



**Consortium for Research on
Educational Access,
Transitions and Equity**

**Education and Change in
Rich, Poor and National Minority Areas in China:
Two Decades of Transition**

**Keith M Lewin, Wang Lu
with
Luo Yuan, Zhou Wei-tao, Wang Tian-tian
and
Wang Ying Jie, Qu Heng Chang**

**CREATE PATHWAYS TO ACCESS
Research Monograph No. 61**

April 2011



**University of Sussex
Centre for International Education**



Beijing Normal University



Consortium for Research on
Educational Access, Transitions & Equity
Funded by DFID

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ISBN: 0-901881-72-4

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List of Acronyms

GDP	Gross domestic product
GPCR	Great Proletarian Cultural Revolution
MOE	Ministry of Education
PRC	People's Republic of China
UNESCO	United Nations Educational, Scientific and Cultural Organisation
USD	United States dollar

Acknowledgements

This research monograph benefitted from the contributions of many colleagues over an extended period of time. Most particularly it was only possible through the cooperation of officials and educators in the three case study sites who made it possible to return to the field after 20 years to take stock of the changes that have taken place. Special thanks are therefore due to:

- Sun Yu-qi (Director of Education Inspectorate, Tongzhou District Education Commission, Beijing)
- Yuan Jing-hua (Deputy Director of Education Inspectorate, Tongzhou District Education Commission, Beijing)
- Zhang Zhan-chun (Director of the Office of Education Inspectorate, Tongzhou Education Commission, Beijing)
- Liu Chun-rong (Director of Education Inspectorate of Ansai Education Bureau, Shannxi Province)
- Zhou Da-fang (Officer, Education Bureau Zhaojue County, Sichuan Province)
- Chen Ye Feng (Institute of Educational Research, Xichang, Sichuan Province)

Thanks to go to all their colleagues in the respective education departments at different levels and schools who made the research teams visits so productive and worthwhile.

The main participants in field work, data analysis, writing of the school, township and county reports, and translation were:

- Luo Yuan (Ph.D Candidate, Institute of International and Comparative Education)
- Zhou Wei-tao (Master Student Institute of International and Comparative Education)
- Wang Tian-tian (Editor, Foreign Language Teaching and Research Press)

Other researchers who participated in the field and in the analysis and writing up were:

- Che Jin-heng (Editor, Educational Science Publishing House)
- Qu Ling (Master Student Institute of International and Comparative Education)
- Wang Li (Master Student Institute of International and Comparative Education)
- Cui Cong-yong (Master Student Institute of International and Comparative Education)

Beijing based research assistance support was provided by:

- Zhao Ling-yan (Master Student Institute of International and Comparative Education)
- Fu Kun-kun (Master Student Institute of International and Comparative Education)
- Yan Li-chun (Master Student Institute of International and Comparative Education)
- Tang Yi-peng (Master Student Institute of International and Comparative Education)
- Wei Zhi-ying (Master Student Institute of International and Comparative Education)

Special thanks go also to Professor Wang Yingjie, Professor Qu Heng Chang, and Professor Xiang Xian-ming of Beijing Normal University for their helpful comments on the design and outcomes. We also appreciate the assistance and advice given by Professor Qumu Tianxi and Chang Youcai in the Nationality University for their insights into development in Zhaojue.

This research was undertaken by a team of researchers from The Institute of International and Comparative Education; Beijing Normal University, Beijing, and the Research Centre for Comparative Education, Beijing Normal University Key Research Base, Humanities and Social Science, Ministry of Education working with the Consortium for Research on Educational Access, Transitions and Equity coordinated from the University of Sussex.

Preface (1)

When Prof. Keith Lewin, Prof. Qu Hengchang, Prof. Wang Lu and I discussed the possibility of revisiting the three counties where we did case studies on implementing basic education in China twenty years ago, I was very excited. Since we finished the research project on *Implementing Basic Education in China* which was published by the International Institute for Educational Planning we had not been able to follow up and track changes during a period when Chinese basic education had been transformed, but a part of the research teams' hearts were left with the teachers and children in the fieldwork areas. Access to basic education and the challenges of people's lives in poor areas has always been an emotional topic whenever the research team members gather together at Beijing Normal University. Periodically I have collected information when chances have arisen to talk with officials and students from the research sites. Some of the changes that have happened over twenty years are difficult to imagine. Tongxian County has been transformed into Tongzhou District. When a county is upgraded to a district in China, it means the area has become urbanized and the living conditions and livelihoods have been transformed. I have had the chance to drive through Xiji which was one of the poorest Xiang (township) in Tongxian when we did our study, which was predominantly rural and agricultural. Now it includes a major industrial park on the outskirts of Beijing, and has the corporate headquarters of several multi-national enterprises. Many residents live in high rise apartments and commute to work in Beijing. I have become aware that Ansai (our second case study county) has become quite rich as petroleum had been discovered there. Zhaojue (our third case study county) is a long way from Beijing. How I wish I could return and see the changes in these areas; twenty years is a long time. Prof. Qu and I now are too old to take on the rigours of fieldwork even though conditions have improved greatly in transport and accommodation. Wu Zhongkui and Qian Jiaqi (two of our team members) have assumed important positions in the Zhuhai Branch Campus of Beijing Normal University, and Li Jiayong (another team member) is our deputy Dean. Fortunately it has been possible for Prof. Lewin and Prof. Wang Lu to organize a new team and revisit the same locations and schools to compare the situation now with that of twenty years ago. This is a unique opportunity which has not been undertaken before and I greatly appreciate their work.

The landscape of the nine year compulsory education in China has been transformed since 1991 when we first did the research. Then the primary and lower secondary schools were run by county and xiang governments and financially supported largely by villages and xiang authorities. This kind of school administration and finance system resulted in schools having very different resources within a county, and even within a xiang. Differences between counties were also large. In 2001 the county governments were required to take full responsibility for running and supporting the schools. Subsequently the provincial governments are responsible for planning and coordinating school management. Thus the central and provincial governments share the main responsibilities to support schools. Another related change is that children in the compulsory education cycle have had tuition fees waived since 2006. Rural school children are also provided with free text books and enjoy subsidised boarding charges. Boarding schools have been built extensively in western rural areas and enrolment rates have been much improved.

There is no doubt that China has made great achievements in compulsory education. Now China has come to a critical turning point in its development. China's policy makers have to make up their minds if China is to be developed into a society with a harmonious distribution of its social wealth. If China wants to be a harmonious society, it must start with its schools.

The school system is a powerful tool to either reinforce social inequality or to promote upward movement for disadvantaged children. Now, at the one extreme the children of privileged classes go to the best schools, and at the other extreme the children from poor families (in poor rural areas, in low income families resident in cities, children of recent migrants etc.) go to schools with lower standards and miserable school buildings and facilities. This new research confirms these general observations. It finds that though participation has improved there are growing needs to address inequalities and it concludes, “Growing disparities will not serve to achieve the goals of compulsory education policy. Universalization requires both better distribution of access through to grade nine, and much more investment in quality to address both the supply and demand side constraints.”

The recently published National Medium to Long Term Plan for Educational Reform and Development (2010-2020) sets strategic goals to provide equal opportunities and an even quality of education to all children, to run all schools efficiently and effectively, and to educate all children and not allow any to drop out of school because of poverty or other reasons. We know that central policy will not be implemented effectively without changes at the lower levels which determine what actually happens. I do believe this research report revisiting the three richer, poorer, and national minority areas will help policy makers to know better what really happens as the result of policy. A close reading will enlighten them so that new policy initiatives will build on evidence and on the experience of previous initiatives. The research will also remind Chinese education researchers that we need to place more stress on basic field work and empirical evidence to complement publications based on theoretical arguments. The report will give a new perspective to international readers to understand Chinese basic education. It will be of interest to those working for the provision of universal basic education throughout the world and should encourage new research on patterns of change in access to basic education. I would like to congratulate Prof. Lewin and Prof. Wang Lu for the excellent research contained in this monograph.

Wang Yingjie
Professor of Education and Former Vice-President
Beijing Normal University

Preface (2)

China has developed more rapidly than anywhere else in the world over the last two decades. In the 1980s the transformation began from a predominantly rural and peasant society to one where the majority will soon be urban dwellers many of whom are now living a middle income life fully integrated into mass consumption and an industrialised society. Alongside rapid social and economic changes the education system has evolved.

This research monograph charts how change has taken place in three contrasting areas. The first Tongzhou is rich and urban and close to Beijing. In 1990 it was one of the richest 300 counties but still had a rural character in many parts and some small scale industry. Now Tongzhou is a modern city with multi lane highways and many commuters living in high rise apartments, and much inward migration from the countryside driven by employment opportunities generated in special development zones. Ansai has been transformed by the exploitation of oil under the Loess Plateau. Its infrastructure has modernised and new roads and railway lines mean that villages that were remote are accessible. At the same time there has been both urbanisation and outward migration so the rural population has shrunk fast. In

Zhaojue there has been some development around the main road onto the high plateau and new villages and schools are being built to encourage Yi people to move off the mountains. But most schools remain small and difficult to access, and some are in very poor condition.

The study illustrates many things. Over a generation some districts that were relatively poor have become relatively rich. The numbers of small and incomplete schools in two of the areas have fallen dramatically. The total number of children enrolled has also fallen steeply as a result of much lower birth rates and in some counties because of outward migration. The old system of pushing the financial burden of compulsory basic education down to the local level with a series of local taxes has collapsed and been replaced by more centralised funding. Inequalities have grown as development has been uneven between areas. And though most children go to school, and in richer areas almost all complete grade 9, it remains the case that in the least developed districts as many as half probably do not graduate successfully from lower secondary. Amongst these are a disproportionate numbers of girls, HIV orphans, and members of national minorities. The biggest single issue that emerges is of the need to rebalance horizontal and vertical equity so that all children have more similar chances of participating, learning and progressing to higher levels of the school system.

Keith Lewin
Director of CREATE
Centre for International Education
University of Sussex

Summary

This study traces education and change over two decades in three areas, Tongzhou on the periphery of Beijing chosen as one of the richest 300 counties in 1990; Ansai in Yan'an which was one of the poorest 300 counties and a famous base for the 8th Route Army at the end of the Long March, and Zhaojue a poor Yi national minority area in the Liangshan mountains in southwest of Sichuan. Two of the case study areas have developed beyond recognition, whilst the third has improved but still lags behind. Many issues are highlighted by the rapid transformations including the impact of large scale demographic change and migration, which has seen falling numbers enrolled and increasing numbers of left behind children in sending areas and inbound migrants in receiving areas; large scale boarding of children from grade 4 and below in rural areas; recentralisation of responsibilities for school financing and teachers' salaries; and growing concerns for horizontal and vertical inequalities in access and participation between regions, urban and rural areas, and different types of schools.

Education and Change in Rich, Poor and National Minority Areas in China: Two Decades of Transition

1. Introduction

This monograph details findings from case studies of three districts in China. These were chosen to illustrate rich, poor, and national minority areas. The study was originally undertaken in 1990 and published as *Implementing Basic Education in China: Progress and Prospects in Rich, Poor and National Minority Areas* (Lewin, Wang et al 1994) by the International Institute for Educational Planning, UNESCO, Paris. Return visits have been made to each of the three case study sites in Tongxian, Ansai and Zhaojue, approximately twenty years after the original research was conducted. This research monograph details changing patterns of access over time and the evolution of policy and practice. It highlights factors that are associated with progress towards the goals set at national level in the 1980s to ensure all children complete nine years of education. The case studies are set against the backdrop of China's rapid modernisation, and its impressive successes in progressing towards universal access to basic education which may inform attempts in other countries to achieve similar goals.

This first chapter presents a map of some recent developments that have shaped China's progress towards its goal of implementing nine year compulsory education. First, it describes how enrolment patterns have changed and demographic transition has resulted in higher participation with lower total enrolments. It also illustrates how inequalities in access have persisted, especially those related to poverty, and how regional inequalities have become prominent. Second, it charts key policy decisions that have been made to inform resource allocation and practice over the last twenty five years. Most important of these have been the 1986 Compulsory Education Law and its revision in 2006. The third discusses changes in financing, and the fourth the structure of management of compulsory education both of which have been instrumental in supporting higher rates of participation. The fifth section then details recent initiatives to accelerate progress in rural education including that in national minority areas. Lastly, the research methods are described as a precursor to the presentation of the case studies and a summary is given of some of the key issues raised in 1990. Chapter 2 elaborates on the current status of nine year compulsory education in Tongzhou (the former Tongxian). It offers an introduction to the area and the case study sites, reviews the evolution of nine year compulsory education, comments on teachers and teacher deployment and on funding and infrastructure, and discusses some of the issues arising. Chapters 3 and 4 repeat this pattern for the case studies in Ansai and Zhaojue. The last Chapter returns to the findings on 1990 and offers an update and some comparisons drawing attention to what has and has not been achieved and to issues that will shape progress over the next twenty years. The analysis highlights the need to persist in ensuring that "the last 10%" enter primary school in the poorest areas. It also needs to recognise the new demography of nine year compulsory education and accommodate the realities of migration, urbanisation, orphans and left behind children, and falling birth rates. Most importantly the research highlights how important it will be to seek for better balance in development strategies to address the needs of all children living in many different circumstances, and to pursue actively actions that are likely to promote both horizontal and vertical equity between regions, urban and rural areas, different types of schools and different social groups.

1.1 Patterns of Growth in Participation in Basic Education

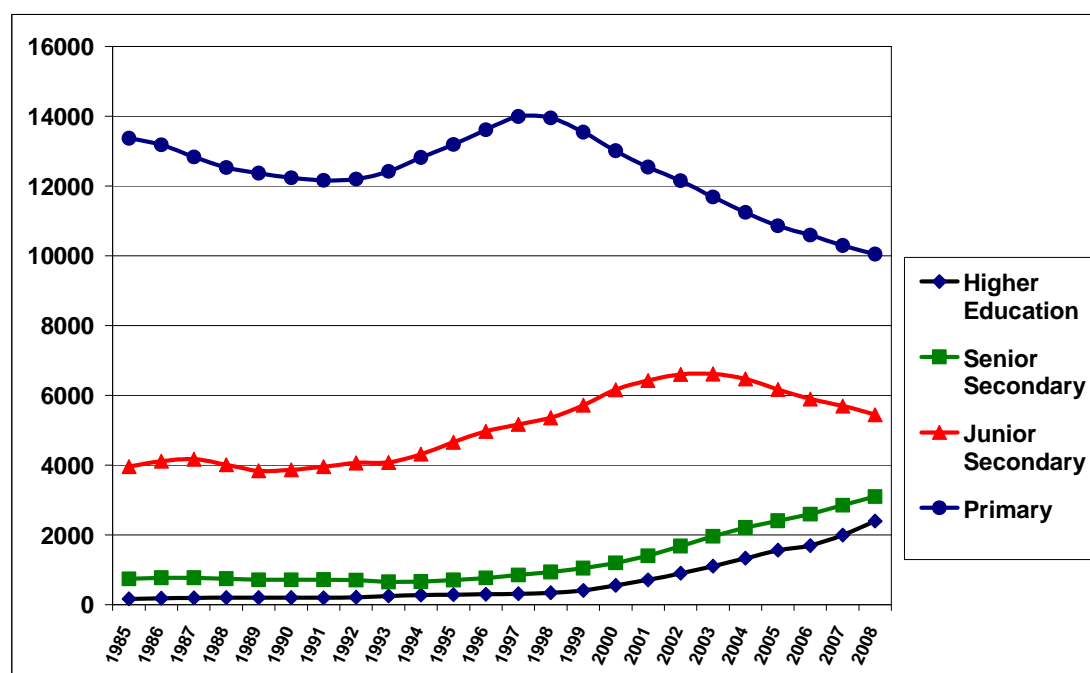
China maintains the largest basic education system in the world with over 100 million children in primary school (grades 1-6), more than 60 million at junior secondary (grades 7-9), and over 20 million at higher secondary (grades 10-12). By some definitions China has already met its commitments first made in 1986 to provide universal nine-year compulsory education. Since the early 1990s enrolment rates in primary education have indicated that over 90% of the age group have entered primary schooling in many parts of China, with most of the problems remaining being located in the poorest counties and amongst national minority populations. The research undertaken in 1990 was consistent with this view and showed that in Tongxian, a rich county, participation was high and improved quality and great equity were the main challenges. In Ansai, a poor county, many children failed to complete primary schooling successfully and quality was low, and in Zhaojue, a poor national minority area, the majority dropped out before grade 6 and physical conditions were frequently well below national standards.

Over the last twenty five years nine year compulsory education has evolved and a range of policy initiatives have been launched. These address some of the problems identified in 1990. In 1985 the total number of primary children enrolled was about 138 million. This fell to around 120 million by 1990, but recovered to 140 million in the mid 1990s as a result of more effective efforts to improve participation rates. Since then the effects of a falling birth rate have resulted in a continuous decline in numbers to not much more than 100 million. Junior secondary enrolment began to take off from 1993 and increased from around 49 million to peak at over 65 million in 2003 since when it has been falling. Numbers in senior secondary started to rise in the late 1990s from about 10 million to over 20 million and are continuing to increase rapidly. Higher education enrolments also accelerated dramatically after 2000. Overall therefore China has seen its education system evolve in the context of demographic transition that has reduced the total numbers at primary and junior secondary level. At the same time participation at higher levels has grown rapidly as the labour market for those with higher qualifications has been allowed to develop.

In 2010 the average gross enrolment rate at primary level was about 112%¹, and net enrolment rates are probably over 95%. This does not mean all children attend school successfully. Significant but uncertain numbers who are in school in the age range of 6-11 years are over age and will drop out before reaching grade 6. Some in remoter areas may not attend at all, and some orphans and those with disability may be excluded from schooling. Junior secondary enrolment rates are much lower and appear to average between 80% and 85%. National statistics indicate that nominal drop out rates at primary are low and this is likely to be true in developed areas on the coastal plains. However, these statistics are highly aggregated and may not count those dropping out between years. Targets for low drop out rates may discourage accurate reporting especially for older children at junior secondary level. We have established that in the two poorer case study areas drop out remains a problem and that as many as half of all children fail to complete junior secondary school. Evolving patterns for enrolments are shown below in Figure 1.

¹ Gross rates can be over 100% because over age children are included.

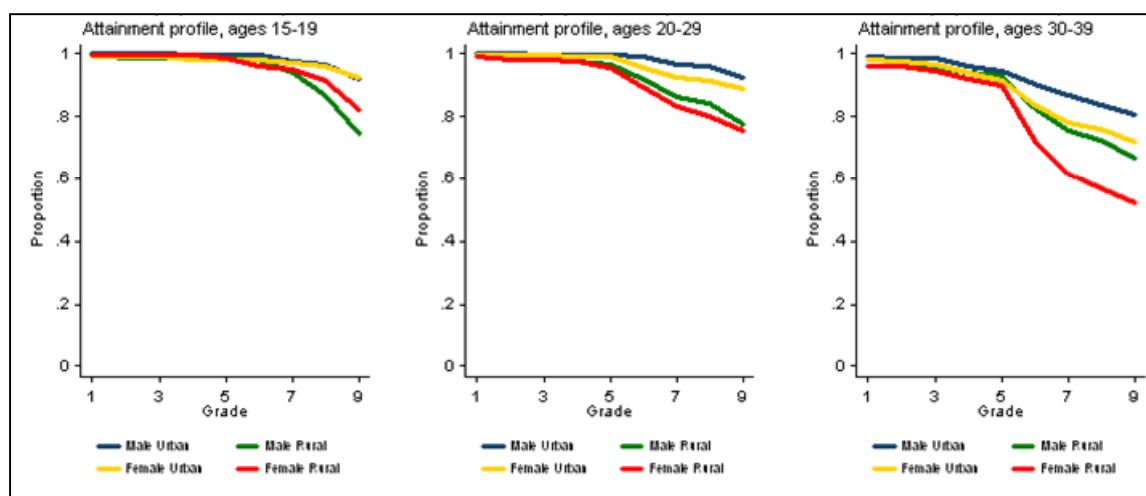
Figure 1: Enrolments from 1985 to 2008



Source: State Education Commission Statistics various years.

Participation in grades 1-6 has been high since the 1980s. However, in 1980 it was clear that above grade 6 rural children were very under represented and girls in particular failed to make the transition to secondary and persist as long as boys. In the 1990s there were large differences in enrolment rates in different parts of China in urban and rural areas (Lewin et al 1994b). In the 2000's urban rural differences have diminished considerably though it remains the case that rural children are less likely to reach grade nine. However, the differences have reduced and, perhaps surprisingly, it seems that girls are now more likely to persist to higher grades than boys, notwithstanding the fact that in some parts of China there are fewer girls in the population. Figure 2 shows how attainment has changed since the 1980s for three different cohorts – those born in the 1970s, 80s and 90s.

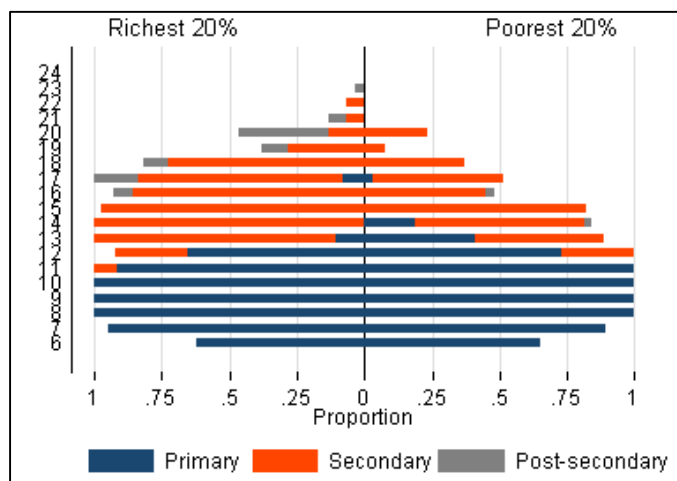
Figure 2: Education Attainment for Three Age Groups



Source: DHS Survey Data

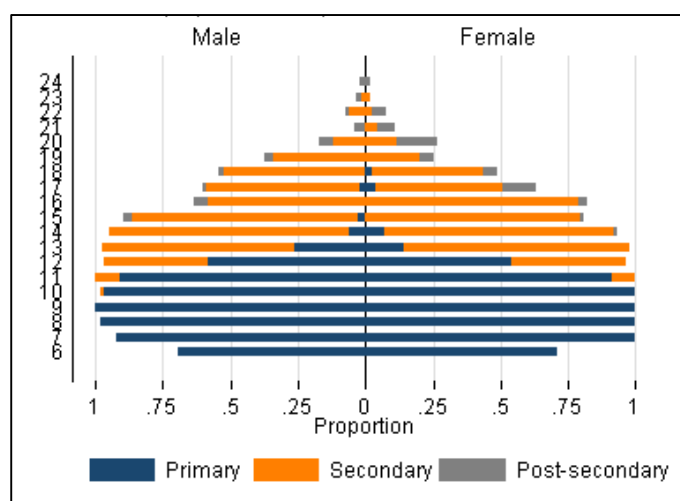
Participation rates remain strongly related to household expenditure. The richest 20% of children are almost all enrolled up to the age of 18 years or so, whereas nearly half of the poorest 20% have left school at the age of 15 years or below. Disproportionately the poor are still enrolled in primary when similar age, rich, children make the transition to junior secondary. Differences in enrolments between boys and girls are much less polarised than those related to wealth. Figures 3 and 4 show this.

Figure 3: Participation by Age and Grade and Wealth



Source: DHS Survey data

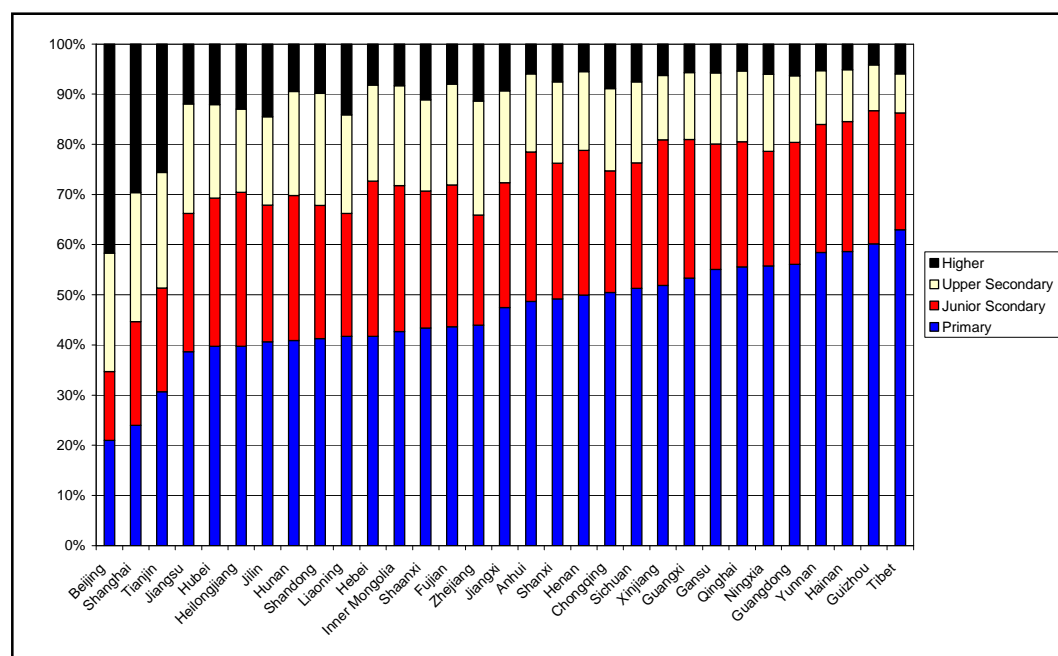
Figure 4: Participation by Age and Grade and Sex



Source: DHS Survey data

Enrolments and enrolment rates are unevenly distributed across provinces. Structurally there are large differences in the proportion of children at different levels of the education system. This is shown in Figure 5. Here it can be seen that Beijing, Shanghai, and Tianjin all have relatively few primary school children and large numbers of higher education students. At the other extreme are Tibet, Guizhou, Hainan, and Yunnan where well over 50% of all enrolments are in primary schools. This reflects overall enrolment rates and the demographic and socio-economic characteristics of the provinces.

Figure 5: Participation in Different Provinces



Source: MoE Statistics 2008

Other variations are important. Pupil teacher ratios vary widely between schools and administrative areas. On average the ratio is about 20:1 at primary level and 17:1 at junior secondary across China. These ratios appear to have fallen since the 1980s when the averages were about 28:1 and 20:1. Since then many more teachers have been employed and the numbers of pupils have been falling. In the 1980s as many as half of all teachers were not fully qualified and trained. Now the qualification rate is claimed to be over 95%.

Three points about teachers are important. First, these averages conceal very large differences between and within local areas and schools. The research in 1990 identified schools in the same areas with pupil teacher ratios below 10:1 and over 50:1. In 2010 the variations were even wider between less than 10:1 and over 60:1. Second, historically class sizes have been large and teaching loads low. Thus there may be more than two teachers per class in urban schools with more than 50 children in each teaching group. The opposite can be true in small and under enrolled primary schools where one teacher may be teaching every lesson. Third, in 1990 there were still large numbers of minban (people supported) and dai ke (substitute teachers) paid low salaries from local revenues. Though the numbers of these teachers have fallen they are still employed in two of our case study areas, despite new policy that is designed to ensure all teachers are on the government payroll and salaries are guaranteed by county level authorities independent of locally generated revenue.

In summary, growth in participation has remained uneven in terms of household income and reducing the gaps between rich and poor remains one of the biggest challenges. Gender differences in participation have largely disappeared. However, there are significantly more boys than girls in some population groups. Rural children remain disadvantaged but gaps have been closing. There are different patterns of participation by level in different provinces, with the lowest rates remaining in the Western region. Highly urbanised areas can have more higher education students than primary children, whereas rural Provinces have very few tertiary enrolments. This issues of horizontal equity (participation at the same level across regions or other categories e.g. girls and boys, urban, rural), and vertical equity (e.g. participation of different social groups by level of education) remain very important and may be the biggest challenge facing nine year compulsory education.

1.2 Policy Development for Nine Year Compulsory Education

Before discussing changes in financing and management of compulsory education it is important to review the recent policy initiatives that provide the framework for the implementation of China's universalisation of access to education. The major reform strategies for compulsory education include statutory requirements, increased financing, changed forms of decentralised management, and a series of other innovations.

