1

*Highlighted villages have a full primary school (grades 1-6) within a five-kilometer radius

** The village of Baoqing and Shanmen are close to a primary school with grades 1-4

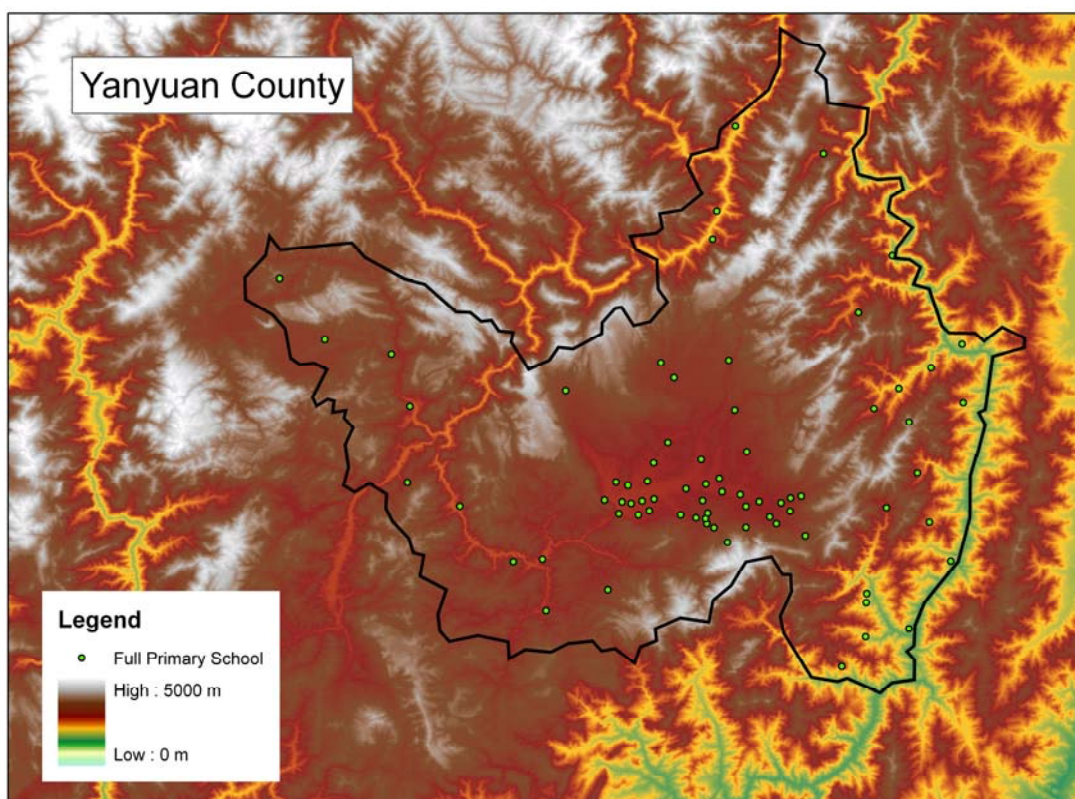
Figure 8 clearly shows the effects of high transportation costs in Baiwu Township. In villages located farther than five kilometers away from a key point or a multi-year village school, the average percent of primary students within the population is about 5%. Villages located near either a key-point or a multi-year village primary school have on average 20% of primary students within the population. Although the measurements here are rather crude, they still show a large disparity based on village location.¹⁶

The distribution of elementary schools in Yanyuan County shows that schools are clustered around flatland areas or in close proximity with townships. (Map 2) This leaves vast areas without convenient access to primary education. (Map 3) We define “convenient access” as being located within a five-kilometer radius, a walk-able distance in an hour on dirt roads or trails. This means that not only are some regions greatly

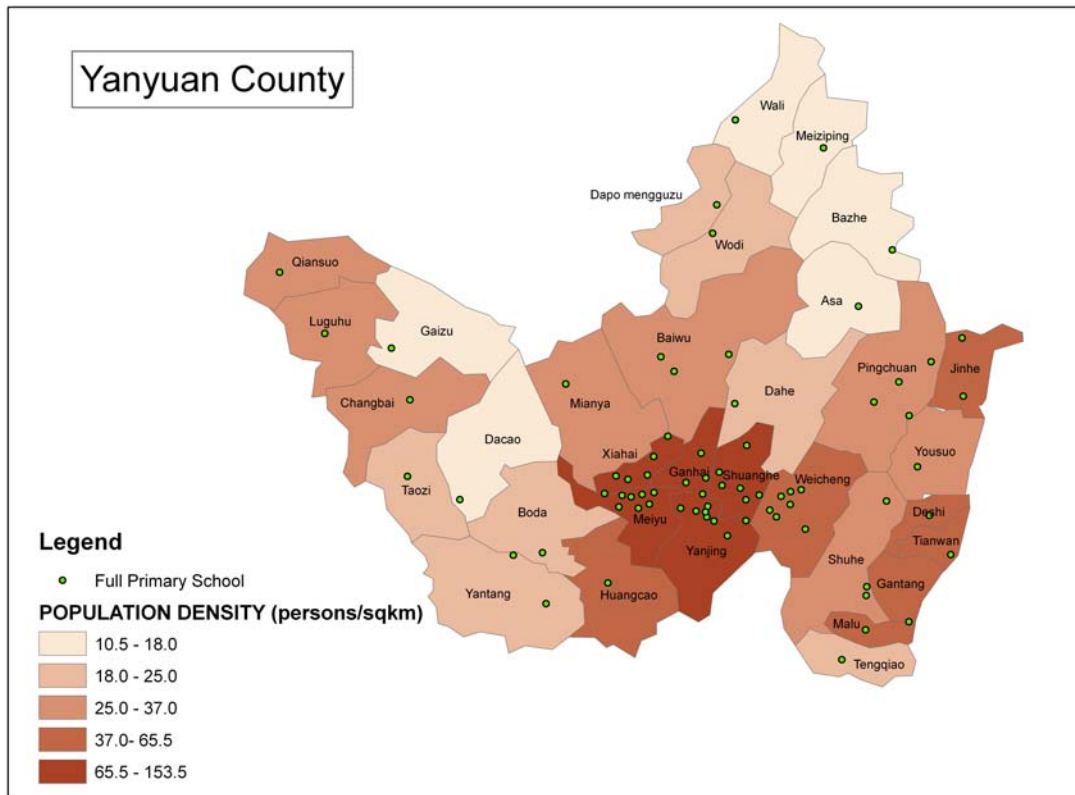
¹⁶ The methodology here is crude, as the data do not account for possible differences in the age structure of the respective village populations. Such data are extremely difficult to find, especially at the village level, and often do not go back more than two years. The most precise measurements come from asking village-heads in person who often must rely on memory. Nevertheless, the age structures would have to differ radically and improbably in order to account for the differences in ratios of school children to total population.