Though education was prioritised for investment after 1949, universal access to basic education was not achieved before the 1960s. After fairly steady progress the Great Proletarian Cultural Revolution (GPCR) in the late 1960s marked a period of confusion about both participation and purpose in the school system. This ended after the fall of the Gang of Four in 1976. The "Four Modernisations" – agriculture, industry, defence, and science and technology – were revitalized by Deng Xiaopeng in 1978, returning to the agenda set by Zhou En-Lai in 1963 to accelerate industrial development. By the mid 1980s after a period of reconstruction and retrieval of the disruptions of the GPCR, and the beginning of the "open door" that sharpened comparisons with other countries, the focus shifted towards upgrading

China's human resources by firstly universalising the basic school system, and secondly rationalising and developing the higher education system.

Universal compulsory education was first mentioned in the 'Decision on Universalizing Primary Education in Whole Country' in 1980 (1980 Decision), and it was clarified by article 19 of The Constitution of the PRC (1982 Constitution), 'the State establishes and runs schools, and universalizes primary and secondary education'. In 1985 the 'Decision on the Reform of Educational System' (1985 Decision) was issued. This elaborated on the detailed measures needed to universalize nine-year compulsory education. This Decision delegated the responsibilities for compulsory education to local governments with clear targets and timescales for implementation in different areas under the *Difang Banxue, Fenji Guanli*, or DBFG System)².

The Compulsory Education Law of the People's Republic of China was enacted in April 1986 (Lewin et al 2004, Lewin 1989). This consolidated all the previous initiatives and was the first law for compulsory education in China. Though this was long after such legislation in many European countries, it predated the Education for All commitments of the international community in 1990 at Jomtien in Thailand, and in Dakar in 2000. It also anticipated by twenty years the Right to Education Act which was finally passed into law in 2009 in India.

A series of policy documents accompanied the new law including the 'Explanation of the Compulsory Education Law of the People's Republic of China' (2/4/1986); 'Opinions on the Compulsory Education Law by the State Education Commission, the National Planning Commission, the Department of Finance and the Department of Labour and Personnel' (11/9/1986); 'Contemporary Regulations on the Collection of Educational Sur-tax by the State Council' (28/4/1986); 'Bulletin on the Reinforcement of Re-building and Maintenance of Dangerous Classrooms in Primary and Secondary Schools by the State Council' (18/6/1986) and the 'Trial Implementation Methods on the Examinations for the Qualified Certificates of Primary and Secondary School Teachers by the State Education Commission' (6/9/1986). The full sequence of the most significant reforms signified by Decisions and Laws is indicated below.

² We are grateful for Dr Niu ZhiKui for the essence of this overview of recent policy initiatives presented at the INRULED conference in 2009 in Beijing.

Table 1: Major Policy Documents on Compulsory Education (1980—2010)

Time issued	Title	
	English	Chinese
1980.12	Decision on Universalizing Primary Education in Whole Country	关于在全国普及小学教育若干问题的决定 (<i>Guanyu zai Quanguo Puji Xiaoxue Jiaoyu Ruogan Wenti de Jueding</i>)
1985.5	Decision on the Reform of Education System	中共中央关于教育体制改革的决定 (<i>Zhonggong Zhongyang Guanyu Jiaoyu Tizhi Gaige de Jueding</i>)
1986.3	The Compulsory Education Law	义务教育法 (<i>Yiwu Jiaoyu Fa</i>)
1986.4	Regulation on Additional Educational Fees	国务院征收教育费附加的暂行规定 (<i>Guowuyuan Zhengshou Jiaoyufei Fujia de Zanxing Guiding</i>)
1993.2	Guideline for Educational Reform and Development of China	中国教育改革和发展纲要 (<i>Zhongguo jiaoyu gaige he fazhan gangyao</i>)
1994.9	Opinions on Implementation of the Two Basics (i.e. universalizing compulsory education and eradicating illiteracy among the young and middle-aged population)	关于在90年代基本普及九年制义务教育和基本扫除青壮年文盲的实施意见 (<i>Guanyu zai 90 Niandai jiben Puji Jiunianzhi yiwu Jiaoyu he Jiben Saochu Qingzhuangnian Wenmang de Shishi Yijian</i>)
1999.6	The Decision on Deepening the Education Reform and Enhancing the Quality of education	中共中央国务院关于深化教育改革全面推进素质教育的决定 (<i>Zhonggong Zhongyang Guowuyuan Guanyu Shenhua Jiaoyu Gaige Quanmian Tuijin Suzhi Jiaoyu de Jueding</i>)
2001.	Decision on Reform and Development of Basic Education	国务院关于基础教育改革与发展的决定 (<i>Jichu Jiaoyu Gaige de Jueding</i>)
2005.5	Some Suggestions on Enhancing the Balanced Development of Compulsory Education	关于进一步推进义务教育均衡发展的若干意见 (<i>Guanyu Jinyibu Tuijin Yiwu Jiaoyu Junheng Fazhan de Ruogan Yijian</i>)
2006.1	Notice on the Elimination of Extra School Fees for Rural Compulsory Education Students	关于对全国农村义务教育阶段学生免收学杂费的通知 (<i>Guanyu dui Quanguo Nongcun Yiwu Jiaoyu Jieduan Xuesheng Mianshou Xuezafei de Tongzhi</i>)
2006.6	The Revised Compulsory Education Law	义务教育法 (<i>Yiwu Jiaoyu Fa</i>)
2008.8	Notice on the Elimination of Extra School Fees to Urban Compulsory Education Students	关于做好免除城市义务教育阶段学生学杂费工作的通知 (<i>Guanyu Zuohao Mianchu Chengshi Yiwu Jiaoyu Jieduan Xuesheng Xuezafei Gongzuo de Tongzhi</i>)
2010.6	Mid and Long Term Education and Development Program (2010-2020)	中长期教育改革与发展纲要 (<i>Zhongchangqi Jiaoyu Gaige Yu Fazhan Gangyao 2010-2020</i>)

Source: Niu, 2011

More than half of China's population is rural with recent estimates suggesting that within the next ten years the proportion will fall to less than 50%. However, poverty is concentrated in rural areas in the interior of China and this is also where the greatest numbers of children remain out of school or fail to complete a full cycle of basic education. In the 1990s provinces were classified into three types as shown in Table 2.

Table 2: Development Priorities for Compulsory Education in Different Regions

Type	Provinces	Focuses
Type 1 (Eastern Region)	Beijing, Tianjin, Shanghai, Liaoning, Jilin, Jiangsu, Zhejiang, Shandong, Guangdong;	Higher level, higher quality compulsory education, encourage universal senior secondary education in places with capacity to implement
Type 2 (Middle Region)	Hebei, Shanxi, Heilongjiang, Anhui, Fujian, Jiangxi, Henan, Hunan, Hubei, Hainan, Shannxi, Sichuan, Chongqing;	Focus on developing rural education opportunities; consolidate and enhance progress towards the ‘two basics’
Type 3 (Western Region)	Inner Mongolia, Guangxi, Guizhou, Yunnan, Tibet, Gansu, Qinghai, Ningxia, Xingjiang;	Focus on the two basics within the national western development project; accelerate school construction in western rural areas; enhance education in minority areas and for women

Note: The two basics are: compulsory education and adult literacy programs

Source: Task Force (2008) *The Rising of a Country through Education (1978-2008)*, Beijing: Educational Science Publishing House; p.139, p.143;

Poor areas in all the regions have been prioritized for development. The Western region has remained most disadvantaged and has the most challenging conditions of poverty, infrastructure, environment and cultural capital. The Western region where Zhaojue is located has received more special funding than other regions, and rural areas like Ansai have also benefitted. The goal is to achieve the “Two basics” – universal nine year compulsory education, and young and middle age literacy. The “One have not and two haves” – no dangerous buildings, and classrooms and chairs for all - has shaped the interventions but has still not been achieved in all places. The “Two exemptions and One Subsidy” – no tuition and text book fees, and subsidies for poor students to attend boarding schools – also provides a key framework for policy. Many rural children are now in boarding schools from grade 4 or younger. Large numbers of small rural primary schools have been merged as boarding capacity has grown and infrastructure has improved. But in some of the poorest areas many small school remain. It is evident that major investments have been made to support the universalisation of nine year compulsory education in China and a number of special development programmes have been approved. The main ones are shown in Table 3. Rural education is being transformed to resemble that in towns more closely, but in the process new inequalities are emerging.

Table 3: Special Funding and Projects on Compulsory Education in Rural Areas (Funded by Central Government)

Title	Time	Amount	Contents	Beneficiaries
National Compulsory Education Project for Poor Regions.	1995-2000	12.5 Billion yuan	Hardware; dangerous school building renovation; teaching facilities and books; teacher and school principal training	586 national poor counties and 284 provincial poor counties, 250 million population
	2001-2005	7.25 Billion yuan	Free textbooks for poor children, IT education in poor areas	522 poor counties that failed provincial accreditation
National Study Aid for poor areas	1997-2000	130 Million yuan	Support for minority students for compulsory education	Minority Students
	2001-2005	100 Million yuan	Support for poor students for compulsory education	Western region poor students
Free textbooks fund	2001-2003	7 Hundred Million yuan	Support for poor students for compulsory education	Students from poor households
Fund for salaries of rural school teachers	Since 2001	5 Billion yuan/year	Subsidy for the pay for rural school teachers in poor middle and western region	Rural School teachers in poor middle and western region
Project for reconstruction of dangerous school buildings	2001-2003	3 Billion yuan/year	Eliminating existing dangerous buildings for primary and secondary schools	
	2003-2005	6 Billion yuan/year		
Distance learning project in rural primary and secondary	2004-2007	9 Billion yuan/year	Rural primary and secondary schools in the western region	86,400 teaching points, 252,000 rural complete schools
Rural Boarding school project	2004-2007	10 Billion yuan/year	Rural primary and secondary schools in the western region	6,400 new boarding schools, to support 3.2 million poor students

Source: Task Force (2008) *The Rising of a country through education (1978-2008)*, Beijing: Educational Science Publishing House, p. 145.

1.3 Management and Financing of Education

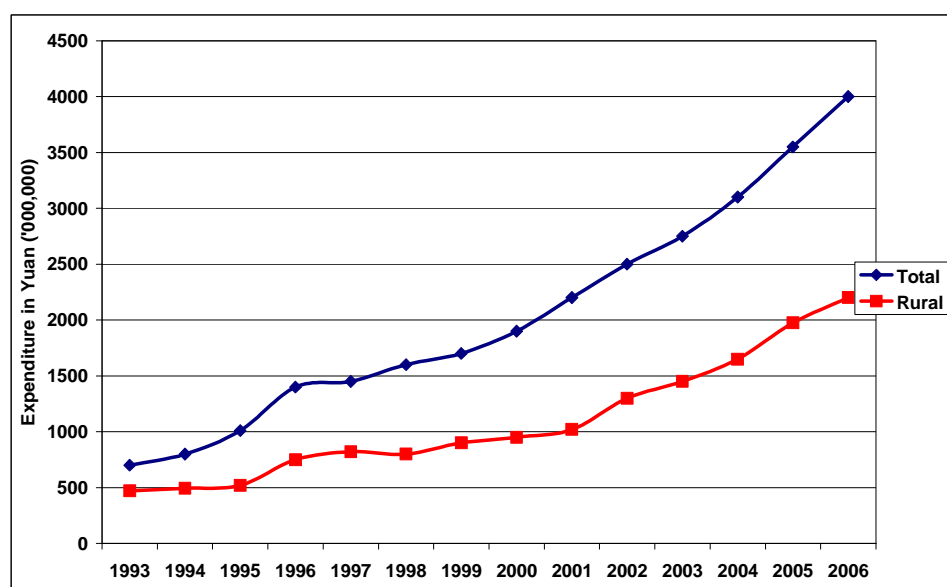
From soon after the founding of the People's Republic of China schools were managed and funded through a 'dual-track system'. This meant that urban schools were administered and funded by central government, and rural schools by local communities. Initially the local component was through the People's Commune & Production Teams, and later from 1980s after collectivisation was abandoned, by town and villages authorities. This dual-system did little or nothing to reduce the large disparities that existed between urban and rural areas in educational resources and development³. Many rural areas supported large numbers of

³ We are grateful to Dr Zhu Zhiyong for this basic information on recent trends in educational finance and the insights in his paper at the INRULED Conference in 2009.

“minban” (people supported) and substitute teachers using off budget sources and earmarked local revenues. These were often insufficient to pay salaries even though these were typically much less in rural rather than urban areas. Payments were often made in grain or other commodities and there were frequent complaints about irregular pay and crises of confidence and morale, especially when there was slow economic growth but demand for local revenue to support education remained high.

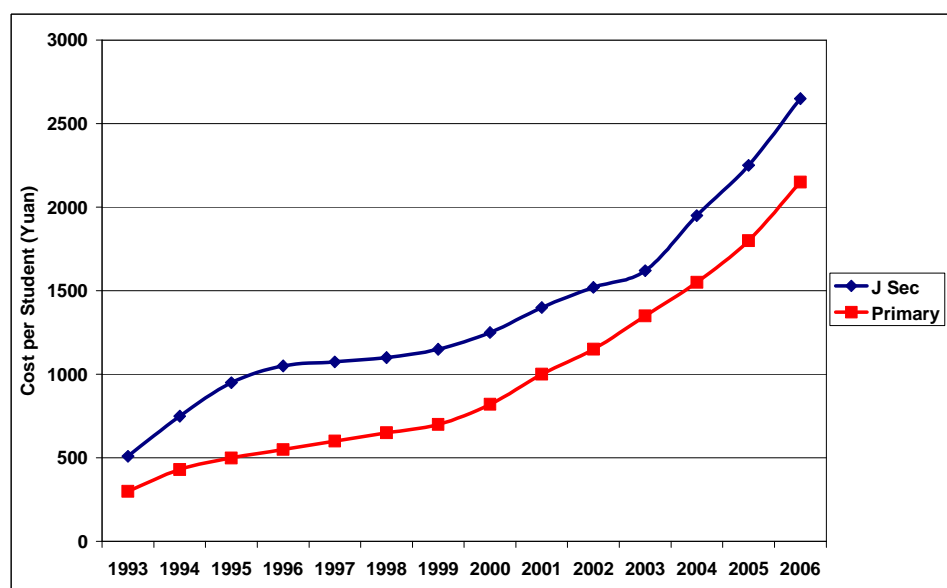
Across China total expenditure on compulsory education has increased from about 60 billion yuan in 1993 to 400 billion yuan in 2006, a nominal increase of 5.8 times (Figure 6). Expenditure on rural basic education has risen slower than that on urban schools, partly reflecting the fact that China is urbanising. Expenditure per student in compulsory education also increased (Figure 7). Thus at junior secondary level overall expenditure rose from 552 yuan per student in 1993 to 2,669 yuan in 2006, an overall increase of 3.8 times. The increase was from 473 yuan to 2,190 yuan for rural students, or an increase of 3.6 times. At primary level the figures were from 278 yuan to 2,122 yuan, (6.6 times greater) and for rural primary students from 250 yuan to 1,847 yuan, (6.3 times greater). The ratio of primary to junior secondary school costs per student fell significantly from about 2:1 to 1.25:1. This has made it easier to finance near universal levels of participation at junior secondary level, which would have been much more difficult at a ratio of cost per student of 2:1. It should be noted that the average cost per student conceals large differences. It is estimated that the cost of a place in a rural secondary school around Beijing can be in excess of 10,000 yuan. In the Western provinces it may be less than 2,000 yuan. Similar differences exist between the costs of primary school places between regions (Zhu, 2011).

Figure 6: Expenditure on Basic Education 1993-2006



Source: State Education Commission

Figure 7: Expenditure per Student 1993-2006



Source: State Education Commission

China has tried to adopt a balanced system of decentralization with shared responsibilities and costs across levels of government (Niu, 2011). This is linked to accountability measured against targets for implementation. The 1985 Decision and the 1986 Law decentralized educational finance and management. Local authorities became responsible for financing and implementing compulsory education.

From 1986 to 2000 most of the responsibility for basic education fell on the town and village level authorities who had to raise funds to cover both infrastructure and running costs with support from county level. User charges and other fees were charged to support the costs of running schools, and local educational surcharges were levied from farmers. Where feasible schools, were also encouraged to generate revenue themselves e.g. by renting their assets and facilities and sharing in the profits of associated enterprises, and by mobilising contributions from the community.

In retrospect it is apparent that the system failed to anticipate the problems that would arise in rural areas with weak economic development and limited capacity to raise revenues. From about 1994 it became clear that reforms were needed to ensure better central monitoring and control of implementation, and more equitable distribution of resources towards poorer locations. Changes to the general revenue raising system had succeeded in expanding total revenue but were not accompanied by changes in the patterns of allocation of funds that could enhance implementation of basic education in the poorest counties. Though decentralization and cost-sharing were supposed to have a variety of advantages including more local ownership of resources, better local decision making, and more revenue, this did not always happen. Town and village authorities sometimes simply transferred rising financial pressure to peasants in the form of additional educational charges and fund-raising requests for education in circumstances where peasants' incomes were insufficient to meet the demands. Defaults on paying teachers' salaries in the countryside became common in the least developed areas. Revenue raised was not always distributed equitably or in relation to need.

As a result over the last ten years administrative responsibility for basic education has been shifted upward from towns to counties, and there have been efforts made to strengthen the central monitoring of progress. Under the current system provinces, autonomous regions, and municipalities directly under the Central government make overall plans for basic education and county level administrations implement programmes. Compulsory education is now included in the central state financing allocations. The overall shift in emphasis is summarised as being from ‘the People’s education should be provided by people’ to ‘the People’s education should be provided by the state’. Rural tax reform has removed rural educational surcharges and tuition fees. Other charges remain however.

The financial guarantee system for rural compulsory education approved by the State Council in 2005 confirmed a county-centered rural compulsory education management and finance system. More recently (2005) the State Council announced and associated with a number of key principles that included:

- Eliminating student tuition and fees for the compulsory stage of rural education.
- Providing free textbooks to rural students at compulsory education.
- Subsidizing students in poor families with boarding allowance.
- Establishing a long-term mechanism for school building maintenance and restructuring.
- Consolidating and improving the mechanism of guaranteeing teachers’ salaries in rural primary and middle schools.

This system increased the ratio of central to local government financing and favoured poor areas in the central and western regions of China. A cost-sharing formula has been introduced whereby expenses for tuition subsidies are 8:2 central and local government in the western region and 6:4 in the central region; expenses needed for free textbooks are wholly assumed by the central government; and those for school building maintenance and restructuring are shared 1:1 by the central and local levels. Transfer payments are now made to counties to guarantee teachers’ salaries are paid on time directly into teachers’ bank accounts. Formula funding is used to allocate public funds to rural primary schools to ensure that lost income from tuition fees etc. is replaced, schools have adequate operating budgets, and funding becomes more equitable between schools in urban and rural areas. Notwithstanding this policy central primary schools continue to exist in most areas and receive the resources first. They may then distribute the resources in different ways to the schools they administer.

The rapid development of China’s economy has greatly strengthened its financial capacity. This has allowed the central government to support commitments to educational development and compulsory education through increased education spending. Budget allocations have included some attempts to increase equity by adopting more favourable subsidies for the poorest places, and especially to rural areas. This is a departure from historic practice and is a response to growing inequalities and the need to build a “new socialist countryside” and promote a more “harmonious society”. It is yet to be established to what extent these transfers are really sufficient in volume, and whether they are being allocated in ways that are efficient in increasing equity.

To explore some of the achievements and remaining challenges we now turn to the case studies that we have undertaken.

1.4 The Case Studies and Research Methods

In 1990 a team from Beijing Normal University designed and developed a research programme to explore progress in universalising enrolment in basic education following on from the enactment of the 1986 Compulsory Education Law. China committed itself to nine years schooling for all in advance of the well known World Conference on Education for All held in Jomtien Thailand in 1990, and did so with different time scales for advanced urban and less developed rural areas, and for national minorities.

The research explored progress and prospects in three areas. First Tongxian county south east of Beijing was selected as one of the three hundred richest counties in China. This area in 1990 had many common features with other peri-urban areas on the coastal plains of China where much of the population lives and where development was taking place most rapidly. Tongxian is part of the Beijing hinterland and it benefits from proximity to the metropolis.

The second case study site identified was Ansai county in Yan'an. Ansai is about 40 kilometres north of Yan'an city and was one of the three hundred poorest counties in China in 1990. Ansai lies on the edge of the Loess Plateau in the transition region between desert and plains and is an area which has some of the highest levels of erosion along the Yellow river. In 1990 it was not accessible by railway and the road system was poorly developed with few tarred roads. The land is potentially fertile where water is available and the economy was essentially agricultural in 1990. Though it was known oil existed in the area there was no commercial production at that time.

The third area chosen for the research was Zhaojue, which lies 100 km east of Xichang in the south west of Sichuan Xichang was the capital of the Yi Autonomous Prefecture in 1990. Zhaojue is located in the rugged Liangshan mountains near the head waters of the Yangtze river and much of the area is at high altitude reaching up to 3,500 meters. Though it is much further south than Tongxian or Ansai its climate is harsh with snow bound winters and short summers. Much of the land consists of steep mountain valleys with small areas of level ground alongside river courses. The Yi national minority speak their own language and have a feudal history. Since the 1950s the Yi have been integrated into the administrative system of China. Pastoralism and agriculture remain the basis of the economy, with modern practices slowly being introduced to increase productivity. Educationally the area lags far behind much of the rest of China (Lewin 1995).

The programme of research had a number of purposes. First, it sought to generate insight into the rate of implementation of the nine year compulsory education policy introduced in 1986. The primary goal was to establish actual enrolment patterns and validate key indicators of system performance - gross and net enrolment rates, repetition, drop out, and promotion rates, and levels of male and female participation.

Patterns of enrolment, information on the progress of age cohorts, and changes in these patterns over time provide, quantitative indications of progress towards universalising access.

Second, the research collected information related to school quality, including that which illustrates the pattern of deployment of human and physical resources, and the levels of educational financial resources available to support learning and teaching. This included insight into the availability of learning materials, equipment and furniture, school buildings, the deployment of teachers, class size in different grades, the qualifications of teaching staff,

and where available, achievement test performance.

Third, the research explored the mechanisms used to support policy implementation. This includes investigation of administrative arrangements, the capacity of the infrastructure to support basic education policy, monitoring and evaluation systems, school supervision and inspection regimes, in-service support, intervention programmes, community resource mobilisation, and other incentives to increase participation.

In each case the intention was to develop a picture of the implementation of policy grounded in data validated at the local level. At the time this was very unusual in China since most evaluation of progress was based on aggregated statistical data and self reporting of target meeting. The research explored the reasons for the varying levels of success in implementation and identified policy initiatives that were more rather than less promising.

Over the two decades since 1990 China has been transformed. From an economy smaller in value than the UK, China is now the second largest economy in the world. On the three large plains where most of the population live incomes have risen dramatically and China's GDP per capita has risen from below USD1,000 to over USD5,500 at purchasing power parity prices. Economic growth has been stellar with an average approaching 10% a year for twenty years. From an inward looking society with a closed door, to links to the outside world China has opened its economy to joint venture companies, energetically acquired new technologies and transformed its productivity in manufacturing to be the most competitive in the world.

China has managed a transition to mass primary and secondary schooling that now enrolls the great majority of children. Demographic transition has meant that the population of school age has been falling, allowing more to be invested in education per child at the same relative cost when compared to countries with high population growth. Enrolment rates, which were already high in most areas of China in 1990, are now near universal levels except in some poorer western provinces and in under developed national minority areas.

Despite the impressive successes there has been growing concern that vertical and horizontal inequalities have risen, some populations have lagged behind in terms of participation and attainment, and that quantitative expansion must now be accompanied by more emphasis on quality improvement and a better matching of educational investment to the increasingly differentiated learning needs of the next generation.

In 2009 the research team decided that it would be timely to return to Tongxian, Ansai and Zhaojue to take stock of the changes that had occurred and re-evaluate the transitions that had taken place. This could then provide an opportunity to revisit the insights published in *Implementing Basic Education in China: Progress and Prospects in Rich, Poor and National Minority Areas*, update data on participation and policy and practice at the local level, and reflect on the amount and quality of progress. This then provides a basis for identifying what lessons might be learned from the experience of rapid change, and speculating on which might have analogues of relevance to other countries pursuing Education for All Goals. As a result return visits were scheduled to the three sites in 2009 and 2010.

The original research programme had three phases⁴. In the first phase the research design was finalized, instruments were developed and data collection techniques were refined. Instruments were piloted and improved. Analysis of the data was undertaken and draft case study reports were written at the school, district and county level. These were then integrated into a single analysis. Phase two of the research extended its reach to two other locations in other parts of China identified for intensive study. The fieldwork then took place and the analysis of data and writing up were completed. The final phase consisted of integrating all the material from the various sub-studies to distil the most important findings.

Different techniques were used to collect quantitative and qualitative data and cross-check and corroborate between sources. Structured interview schedules were used alongside semi-structured interviewing techniques. Secondary data was collected from schools and local authorities. Questionnaires were also deployed in some parts of the enquiry. Schools constituted the central unit of analysis for data collection. Records, interviews and observations at school level provided the basis for the interpretation of data from other levels. Focused questioning and enquiry was used to explore patterns of implementation and juxtapose data obtained from different levels on issues of concern.

There were three distinct levels of data collection, the county, district and school. In each case study area a progressively detailed programme of fieldwork was conducted. First, an inventory exercise was undertaken at the county-level (xian) to gain an overall portrait of key indicators on progress towards basic education goals. This included data on enrolments, participation and progression and information on income and educational expenditure. The research then focused progressively down to the district (xiang) and village (cun) level. Within each of the three case study counties two districts were identified for intensive scrutiny. The choice of relatively economically developed and underdeveloped districts was made on the basis of statistics available at the county-level, bearing in mind practical considerations of accessibility.

⁴ Further details of the original research design can be found in *Implementing Basic Education in China: Progress and Prospects in Rich, Poor and National Minority Areas*



Each district typically has about 15-20 primary schools and 2 to 4 lower secondary schools. A selection of schools was made for intensive fieldwork. This sampled from the four main types - junior secondary (grade 7-9), central primary (grade 1-6), complete primary (grade 1-6), and incomplete primary schools (grade 1-3 or 4). Fieldwork teams were based in each district for about 10 days for each period of field work. The fieldworkers were based in the local community and therefore had opportunities to explore community characteristics and perspectives through conversations and informal interviews.

At the county-level a typical initial visit consisted of a half day being introduced to the county by the local leadership and being briefed by different officials. After these introductory meetings structured requests for data were left at the county offices for completion at a later time and documentary material was collected. After working at district-level further

interviews were held at county-level to gather perspectives on the issues raised by the fieldwork. At the district-level most fieldwork periods also commenced with a formal introduction by local officials to the district and its educational development. Similar strategies were used to collect basic data i.e. standardized forms were explained and left to be completed and documents were collected. It was possible to get to know district-level officials well since the research team lived close to the local government courtyard for the duration of the fieldwork. At school level the pattern of a typical condensed case study day for a fieldwork team of two researchers included the following kinds of activity:

- (i) Interview with the principal.
- (ii) Observations in a number of classes.
- (iii) Interviews individually or in groups with selected teachers and students.
- (iv) Informal conversations with teachers and pupils during teaching breaks.
- (v) Unplanned walks around the community to identify out-of-school children, and explore informally perceptions of parents and other community members.
- (vi) Collection of documentation.
- (vii) Examination of samples of pupils' work.
- (viii) Re-interviewing the principal about issues that were emerging.
- (ix) Team meeting after school to analyse and summarize insights from the day's data collection. Planning of next day's fieldwork.
- (ix) Questionnaire to teachers and principals.

For the follow up research conducted in 2009-2010 the methods used mirrored those originally developed. Wherever possible the team returned to the same schools and local authority offices and collected similar data. Though every effort was made to collect comparative data this was not always possible. Local authority boundaries had changed, small schools had been merged with larger schools, and comparable assessment data was generally not available.

In 1990 a series of observations arose from the analysis of data.

1.5 Observations from 1990

To help set the scene for the interpretation of the new data collected it is useful to revisit some of the findings reached in 1990 in the last chapter of *Implementing Basic Education in China: Progress and Prospects in Rich, Poor and National Minority Areas*. In summary:

- In Tongxian and Ansai demographic transition had been taking place in the 1980s to lower levels of population growth. In Zhaojue the birth rate remained high with consequences for the demand for new school places. Demographic change was set to continue but it was not clear how it would unfold.
- Though enrolment rates were improving many children were not completing the primary cycle successfully in Ansai and Zhaojue. Substantial levels of late enrolment, over age promotion to the next grade, and significant levels of absenteeism meant that much learning time was compromised and many children fell behind an on-schedule graduation pattern of progression in Ansai and Zhaojue. Poor record keeping made it difficult or impossible to trace the educational progress of children.
- There were concerns that the system of educational administration in 1990 was not well suited to purpose in implementing nine year compulsory education given the capacity constraints and resource shortages typical of the poorest countries and

national minority areas. It was noted that the implementation of basic education policy at a local level depended both on the regulatory structure and policy framework provided by higher levels, and on the adequacy of the school management and resource allocation that converts these aspirations into reality.

- Management practices that seem counter productive were common in 1990. Thus often in the case study schools the pupils in the lowest grades had the worst learning conditions. Class sizes were largest in the lowest grades, often by a factor of 3 or 4 when compared to grade 5 or 6, especially in rural schools. Where furniture was in short supply it was the grade 1 and 2 classes that had no chairs and used piles of bricks as desks. Qualified teachers were disproportionately allocated to the upper grades. Repetition rates tended to be greatest in the first grade, suggesting that learning was least effective at this level. Where money was collected from pupils to assist in school expenses, it was collected from all pupils though it seems that where investments were made in learning resources they tended to be for the benefit of the higher grade classes.
- Notwithstanding the complex and multi dimensional methods of raising revenue and allocating resources in place in 1990, there appeared to be chronic underfunding in Ansai and Zhaojue in relation to the achievement of basic education goals. Though per capita funding was comparable with richer areas, this ignored the fact that many children were not enrolled, and that the stock of infrastructure was greatly inferior.
- Funding in 1990 also provided direct support for salaries only for government teachers, though many of the teachers were minban and substitute teachers depending on support from local resources earning a third of government teachers' salaries or less. Capitation payments for non-salary recurrent support to schools were linked to the number of government teachers in a school further disadvantaging the poorest areas.
- Growing disparities in non-government income were noted such that Tongxian was spending up to six times more per pupil than Ansai in the late 1980s. Within Tongxian the ratio of cost per pupil was as much as 4:1 between districts. Central primary schools appeared more often than not to hold on to common resources and distributed little to the cluster of complete and incomplete schools with which they were associated.
- Teacher salaries were becoming subject to performance related additions in 1990 through "structured salary schemes". This, and differences in off budget income, meant that teachers income in rich areas could be as much as double their salary, whereas in poor areas little additional benefit was available.
- Teacher class ratios at primary level generally varied between 1:1 and 2:1. The lower levels were found in incomplete primary and small rural schools. At lower secondary level the ratio was frequently around 2:1 and reached 3:1 in specially favoured schools. This coupled with pupil teacher ratios of about 20-25:1 suggested that teaching loads on some schools were relatively light with teachers teaching about half the number of timetabled periods.
- Teachers motivation remained a substantial problem in 1990, especially in rural and remote areas where living conditions were very basic and teachers lives difficult. Attempts were being made to increase the proportion of locally born teachers in Zhaojue since many of the Han teachers prefer not to work in minority areas. Teachers difficulties included feelings of low status in society; low incomes; limited fringe

benefits in terms of the quality of housing and medical care; difficulties in obtaining city and town registration for spouses and children; lack of safety in some areas. Minban teachers are particularly deprived since they have lower incomes than government teachers, often seem not to receive the full amounts of grain and locally provided income to which they are entitled, and have virtually no fringe benefits.

- Allocations for books and equipment tended to be very low and of the order of 1 to 2 per cent of total expenditure. The consequence of this was that most rural schools visited had very little in the way of learning resources apart from textbooks which were usually purchased by parents. No library books were to be found in the majority of rural schools. Subsidies were given to schools to purchase textbooks in Zhaojue.
- In Zhaojue enrolment rates for girls were between 10% and 15% of the total at primary level. In Ansai the situation was better and improving, and in Tongxian the enrolments of girls were similar to those of boys. All girl classes existed in Zhaojue and were thought to be effective. Hostels were also being built for girls to encourage enrolment and retention.
- Pre-school classes were becoming widespread in the case study districts in 1990. They varied from those which appeared well run with structured learning tasks and qualified teachers with appropriate educational materials, to those which were poorly organised with unqualified staff operating for profit.
- Not many areas had inspection and monitoring systems established. Where they did exist most attention seemed to be focused on administrative inspection, with little attention given to quality issues. There was no considered analysis of outcomes that would give deeper insight into the status of teaching and learning. Actions subsequent to inspections rarely seemed to involve improvements to curricula, teaching methods, and learning materials. In both Zhaojue and Ansai the use of examination data to improve school performance seemed to be at a very early stage. Beyond collecting information from tests there seemed to be little attempt to design interventions to assist school with low performance. More attention seemed to be focused on further improvement of the scores in the best schools than on closing the gap between the best and the worse.
- The need to standardise definitions of key indicators used to measure progress and to provide administrative targets, and the need collect more reliable data on enrolment, progression, completion and drop out.

The scene is now set to present data from each of the three case study sites and raise issues of current status and comparisons with the past which we develop with each narrative. The final chapter will draw out lessons from the experience of change and transition that the three very different case study sites have experienced.

2. Compulsory Education in a Rich District Tongzhou in Beijing

2.1 Social and Economic Background

Tongzhou District lies about 20 km southeast of Beijing, at the northern end of the Grand Canal, and covers about 900 square kilometres. Farmland occupies about half the total land area. The District is well placed geographically to take advantage of the rapidly developing industrial and service sector economic activity and is now well served by transport infrastructure linking it to the capital and to the hinterland in Hebei. Tongzhou has become one of the satellite towns of Beijing and has benefitted from being identified as a special development zone.

Tongxian has been upgraded administratively to become Tongzhou. This signifies the transition of the district from being agriculturally based to being industrial and service sector focused, and peri-urban in character. The upgrading of Tongxian to Tongzhou has been accompanied by changes in administrative structure and rationalization in order to increase efficiency, and reduce duplication. Towns and townships have been amalgamated. Thus in 1990, under the raw material and agriculture-oriented county management structure, the county comprised 24 towns, townships and districts, and 473 villages. Today it comprises 10 towns, 1 township, 4 sub-district offices, 67 residential committees, and 480 villager committees. Xiji Town and Langfu Town, which we surveyed in 1990 have now been amalgamated together. The underdeveloped Dadushe Town has been integrated into Majuqiao Town. These changes also reflect urbanization and inward migration from more remote and poorer areas. This means that it is often difficult to compare, precisely, changes from 1990 and 2010 (Wang 2001).

Tongzhou has been physically transformed from a small town with a provincial character to a bustling city with wide boulevards and modern multistorey buildings along the main street. What was a poor rural village environment in Dadushe is now unrecognisable, as Majuqiao has developed its industrial zone with corporate headquarters and modern industrial buildings. Xiji was the richest xiang and Dadushe the poorest in 1990. In 2009 the situation has reversed. Dadushe is now in Majuqiao which is the richest part of Tongzhou, and Xiji is now last but one in the ranking. Xiji has changed much less than Dadushe with much of the infrastructure remaining recognizable.

Most recently plans are underway to accelerate development further with five year planned investments to “wake up” the district and invigorate its commercial and cultural life. These plans include building a new town to accommodate an increasing number of migrants attracted to the area by its rapid development and buoyant labour market. Environment friendly town planning, shopping malls and cultural centres are included in efforts to make the city more attractive as a location for business and counterbalance the growing numbers who now commute daily to jobs in Beijing (MetroBeijing, March 14th, 2011). The number of migrants in the area has increased dramatically. In 1990 there were very few and now it is estimated that there are between 400,000 and 500,000 migrants across Tongzhou, especially in Majuqiao where the Yizhuang development zone is located.

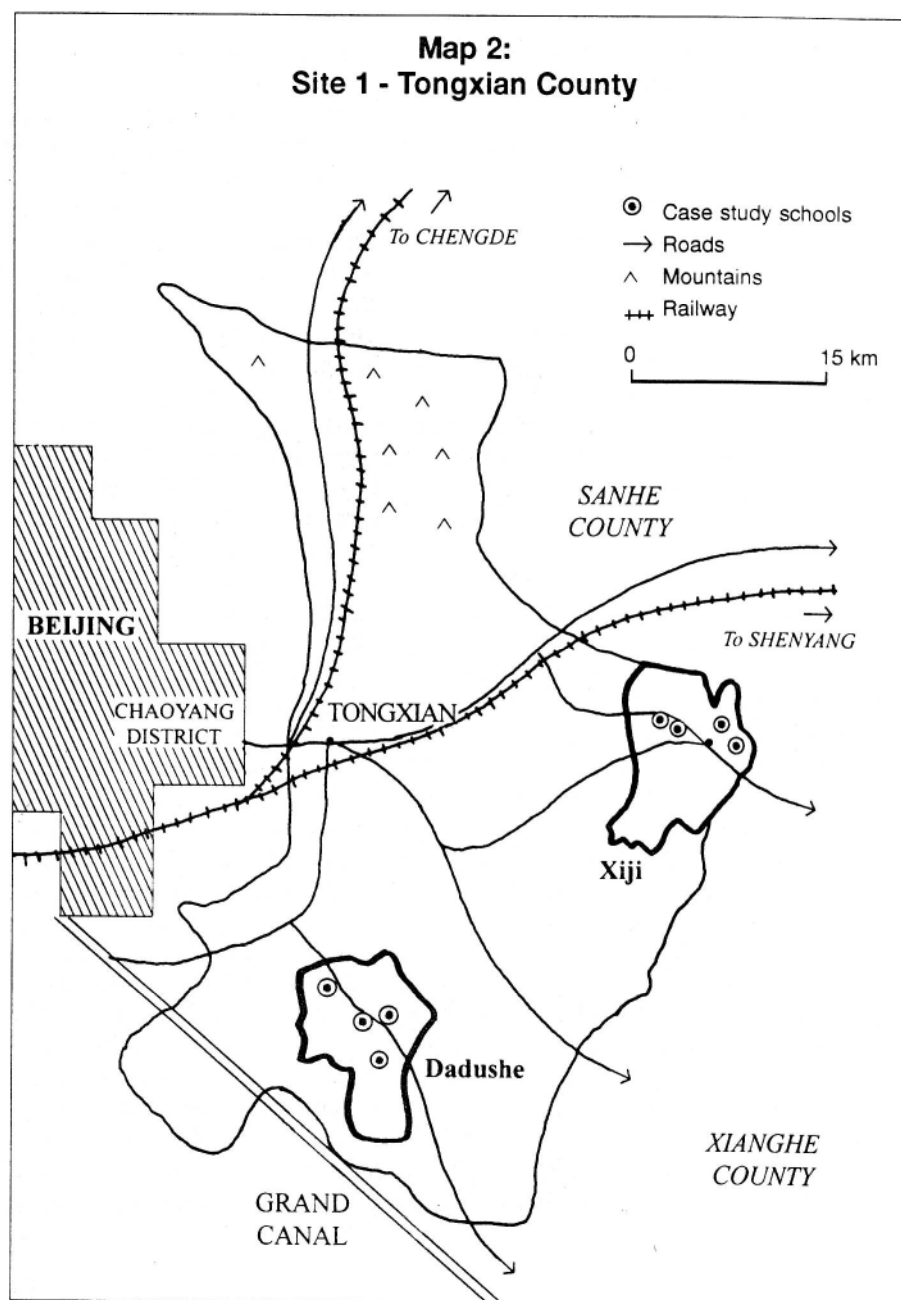
The economic growth which began in the 1990s in Tongzhou accelerated in the 2000s. The district remains amongst the richest group of administrative districts in China. Urban per capita income is now about 17,000 yuan, and rural income about 8,300 yuan. This is much higher than in Ansai and Zhaojue. Two rural xiang were selected for study in 1990. In Xiji the

richest the average per capita income was about 2000 yuan and in Dadushe, the poorest, it was only 1200 yuan. At that time Xiji generated most of its income from small scale industry, and Dadushe was predominantly agricultural. Whereas in 1990, 77% of the total population were agriculturally dependent, this had fallen to only 55% by 2006. Industry and service sector activity now account for most of the economic output by value and will soon account for most employment. Increasing numbers now commute to Beijing and its suburbs using the multi-lane highway and high speed train which have been constructed.

In Tongzhou as a whole the resident population has grown modestly from about 580,000 in 1990 to 637,000 in 2006, an increase of only 10% (excluding migrants). Tongzhou has seen a sharp decline in the birth rate. In 1990 the rate was 15%. By 2003 this had fallen as low as 4%, though it recovered in 2006 to about 7%. The birth rate amongst residents has tended to be greater than that of migrants, reflecting the circumstances of migrants amongst whom larger numbers are likely to be single.

There have been dramatic changes in attitudes towards the one-child policy since 1990, especially in the rural villagers in Tongzhou. In 1990 family planning was being promoted and meetings and mobile loudspeakers were being used to persuade families to have only one child, because the policy was only partly successful. The Birth Control Office showed that there were 264 newborn infants six years before and there should have been 264 children of school age in school by 1989. In fact the school age population was 504, and the actual enrolment was 607. Clearly extra births were taking place and not being reported. In 2009 the situation had changed. The attitude of rural people in Tongzhou appears to have become closer to that of urban residents and most appear to have only one child.

Several reasons were given by those interviewed for changing attitudes. First, there were rising costs of education, and increasing social competition, which were thought to intensify the risks of success in raising children and finding them jobs. Second, more young couples of child-bearing age were making the choice to pursue their own development goals and a higher quality life and were placing a lower priority on raising a family. Third, several informants indicated that the traditional concept of “bringing up sons to support parents in their old age” was outmoded since it had become very uncertain where children would go to work or study in the future, and it was unrealistic to depend on them. Interviewees in Xiji also argued that discrimination against girls at birth had ceased to be a problem and enrolment patterns seemed to confirm this.



2.2 Change and Transformation in Xiji and Dadushe

To understand the educational transformations in the case study districts it is necessary to elaborate on the more general changes that have taken place. This provides a reminder that change is often not linear and may be subject to the influence of many different factors, only some of which are under the control of local planners, and that changes are often interconnected.

Xiji is southeast of Tongzhou, and located at a communication junction between Beijing, Tianjin and the Hebei and northeast hinterland and was historically a gateway to Beijing. Now the Jingjin expressway, Tongxiang highway and Jingshen expressway all run through the township, with local access points. Twenty years ago Xiji had jurisdiction over 36 villages.

After the amalgamation in 2002 with Langfu Town, it now presides over 57 administrative villages, with a population of 46,000 or about 1.8 times as much as in 1990. Development zones have been identified and new businesses have been attracted into the area, including some with multinational ownership. The agricultural economy has been reformed and is centred on the Grand Canal fruit production belt and Chaobai River vegetables production belt with newly developed greenhouse facilities and a developing riverside ecotourism and sightseeing area.

Despite these and other developments Xiji itself has not changed very dramatically. There is little difference in the appearance of downtown businesses, local roads, and residents' housing from the past. Now the main sources of income are grain crops and market gardening for fruits and vegetables, and for some, jobs in Beijing or in other parts of Tongzhou District. The residents' per capita income appears to be between 5,000 and 6,000 yuan now, much lower than the average for Tongzhou city. Local revenue is argued to be only sufficient to cover payroll finance, with little left for investment in infrastructure and educational development. Structural changes have resulted in a decline in relative prosperity. Though incomes have risen, they have done so more slowly than in Dadushe. Formerly, most of the output value came from synthesized processing, spinning and other manufacturing industries, and agricultural labour now only accounts for 10% of all employment. The shift back to agriculture has occurred as Xiji's rural industry has relocated to areas with lower costs.

In 2001 Dadushe Township of 16 villages amalgamated with the 34 villages of Majuqiao Township which is located in the southeastern suburbs of Beijing, southwest of Tongzhou District. It is also a communication hub strategically located between Tongzhou, Daxing and Hebei-Beijing-Tianjin corridor. Close to the Liangshui River. The 6th Beijing ring road crosses the district and the Jingjitang Expressway passing through it. The present administrative region of the town covers 57 administrative villages. In 2007, the per capita income of Majuqiao for local residents was about 10,000 yuan. The population had reached about 43,000 or about 2.5 times that in 1990. As noted above there is now a very substantial migrant population. In this area there are over 100,000 migrants which is more than twice the resident population.

Nearly half of the land in Majuqiao has been allocated to high and new technology industrial development zones, and it is one of the 33 suburban prioritized centre towns designated by Beijing Municipal Government. These enjoy preferential policies on income tax, import and export tax, depreciation of fixed assets, land utilization, and qualify for performance-based grants, and financing. Technology intensive environment industries and the headquarters of logistic enterprises have become the two largest industries in the town. Majuqiao is also an important production base for vegetables, grain and subsidiary foodstuff. Over two thirds of the workforce is employed in industry and a quarter in the service sector, compared to nearly 90% in agriculture in 1990. Over 60 large scale industrial enterprises are operating and the number continues to grow. Majuqiao is also the site of large scale developments in real estate which will generate more housing and jobs related to construction. Revenues have been rising fast as a result of the rapid economic development and it has been possible to invest in infrastructure and educational quality to a greater extent than in Xiji.

Xiji's relative decline compared to Majuqiao can be put down to a variety of factors. First, when the market economy replaced the doubletrack pricing system in the 1990s the phasing out of the subsidies meant that the clothing industry based in Xiji ceased to be competitive. Second, metal fabrication industries in Xiji only undertook early stage processing which

added little value compared to producing finished products. Third, the location is less favourable for changing patterns of commerce and real estate development than Majuqiao. Lastly, Xiji has suffered from serious brain drain. Its relatively slow development has meant that aspirant parents and professionals have moved to Tongzhou City and Beijing. Even primary teachers prefer to live in Tongzhou City and commute. This is in strong contrast to Majuqiao which is growing and attracting large numbers of migrants.

2.3 The Evolution of Compulsory Education in Tongzhou, Xiji and Majuqiao

In Tongzhou as a whole primary level enrolments have been falling and schools have been consolidated and merged to reflect changing numbers of school age children, and changes where the population is located as urbanization occurs. The number of primary schools in Tongzhou declined from over 300 to just over 100 between the case study periods. During this time all 130 incomplete village primary schools were closed and amalgamated with complete schools.

In Xiji the 24 schools fell to only 7 despite the incorporation of Langfu schools, and all 8 village schools closed. One central primary school now oversees 6 complete primary schools. Of the 13 primary schools in Dadushe Township only 3 remain after the merger with Majuqiao. After a period of mergers there is now only one central primary school and two complete primary schools.

The distance that children need to travel to get to school has increased for those who live in the villages, as a result of school mergers. Majuqiao Township government has invested 200,000 yuan a year to hire 11 buses to commute between schools and home. The bussing system now covers about 750 primary school children living in 25 administrative villages. In Dadushe primary school 500 children take school buses between home and schools. The costs are shared with households and amount to 50 yuan per student each term. The scheme is welcomed by parents. In contrast in Xiji there is no organised bussing. Some of the students in the complete schools have to walk large distances between school and home. In Xiaolin primary school children walk to school together and many have to walk for 40 minutes or more. The school has a regulation that children below 12 cannot use a bicycle for safety reasons. Some parents carry younger children to school by bicycle. The Xiji Township government does not have the resources to hire school buses as in Majuqiao.

The picture is different at secondary level and the numbers have changed little. Overall there were 45 secondary schools in 1990, including 9 complete secondary schools, 1 senior secondary school, and 35 junior secondary schools. The total number now is 46. However, the structure has changed as participation at this level has increased. There are now 9 senior secondary schools, 7 complete secondary schools, 24 junior secondary schools, and 6 nine year schools. The demand for senior secondary places has been increasing as more pupils graduate from grade 9.

Along with these changes schools run by non-government organizations have appeared which did not exist before. These operate at all levels and the number of kindergartens, elementary and secondary schools, and colleges increased from 11 in 2001 to the present level of 31. These predominantly cater for wealthy students and include high quality private schools, some with international partners. Collectively these may enrol about 10% of students.

Patterns of enrolment at primary level have been changing and numbers falling. The number of students in Tongzhou in primary schools in 2005 was 28,700 compared to 65,100 in 1990. This represents a fall of 36,400 or a 56% decline. In Xiji, primary schools enrolled 2,920 children in 1990 and only 1150 in 2008. Enrolments fell continuously through the 2000s as shown in Figure 8. This illustrates that grade 1 is consistently smaller than grade 6, and entry numbers in grade 1 have been falling year on year.

This is in contrast to Majuqiao where enrolments appear to have increased. In Dadushe in 1990, 1,870 were enrolled. In 2008 the number was 2,240 representing about a 40% increase. However, if migrants are excluded, local children only numbered 1520, or nearly 20% less. As in Xiji enrolments overall are falling and in the 2000s grade 1 was always less than grade 6 (Figure 9). The number of classes fell in both places at about the same rate (Figure 10).

Figure 8: Enrolment by Grade Xiji

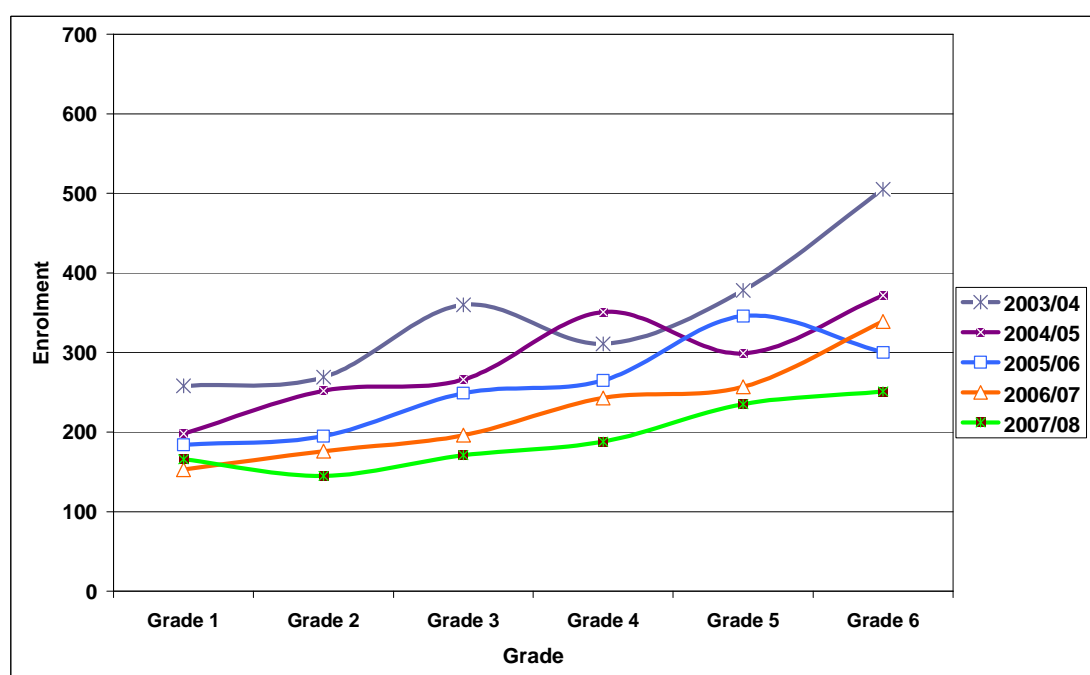


Figure 9: Enrolments by Grade Majuqiao – All Children

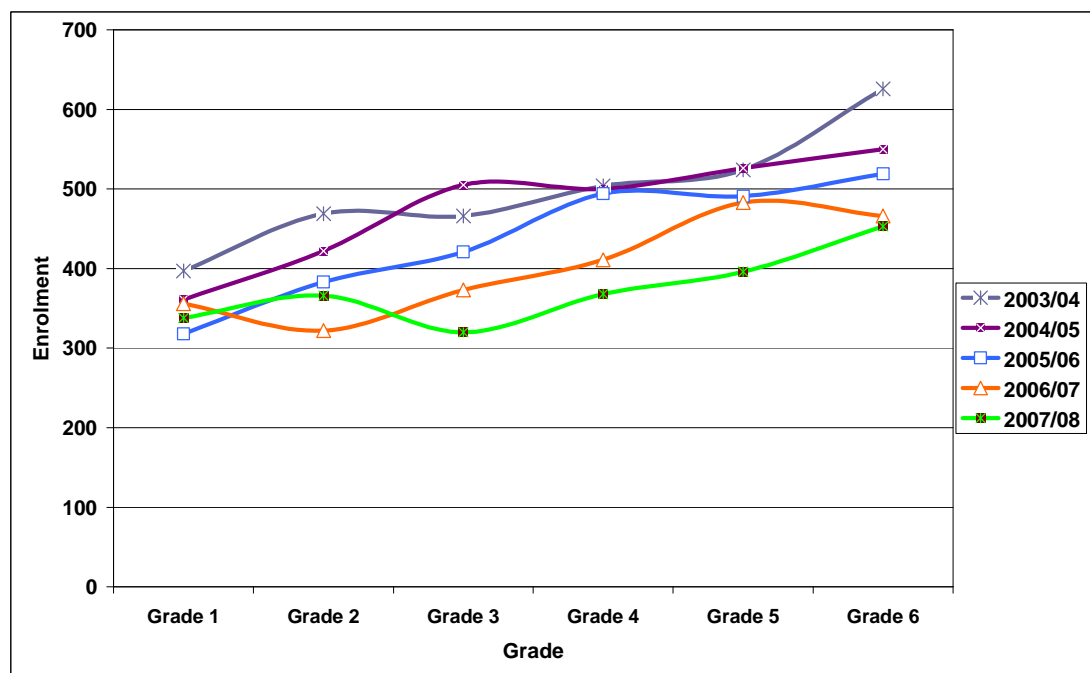
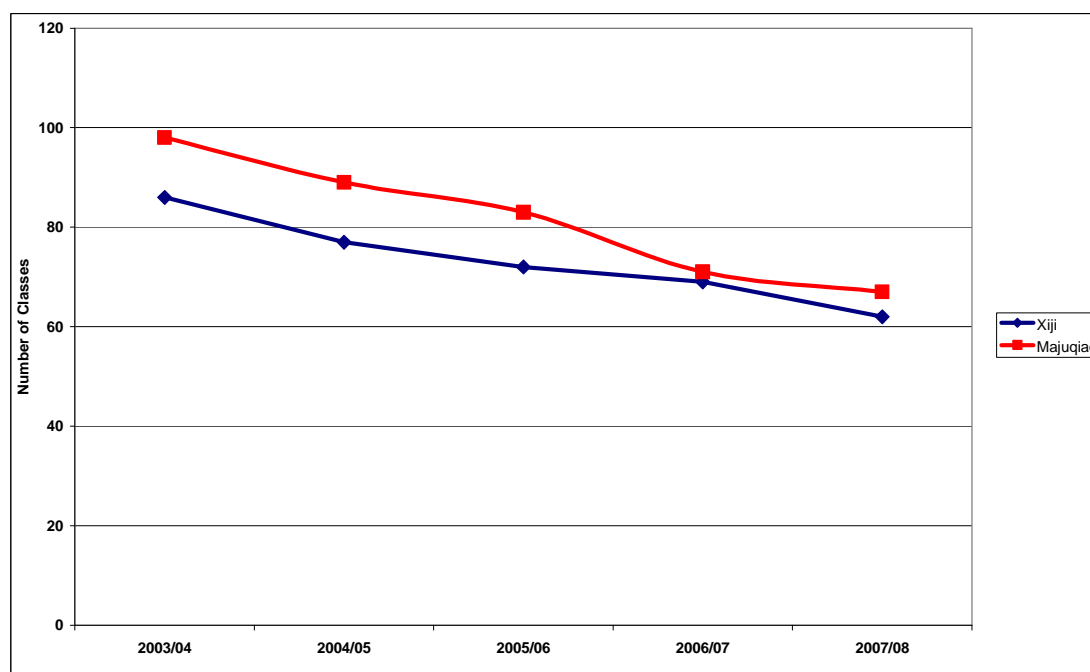


Figure 10: Number of Classes in Majuqiao Primary Schools



Class sizes have fallen since the 1990s but have been stable in the 2000s. In Xiji class size was around 32 in 1990 and in the 2000s has averaged about 21. In Dadushe they were 25 in 1990 and are now about 34, partly as a result of the influx of migrants. Class sizes tend to be larger in the central primary schools as there is excess demand for entrance. There is not much variation in class size between grades 1 and 6.