underprovided with schools, but also that existing schools must compete with one another to attract students and teachers.

Map 2: Location of county primary schools with reference to elevation



Map 3: Location of county primary schools with reference to township population densities (persons/km²)



An example of schools competing would be Yangjuan and Baiwu Elementary. The two schools are about a 45 minutes' walk apart and draw their students from the same areas. However, Yangjuan loses a number of teachers to Baiwu every year. Yangjuan was established because of the close personal connections between one of its natives and foreign scholars; it would have been more efficient to fund a school in a village like Mianba such that the children in the village could avoid the two-hour commute. If enough monetary incentives were offered, a school in Mianba could also maintain a full staff of teachers and administrators, despite its remote location. A more

dispersed system of village schools could still mitigate overcrowding in key-point schools while increasing access to education among the rural population.

Discussion and Conclusions

Because of the lack of reliable time-series data we cannot measure how education opportunities were distributed in Yanyuan before consolidation¹⁷, and therefore it cannot be said conclusively that the consolidation effort has resulted in increasing inequality. We can, however, show that rather extreme inequality of access exists at present, and, that the *potential* for regional disparities has become greater. Limited access to education and higher economic costs to families create disincentives, although it is entirely possible that potential returns to education outweigh increasing costs. However, in an economy increasingly valuing human capital (Hannum, Behnam, and Wang 2006), access to education becomes ever more important for those wanting to escape the cycle of poverty.

The efforts of the Chinese government, particularly the provincial levels, to increase the quality of basic education should be applauded. In essence, they have succeeded, but at the cost of unequal access for children living in remote areas. The severity of higher transportation costs is mitigated in a few cases by the existence of successful, self-sustaining village elementary schools. However, these village schools only exist because of outside philanthropy, receiving little or no support from the government. The current education system in Yanyuan County relies to some extent on

¹⁷ It is noteworthy, however, that in a larger-scale study of poverty and inequality among minorities in the Southwest, Bhalla and Qiu have claimed that, while location was a significant predictor of access to primary education among both Han and Minorities in rural China in 1988, with children living in mountainous areas less likely to attend schools than those in hilly or plains areas, that effect had disappeared by 1995. It would be interesting to see if the effect would re-appear nationally in statistics based on surveys taken after the 1999-2000 school consolidation (Bhalla and Qiu 2006: 94-95, 98)

schools that are not actually part of the government planned system; where these schools do not exist, as in most of the villages in Baiwu Township, children are much less likely to receive education. The government's education plan in itself cannot meet the goal of universal mass education because it creates enrollment pressures and high student transportation costs that have been alleviated in only a few cases by outside funding of schools.

Is the Chinese government willing to rely on outside support to serve its education needs? The United States also faces a parallel question in the debate over school vouchers; should the government help students pay for private schools? If the Chinese government wants to pursue a purely public education system, there needs to be serious rethinking of the consolidation policy. There need to be more schools in mountainous townships to decrease transportation costs. Moreover, the locations for these schools should be chosen not only by economic development or by the random outside connections of local people, but also by local population densities. Groups of villages in remote areas of the mountains should have their own government-sponsored school as an alternative to the township school. In addition, increased investment in transportation infrastructure in the remote areas could be the key to decreasing transportation costs for students and providing more incentives for teachers to work in mountain regions. Paved roads and regular bus service can cut transportation time by 2/3 or more.

If private philanthropists continue to be an essential part of the education system, there needs to be effort to provide funds to areas that are in most need. In this study, the schools of Yangjuan and Shaba were built not in the areas of most need, but where

the respective philanthropists had local connections. This is not to say they were unfairly favoring one area; instead, logistical complexities such as official approval and permits make it necessary to have existing connections with local leaders in order to make the bureaucratic process more expedient. Perhaps then, there warrants the creation of an organization or database to help philanthropists, especially foreigners, communicate with the areas in most need. In the meantime, the dream of universal primary education for all China's children continues to go unfulfilled, especially in the remote areas populated by members of minority nationalities.

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