As far as we could establish drop out in 1990 in Xiji and Dadushe primary schools was minimal, though it appeared to be significant at secondary level in Dadushe. In 2009 enrolments by grade suggested that there was very little attrition. Thus enrolment in grade 1 in 2003 in Xiji was 258, in 2008 251 were enrolled in grade 6. In Majuqiao the numbers were 279 in grade 1 and 280 in grade 6 six years later. Though we do not know if these were all the same children almost certainly most were. There are some transfers in and out of the schools but these are a small number each year, generally less than 5% of staff. Necessarily migrant children sometimes transfer as a result of changes in the employment of their parents and numbers of migrant children in particular schools can fluctuate quite widely. It seems that some do return to their home areas in grade 5 and 6 to gain admittance to local junior secondary schools. There is also some transfer related to parental aspirations to send their children to schools with a better reputation.

Repetition is not formally permitted, however the research identified a small number of children who had repeated. Data from Majuqiao indicate that the numbers of overage children (by one year or more) had fallen from as many as 23% in the early 2000s to about 6% by 2008. Most (90%) were overage by only a year indicating that over age enrolment was not a serious issue. It should be noted that in 1990 the age of entry to school was typically seven years not six. In 2000 local authorities have encouraged and required enrolment at age six.

Enrolments at junior secondary level are falling as the numbers graduating from primary fall. Though numbers increased from 1990 when 20,000 were in junior secondary, to 31,400 by 2001, they have subsequently declined to 24,100. All primary school graduates seeking a place a junior secondary can locate one so transition rates are close to 100% and this has been made easier by the falling enrolment. Average class size at junior secondary is about 35 and this has fallen from over 40 in both Xiji and Majuqiao as enrolments have shrunk. Figures 11 and 12 show how enrolments in grade 7, 8 and 9 have been falling.

Figure 11: Junior Secondary Enrolments - Xiji Town School

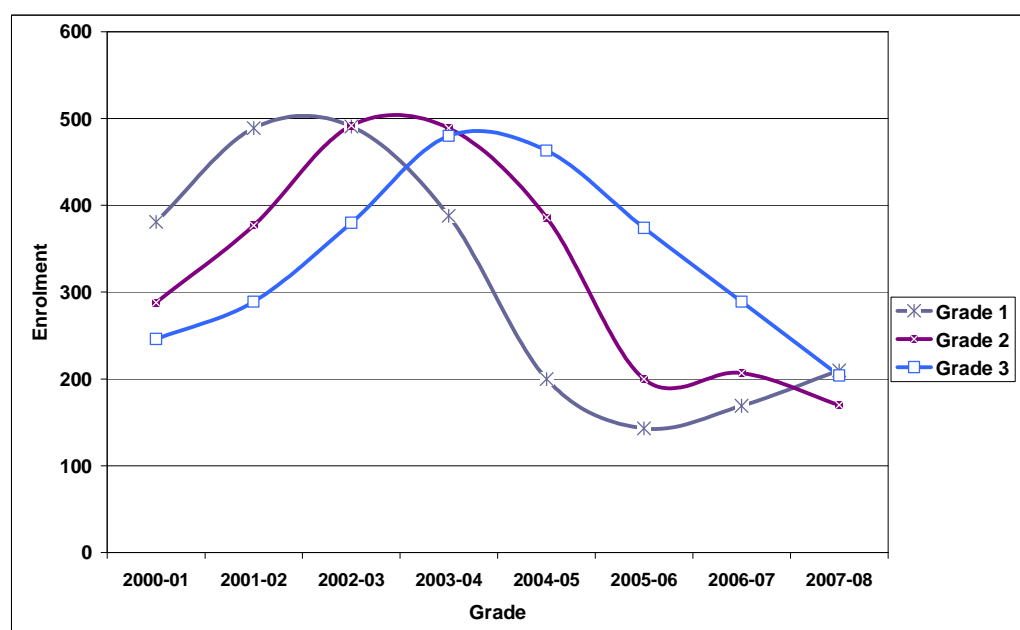
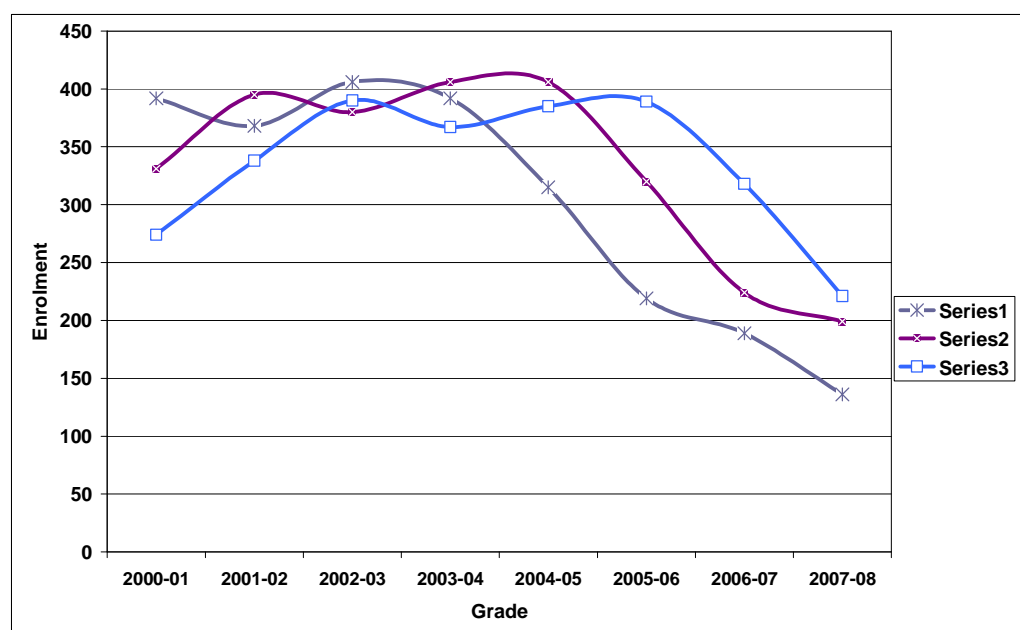


Figure 12: Junior Secondary Enrolments – Dadushe Secondary School, Majuqiao



In 1990 attrition was an issue at junior secondary. About 14% appeared to drop out before completion. This problem seems to be resolved with almost all those who enrol completing the cycle in both districts. The number of overage students has been reduced dramatically such that by 2007 almost all students were of the correct age for their grade compared to half or more overage in 2001.

There was some evidence that the education of disabled children had improved since 1990. Then intellectually and physically disabled children didn't have a chance of going to normal schools at all. In Xiji Town we located 7 mentally disabled children between the ages of 7 and 12 who have been placed in normal school classes and have been brought into the regular education system. There are no statistics on children with different types of disability, and it remains unclear as to what specialist support is available at school level. In 1990 there was only one special school aimed mainly at mentally disabled children for the whole district. By 2006 this school had 10 classes and about 100 students, and had two primary schools with affiliated classes, and more than 500 children with disability were learning in normal classes across the district. The situation in Majuqiao also seems to have improved but there is no systematic data available to confirm this.

2.4 Teachers and Teacher Deployment

Tongzhou has about 3600 primary teachers and 2350 at secondary level. Pupil teacher ratios have fallen since the 1990s. The ratios at primary and secondary in Xiji were 21:1 and 14:1, and in Dadushe 14:1 and 14:1. In 2008 the ratios had fallen to 9.2:1 and 6.6 in Xiji and 13.5:1 and 8.6:1 in Majuqiao. These very low ratios arise for two reasons. First, the number of children in school has been falling but the overall number of teachers has not fallen as fast. Second, substantial numbers of those employed on teaching faculties do not teach. Thus, for example, about 35% of the faculty in some secondary schools are in administrative and support roles. The proportion of administrative staff has been increasing and is now about 23% at primary and over 30% at secondary level in Xiji. As the system has developed the proportion of administrative non-teaching staff has remained high, not least because the

central primary school has retained its administrative infrastructure despite the reduction in the number of complete primary schools under its responsibility.

Xiji and Majuqiao have not recruited many new teachers since the early 2000s and some schools have had no new appointments for more than eight years. There have been more transfers out than transfers in, and as a result in these two districts it appears that teacher numbers have fallen by 15% - 20% since 2003. Staff turnover is modest across the districts averaging around 5%. Some teachers have retired and a growing number of the younger teachers have succeeded in being transferred to urban schools in Tongzhou city or elsewhere where conditions and subsidies are better. Reasons given for transferring out revolve around better educational opportunities for teachers' own children and career advancement, and the relatively poor living conditions in and around Xiji. This slow exit of teachers is potentially of concern since it is typically the best and most motivated young teachers who succeed in being transferred out. In Xiji problems of attracting new teachers have been so difficult that local government has explored the possibility of "purchasing" teachers from Qinghai in Inner Mongolia where conditions are generally thought to be less attractive than Xiji.

There are persistent problems in the efficient utilization of teachers in the two districts. Though the pupil teacher ratio is very low the class sizes remain quite large at about 20 in Xiji and over 30 in Majuqiao. With pupil teacher ratios of 10:1 or less it is clear that many teachers cannot have a full teaching load, and that efficient utilization of teachers has yet to be achieved. The case studies indicated that some of the teachers who were teaching were reasonably loaded with as many as 24 periods a week or about 5 a day. But others taught little. There were also mismatches between teachers' qualifications and the subjects they taught. Only 40% of teachers in Xiji secondary school were teaching the subject for which they had been trained. Shortages persist in English, Chinese, maths and science, and surpluses in physical education.

Levels of teacher qualification have improved. In Xiji 90% of primary teachers were graduates of secondary normal schools. By 2008 30% were Bachelors level graduates and 48% three year college trained. At secondary level over 80% had Bachelor degrees. Majuqiao lags behind but nevertheless Bachelors graduates are 22% and 54% of all teachers at primary and secondary level. Twenty years ago only 70% of teachers at primary level were qualified and many had professional qualifications from secondary level training schools. Now over 70% have degrees or three year College qualifications. At secondary level almost all teachers are now Bachelors or three year College graduates. It is clear that from 2003 there has been a major effort to increase the proportion of qualified teachers and this has succeeded in eliminating almost all the under qualified.

A substantial change in Tongzhou has been that substitute teachers have been replaced by government teachers. Whereas in 1990 between 20% (Xiji) and 30% (Dadushe) of all teachers were minban, now there are none left in Tongzhou. In the early 2000s minban were either retired or offered the chance to retrain and become qualified.

There have been changes in the age structure of the teaching force. In 1990 most primary school teachers were young and about 45% were under 35 years old. There were few older teachers in primary schools. By 2008 in both Xiji and Dadushe there were still large numbers of young teachers, but there was also a bulge of older teachers approaching retirement. Conspicuously there were few teachers in the 35 – 45 year old age range (Figures 13 and 14).

Figure 13: Age Distribution of Primary Teachers Xiji

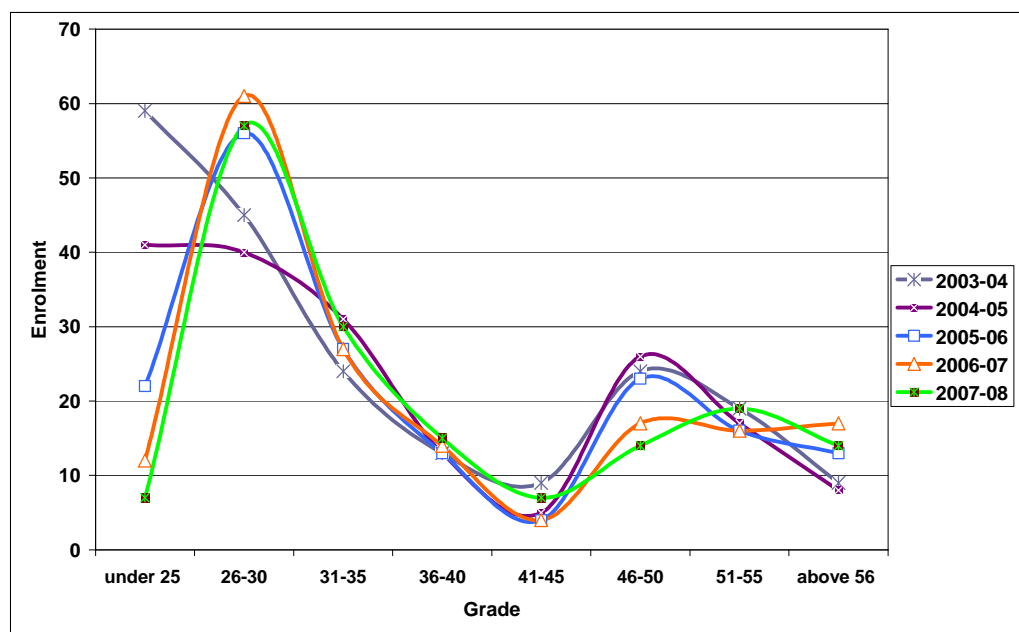
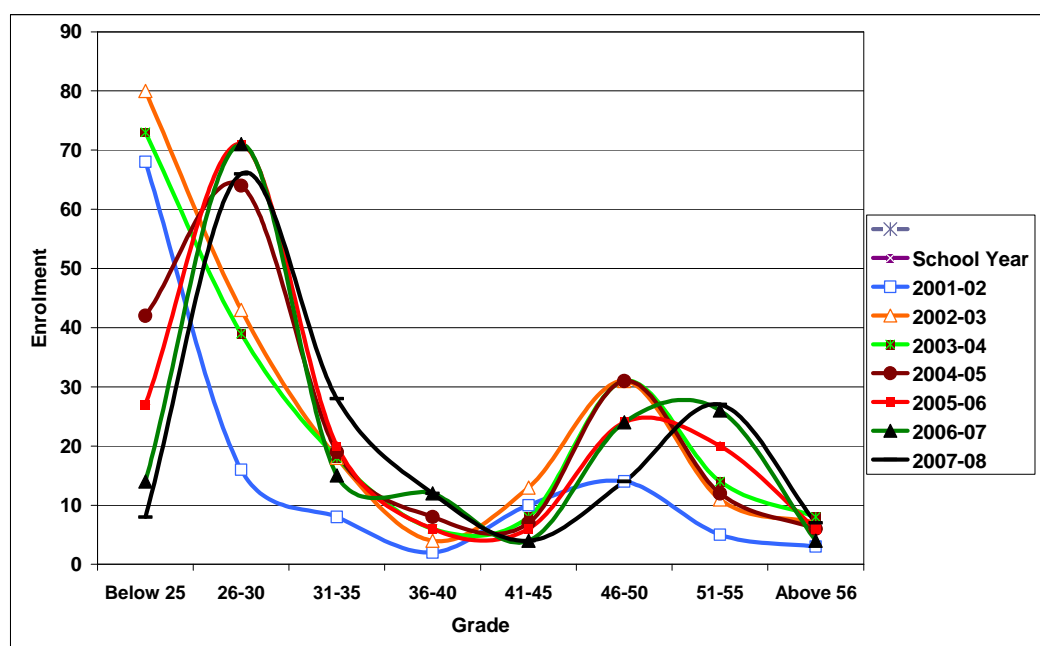


Figure 14: Age Distribution of Primary Teachers in Dadushe



Though the average age of teachers in Xiji was 35 years old about 60% were below this age and relatively inexperienced, and most of the rest were over 45 years old. There was a very similar pattern in Majuqiao. In both Xiji and Majuqiao secondary schools over 70% of all teachers were below the age of 35, and there were relatively few between the ages of 35 and 45 years. These distributions reflect previous waves of teacher recruitment which seems to have been uneven and to have peaked in particular years. They may also indicate that young teachers teach for five to ten years and then find ways of transferring or moving on to other jobs outside schools.

The gender balance in the teaching cadre is skewed in favour of females. At primary level in both districts females constitute between 55% and 60% of all primary school faculty members including administrators. They represent a higher proportion of teaching faculty in Majuqiao rising to over 70%. Women are under represented in administrative non-teaching positions where most places are occupied by men. Thus, in Majuqiao in most years 80% of administrative staff were men.

Teachers' salaries have improved considerable over the last twenty years. The average monthly income of primary and secondary school teachers was 180 yuan and 200 yuan respectively and the average monthly income of substitute teachers ranged between 70 and 80 yuan. There used to be delays in payment of salaries which caused dissatisfaction. By 2008 all substitute teachers have been replaced and new arrangements mean that salaries are paid direct to bank accounts and are generally on time. Government teachers have a guarantee of salary and some basic benefits and welfare, such as medical treatment, pension, housing allowance. Incomes have been rising and the range of monthly wages is between 1500 and 3000 yuan depending on age, grade and experience, with an average of about 2,000 yuan at primary level. Secondary teachers can earn about 500 yuan more on average. These incomes relate only to state supported salaries. Other income can be generated from school resources, though this is only likely to be substantial in urban schools.

There are many issues around salaries. In 1989, China implemented the teachers' structural wage system which took the place of the single fixed wage system. This provided rewards related to teachers' performance. However, these were largely funded from local income generation. In most rural areas teachers' income remained the basic salary. Rewards were very modest e.g. teachers' additional class fee was only 1.1 yuan per class, the home class teacher fee was 0.3 yuan per month for each student. These reward levels were held static for nearly 20 years.

Conditions have improved recently. In addition to the government salary schools have been receiving about 115 yuan a month per teacher to distribute related to teaching loads. Payments per class range from between 2.8 and 3.5 yuan for each class, and an additional 3.5 yuan per class for major subject teachers. However, head teachers receive little benefit to compensate for their additional work and payments are between 60 and 150 yuan a month extra. As a result teachers are often unwilling to be a head teacher, and the morale of teachers can be low. Though there are some other special payments e.g. the town government gives each teacher a subsidy of 100-200 yuan on Teachers' Day; teachers receive subsidized meals at school – these are not judged sufficient to solve problems of low morale. Several of the teachers interviewed indicated they were trying to leave the area and to gain urban residence qualifications so their own children could attend better schools.

Whereas in 1990 most teachers lived locally near the schools in which they taught the pattern has changed. Many now commute to rural schools and live in Tongzhou city. The Tongzhou District government has had to provide regular buses for teachers. However, the fuel and pay for drivers has to be paid by schools. Initially teachers were charged 60 yuan a month for transport but since 2007 this charge has been waived. Of the 33 teachers in the central primary school in Xiji, more than 20 take the bus to commute between the urban district and the school. Over 60% of teachers in Dadushe secondary school commute one hour each way each day on school buses. Some single teachers do lodge in the school but are in a minority. This pattern of commuting by bus or by bicycle is now common across the district.

Although the qualification rate is very high for secondary schools, there are still issues about the quality of the teachers. The principal of Xiji Secondary School identified three problems. First, though almost all are qualified they are not all teaching the subjects in which they qualified. What they were trained in did not match what they are teaching. In main subjects such as Chinese, mathematics, foreign languages, physics and chemistry, 40% of the teachers teaching these subjects are not trained in them as their major. Thus only two English teachers were graduates of three year colleges specialising in English. The rest acquired English through self study. There are 10 teachers who have graduated with physical education as a major subject but only two are actually teaching physical education. The rest are encouraged by the school to learn a second subject to meet the needs of the school. Second, amongst 55 teaching staff, 20 were transferred from primary schools. They take time to adapt to the teaching methods and materials of the junior secondary schools. Third, though overall there are enough teachers, there is a drain of experienced “backbone teachers” because some transfer out to more desirable schools in urban areas around Beijing. Typically between 5% and 10% of teachers a year leave the school. This principal noted wryly that the training colleges produced and fostered new teachers but that rural secondary schools like his really trained the young teachers who then left for better schools.

The story of one teacher in Xiji Junior Secondary schools illustrates how careers can develop. Mr Xu graduated from secondary normal (teacher training) school and his major was in fine arts. Then he went to Langfu Primary School to teach across all subjects when he was 19 years old. Whilst he taught he was doing part time courses in geography in a three year college and he qualified and was upgraded in 1999. At the same time he was also attending a bachelors degree programme in fine arts as this is his real interest. He is now teaching information technology and computers, and geography in the primary school, and fine arts in Xiji Secondary School.

2.5 Educational Funding and Infrastructure

Educational expenditure in Tongzhou has increased substantially over the last twenty years. Direct comparisons are difficult to make but key changes can be identified. First, compulsory education is now very largely financed directly by the Tongzhou District government and Beijing municipal government. The local taxes for education and contributions from enterprises that existed in 1990 and which accounted for as much as 40% of expenditure, have been replaced by a single centralized funding system. The inequalities that arose from the differing capacities of rich and poor districts to raise revenue, which resulted in almost twice as much being available per child in Xiji than Dadushe in 1990, have therefore been greatly reduced.

Second, school management has now been concentrated at the county level, rather than shared across several levels. Lower administrative levels are no longer obliged to make contributions to expenditure though some do. Central funding should be adequate to run effective schools assuming it reaches its intended destinations.

The township level still plays an important role in the development of basic education in terms of funding and improvement of infrastructure. However, Majuqiao is much more advantaged than Xiji and has a much larger the financial income. This allows higher levels of investment. Xiji relies on Beijing municipal and Tongzhou District government’s financial allocation after meeting basic costs, whereas Majuqiao has the capacity to pay for many

additional inputs. This has enabled it to finance an Experimental Secondary School for over 65 million yuan, to refurbish all its schools extensively, and acquire a fleet of school buses.

Third, some additional income is generated from migrants in areas where there are significant numbers of workers from other regions. In Tonzhou typically 200 yuan a term is charged to each non-resident student. This adds up to a considerable sum since it is much more than the capitation paid of less than 100 yuan a month paid for resident students. There are also sporadic donations from enterprises.

Fourth, cost per pupil has risen to about ten times the level in 1990. Primary cost per child appear to be about 2500-3000 yuan a year, and at secondary level about 3500-4000 yuan. Non salary expenditure per capita is now pegged at around 800 yuan and primary and 900 yuan at secondary. In 1990 costs per pupil were around 230 yuan at primary and about 400 yuan at secondary.

Fifth, tuition fees and textbook fees have been abolished. Subsidies are now available for poor children to continue to attend school. These changes have made it easier to maintain high levels of enrolment and have reduced some inequalities present in 1990.

Increased funding has been accompanied by greatly improved infrastructure. New buildings have been constructed, especially in Majuqiao which has been physically transformed compared to the past. Information technology is widely available in schools and a ratio of one networked computer to every ten students appears to have been achieved, allowing individual access during IT lessons in secondary schools and central primary schools. Libraries have been restocked. However, some evidence indicated that library use by students was infrequent and that often only teachers could borrow books.

In general school environments and sanitation has improved, though issues remain and it is recognised that standards still need to improve. There are no medical facilities in most of the schools, though some allocate a room for first aid. Schools are obliged to arrange regular medical examinations for staff and students.

In rural parts of Xiji and Majuqiao much of the infrastructure remains recognizable from 1990 and changes have been incremental rather than radical. Greater changes have taken place in infrastructure at secondary school level rather than primary where investment has clearly been on a larger scale. New secondary schools have been built to an impressively high standard and are spacious and well equipped with facilities.

2.6 Migrant Children

Migrant children have become an important feature of changing patterns of enrolment. In 2003, 8,580 of the 42,300 enrolled in primary were migrant students who accounted for about 20 per cent of the total. By 2006 more than 30% of all students were migrants. In Majuqiao Central Primary School the overall proportion exceeded 45% in 2008 and was more than 55% in grade 1 indicating the trend to increased numbers of migrants was continuing. Yizhuang Development Zone in Majuqiao is home to dozens of modern high-tech industries which employ a large number of migrant workers. Across the district as a whole the number of resident students is declining and the number of immigrant children is increasing.

In Xiji migrants constitute about 20% of primary enrolment and this proportion has also been growing, but not as fast as in Majuqiao. Migrant children are found even in remote rural schools since migrant labour is used in agriculture. Compared with Majuqiao, the pressure on enrolments from migrant students is less. Migrant children also supplement the local resources for schools through contributions they make.

At junior secondary level the numbers of migrant children are smaller than at primary. Overall in the district they have increased from about 5% in 2003 to about 13% in 2005. The proportions are smaller than at primary because migrant children have no access to the public senior high school in Tongzhou. Thus many primary graduates return to their domicile junior high school to ensure a smooth entrance into senior high school. Migrant students can enter local secondary professional or technical schools and if they do then the tuition fee for them is the same as for local students. However, these institutions have lower status than senior secondary schools and do not generally lead to university level courses.

Admission to schools above junior secondary level is a problem for migrant students. Since they have no registered Hukou in the locality, they cannot get the admission into an ordinary senior secondary school even if they take the Beijing senior high school entrance exam. If they finish their junior high school education in Beijing and return to their place of domicile to take the local senior high school entrance exam they may have less chance of admission to a highly ranked college than if they had been schooled locally because of variations in the curriculum. As a result some parents of migrant students plan their children's further schooling well in advance and send their children back to their area of domicile after primary education. This can lead to long periods of separation from their parents.

Migrant children are divided into two types by municipal authorities. Those who have a rural household registration are called children of peasant workers. If they can present six certificates (temporary residence permit card, household register, singleton female card, agreement/contract/ license of parents working in Beijing, no guardian certificate issued by relevant sector in the registered permanent address locus, agreement of housing/certificate of buying a house), they fall within the same policy umbrella as local students. Thus they qualify for the two exemptions (tuition and textbook fees) and one compensation (poverty related subsidy). Obtaining all six certificates can be demanding and many may not be able to satisfy this requirement. Those who have an urban household registration have to pay for temporary study fees of 200 yuan per term as noted above (500 yuan per term in secondary school). If the first category of migrant children becomes too large it creates a problem of how to finance the two exemptions and one compensation and this is seen as likely in the future.

The research indicated that not only was migration a new phenomena but that also there were issues of adjustment and balance. Though most of the migrant students were thought able to adapt themselves quickly to local environment and integrate into their new classes and with their new classmates, some migrant students could not keep up with the teaching and had difficulties in their learning, especially foreign languages. There were thought to be gaps in standards and teaching methods between Tongxian and the areas from which migrants came, and issues about levels of parental motivation and commitment. Some students repeated grades partly as a result.

There is a problem of retention for migrant children in Majuqiao that is much more serious than for resident students. The following table shows that there was considerable drop out from grade 5 to grade 6. In 2006/7 there were 145 children in grade 5 but the following year

only 114 enrolled in grade 6. For the 2005/6 cohort the number dropped from 150 to 124 between grades 5 and 6. The major reason given for this apparent drop out was that these children were sent back to their home areas to ensure they would get access to a good junior secondary school. Going back for grade 6 allows the children to readjust to the local curriculum and take the examination locally to qualify for secondary school. It is also possible that there is some drop out but there is no data on this.

Table 4: Retention of Migrant Children in Majuqiao Primary Schools (2003/04-2007/08)

	2003/04	2004/05	2005/06	2006/07	2007/08
Grade 1	118	116	112	98	138
Grade 2	128	138	136	115	114
Grade 3	128	166	138	128	114
Grade 4	97	160	154	129	123
Grade 5	80	127	150	145	116
Grade 6	88	105	117	124	114
Total	639	812	807	739	719

2.7 Concluding Comments

It is clear from this account that both Xiji and Majuqiao have made substantial progress in implementing nine year compulsory education over the last twenty years. They started with several advantages over other districts, not least being located in one of the richest 300 counties. As Tongxian has developed to become Tongzhou high enrolment rates have been maintained, drop out, repetition and over age children in the system have become minimal, and facilities and infrastructure have improved greatly. In part this is due to the changes in funding and administrative responsibilities which have been implemented across China. In part it reflects the achievements of many different stakeholders at local level.

Several old issues remains relevant from the 1990 study and some new ones have become prominent. First, though enrolment rates are high, these come at a cost. The pupil teacher ratios are low and have been becoming lower at 10:1 or less. This is well below what is found in most countries with high enrolments. It may be affordable since teachers' salaries remain relatively low in relation to GDP. But it may reflect inefficiencies that need to be addressed if class sizes are to fall to increase teacher contact time with students and improve quality, and if teachers' salaries are to be increased enough to motivate good students to become teachers.

Second, schools have been rationalized as enrolments have fallen and small schools have been merged with larger schools. This concentration should have increased efficiency and reduced administrative overheads but this does not seem to have happened on a significant scale. The non-teaching workforce remains large.

Third, large scale migration has affected enrolment patterns and introduced new dynamics into classroom management, pedagogic challenges, and school financing. The numbers of migrants in Majuqiao are particularly large and in some areas migrant children are in a majority. It may be time to take more special measures to address this reality and the

challenges it poses. This may require more systematic integration of new migrants to ensure they settle into schools successfully, with some thought given to bridging programmes that may be required related to language and levels of achievement. The issues around additional costs to migrant households, especially if they pay similar taxes to residents, and access to high school, are likely to become more rather than less important as migration continues.

Fourth, many teachers no longer live close to the schools in which they teach and commute substantial distances. This has costs and may also have an impact on school quality. It also reflects issues surrounding working conditions and quality of life that need addressing if teachers are to be attracted and retained in schools in Xiji and Majuqiao in competition with rapidly developing districts around Beijing. The age distribution of teachers is also a cause for concern, since it appears to be unbalanced with a shortage of experienced middle aged teachers, and increasing numbers approaching retirement. The reasons for this need to be understood and addressed.

Fifth, information systems appear to have improved and key data is available on all schools which generally appear well administered. It is not clear to what extent data is collected and used to monitor children's progress diagnostically and this may be a development that should be considered. It is also unclear to what extent disability is systematically diagnosed and addressed though special provision or managed integration into the mainstream.

Sixth, investment in improving quality remains a priority since physical access is not a problem in Tongzhou. This requires more than improvements in infrastructure, though these remain important. Teaching and learning remains similar to that twenty years ago with a predominance of whole class teaching, passive learning, and undifferentiated learning tasks. It may be that future progress depends on more attention being given to different pedagogies and to a broader range of learning outcomes than those inherited from the past.

Seventh, despite the overall improvement, disparities remain at township and school level. At the township level, Majuqiao has much better financial income and has invested much more in the development of basic education. Xiji is disadvantaged as it has few resources of its own unlike in 1990. At the school level the gaps in school infrastructure have narrowed a lot but are still present. There remain problems with the distribution of teachers and their motivation, and with variations in their subject training and teaching quality.

3. Nine Year Compulsory Education in a Poor District Ansai in Yan'an, Shaanxi

3.1 Social and Economic Background

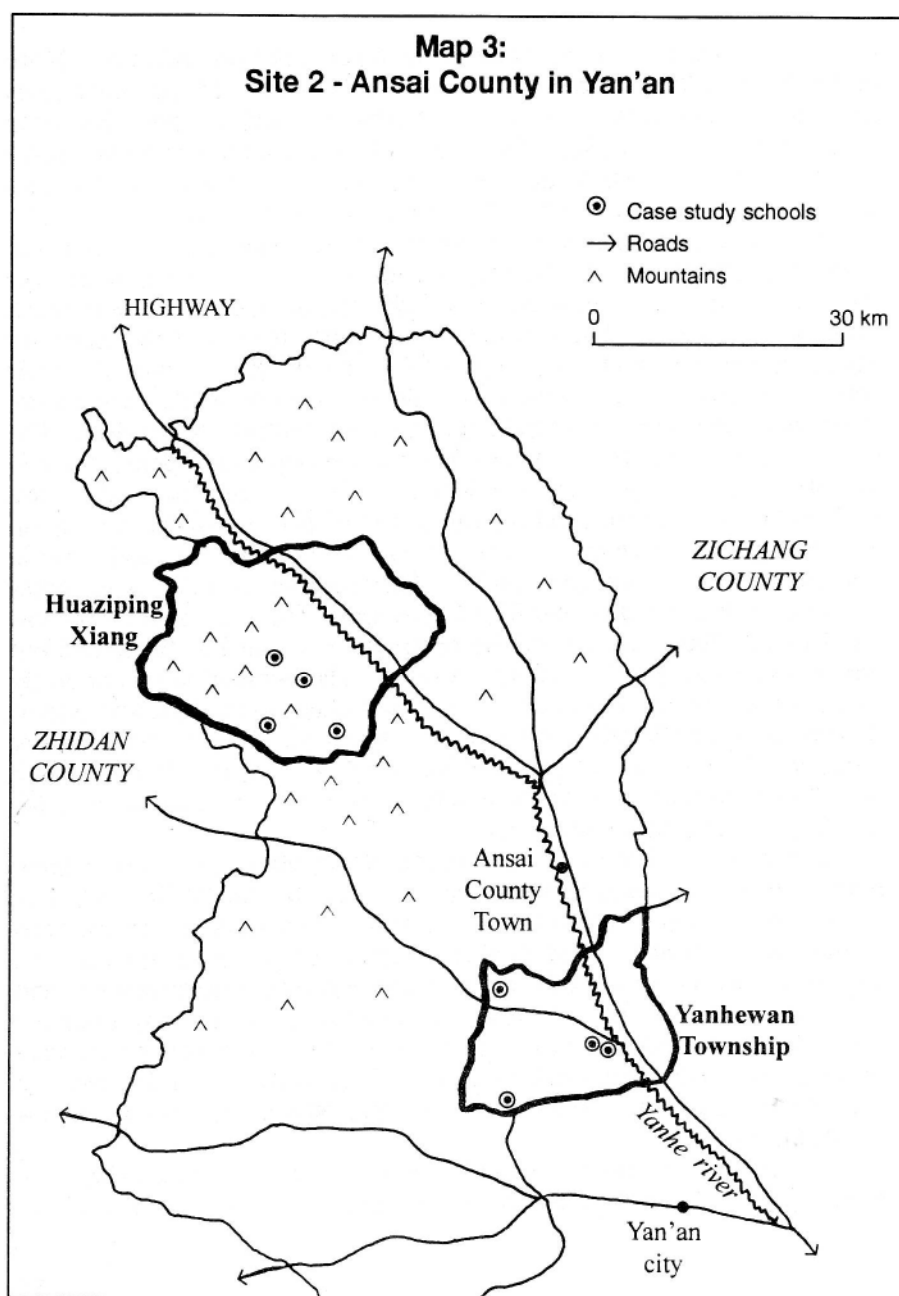
Ansai County is located to the north of Yan'an City in Shaanxi. It covers an area of about 3,000 square kilometres and includes 12 towns and townships, more than 200 village committees and over 1000 village groups. The total population of the county is over 160,000 of which over 85% are engaged in agriculture. About 46% of the population are female and men outnumber women by about 14,000. Since 2008 the population has started to decline after a long period of slow growth. It seems likely this trend will continue as the effects of a low birth rate become apparent.

Ansai has the typical characteristics of the hilly areas of the Loess Plateau in northern Shaanxi, with a warm semi-arid climate. Its average elevation is 1,200 meters, and average annual temperature is about 9 °C. The population density is low and land in the valleys is potentially fertile and is suitable for the integrated development of agriculture, forestry and animal husbandry. The main products are maize, millet, buckwheat, beans and other grains, with an annual output of about 30,000 tons.

Since 1990 oil and gas resources have been exploited and have brought new wealth to the area. Very substantial quantities of oil are being extracted and the extensive reservoir of natural gas is beginning to be brought into production. The strategy is to "build a strong oil county, making people rich by development of industry". Economic and social development has been rapid with economic growth in most years well above 10%. Industrial output is about 60% of output, with the service sector accounting for about 23%. Income per capita in urban areas is now about 16,000 yuan and rural per capita income exceeded 2,600 yuan. From being one of the poorest 300 counties nationally in 1990 Ansai was ranked number 6 in Shaanxi Province's economic and social development top ten counties in 2007. Urban residents had incomes comparable to Tongzhou, a dramatic contrast with 1990.

The natural conditions in Ansai County can be harsh, soil erosion is serious, and drought not uncommon. Initiatives have been taken under national environmental programmes to return some farmland to forest to reduce erosion and the forest and grass coverage increased from 18% in 1998 to the present 31%. Greenhouse market gardening, livestock, forestry and fruit production have become the three leading industries in rural areas. The county has developed with the fiscal support from oil industry within the framework of "building a new socialist countryside", adhering to the principles of "industry nurturing agriculture", "cities supporting rural areas" and the policy of "giving more, taking less and loosening central control". There are now over 36,000 greenhouses in production with an annual production of fresh vegetables reached more than 110,000 tons. Large numbers of fruit trees have been planted and the livestock industry has been commercialized.

Infrastructure has been radically improved since 1990. Then there were few tarred roads and no railway access and many villages without running water and electricity. Now 70% of rural roads are asphalted, 75% of households have direct access to clean water, and almost all communities have electricity and mobile phone access to communications.



3.2 Change and Transformation in Huaziping and Yanhewan

Two localities were selected for study in 1990, Huaziping xiang and Yanhewan Township. In 2008 Huaziping had a population of 14,700, an increase of about 1450 compared to 1990. In recent year overall population growth has been below 1% annually. The birth rate has fallen from about 25‰ to about 7‰. This fall reflects a recent tightening of family planning policy such that few now have more than two children. In 1990 there were many families with three or more children. The numbers of live births are now less than a third of the numbers in the early 2000s and this will have consequences for school enrolments in the next decade. The sex ratio on the population was about 110:100 in favour of boys in 1990 and was similar in 2009.

In Yanhewan the population has fluctuated but still appears to be growing slowly. In 1990 it was 16,300, it fell to 15,900 by 2000, and by 2009 it had risen to 17,000. Over twenty years growth was less than 1% per annum. The proportion of girls amongst live births has fallen as low as 38% (2004), and is now about 43%. Unlike Huaziping the number of births appears not to be falling.

Huaziping is now a township not a xiang after an administrative re-organisation. In 1990 the economic and social development of Huaziping xiang lagged behind Yanhewan Township. Both districts have progressed and now the development of Huaziping Township has surpassed Yanhewan. This reversal in economic and social development ranking mirrors the similar changes that have happened in Tongzhou between Xiji and Dadushe Townships. This is a reminder that over time development is often uneven and takes place at different rates in different places.

Huaziping Township is located 40 kilometres north of Ansai County, with a total land area of 325 square kilometres most of which is farmland. The Yanhe river flows through the territory. The township is rich in natural resources, particularly oil and natural gas. The township has a jurisdiction over the 20 villages, and 106 villager groups, with a total population of 13,600, of which the agricultural population is 13,200. In 1990, Huaziping Township only had a dirt road, and very few villages had electricity. Today, every village has electricity, water supply and roads. Urbanization in rural areas has made a rapid progress. There are convenient transport, information and communication facilities. Radio, television, telephone and mobile communications coverage for the whole township. The Yan-Jing provincial highway and Abei expressway are under construction and run through the town. The Ping-Hua and Hua-Zhang highways are being built.

In 1990, 70% of GDP of Huaziping depended on agriculture and there was no industry. The annual income of the farmers was 308 yuan. The oil industry has boomed and much new investment has been made in different industries. Net per capita income now exceeds 3500 yuan.

Yanhewan Township is located south of Ansai County at the junction of the Yanhe and Xing rivers. The highways from Yan'an to Jingbian pass through the township. The township has a land area of 210 square kilometres. It has a jurisdiction over 28 administrative villages, and 102 villagers groups, with a total population of 17,000.

The road infrastructure has improved in Yanhewan but lags behind Huaziping in terms of the amount of tarred roads. Almost all households have access to clean water and electricity. Agriculture is about 65% of the local economy and forestry now accounts for 10%. Per capita income now exceeds 4,500 yuan.

3.3 The Evolution of Nine Year Compulsory Education

The evolution of the school system in Ansai has followed a similar pathway to that in Tongzhou in so far as the merger of small schools and concentration of children in fewer larger schools is concerned. The total number of primary schools has fallen from over 370 to less than 140 and there are now only 6 central primary schools compared to 13 before. The many incomplete primary schools have been reduced in number substantially and merged with larger schools. However, the age of entry to school remains seven years, unlike in Tongzhou where it is now six years old.

This rationalization is reflected in the two case study districts. The number of primary schools in Huaziping fell from 40 in 1990 to 10 in 2008/09. The 39 incomplete primary schools fell from 39 to nine. During the 2000s the incomplete primary schools were gradually reduced in number until 2009 when a decision was made to retain nine incomplete primary schools covering only grades 1 and 2, after which children would be enrolled in the single central primary school. Those living at a distance would become boarders from grade 3. In 2003/04, 290 students were in incomplete primary schools and these were 18% of total enrolment. In 2008/09, only 91 were in incomplete primary schools accounting for less than 6% of the primary school population. The largest incomplete school that remains has three full-time teachers, and only 37 students, of which 14 were in pre-school, 14 in grade 1, and 9 in grade 2. Over time it is probable that children living at a distance will be invited to become boarders from grade 1.

In 1990, there were 47 primary schools in total in Yanhewan Township, including 1 central primary school, 3 complete primary schools, and 43 incomplete primary schools. Now, Yanhewan has a total of 15 primary schools, including 1 central primary school, 1 complete primary school and 13 incomplete primary schools. As in Huaziping the number of school age children has declined, and qualified teachers willing to work in rural schools have been in short supply. Small incomplete rural schools have been gradually incorporated into the central primary school. Those left now teach up to grade 2 or grade 4 before children are transferred to the large central primary school.

At secondary level changes have been less dramatic. In 1990, Ansai County had 15 secondary schools, of which 1 was a complete secondary school, 13 were junior secondary schools and 1 was a vocational secondary school. By 2008/09, there were 14 secondary schools of which two were complete (one is private), 11 were junior secondary, and a vocational secondary school that had existed in 1990.

In 1990 in Ansai county the total number of primary students was 15,960, of which about 49% were girls. In 2009 13,540 were enrolled of whom 46.5% were girls. This almost certainly reflects the fact that there are fewer girls than boys in the school age population.

Total enrolment at primary in Ansai has been falling rapidly. It was 27,800 in 2001 but only 13,500 by 2009. This has followed the fall in the school-age population. From 27,900 in 2000/01 this has fallen to 12,300 in 2008/09. The population fell fast as more emphasis was placed on family planning over the last decade. Compared to 1990 there appears to be more concern to encourage smaller families. There are other factors that are important. The rapid social and economic development has resulted in changing attitudes towards larger families amongst young people. Importantly there has been a substantial movement of the rural population into cities. In these cases children usually follow their parents. As a result the number of children in rural areas falls faster than the decline in the birth rate that has been taking place. Ansai County experienced very significant migration from its population of about 160,000. The numbers leaving are shown below. Though many may be temporary migrants whilst they are away they reduce the demand for school places if they are accompanied by their children. If not then the number of "left behind" children increases.

Table 5: Number of Migrants leaving Ansai County (2002-2008)

Years	2002	2003	2004	2005	2006	2007	2008
Migrants	4430	5450	7850	15109	14156	25454	15499

Table 6 shows the “left behind” children in Yanhewan Central Primary school. They accounted for about 10% of the total school enrolment. These children live with their grandparents or other relatives who may spoil them and who may have limited ability to support their school work. Teachers indicated that these children had a disproportionate share of problems and were more likely to be low achieving. Not surprisingly the “left behind” children interviewed wanted to see their parents more frequently

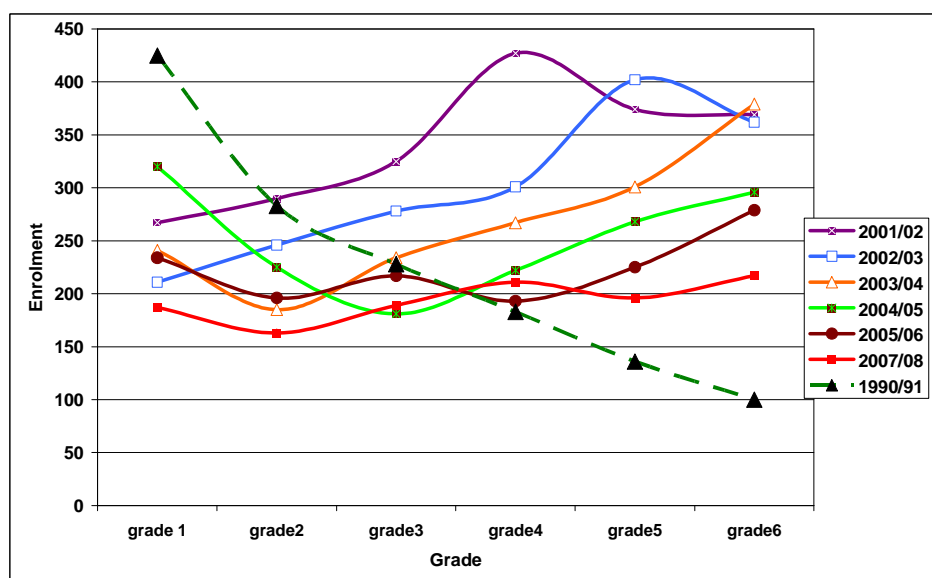
Table 6: Number of “Left behind” Children in Yanhewan Central Primary School (2006-2009)

Year	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Total
2006	6	24	19	15	9	3	76
2007	14	6	24	19	15	9	87
2008	1	14	6	24	19	15	79
2009	5	1	14	6	24	19	69

Not surprisingly across the schools in Huaziping and Yanhewan there were more transfers of students out than in to the system, reflecting the fact that migration was occurring. Within the system most of the transfers were towards the central primary schools as these grew in size and smaller schools were merged. Unlike in Tonzhou there are very few migrants in the schools in the two townships and it was only possible to identify about 10 cases a year across all the schools.

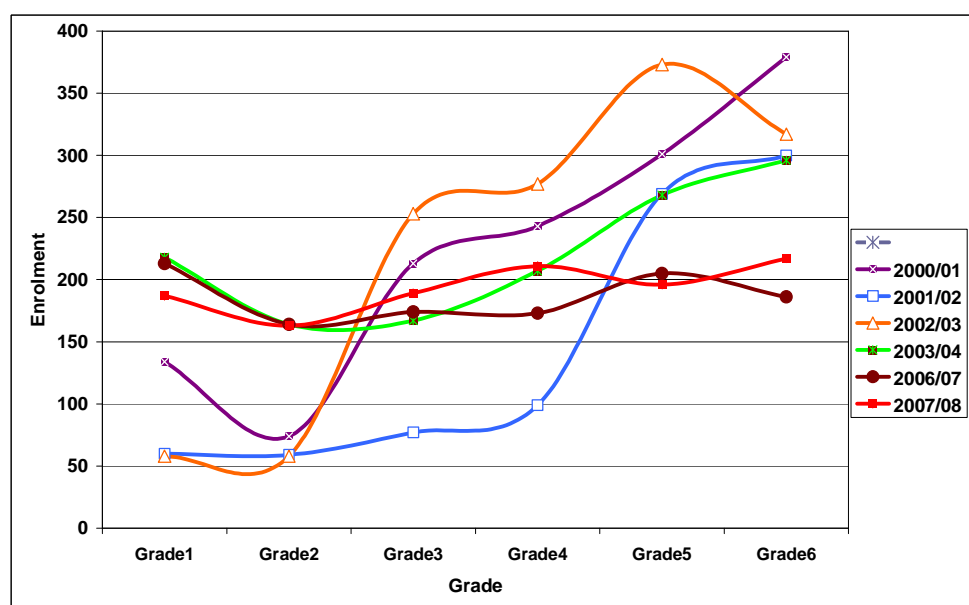
Falling enrolments across the county are reflected in Huaziping (Figure 15). In 2001 over 2,050 primary students were enrolled. By 2008 the number fell to 1,344, which was similar to the level in 1990 when enrolment rates were much lower. In most years grade 1 enrolments were less than grade 6 indicating that total enrolments are declining. These patterns of enrolment are in striking contrast to the pattern in 1990 shown by the dotted line. Then there was a high rate of attrition and grade 6 enrolments were less than a quarter of those in grade 1. The pattern of enrolment has been transformed.

Figure 15: Enrolment in Primary Schools in Huaziping (2001/02—2005/06)



The Huaziping Central Primary School has benefitted from the policy of rationalization and its enrolments have experienced less of a decline than the township as a whole. From 2002 onwards it is clear that additional students are being transferred into the school in grade 3 and grade 5 from incomplete schools as shown by the steep increases in these grades. Overall enrolments have fluctuated with between around 1,150 to 1,300 enrolled in total (Figure 16).

Figure 16: Enrolments in Huaziping Central Primary School



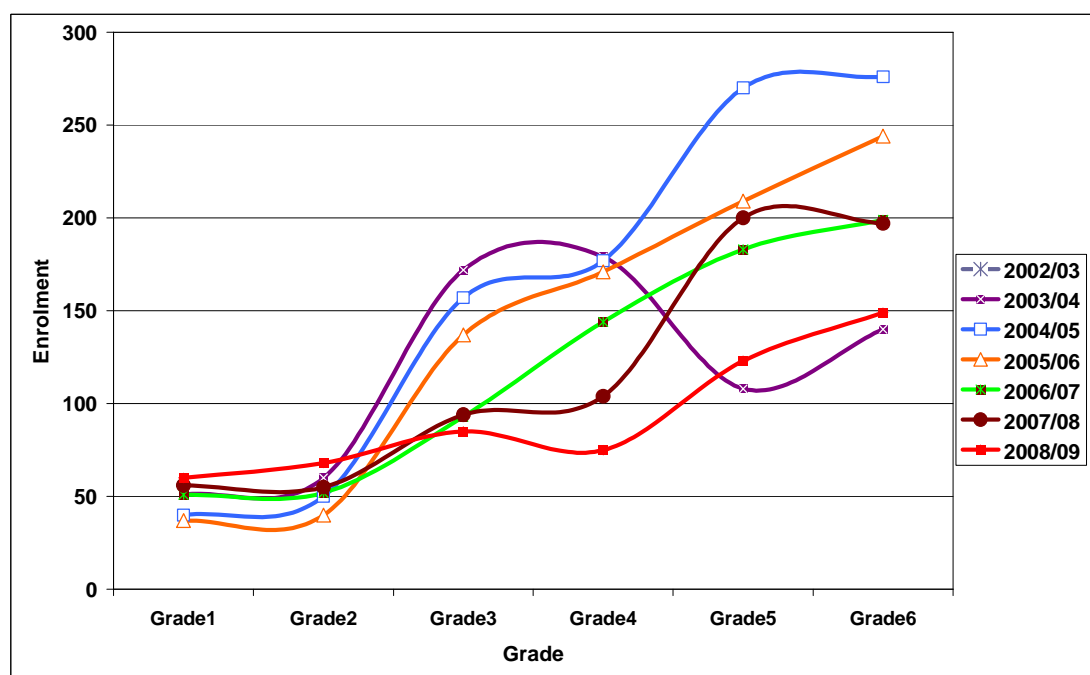
These enrolment changes are linked to the decline in the school age population which was 1,440 in 2001/02 to 1,160 in 2005/06. They also reflect changes in the numbers enrolled and overage. In 2001 there were over 600 non-school age pupils enrolled, mostly over the age of 13 years. By 2006 there were only 140 overage children in the system. School mergers have caused the distance between home and school to increase. Parents worry about safety of their

children on the road. This can lead some them to send their children to school later than 7 years old and become overage.

The imbalance in enrolment of girls and boys was significant in 1990. At that time girls' enrolments were about 80% of boys' in grade 1, and they were less than 60% of those of boys in grade 5. Now the proportion of girls averages about 95% of the number of boys in Huaziping. This represents a substantial improvement. In Yanhewen girls have been disadvantaged but now are also about 95% of total primary enrolment.

Patterns of changing enrolment have many similarities in Yanhewan. Total enrolment in the central primary school has fallen from 850 in 2005 to 570 in 2009. Each year more graduated than entered as new enrolments so the total enrolled fell. The only complete primary school has seen enrolments drop from 230 to 60 between 2000 and 2008. And some of the remaining incomplete schools have less than 15 children. Both in Huaziping and Yanhewan incomplete primary schools increasingly have only the lowest grades and have more preschool children than children in grades 1 and 2. Figure 17 shows how enrolments have changed in the central primary school as students have been transferred into it. Though overall enrolment has fallen, the higher grades have consistently enrolled more than the lower grades as a result of inward transfers and falling entry rates as in Huaziping.

Figure 17: Enrolments in Yanhewan Central Primary School



Class sizes vary widely by school type. Central primary schools tend to have large classes and incomplete schools small ones. This was the case in 1990 and remains true now. Thus in the last five years the class size in Huaziping Central Primary School has been over 60 children per class. The average for the township is about 28:1. This means that many of the incomplete primary schools have class sizes around 10 and should be operating as multi-grade schools. In Yanhewan Central Primary School the class size averages about 42, and as in Huaziping the incomplete primary schools can have class sizes of around 10. One incomplete school now has 12 students, 10 of whom are in pre-school.

The enrolment patterns in 1990 indicated that many of those who enrolled in grade 1 did not reach grade 6. Simply put enrolments in grade 6 were typically about 25% of those in grade 1 across the county and in the two case study districts. The data indicate that now enrolments in grade 6 average only 10% less than in grade 1, six years earlier. Rates of drop out are therefore now much lower. The patterns of enrolment still suggest that the largest reductions occur between grades 1 and 2. In the 1990s much of the explanation was that children did drop out and did not continue their schooling. Now most of the explanation is related to repetition of grade 1 and under and overage entry into grade 1. Some under age children may be counted as grade 1 pupils, though they are actually preschool age. Some others enter a year late and expand the size of grade 1.

Gross enrolment rates at primary level are about 110% in Ansai confirming the fact that over age children are still in the system. Net enrolment rates appear to remain lower. In Huaziping net enrolment rates in 2006 were around 60%. Nearly all of the children are able to get access to schooling, but many are over age. Most of those who complete primary school now have access to secondary schools. Transition rates are usually more than 90% from grade 6 to 7. Though transition rates had been high in 1990 the difference is that now most children reach grade 6 whereas before only 25% or so graduated from primary. As a result the on-schedule graduation rates have improved for those who enter primary school at the correct age.

In 2009 there were 7,890 enrolled in junior secondary schools in Ansai. This represented a decline from 2005 when numbers reached a peak of 11,000. In 1990 there were 2,300 enrolled out of a much larger age group. In 2008 about 46% of enrolments at this level were female. Twenty years ago the number of girls in lower secondary was less than 35% so considerable progress has been made. The number of secondary classes has grown since 1990 from 55 to about 230 and class size has increased from 42 to about 50. With a reduction in enrolments this class size is now falling.

Outward migration has affected numbers in junior secondary schools, as has increased aspirations by parents of capable children who want their children to get a higher quality education in Yan'an or even Xian. The reduction in the number of repeaters has also increased internal efficiency and reduced numbers.

Huaziping and Yanhewan secondary school have followed the overall trends. The former enrolled 240 students in 1990 a third of who were girls, and the latter 270 of whom 42% were girls. Now Huaziping has about 700 students of whom more than 45% or female and Yanhewan also has about 700 with 47% girls. In both cases enrolments in the recent past have been fairly stable (Figures 18 and 19).

Figure 18: Enrolments in Huaziping Junior Secondary

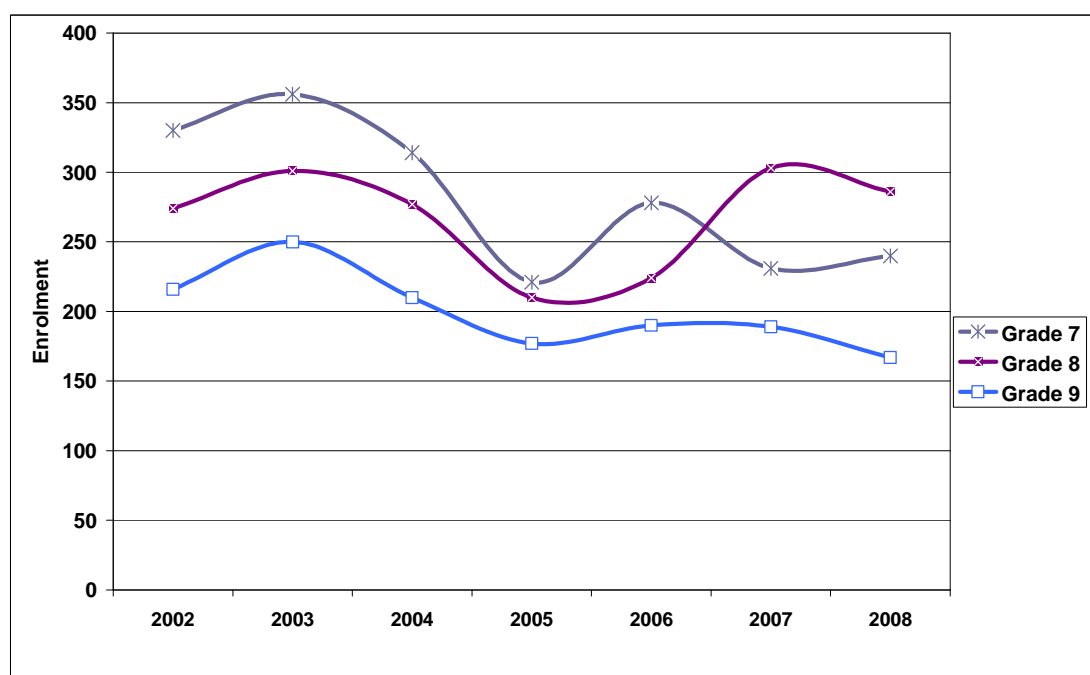
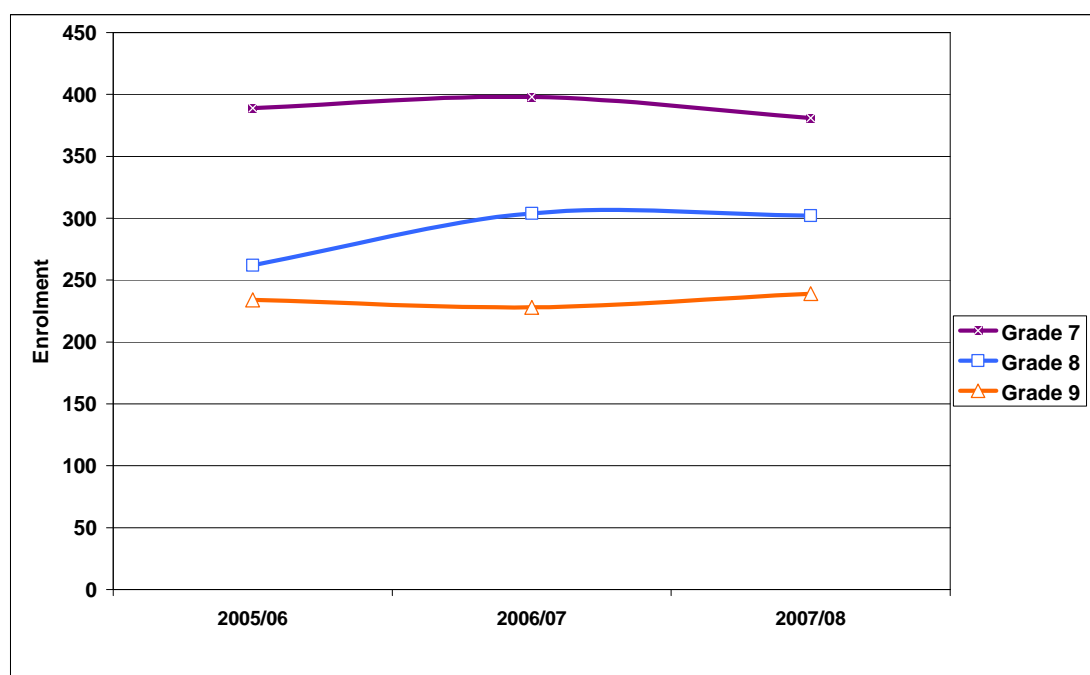


Figure 19: Enrolments in Junior Secondary Yanhewan



Consistently enrolment in grade 7 has been larger than in grade 9 in both cases suggesting that there is still some attrition. However, analysis of transfers suggests that the larger part of this reduction in numbers between grade 7 and 9 is a result of more transfers out than in. Thus in both townships up to a hundred students a year transferred out and less than 20 transferred in each year. Migration and transfers seem to account for the bulk of attrition.

About 70 per cent of the graduates of Huaziping Junior Secondary School are promoted to general senior secondary level and 80 per cent in Yanhewan Junior Secondary School. Another 10% of students enter secondary vocational schools. The proportion was higher than that in Dadushe Secondary School in Tongzhou. Students who reach the end of junior secondary in Ansai may be more motivated to continue to study since the alternative is most likely to be work in agriculture. In Tongzhou and other suburbs of big cities it is possible more students want to work after junior secondary education and make money.

Recent increases in enrolment in Huaziping at junior secondary in 2007 are associated with the arrival of a new principal who improved the quality of teaching and learning and the management and this attracted new students to enter this school. Class sizes in this school were about the same as in 1990 and were around 50. There are however three times as many classes (15 rather than 5). In Yanhewan enrolment has also tripled and class size has also remained high despite recently falling enrolments and averages about 45.

Over-age entry and progression remains a problem. It is due to late initial enrolment and subsequent repetition. More than half of primary children in Yanhewan still appear to enter school and be in grade 1 at the age of 8 or greater. In grade 6 in the central primary school over 70% are 13 years or older, and 35% are 14 years or older. Large numbers also appear overage in Huaziping though there is evidence that the number has been falling. Repetition occurs because of low achievement. It also arises because students transferred to the central primary schools may be made to repeat to catch up with the higher level of learning in the school. Though the number of overage students is being reduced it is clear that this is still an issue at primary level. It is also clear that repetition still occurs quite often despite the fact that it is only supposed to occur rarely.

In junior secondary schools it appears that more than half of students are overage by a year or more. Huaziping 45% of those in grade 7 are over 14 years old and four students were identified as 19 years old. There was a five year spread of ages within grades. In Yanhewan more than half the students are over 14 years in grade 7 which include 21 students who are 16 years old.

Teachers interviewed were not very concerned about the concept of on schedule schooling and progression in the right grade for age. The most common perspective was to argue that if children cannot learn well, then repeating the year will enable them to learn better. Thus teachers, parents and administrators tended to regard repetition as unexceptional and accepted it as normal practice. The research identified many students who had repeated more than once, especially if they had transferred schools. Other observations commonly made were that where there were long distances between home and school parents worried about the safety of their children and this resulted in waiting until the child was older to send them to school. School mergers were undoubtedly exacerbating this situation. Even when there was boarding available parents were concerned that their youngest children were not old enough to be on their own.

It was not possible to locate reliable achievement data based on standardised tests that would enable comparisons to be made with achievement levels in other parts of China. It was possible to discuss local achievement data and gain some insight into the issues. Pass rates in the 1990 county examinations were very low with Huaziping scoring only 26% and Yanhewan 7% passes. Now it appears that 70% or more pass in Huaziping and even more in Yanhewan. Though overall performance has improved it is noticeable that performance in

transition grades 2.3 and 4-5 is often poorer than other grades as a result of pupils transferring schools. Unsurprisingly though Chinese and mathematics scores have improved a lot English has poor performance. Although a high proportion of students are promoted to senior secondary school, the achievement of the students at Huaziping and Yanhewan secondary schools is also subject of concern. The results of the grade 9 graduation examinations indicate that students in Huaziping score more highly than in Yanhewan which remains below average. English is the lowest scoring subject not least because it is a language not heard or used in Ansai.

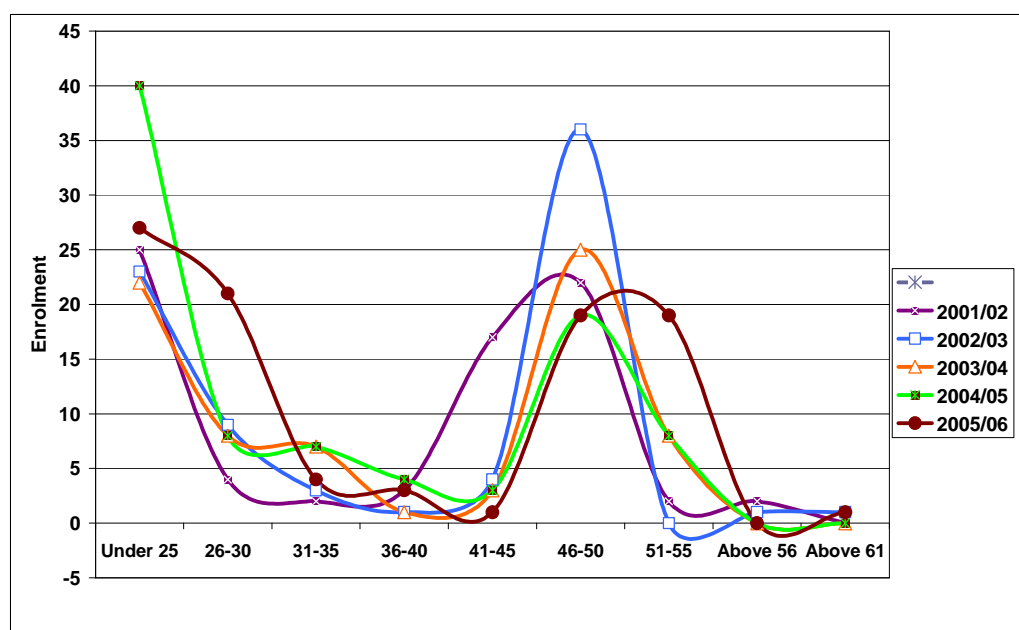
3.4 Teachers and Teacher Development

In 2008/09, there were 1,650 teachers in Ansai, including 590 teachers in secondary schools, 915 in primary schools and 150 substitute teachers mainly in primary schools. The number of teachers had fallen from 2,100 in 2001 and the number of substitute teachers had decreased from 850 in 2001/02 with the proportion falling from 40% to 9%. In 1990 66% of the 900 teachers were minban. Huaziping and Yanhewan both reduced the numbers of minban from over 60% in the early 2000s to below 10%. All the teachers in junior secondary schools are government teachers.

In comparison with early 1990s when the qualified teacher rate was 81% at primary and 50% at secondary the situation has improved greatly. Now over 95% of all teachers at both levels are qualified. Of 1,650 teaching staff in 2008/09, 10 had postgraduate certificates, and 660 undergraduate degrees. In 1990/91, the qualification rate of the teaching staff in primary school in Huaziping was 74% and it increased to 94% by 2005/06. About a third have three year College certificates and about a third of secondary teachers now have bachelor degrees and all are qualified. In Yanhewan teachers are better qualified and all have three year College level at primary, and 40% of secondary teachers have a bachelor degree.

Teachers are predominantly young. This can be seen in Huaziping where most are under 30 years old (Fig 20). There is also an older group who are 45 to 55 years old and close to retirement. In the central primary school 60% of the teachers are under 30 years old. These patterns are similar in Yanhewan reflect past recruitment and, to some degree, teachers being transferred out of rural schools after their first appointment. At secondary level it appears that there is a similar polarization towards young teachers with 70% being below the age of 40 years.

Figure 20: Age Structure of Primary Teachers in Huaziping



Teachers are predominantly male at primary level though in central primary schools the ratio tends to be closer to 50%. There is a lot of variation between schools with a minority of small schools having a preponderance of female teachers. In the 2000s it appears that the numbers of female teachers were increasing. The numbers of non-teaching staff in Ansai appear much lower than in Tongzhou. Over 95% of all faculty are teaching staff. The match of subject specialization was also high with the great majority of teachers teaching subjects that they were trained to teach.

In 1990, the pupil-teacher ratio at primary and secondary level was 15:1 and 13:1 respectively in Huaziping and 18:1 and 11:1 in Yanhewan. These levels were low by international standards. By the early 2000s the ratio had risen at primary level to 27:1 in Huaziping and 20:1 in Yanhewan. However, as enrolments fell, and teachers were retained in service, the pupil teacher ratio then fell such that by the late 2000s it was below 15:1 in Huaziping and as low as 11:1 in Yanhewan Central Primary School. Secondary pupil teacher ratios appear to have remained between 13:1 and 15:1.

These low ratios may indicate that there is scope for increased efficiency. In 2009, all the students from grade 1 to 5 had 8 periods of lessons every day, amounting to 40 lessons a week (38 in grade 6) in Huaziping Central Primary. There were three parallel classes in each grade so every teacher had an average of about 11 lessons per week, or about 2 lessons every day. The class size of the central primary school was very large at over 65 pupils. One option is to reduce class size, increase teaching loads and improve teacher utilization and teaching and learning quality. This could allow increased salaries funded from greater efficiency.

Yanhewan Central Primary School operated in a similar way with an even lower pupil teacher ratio. One of its associated primary schools had a pupil teacher ratio of only 7:1 as a result of rapidly falling enrolment. Two incomplete primary schools had a pupil teacher ratio of 12:1. In the first there were three teachers and 37 students and each teacher was responsible for each grade. They therefore all had classes all day and about 40 lessons every week across all subjects but with small class groups of around 12 pupils. In the other school there was only

one teacher and 12 students so the teacher had to teach all the time in a multi-grade environment.

The evidence that we have indicates that the teaching force does turnover with about 10% transferring in and out of schools each year. There are characteristically more transfers into the central primary schools than out since they are regarded as more desirable postings and these schools appear to have more stable staffing. Secondary schools have a turnover that is between 5% and 10%. In the group interview with teachers there was a general satisfaction with the accommodation, office space, and other treatment provided. However, they expressed a lack of satisfaction with pay, and with separation from their partners and children, since they only saw their families and children once a week or once a month. Though teaching is a good job locally many would apparently leave if they had a chance.

Problems with substitute teachers: 10% of the total number of teachers tend to work in incomplete schools. Treatment is worse than official teachers, only 700 yuan a month without any other benefit. Some of them have been working as teachers for over 10 to 20 years and very experienced. They have managed to get qualified through various challenges. But they still cannot get the status of official teachers as it is the policy of the county government that they stop transferring them to official teachers as more university or college graduates become teachers.

The story of teacher Zhou in Yanjiagou Incomplete primary school in Yanhewan Township is illustrative. She was 39 in 2008 and has been teaching for over 20 years as a primary school teacher. She managed to complete 3 year college study and became a qualified teacher and in 1993 she received a teacher certificate. Now her school has lost enrolments and only has preschool and grade one. It is a one class school so she uses multi-grade teaching methods to teach students of different ages. She has to teach all the subjects and teaches 30 periods a week. Her teaching load is much higher than the teachers in central primary schools. Her teaching preparation indicates that she is a very devoted teacher who cares greatly for her children. She gives special attention to a child in her class who has learning difficulties and gives special help and records his progress to ensure he does not drop out. She encourages him to integrate with other children. However, Ms Zhou remains a substitute teacher. Mr. Wu and Mr. Zheng in Chengmao Incomplete Primary School in Huaziping are in similar situation. Both of them are qualified teachers with a 3 year college education and teacher certificates. But they cannot become official teachers because the policy is to recruit new graduates.

3.5 Educational Funding and Infrastructure

Teachers' salaries have risen by a wide margin. The average monthly income of government teachers in Huaziping Primary School is about 1,200 yuan which can be compared with about 170 yuan in 1990. Substitute teachers still exist in Ansai though they were to be phased out. They typically now earn about 700 yuan though they undertake the same workload as government teachers.

There is an incentive system whereby home room teachers whose classes have outstanding achievements are rewarded. In the secondary schools incomes average about 1,300 yuan, and the teaching period fee is 6 yuan with a bonus of more than 20% of the typical salary under the structured salary scheme. The school provides teachers with dormitories next to their offices. Though Huaziping Secondary School provides more than many other secondary schools its conditions are less favourable than Ansai County Secondary School where the

average monthly income of teachers is more than 2,500 yuan, with a 12 yuan's per teaching period fee. In Yan'an City the monthly salaries reach more than 3,000 yuan. The bonus system in Huaziping Secondary School of four allowances - teaching hours, cost of living, performance related, and electricity is designed to partly compensate for these differences.

Yanhewan Central Primary School is similar to Huaziping though the average income is slightly more - about 1,300 yuan. In Huaziping teachers have 15 to 18 classes per week, or three to four a day. If they have more than 18 classes per week, they receive 2.5 yuan for each additional class. In Yanhewan, teachers have 12 classes per week, and receive 2.5 yuan for each extra class. Head teachers get an additional 100 to 150 yuan depending on the size of the school.

Structural wages are distributed according to the workload of all the working staff at school. The practice is that teachers get additional pay by teaching more lessons. The baseline for the number of teachers classes is 360. The class fee for secondary school senior teachers is 6 yuan, primary school senior teachers 5 yuan, primary school first class teachers is 4.5 yuan, and primary school second class teachers 4 yuan. Structural wages are distributed at the end of each term. The formula for calculating structured wages is as follows:

$$\text{Actual pay} = \text{personal subsidies reserved} + \text{teaching period fees} \times (\text{actual number of teaching period of the term} - 360)$$

The structured wage system reflects the principle of pay for work, but this system has some problems. First, the structured part of the pay comes from the salaries of teachers themselves and this decreases the pay of teachers each month. Thus the monthly income of a teacher in Huaziping Primary School is 1,200 yuan, but the actual pay is 840 yuan. The rest of the income will be re-paid after 5 months (at the end of term) when the teacher meets the standard. As one teacher said "the school actually rewards us with our own money, it is something like getting wool from the sheep". The structural wage system does not obviously provide a strong positive incentive to work harder and more effectively, rather a negative one to conform. Second, since substitute teachers already have relatively low wages, the implementation of structural wage system will further adversely affects their treatment.

In 1990, non-governmental sources accounted for 31% of the education funding in Ansai County. Now government funding is the main source of school income and the proportion of the county budget allocated to education has risen from about 19% in 1990, to over 40% in 2008. In addition there are contributions from the central, provincial, and prefectural level through various special funds.

An illustration indicates how schools are financed. Yanhewan Primary School is largely funded through two main tracks. The first is the recurrent fund of 350 yuan per student per school year. This is about seven times more than the capitation of 58 yuan in 1990. Second, there is the recurrent fund paid per teacher of 500 yuan per school year. In addition there is a 60 yuan subsidy per boarding student per school year. Thus for example the income received by Yanhewan Central Primary School for a year is: $350 \times 972 + 500 \times 85 + 60 \times 972 = 441,020$ yuan. This excludes teachers' salaries which are paid directly. It amounts to about 20% of the salary bill. Secondary school financing is similar with 550 yuan per student, 500 yuan per teacher and 75 yuan per boarder. Under the 'two exemptions and one subsidy' tuition and textbook fees are waived, and poor students are paid a subsidy of about 100 yuan a month.

Non-salary school expenditure has four main parts. First, office supplies and equipment including purchase of teaching aids and sports equipment. Second, home teacher allowances, with 500 yuan per term for a village school. Third, maintenance and reconstruction of school buildings. Fourth, performance related incentives for teachers. The financial income of the school is supplemented for large infrastructure projects and major building maintenance through application to a special fund.

No detailed inventory of facilities was possible in this research. However, it is possible to comment on adequacy, and some of the changes that have taken place. The fabric and facilities of the central primary schools and junior secondary schools are now of a good standard for rural schools. They include computer rooms, library, science laboratories, playgrounds, sports facilities, and the secondary schools have a campus network for the internet. Central schools have large campuses of 10,000- 20,000 square metres and a full range of facilities to support learning. Infrastructure in some of the incomplete schools has improved. It is clear that major investment has taken place and that learning conditions have been enhanced greatly since the 1990s.

There are still some issues. Students' dormitories in the central primary school and junior secondary school have improved since 1990 when they were bare rooms with mattresses on the floor. However, they remain over crowded with over 20 children in about 10 square metres and no furniture apart from beds, and no adjacent toilets. Some schools have no communal space and food is eaten in dormitories or sitting on the floor. The incomplete primary schools that remain are located in a variety of structures which are not necessarily purpose built as schools. Often they are attached to the village committee office building or a community hall. They generally do not have special facilities e.g. library, playground and sports facilities. However, they are no longer the dangerous and unsatisfactory cave schools that existed in 1990.

3.6 The Development of Boarding Schools

About 34% of all primary students in Ansai County in 2006/07 were boarding. In some schools boarders were the majority of children accounting for over 60% of total enrolment. Almost all those transferred from incomplete primary to central primary schools need to live in the school. Huaziping Central Primary had 282 boarders in 2008/09 of whom 118 were girls accounting for 26% of all the students. In Yanhewan Central Primary School there were 337 boarders, accounting for 54% of the total enrolment. In 2006/07 67% of all junior secondary children were boarding. The highest proportion of boarders was over 90% in Yanhewan Secondary School, and the lowest was 44%. The proportion of boarders in Huaziping Secondary School was 80%. In Yanhewan in 1990 only 24% boarded indicating that there has been a major shift in practice to favour more boarding. This will have increased costs per student.

School work schedules vary but a typical pattern is provided by Yanhewan Central Primary School. Students get up at 6:00 am and then take the seven formal classes every morning. In addition there are morning reading classes, and extra-curricular activities after school. Boarders have to take two additional evening classes, 40 minutes per class, until 21:00, and 21:30 is bedtime. The regime at secondary level is similar but more intensive with extended evening study periods up to 22.30.

Table 7: Timetable of Yanhewan Central Primary in the second term (2008/09)

Period of time	activities	time	activities	time
morning	Getting up	6: 00	Morning exercises, breakfast	6: 40-7: 50
	Morning reading	7: 50-8: 20	The first lesson	8: 30-9: 10
	The second lesson	9: 20-10: 00	Exercises during breaks	10: 00-10: 20
	The third lesson	10: 20-11: 00	The fourth lesson	11: 10-11: 50
noon	School over and lunch	11: 50-12: 20	Noon break	12: 20-14: 40
afternoon	Eye exercises	14: 55-15: 00	The fifth lesson	15: 00-15: 00
	The sixth lesson	15: 40-16: 20	The seventh lesson	16: 30-17: 10
	extra-curricular activity	17: 10-18: 10	School over and supper	18: 10
	Evening self-study (1)	19: 30-20: 10	Evening self-study (2)	20: 20-21: 00
	bedtime	21: 00-21: 20	Lights out	21: 30

Conditions for boarders remain austere. Generally in a room of about 10-15 square meters there are 5 standard double layer bunk beds. These should be used by 10 students but are actually used by 20 students sleeping two per mattress. In these dormitory rooms there are no tables or chairs or any other furniture, no toilet and no heating system, though the winters are well below freezing. There is also no system whereby carers are available to children in addition to the home room teachers who have general responsibility of the health, safety and wellbeing of the boarders. The caring of borders, especially those very young ones is a cause concern.

Increased boarding has been made necessary by the decrease of school age children and school mergers which have led many incomplete schools in villages disappear. The policy choice has been made to concentrate resources in a few large schools of reasonable scale. Children living in remote villages now start their schooling in nearby incomplete schools and then transfer to central primary at grade 3 or grade 5. They have to be boarders since central primary schools are distant from many villages, though this is changing as transport infrastructure improves. The presumed advantage of this policy is that children get better quality education in the central school than would otherwise be the case, not least because of the difficulties of posting good teachers to rural villages. There may be a price in terms of aspects of children's childhood and emotional well being.

Several issues were mentioned. First, boarding makes it difficult for parents to care for their youngest children who may become home sick and miss the emotional support and unconditional care that most parents give to their own children. Second, the boarding regime is demanding and children may not have much space for play and exploration. They spend long hours in learning from 7-10 pm and may have little free time and entertainment. Third, boarding can generate a financial burden on parents. Though it is fee-free some parents are so concerned that they rent houses near the school to take care of the child's daily life. As a result they have to spend money to rent houses and cannot work, so suffer a loss in income. Fourth, many teachers in Ansai are also boarders. Some we interviewed were married to other teachers teaching in different schools, with their own children going to school in other boarding schools in major cities far from Ansai. This aspect of high rates of boarding which affects teachers quality of life seems to have been little discussed and addressed.

In the interviews with older students it was clear that many were willing to live in the school, and believed that there were advantages. The advantages noted were that the teachers would help them with their studies; they could socialize with other children; and that the discipline

of boarding was good for their future well being. On the other hand some teachers complained that the management policy of ‘fixed position’, and the so-called ‘sentinel positioning system’ means that from morning to night they have to be responsible for the study and wellbeing of all the students and this increases their workload. In addition to formal classes, teacher must be on post for tutoring, self-study classes, exercises during breaks, and bed checks. As one teacher has put it: “managing the students too rigorously will make students have no imagination and have a lack of enthusiasm for study. If students cannot learn independently, the more the teachers teach, the more dependent they will be on the teachers.”

Though many boarders in Ansai qualify for the “Two exemptions and one subsidy” policy, parents who were interviewed expressed the view that the costs were still substantial. Excluding the cost of tuition and textbooks, the 75 yuan per month living allowance is not enough for the boarders. For example, each meal costs a student about 2-4 per yuan, 7-10 yuan per day, and at least 200 yuan per month. In discussion with students it became clear that between 20-40 yuan per month are needed in addition. Thus parents need to pay 100-150 yuan living expenses a month for boarding children over and above the subsidy.

Closely related to the development of boarding is the extent to which the number of “left-behind” children is growing. This occurs when parents work away from Ansai as migrant workers. Children have to live with their grandparents, or be entrusted to the care of their relatives. For example, in Yanhewan Central Primary School in the last five years the number of left-behind children was between 70 and 90, accounting for about 10% of the total enrolled students.

“Left-behind” children are a special group who have a disproportionate amount of learning problems. Teachers indicated that some left-behind children are withdrawn and indifferent, and their academic achievement is not as good as other students. Because they often live with their grandparents who may have low levels of education, they may be spoiled and given little help and guidance in their studies. Although it is argued, teachers try their best to give help to these children, the issues are often complex. Several left-behind children we interviewed were clearly distressed they did not see their parents for long periods, sometimes more than a year at a time.

3.7 Concluding Comments

In general, access to nine year compulsory education has clearly improved considerably in Huaziping and Yanhewan. Almost all the children now enter primary school and the great majority reach the end of the primary school and have a good chance of enrolling in junior secondary. This was not the case in 1990 when enrolments in grade 6 were only 25% of those in grade 1 and drop out was a major issue. The participation of girls is now broadly similar to that of boys, achievement appears to have improved, and the physical condition of the larger schools has been greatly improved. Almost all teachers are qualified and teaching subjects in which they are trained, and increasing numbers now have bachelor degrees. Though there is a turnover of teachers, this is also accompanied by an increase in the qualification level of those in post which should improve quality. Minban teachers have been greatly reduced in number though some remain. A major change has been that the county has taken over most of the responsibility for financing compulsory education. The panopoly of fundraising devices used at local level in 1990 has been replaced by a much simpler administrative system based on formula funding. Teachers are now also paid into their bank accounts avoiding the delays that

were previously common. The “two exemptions and one subsidy” has reduced the burden on poor households and is likely to have contributed to reduced rates of drop out.

These developments have taken place against a background of rapid economic development, accelerated by revenues from the exploitation of oil and natural gas, and the commercialization of agriculture. Enrolments grew between 1990 and the early 2000s but since then have declined as demographic changes have reduced the number of school age children by as much as 50% in ten years. This has arisen as a result of a combination of declining birth rate and outward migration for work in more prosperous parts of China.

There are a number of issues that are raised by the case study of Ansai which can focus future policy dialogue and practice to support the implementation of nine year compulsory education.

First, demographic changes are likely to continue and need to be anticipated. The macro economic and social dimensions of these changes are outside the scope of this paper, but a view has to be taken as to whether the number of school age children will halve again in the next ten years, or whether changes will occur that will lead to a different outcome. Planning provision depends fundamentally on how many children need access to education. Falling enrolments at the high rates that have been experienced create institutional and pedagogic challenges that need to be addressed if inefficiency is not to grow and educational quality to suffer.

Second, the rationalization of small schools has taken place on a large scale. The number of schools has more than halved in Ansai as a whole and has fallen even more sharply in Huaziping and Yanhewan. This has resulted in a number of stress points. Merging small schools with larger schools has necessitated more boarding than would otherwise be the case. This has costs and educational implications, especially where it means very young children are separated from their parents. Though concentration of enrolments in large schools can result in economies of scale these may become marginal above a certain school size of 750-1,000. There may also be diminished economies of scale.

In addition, those small schools that remain may suffer from relative neglect and falling demand to the point that they become non-viable if they are not seen to have a future; teachers may be demotivated and parents may try to transfer their children. There is also a growing issue about pre-school provision which is most likely to be delivered effectively close to pre-schoolers homes. Managing the dynamics of transition is clearly a challenge in Ansai. Over time, almost all children may become boarders from lower and lower grades. Alternatively new kinds of incomplete schools including pre-schools and early grades might be developed with multi-grade pedagogies and access to internet and other distance technologies that can link in low population density communities to mainstream educational services. Though the policy of reducing the number of small rural schools in favour of concentrating resources in large boarding schools had many attractions in the last two decades, it may be that the time has come to reappraise the options and the costs and benefits.

Third, high levels of boarding school participation have raised issues of both child development and pedagogy, and issues for teachers. There appears to be little grounded research but much opinion about the benefits of boarding schools for improvements in the quality of education for rural children. There is scope for more evidenced based research on what the effects may be and how the beneficial aspects can be maximized and the negative

aspects minimized. This applies to both the children whose emotional support and family relationships are central to their developing identities, and to teachers who may or may not be attracted to the conditions of employment that boarding schools provide.

Fourth, though enrolment rates are high and drop out rates generally low, it appears that there are still issues about over-age enrolment and whether all students will graduate on schedule. Late entry into grade 1 and repetition still occurs, though it should no longer be visible. The reasons vary but some are certainly subject to policy intervention – late entry should be discouraged and entry at age six promoted at community level; repetition is a curriculum and learning issue that needs to be addressed within schools; age grade slippage related to school transfer should be managed in ways that reduce the problem. Over-age enrolment has consequences – the more over-age the less likely to enter and complete junior secondary school and the greater the chance of falling behind in learning. All countries that have high participation in schooling have few over-age students.

Fifth, the deployment of teachers and the efficiency with which their time is allocated remains an issue. Some schools have an unbalanced age structure in their teacher cadres which may result in shortages of experienced teachers in mid career. Some schools now have very low pupil teacher ratios. Even in larger schools teacher workloads can appear modest, with less than half the number of teaching periods in a week being taught. If this is the result of managed decisions on resource allocation it may be appropriate. But if it is the result of organizing large classes to minimize teaching hours a week it has a cost in the quality of interaction between students and teachers. Gains in efficiency could result in higher salaries for teachers justified by increased productivity.

Sixth, though the number of minban and dai ke teachers has been reduced there are still a significant number many of whom appear to render good service for very modest rewards. It is well known that it is difficult to deploy official teachers to small and remote villages to teach, and that is partly why substitute teachers continue to be employed. But those teachers who take on these jobs need to be properly motivated and equitably treated. Many are now qualified and have a lot of experience. Most of those who were unqualified minban have now retired. Under current circumstances with the system which guarantees state financing of teachers' salaries, the anomaly of this category of teacher should be removed. These teachers should either become qualified and be employed as full time government teachers, or should be redeployed.

Seventh, it is clear that significant disparities remain between rural and urban areas in Ansai, between school types, and between communities. The differences may have been growing with rapid economic development and uneven growth. These disparities need to be monitored and managed so that they decrease rather than increase.

Eighth, data on schools, pupils, teachers, and facilities has improved considerably over the last twenty years. However, many gaps remain which need to be filled if policy is to be informed by up to date and reliable statistics.

4. Nine Year Compulsory Education in a National Minority Area Zhaojue County, Yi Autonomous Prefecture, Sichuan

4.1 Social and Economic Background

Zhaojue County lies 100 kilometres east of Xichang, the capital of Yi Autonomous Prefecture in Sichuan Province and is located in the rugged and under developed Liangshan Mountains south of Yuexi County, north of Jinyang, Butuo and Puge County. The Yi national minority can be found in Sichuan, Yunan and Guizhou and number about 10 million people. The county covers 2,700 square kilometres and has low population density. Zhaojue County administers 47 xiangs (towns), 267 villagers' committees and 835 villagers' groups. The total population at the end of 2009 was 268,000, 98% of whom are Yi people. Yi is widely spoken and is a written language though there are relatively few sources of print material in Yi. In 1990 there were few radio sets, a handful of televisions, and no telephones outside Zhaojue and the main road communication lines. Now radio and television reach most areas, and mobile phones are common. Remote valleys still remain isolated. Most schools operate using Chinese as the medium of instruction but some maintain dual medium streams.

The altitude in Zhaojue varies between 520 m and 3900 m above the sea level, with an average altitude of 2300 m. As a result the climate is harsh. The annual precipitation is high at over 1000 mm, the average annual temperature is 11 degrees centigrade and it has nearly 1900 hours of sunshine annually. The winters are cold with much snow and below freezing temperatures and the summers hot and humid. The four seasons can be experienced in one day when moving from valleys to mountains.

The area is agriculturally dependent on wheat, corn, potato, buckwheat and oats which are cultivated in the lower valley floors. Only about 10% of the land can be cultivated. Though water is available in abundance there are also high levels of erosion along water courses that periodically flood. Historically Yi people were pastoral herders living in dispersed settlements throughout the region practicing shifting cultivation and moving up and down the mountains in search of pasture in different seasons.

Transport infrastructure remains poorly developed. Though the highway to Xichang has been upgraded and is now fully asphalted, roads beyond Zhaojue remain unsurfaced and can become impassable when there is heavy rain. New village style housing is being constructed along the main valley and Yi people are being offered subsidies to adopt a more sedentary pattern of livelihood and lifestyle. This is creating communities which are large enough to support conventional schools mostly located along the roads along the valley floors.

The county has always been poor since it has no industry of magnitude that can generate revenue on scale. The county budget continues to depend on subsidies from higher levels to support the costs of its services including education. Though urban residents appear to have an average income of as much as 11,700 yuan per year, few enjoy this level of income since most of the population is rural and some is on the margins of the cash economy. Rural average incomes are estimated at only 2,600 yuan per year. Zhaojue is conspicuously much poorer than Tongzhou and Ansai.

Before 1950 the Yi people had a feudal society with traditional landowners and serfs working the cultivatable land and herding. Yields were very low, basic needs of shelter and nutrition went unmet for many, and security was problematic as rival clans fought over resources.

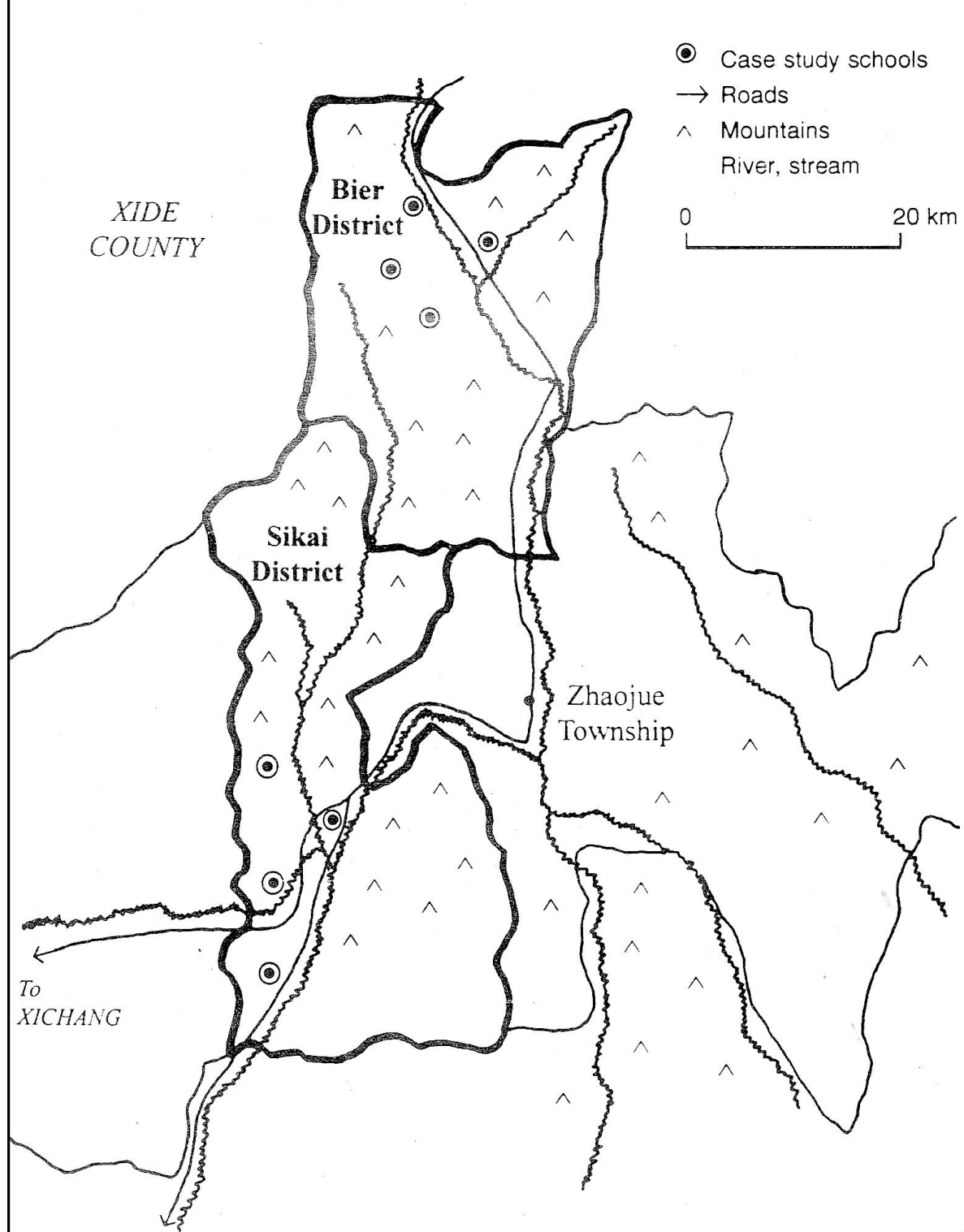
Since 1956 and especially since the 1980s the county government has invested in agriculture and livestock and has introduced rotation of crops and cultivation of the grassland. Yields have increased and sheep have become an important source of income on planted grasslands. Most output remains related directly to agriculture. Thus, though economic development is taking place the economy of Zhaojue is small scale and under developed.

As a national minority Yi people are not subject to the one child policy and may have several children. In 1990 large families were common and many had several brothers and sisters. Typically families had two or three school age children. This also appeared to be the case in 2010. The birth rate therefore remains much higher than that in Ansai and Tongzhou and there is no clear indication that it has begun to fall.

What had changed between 1990 and 2010 was that HIV/AIDS had appeared in the Yi population and had produced substantial numbers of single and double orphan children, many of who had difficulty in consistently accessing schooling. The source of the problem is attributed locally to illicit use of intravenous drugs with shared needles, and to the social impact of opportunities for Yi people to temporarily migrate to other parts of China with surplus demand for labour. The seriousness of this development is now recognized, and public campaigns have sensitized the population to the risks and transmission vectors.

Zhaojue has benefitted from China's investment in the development of the Western Regions which has directed substantial resources into infrastructure and education and health. Over the last three years there has been a push to increase initial enrolments in school and to construct and rehabilitate school buildings. This has proceeded in parallel with investments in improving roads and building houses in new villages along the valley floor. Zhaojue County Town is developing and is a vibrant market town. Its main streets include retail outlets, small hotels, banks and restaurants which contrast with its appearance in 1990 when there were a few shops selling mostly basic commodities and the town was much smaller with very few large buildings.

Map 4:
Site 3 - Zhaojue County in
Qong Shan Yi Autonomous Region



4.2 Change and Transformation in Zhaojue in Bier and Sikai

Two areas were selected for case studies in Zhaojue. These were Bier and Sikai. Bier District is 32 kilometres north of Zhaojue County. It links with Yuexi County in the north and Pangxide County in the west. The Bier River goes through the district from the north to the south. The only flat land is along the bank of the river and the rest of the district is mountainous with an average elevation of 2500 metres and a high point of 3,900 metres. Bier remains difficult to access along a road which becomes impassable in poor weather and which follows the line of the river. Roads leading off the main road remain only suitable for four wheel drives. There is a private bus service along the road but the price of 10 yuan for a ticket to Zhaojue is a disincentive to many who are not receiving regular salaries. It is not used by school children. In this area the population density is very low and the grazing is very poor. Frost and hail are major natural hazards which destroy the crops. Though there has been some economic development including a potato processing plant, physical infrastructure remains poor and the quality of many buildings is low. Bier xiang has not benefitted as Sikai has from being located on the road between Zhaojue and Xichang where more investment has been concentrated.

Sikai District was the other case study area chosen. It lies more than 20 kilometres southwest of Zhaojue County Town and is contiguous to Bier District and Xide County in the north, Fucheng District in the east, Jiefanggou District in the west, and Butuo County in the north. Several small rivers run across the district, and it has a relatively large plain area unlike Bier. On average it is 2,200 m above the sea level, and the highest point is 2,800 m. It is a little warmer than Bier and has a higher rainfall. The land is more fertile than Bier and there is some irrigation, commercial agriculture, and some mining and small scale industry. Ribbon development is taking place along the main road that leads to the city of Xichang on the plain below.

Sikai has developed faster than Bier and it is clear that levels of investment in infrastructure and buildings including schools have been substantial. The transport system has continued to improve in Sikai and the main artery road to Xichang and the rest of Sichuan and China passes through Sikai with a regular bus service down to the plain. Sikai is no longer isolated from the outside world, at least for those living along the highway. Whereas in 1990 only three families owned a tv set these are now commonplace, as are mobile phones. Thus Sikai remains richer and more developed as was the case in 1990.

4.3 The Evolution of Nine Year Compulsory Education in Zhaojue in Bier and Sikai

The evolution in the number of schools in Zhaojue has followed a very different pattern to that in the other case study areas. In 1990 there were 122 primary schools including two at county town level with the rest at village school level. By 2005 the number of village schools had more than doubled to 261 and the two county schools continued with expanded enrolments. Another county primary school was established in 2007 – a National Primary School with 1200 enrolment. The new village level schools are the result of commitments to provide access to all children many of whom live in remote villages and settlements away from main roads and sometimes in settlements in the high mountains. They include eight central primary schools.

Though many children walk for long periods to school the pattern of settlement is such that without small schools access would be very limited. Though many new schools have been

established it is also true that many have very limited facilities often without electricity or drinking water, and without safe, dry, warm and light space for learning and teaching. Zhaojue County officials indicated that they were at the beginning of a process of consolidation of teaching points and merging schools. This process was going to result in an increase in boarding because of the demographics of the population and the physical topography. Ten small schools were closed between 2006 and 2010 and the process was set to continue as boarding places were made available. Before 2004 there were 9 primary schools in Bier. After 2004 there was only one central primary school and 3 incomplete primary schools as a result of mergers to increase efficiency and reduce costs.

Zhaojue has two complete secondary schools - Zhaojue County Secondary School and Zhaojue County National Secondary School. Both are located in Zhaojue Township and both existed in 1990. These two schools are widely seen as the best secondary schools in the county because of their location and ability to attract and retain the best teachers. The number of junior secondary schools has increased from one in 1990 to 6 in the academic year 2009. The Bureau of Culture and Education in Zhaojue has the county government's mandate to support education and, for secondary schooling, it devolves the responsibilities to the lower district level authorities. There are six districts in Zhaojue County and each now has a junior secondary school.

Across Liangshan Yi Autonomous Prefecture in which Zhaojue is located teaching follows one of two models. In Model 1 all subjects in grades 1 to 6 are taught in the Yi language and Chinese is taught as a major subject. In 2010, there were only 14 schools using Model 1 with 1,400 students and 80 teachers. In Model 2 all subjects of grades 3 to 6 grades are taught in Chinese, and Yi language is treated as a major subject. Grade 1 and 2 are taught bilingually in Yi and Chinese. All schools in Bier and Sikai belong to Model 2. Generally, teachers teach in Chinese and the textbooks are the same as those used in non-ethnic minority regions. In these schools teachers indicated that in lower grades much teaching had to be in Yi. At higher levels Chinese was used most of the time. Most pupils from incomplete schools come from a non Chinese language spoken environment, both at home and outside the school. Children cannot understand Chinese at all. Learning is more difficult for these children as textbooks are in Chinese. This is one reason why learning achievement is low.

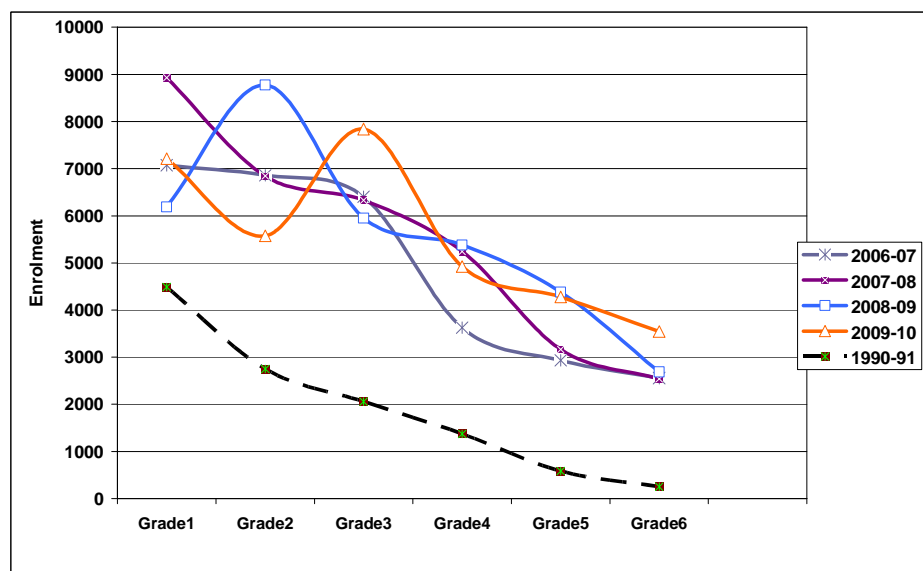
Patterns of enrolment in Zhaojue have resulted in significant growth in numbers since 2007 when over 26,000 were enrolled. This can be compared with 1990 when enrolments only reached 11,500. At that time there were only 250 children in grade 6 and 4,500 in grade 1. Not much more than one in twenty children who started school completed grade 6, and there were more than twice as many boys as girls enrolled.

Figure 21 shows how enrolments have been changing and have more than doubled over twenty years. In 2007/8 special efforts were made to increase the enrolment of children. In 2007/8 grade 1 enrolments were high and the bulge of enrolments moved on to grade 2 in 2008/9 and grade 3 in 2009/10. Those enrolled included over age children. The next cohort entering in grade 1 in 2008/9 was smaller since no more over-age children could be enrolled. In most recent years the numbers in grade 6 have been around half those in grade 1 indicating that drop out remains serious issue.

The current pattern can be compared with enrolments in 1990 shown by the dotted line. It is clear that many more children are attending school. It is also clear that many of those who enrol in grade 1 are still unlikely to graduate since the numbers in grade 6 remain much lower

than in grade 1. Overall in 2010 there appeared to be less than 1,000 children in the primary age group who are out of school, out of about 31,000, according to county statistics. These may underestimate both school age children and those out of school.

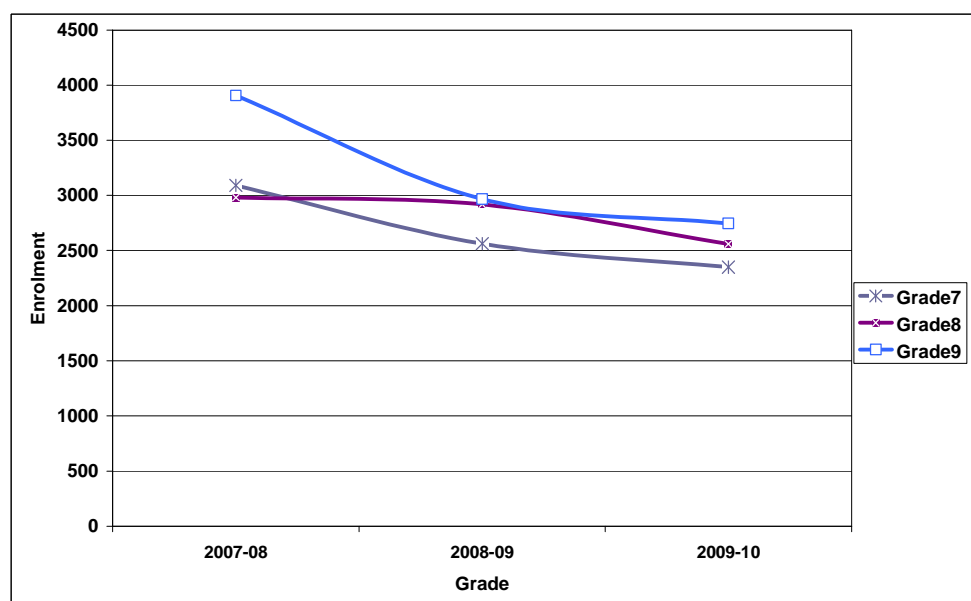
Figure 21: Enrolments in Zhaojue



Currently 42% of those enrolled in primary are girls and the proportion continues to rise. In 1990 very few girls were enrolled and some village schools had no girls in grade 6. The problem was recognised and some all girl classes were introduced in one central primary school. These classes group all girls together in a grade and are often supported by subsidies from sponsors. In 2010 some all girl classes were in evidence in much the same pattern as in 1990. The classes did not appear to run all through the school but were only in particular grades. The sponsored grade group moved forward together. As far as could be established the curriculum followed differed little from that offered to mixed classes and the books used were the same. It seems that the innovation has persisted on a small scale and has not been generalised across the schools.

Enrolments at junior secondary level are now about 7,600 which can be compared with 1,380 in 1990 – a fivefold increase. Most of those who enter grade 7 complete grade 9. Between 35% and 40% are girls: this is similar to 1990. Enrolments seem to have been falling since 2007 (Figure 22). This is most likely to reflect the fact that some who enrol transfer to other schools outside Zhaojue in search of better quality schooling. Those who reach this level and drop out are a relatively small number. It appears that about 6,000 of the 12,000 in the lower secondary age group are not enrolled.

Figure 22: Enrolments in Junior Secondary



Efforts were made to establish the dropout rate. This is difficult because flows of children through the system are uneven, especially after the 2007/8 campaign to enrol all school age children. It is also complicated by the transfers of some students into town schools after the scholarship examinations in grade 3, and the transfer of others to schools outside Zhaojue, in Xichang and elsewhere. No clear records were available on these transfers.

At the most obvious level the number of students in grade 6 in Zhaojue in academic year 2009-2010 was 3,345. In 2006-7 the number enrolled in grade 3 was 6,403 so about 3,058 had failed to arrive in grade 6 four years later. As many as half of those who entered grade 3 in 2006-7 had probably left school by 2010. It is very unlikely that all or even most of the 1,150 who did not transit between grade 3 and 4 were transferred out of the Zhaojue system altogether. If they were transferred to schools in Zhaojue they would have been counted in the enrolment statistics. Though there are some signs that the dropout rate may be falling in the last three years it is too soon to establish if this is a long term trend. Thus though drop out has decreased, and more than half those who enter grade 1 probably reach grade 6, it is far from being eliminated.

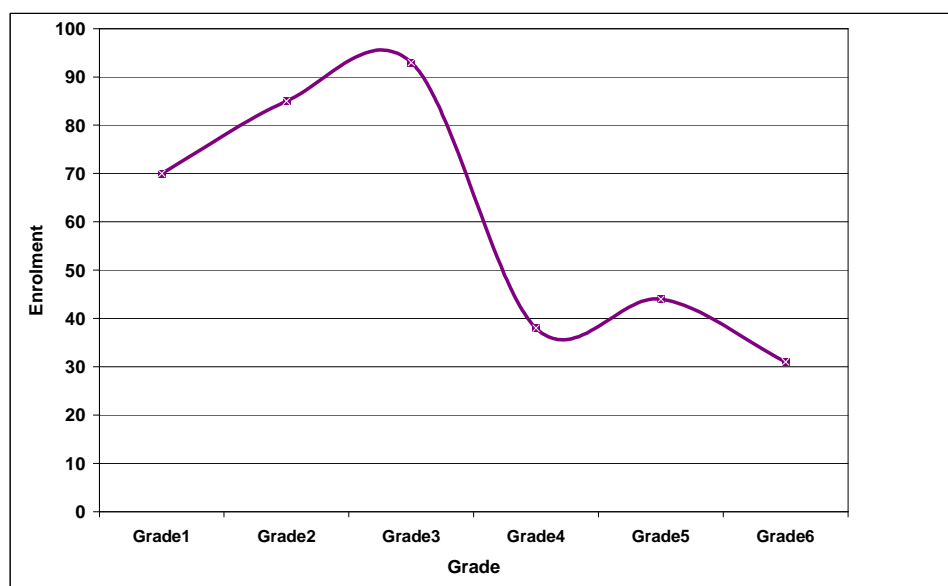
The data from Bier and Sikai District show similar patterns. Thus for example in Bier about 3,500 7-12 year olds were in school out of 4,750, and this represented about 74% of the age group. 1,250 were identified as not going to school, or at least 25% of all school age children. Amongst 13-15 year olds about 700 out of 1,850 were in school or 38% and over 60% were not attending. Only 6% of 17 year olds were still in school of which 80% were still in primary school. From interviews and other data the students who transferred to other schools only accounted for a small part of the attrition. It was thought most dropped out and sought work inside or outside Zhaojue. The most common reasons teachers cited for drop out were the demands for labour to contribute to household income, other household work, and paid work outside Zhaojue. Less frequently they attributed the causes to long distances to travel to school and family poverty and to the costs of schooling. "School weariness" was also cited where students became bored with school work and ceased to see it as relevant. There was a widespread feeling amongst teachers interviewed, that some of the problems lay with the

attitudes of parents who failed to see the value of schooling and prioritized the immediate benefits of additional contributions to household production.

There is no reliable data on how many children who have never attended school. The numbers cannot be very large but they are not insignificant. Fieldworkers had little difficulty locating itinerant Yi teenagers in Xichang most of who had dropped out and some of whom had never been to school. Interviews with orphans in Sikai indicated that some were from households where other siblings had not attended school at all. There appeared not clear chain of accountability that would ensure that all children had the opportunity to attend school. Those who did not attend were not apparently systematically located and supported to come to school either by schools or by village authorities, though there were examples of initiatives taken by individuals and some communities.

In 2009 class sizes in Zhaojue averaged between 45 and 50 children. This average is misleading since many of the schools were small village schools with small classes. Village schools average class sizes of about 30 across Zhaojue. About a third of all classes are less than 25 children and these are all in village schools. A third of classes are over 46 in number, half of which are in central primary schools. The central primary schools have much larger classes and average over 65:1. In particular, grades 1-3 have over sized classes where there may be over 90 in a single classroom as Fig 23 shows. In grade 3 there is a selection examination and those who are successful are transferred to schools in the county town, including the school reserved for Yi minority children. Enrolments drop in grade 4 and above in the central primary school as a result. However, similar numbers of classrooms and teachers are allocated leading to a fall in class size.

Figure 23: Central Primary School Class Sizes



Oversize classes are problematic since classrooms are built to hold about 50 children. Some now house between 80 and 100 children in five rows of seven desks with three children to a desk. In strong contrast with Tongzhou children who now have individual desks to work on. There is also a pre-school class with more than 130 children aged from 4 to 6 years old, in one of the central primary schools. This creates a crowded and noisy environment where

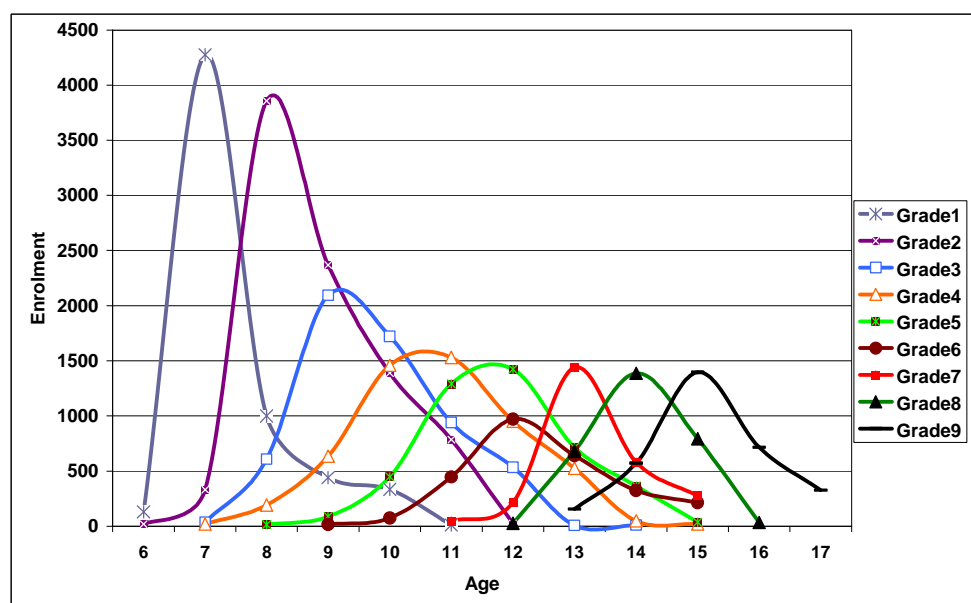
systematic learning is unlikely. In this case the children had no school bags or books and the activity appeared to consist of little more than child minding.

The legal age of entry to school in Zhaojue County remains at 7 years old. The records show that some do start schooling at the age of six, especially in the townships. But many do not enter school until they are eight or more years old. This means from the outset these children are at least a year behind those in Tongzhou and other parts of China who start at six years old. A substantial issue remains with both age of initial enrolment, and the on-age progression through the grades.

It is clear from the data in Figure 24 that many children enter school late. In fact over 31% are 8 years or older and 16% are 9 years or older. By grade 6 nearly 40% are 14 years or older and 19% are 15 years or older, or 2 years above the normal age in grade. At junior secondary level, similarly, about 40% of children are overage. The numbers of overage have remained largely unchanged over the last five years across the county. There is evidence that since 2007 more children are entering the central primary school at the age of 7 years, but this change does not seem to have reached the majority of village schools where most are enrolled.

The reasons for overage entry and progression vary in Zhaojue. Amongst the reasons given were that since households often have three or more children it is often the case that older children have to take care of younger children. They may also have to contribute labour to household agriculture. This can delay school entry for some children. The culture of school going is argued to be weak and there is no sense of urgency amongst parents to enrol children, especially if they are small for their age. Many children appear stunted and thus look younger than they are. Repetition of grades is also fairly common according to teachers leading to a slippage of age in grade. Most village schools are incomplete primary schools with only two or three grades, and little or no systematic monitoring of progress, and no clear criteria for promotion from grade to grade. Educational quality can be very low and teaching irregular so that children have difficulties in keeping up with learning. This is especially true if children transfer to other schools with higher grades, they may be asked to repeat a year to reach the same level as children already in these higher quality complete schools.

Figure 24: Age and Grade in Zhaojue



The curriculum followed in Zhaojue is essentially the same as that in other parts of China. The timing of lessons is adjusted to suit local circumstances. A typical timetable for a grade 5 class is shown in Table 8. In the morning, there are 30 minutes for reading. At noon, 40 minutes is allowed for exercise or Ashiqie (a folk dance activity). Where videos and TVs are available, lessons that have been prepared by master teachers and distributed to schools are played to children, especially for English language lessons and sometimes for science where teachers are often unavailable or untrained. At the end of the school day, students clean the classroom and school compound. The time to travel between home and school for non-residential students averages 1-2 hours each way as most children walk to school, often over mountain paths. Schools generally do not provide lunch for non-residential students, though some do for payment.

Table 8: Timetable for Grade 5 – Zhaojue

	Monday	Tuesday	Wednesday	Thursday	Friday
10:00-10:30 Morning reading	Chinese	Math	Chinese	Math	Chinese
10:40-11:20 First lesson	Chinese	Math	Chinese	Math	Chinese
11:30-12:10 Second lesson	Math	Chinese	Chinese	Chinese	Math
12:20-13:00 Third lesson	Math	Chinese remote education	Math broadcast	Chinese broadcast	Math remote education
13:00-13:40	Exercise or Ashiqie				
13:40-14:20 Fourth lesson	Traditional education	Music	Math	Yi language	Labor
14:30-15:10 Fifth lesson	Traditional education	Art	Ideological education	Yi language	PE
15:20-16:00 Sixth lesson	Safety education	PE	PE	Science	School activities
16:00-16:30	Cleaning				

As in the other case studies comparable data on achievement over time is not available. County level tests are administered and give some indication of performance. Children in Zhaojue at primary level appear to perform better in mathematics than in Chinese as might be expected since Chinese is not the mother tongue of most children. Zhaojue appears to perform around the average for Liangshan Prefecture, with variations around the average in different grades. Surprisingly performance in Yi language was weak, but this is likely to be because in most schools only two periods a week are allocated to the subject and much more time is given to learning Chinese since they are Model 2 schools. There is a wide gap between junior secondary schools' scores and prefecture averages. This is particularly wide in subjects other than the core curriculum subjects of Chinese and mathematics. Low achievement may reflect the disadvantages that many children bring with them from their primary schools and problems with maintaining standards and motivation in relatively remote locations. Overall it appears many children in Zhaojue are performing well below levels of achievement in Tongxian.

Zhaojue has suffered from exposure to the HIV/AIDs pandemic. Its location is such that Zhaojue County has been the transshipment point for trafficking drugs. It may also have been affected by Zhaojue migrant labour returning home with infections. In the late 1990s mortality from AIDs became more evident and the number of single and double orphans began to increase. Several of the central primary schools now have classes for orphans and most of these are sponsored by non government organisations and philanthropists. Though it is difficult to establish how many orphans there are, these orphan classes account for 5-10% of enrolment in the central primary school and do not include all orphans. For orphans in special classes the room and board is free. But there is no subsidy or allowance for the orphans in common classes.

It was not possible to establish systematically how effective special provision was in Zhaojue. Orphans appeared grouped in single classes sponsored by benefactors, but not all grades had such classes. It was not clear what the rationale was for such grouping. Neither did it seem equitable that some orphans were sponsored in these special classes and others were not. Or why some were housed in separate living accommodation from other boarders which was privately sponsored. Though teachers noted that some orphans were more likely to lack self-confidence, be less communicative, and be low achievers, there appeared to be no access to

specialist support that might diagnose and treat these manifestations of potential marginalization and illness.

4.4 Teachers and Teacher Deployment

There are now 1,320 primary and 360 junior secondary teachers in Zhaojue which can be compared to 645 and 250 respectively in 1990. The number enrolled has therefore grown faster than the number of teachers. In 1990 there were over 300 minban and substitute teachers making up as much as 32% of all teachers. It appears that over 200 still remain. Most teachers were young in 1990. This remains the case with over 50% of primary teachers and more than 65% of secondary teachers being under 30 years old as Figure 25 and 26 show.

Figure 25: Age of Teachers in Primary Schools in Zhaojue

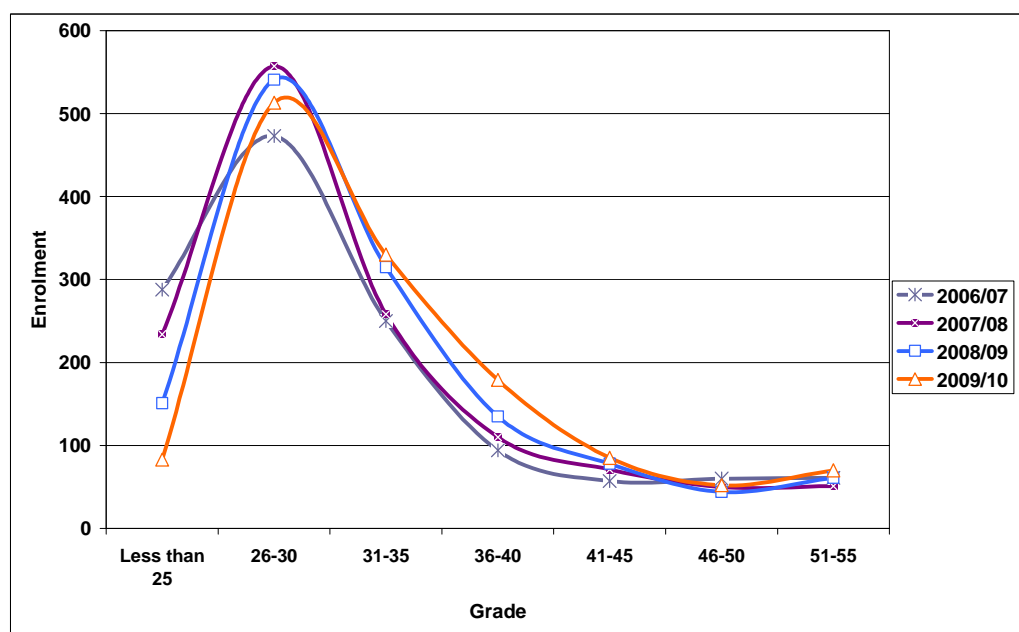
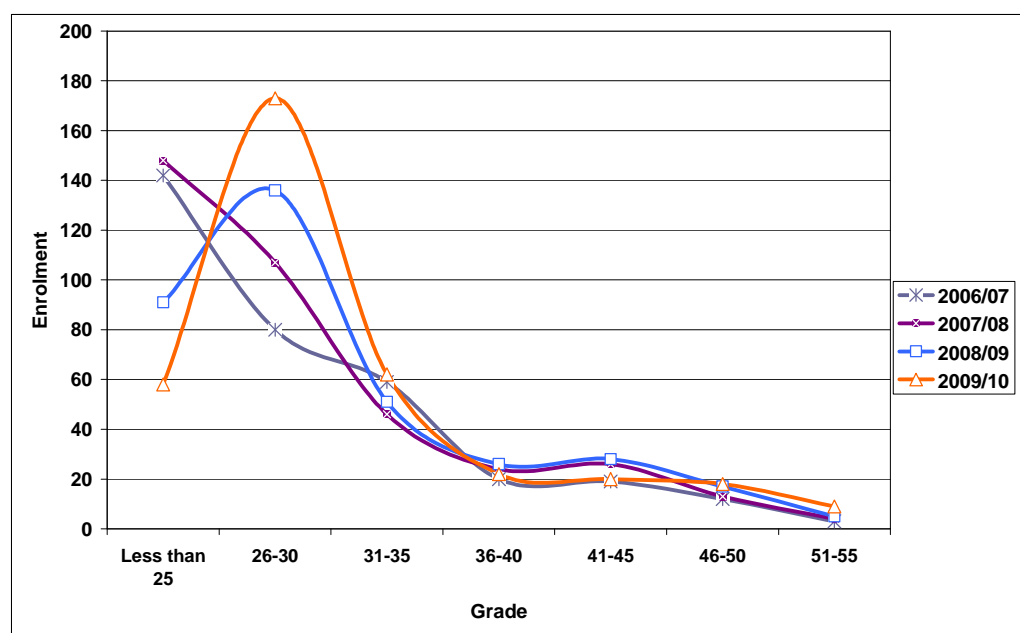


Figure 26: Age of Junior Secondary Teachers in Zhaojue



Two thirds of the primary teachers were Yi nationality in 1990, and the proportion has now increased to about 73%. At junior secondary level the proportion of Yi teachers is now 45% and the remaining teachers are Han. Yi teachers are concentrated in the lower grades of the primary school not least because children cannot speak Chinese and lessons have to switch between languages. Most teachers are male in a ratio of 1.5:1 at primary level and 1.9:1 at junior secondary. This is an improvement over 1990 when less than 20% of all teachers were female, and in many village schools there were no female teachers.

In 1990 most teachers who were not minban and substitute teachers were qualified. Now minban and substitute teachers have been reduced and most teachers are government paid. Primary school teachers have to hold a high school diploma or above, and junior secondary teachers a college diploma or above. In 2010, 96% of teachers at primary level and 99% junior secondary teachers were qualified by these standards. There are still quite a number of incomplete schools and teaching points. Most of the substitute teachers are working in incomplete schools and teaching points. Unlike in Ansai where substitute teachers have no chance to become official teachers, in Zhaojue substitute teachers have the chance to take part in assessments and become official teachers once every two years.

Pupil teacher ratios have increased. Across Zhaojue these averaged 13:1 in 1990 with nearly 2 teachers per class at primary level. At junior secondary, the ratios were about 7:1 and over 4:1 teachers per class. These were very generous levels of staffing. In 2010 the average pupil teacher ratio had increased to 24:1 at primary and there were 1.4 teachers per class. At junior secondary the pupil teacher ratio reached 20:1 and the number of teachers per class had fallen to less than 3 per class.

Overall these current ratios may be appropriate and are comparable with national standards. However, they do vary considerably from the average in different schools. Village primary schools tend to have higher ratios – an average of 26:1 compared to 20:1 in towns, because of shortage of teachers willing to work in their remoter conditions. Rural junior secondary schools have lower ratios (18:1 compared to 24:1 in towns) because of their more specialised

teachers and small enrolments. In the mid 2000s when many secondary age students went in search of work pupil teacher ratios in the junior secondary schools fell to only 6:1. In contrast to this very low ratio the pupil teacher ratio in Sikai Central Primary School approached 40:1 for much of the last five years.

Teachers were recruited in Zhaojue in advance of the initiatives in 2007/8 to popularise compulsory education, were accompanied by an inspection. In the last two years the number of teachers has been falling. The county government determines the number of teachers employed and controls transfers. It appears that about 10 % of teachers are transferred in and out of schools each year. There is a competition each year to select the best teachers who qualify for transfers to better schools. Though this may motivate some teachers, it may reduce the quality in the schools they leave. Zhaojue remains an unpopular posting for those teachers who do not come from the area. Many rural teachers also indicated a preference to work closer to Zhaojue Town.

Teachers' salaries in Zhaojue have been increasing with monthly average of 2,300 yuan , the highest salary is 3,200 yuan per month. This is above the average agricultural income in the area. Substitute teachers only receive 600 yuan each month without any other benefit. However, living expenses are high and a lot of money is spent on transport and commuting, and there are not enough houses for all so some pay rent. In 1990 salaries for teachers were between 180 yuan per month and 200 yuan per month and have therefore increased ten times. Though the increase in salary has been more than in other places it is still a subject of dissatisfaction.

4.5 Educational Funding and Infrastructure

The management of the primary school system in Zhaojue is undertaken by principals of central primary schools, though formally the responsibility is with the district office of Culture and Education. School principals are responsible for instruction in the central school and for instruction and administrative work in other schools in this district. Thus Bier district has eight administrative Xiangs each of which has a central primary school linked to the Bier Office of Culture and Education. This managerial system is able to integrate resources and oversee widely dispersed village primary schools and teaching points.

The implementation of the new financial allocation system has guaranteed overall funding, and local fund raising at Xiang level has largely ceased. However, it appears that there are issues about funding affecting the large numbers of village schools in Zhaojue. Cash transfers related to numbers of children and teachers do not appear to reach these schools and are captured at central primary school level. Though centrally purchased teaching materials are distributed, these schools receive no money to meet local needs. For example, in Xinbang Incomplete Primary School in Bier District, the recurrent fund does not reach them. In 2009 the school requested each parent to pay 50 yuan for school maintenance and repairs. In Aboluo Incomplete School the condition of the school building has remained unchanged since 1990.

As elsewhere the state grant is based on providing 350 yuan per student and 500 yuan per teacher. Students in villages don't need to pay for tuition and textbooks, and those who are boarding in Zhaojue receive a subsidy. But the money goes to the school instead of students themselves: the student has to pay. Substantial expenditure on repairs and on school buildings has to be allocated on request by the county government.

Zhaojue County was and is a poor county. It has benefited from the implementation of the “One Decade Action program of Minority Education”, and has seen much investment in new school buildings. Junior secondary and central primary schools are now mostly substantial multi storey buildings on campuses with sports facilities. The new secondary schools have science laboratories and computer rooms.

Though village schools have also been improved those away from communication channels can be very impoverished. They may not be purpose built structures and are likely to have been constructed from local materials which have structural weaknesses. Some would fail any health and safety inspection. There are large differences in the quality of construction and the quality of space provided in different schools. Though some conditions have improved, and more children are housed in appropriate school buildings, some remain seriously in need of rehabilitation or rebuilding. Too many children still appear to need more support to maintain personal hygiene, and sanitary facilities often remain rudimentary. Clean water is not available at all schools, and some remain without electricity.

4.6 The Development of Boarding Schools

Zhaojue County has recently embarked on a policy of rationalizing its school resources. It has yet to reduce the number of small schools in villages by a significant amount as has happened in Ansai because its conditions are different. However, in the last five years 38 schools were dismantled and merged, and 14 schools were newly built. A pattern of “high schools concentrated in county, middle schools concentrated in rural junior middle school, primary schools concentrated in township central schools” has been established.

In 2010, there were 49 boarding schools in the county, which accounted for 19% of all schools. Of these 40 were primary schools, 6 were rural junior middle schools, one was a nine-year school and 2 were high schools. A living allowance is paid for primary and secondary boarders of 50 yuan and 70 yuan per student per month respectively. This does not cover the full cost of boarding which appears to be closer to 200 yuan a month, and is less than is provided in Ansai.

Though the latest initiatives represent a new attempt to improve conditions for many students by extending the amount of boarding provision, the policy has a long history. In 1990 there were three levels of boarding – key point, general and semi boarding. Children were selected for each type depending on examination results and each stream had different levels of subsidy for students, costs were weighted in favour of girls. In 1990 there were 3,000 boarders, over 20% of total enrolment at that time. So far the new initiatives have therefore only succeeded in keeping pace with increased enrolment, so the proportion of boarders has remained similar to its level twenty years ago, though the numbers involved have increased.

The boarding system is intended to solve problems of distance and rural isolation in what is a very mountainous area. The system is in transition and there are many issues. First, the dormitories are insufficient for the number of students. The research indicated that there are 20 or even 30 students living in a dormitory designed for 10 people, and they sleep two or three to a mattress. Second, though infrastructure in new schools has improved, in some heating is unavailable, toilets and running water are some distance from the dormitories, and some furniture in dormitories is lacking, not least because there is little space any. Pupils appear to have little if any personal space or non classroom social space. This is all the more

surprising when fully equipped computer rooms are provided with more than 40 machines and the necessary networking representing a substantial investment of resources.

Third, food and nutrition are a concern. Traditionally in Zhaojue there are only two meals a day at 10:00 and 16:00. The food for boarders tends to be very simple and with little protein, meat is provided once a month. A proportion of children are below height and under weight. Fourth, according to some teachers children can experience emotional problems as a result of long periods separated from parents and home environment. Boarding schools are run according to fairly rigid timetables with little creative space and free time. Fifth, the costs of boarding are substantially greater than for day schools, and the demands on teachers are considerably greater than in day schools. As relatively closed communities in remote locations it remains difficult to get teachers to serve in these schools, especially after their first appointments and if they have families.

It is not clear what the reasons are why more boarding is not in evidence in Zhaojue given the existing policy and the fact that it has been a priority for twenty years. Financial constraints have been an issue but the existing small village schools must also be relatively expensive if they have low pupil teacher ratios. More boarding may be the option of choice if more of the population relocates from mountain habitations to valley floor villages. But such relocation would make more local day schools viable especially if transportation was improved and subsidised. As in Ansai the possibilities opened up by new technologies may also create windows of opportunity to develop efficient small schools connected to the latest developments in pedagogy.

4.7 Concluding Comments

Zhaojue has developed from a much lower base than either Tongzhou or Ansai. It remains the case that not all children complete primary school, even though the great majority of children in the 7-12 year age range are enrolled in school. It is clear that many children enter school late and do not complete the full cycle of primary schooling. Even fewer and perhaps as little as one third complete junior secondary school as they should under current policy. Some children never attend school.

There have been very real gains. The efforts made in 2007/8 to universalize access can be seen to have had a substantial impact on enrolment in the lower grades. Though drop out persists it is much less than it was and many more do reach grade 6 and 9 than in the past. School infrastructure especially in the central primary and junior secondary schools is much superior to that which existed in 1990. Purpose built new buildings have been constructed in anticipation of greatly increased numbers of boarders. However, this expansion has yet to be realised as boarding remains at similar levels as a proportion of enrolment as in 1990.

Several observations stand out from the changes that have taken place.

- Disparities between town and rural schools remain striking. Although the larger primary and secondary schools now resemble those in many other parts of China in construction and facilities. The majority of schools, and most enrolments, remain in the large number of village schools many of which are small and of poor quality. As far as can be judged investment has favoured large central schools and little has trickled down to the small rural schools, especially those which are located away from metalled roads and which may involve crossing rivers and mountains to gain access. A hierarchy of schools continues to exist with the county town institutions well provided

for with the best facilities and highest proportions of qualified teachers, next are central primary schools and rural junior secondary schools in townships, then complete schools, and last incomplete primary schools in villages. The question is whether recent developments have diminished the differences between the schools and provided more access more equitably. There must be cause for concern that the answer to this question may be that access has increased but that the system remains inequitable.

- The disparities between schools have consequences for teachers and pupils. County town schools with superior advantages in facilities, accommodation and amenities are attractive to both teachers and students and their parents. Aspirant families want their children to study in the county town. The annual teachers' competition offers transfers to the county town school to the best teachers. Those who have taken first appointments as teachers in rural schools often seek transfers after three years or so. The risk is of a spiral of deprivation whereby weak village schools are becoming weaker and finding it difficult to maintain enrolments and normal teaching activities.
- It may be that the policy of incorporating schools and reducing the number of teaching points is a possible solution but it has a long way to go to reach out to all the existing schools and small communities. It would also create a relatively small number of large institutions separated from the communities they serve with the benefits and disadvantages that accompany boarding large numbers of young children. There is therefore a need to address the management of the reduction of disparities within a framework that may need to be more flexible than simply building more and more large boarding schools.
- Teacher recruitment and deployment are still problematic. The training and appointment and retention of teachers is central to a stable and effective education system. There are more Yi teachers now in the system than twenty years ago but there could be more. Not only do they have Yi language competence as well as Chinese they may also be more likely to stay and build careers in the schools. The age distribution of teachers remains predominantly skewed to young teachers after twenty years, suggesting there is significant attrition in mid career.
- Pupil teacher ratios and class sizes are very unevenly distributed. Large schools have large and very large classes though they may have surprisingly low pupil teacher ratios. Small rural schools can have very small classes and some have low pupil teacher ratios. Where teachers are unwilling to be posted some rural schools may have very large pupil teacher ratios. Zhaojue is urbanizing and it is likely that more places will be needed in town schools which are planned to increase to 6,000 at primary and 5,600 at junior secondary in 2015. These schools already have the largest class sizes. The disparities that now exist were foreshadowed twenty years ago. They seem to have persisted and may have worsened. More even distribution would lead to more equitable access.
- The formal age of entry remains at seven years though some six year olds enter town schools. The reasons for this are unclear. It costs no more to attend school at six than at seven. But the loss of a year's schooling at an age where learning is most rapid is something that cannot be replaced. This, coupled with the persistence of overage children in the system in large numbers, leads to a need to act to ensure earlier enrolment and progression on schedule for age. This might reduce dropout rates amongst overage children, especially girls.

- Preschool provision is largely absent in Zhaojue except in the town. Some larger schools are opening pre-schools which are fee paying and revenue generating. The gap between children who have access to pre-school, and who are likely to enter grade 1 at six rather than seven years, and those who have no pre-schooling, may result in a further widening of opportunity between those children with a head start, and those without.
- The position of girls appears to have improved since 1990. However, they are still under represented in enrolments. More needs to be done to increase the chances of participation through to the end of junior secondary. Though there are some girls only classes in some schools, these seem to be arranged on an ad hoc basis with no clear programme of support, and no systematic tracking and monitoring to establish whether they make any difference, and if so what is it that makes the difference. Since these classes have existed for two decades they should be evaluated and either generalized across schools and grades if they make a difference, or abandoned if they do not.
- The practice of creating special classes for HIV/AIDS orphans appears to lack a clear and consistent rationale. It may have pedagogic and social psychological benefits for those lucky enough to be selected but this needs to be demonstrated. If effective then natural justice and equity would extend this arrangement, and the associated payment of fees etc, to all orphans rather than a few. It would also recognise the differing circumstances likely to affect HIV/AIDS orphans and “left behind” children who may effectively be orphans. It is clearly not equitable that some orphan siblings receive benefits and some do not. If the objective is to integrate orphans into main stream society to lead normal lives separate classes for orphans may or may not be the best mechanism, there needs to be a stronger rationale than simply the availability of limited sponsorship. Other forms of financial, medical and emotional support should be considered.
- Accelerating the boarding school programme and closing or merging more small schools may increase enrolment and progression. However, there may be limits to the extent to which it is cost effective and educationally beneficial. School mapping can identify the degree to which boarding can and should replace efficient day schooling. The conditions may be changing as infrastructure improves and it becomes possible to link remote communities to the mainstream by using information technologies. The impact of childless villages on communities should be considered, and so should the accelerated urbanisation of the area and the impact that has on agricultural productivity.
- The direct and indirect costs of schooling in Zhaojue remain significant. Though the abolition of tuition fees and textbook charges is helpful, and the subsidy to the poorest essential; it appears that this is not sufficient to provide incentives and cover costs for the poorest, living on the margins of the cash economy. In addition if district and central primary school authorities retain some of the per capita subsidies destined to support the poorest schools and communities this may also limit the impact of the existing measures. If all Yi children are to complete nine years of education, those currently failing to do so who are disproportionately from the poorest communities, will need to have all costs met.
- Full participation also requires more investment in physical infrastructure. Inadequate buildings remain, especially in villages. In the worst cases these may have little or no furniture, poor quality construction, lack of light, heating and electricity, clean water, and sanitation. They may also have few textbooks and learning aids. Some village

schools are receiving assistance from non government organizations and other benefactors. Under the current commitments to fully fund nine year compulsory education this should not be necessary.

- Demographic changes will continue in Zhaojue and need anticipating in order to establish how much schooling to provide, in which locations and at which level. Urbanisation is resulting in growing demand in the county town and some larger villages along communication routes. Some rural settlements are shrinking as their inhabitants move to new villages. Outward migration, of young people looking for work is also likely to continue and in some years seems to have had a substantial impact on enrolments, especially at junior secondary level. The birth rate appears to be high but may fall amongst the growing numbers of town dwellers. Balancing supply and demand for places will require consistent planning informed by good quality data on the dynamics of enrolment.
- The implementation of “one decade action program” and the additional support that development of the Western provinces are receiving, has led to gratifying achievements in implementing nine-year compulsory education in Zhaojue County. Many officials, teachers and other members of the community have contributed to the gains that have been made. But the analysis illustrates that there is a road still to travel. There is a risk that the growth in participation that has been achieved will stall if steps are not taken to address the issues raised in the case study on both the supply and the demand side. The differences between Zhaojue and Ansai and Tongzhou remain striking, and mean that children in Zhaojue continue to have much less chance of progressing to the end of junior secondary and of learning in an environment that promotes successful achievement of national learning goals.

5. Education and Change – Retrospect and Prospect

5.1 Tongzhou, Ansai and Zhaojue Revisited

Dramatic changes have occurred across and within the case study districts. These have taken many forms, the flavour of which is apparent from the case studies. Along with the rest of China economic growth, the fruits of the “open door” policy and Deng Xiaoping thought have transformed the physical and financial context within which nine year compulsory education is being realised. Average per capita income was between 1,300 and 2,000 yuan in 1990 in Tongxian. By 2010 it was over 17,000 yuan (urban), and 8,300 yuan (rural). In Ansai per capita income was between 180 and 330 yuan per capita in 1990 and is now between 16,000 yuan (urban) and 2,600 yuan (rural). And in Zhaojue it has increased from around 210 to 240 yuan to about 11,700 yuan (urban) and 2,600 yuan (rural). Zhaojue remains overwhelmingly rural, whereas Ansai is increasingly urban. Zhaojue thus remains the poorest of the three counties.

Over the last ten years in two of the areas, Tongzhou and Ansai, the number of school age children has fallen dramatically as fewer children are being born. In Tongzhou the effect on enrolments has been moderated by the influx of substantial numbers of migrants. Nevertheless by 2006 primary enrolment was less than half its 1990 level. In Ansai enrolments have fallen at primary level by nearly half since 2001. But in Zhaojue primary school enrolments have doubled since 1990. These changes are related to the falling birth rates in Tongxian – from about 15% to less than 7%, and from about 25% to less than 10% in Ansai. In Zhaojue the birth rate remains high and though it has probably fallen from the 25% in 1990 it still appears to be over 15%.

In all the areas enrolment rates have improved at both primary and secondary level. Overall, in Tongzhou nine year compulsory education has been consolidated and the high levels of performance reported in 1990 have been sustained. It is fairly certain that virtually all school age children were enrolled then and continue to be now. Almost all now transit to secondary schooling, though those who are migrants may return to their areas of domicile to maximise their chances of admission to the better junior and senior secondary schools since they are excluded from those in Tongzhou. Tongzhou has invested in improved quality and this is evident in the increasingly common practice of providing single desks for pupils, the widespread availability of learning and teaching materials, the higher level of facilities and equipment in most but not all schools, and in low rates of reported absenteeism, repetition and drop out. The largest change structurally has been the arrival of large numbers of migrant non-resident children accompanying their parents, who are now in a majority in some schools.

In Ansai significant progress on increasing primary school enrolments had been made in the late 1980s and female participation had improved dramatically to approach much more equitable levels. Drop out was a major problem in 1990 but is now considerably reduced and it seems as many as 90% of those who enrol reach grade 6. The changes brought about by the declining birth rate, permanent and temporary migration, and urbanisation have greatly reduced the rural population of children. Alongside this schools have been rationalised and now most children are enrolled in large central schools with boarding facilities. These schools have developed considerably since 1990 when many “cave schools” were in existence. Equipment and furniture is much improved though conditions remain basic for boarders. Most teachers are now trained and qualified. However, some substitute teachers remain and have

very inferior conditions of service. Teachers are mostly young or approaching retirement with few in mid career.

Zhaojue had the worst educational conditions of the three case study areas in 1990 and this remains the case. The recent growth in enrolments has more than doubled numbers in schools, and there are now twice as many schools as in 1990. The great majority of schools are at village level and many are small and remote. Enrolment rates are much higher than in 1990, and drop out which was very high has fallen. Nevertheless it seems unlikely that more than about half of an age group succeed in completing primary and entering secondary school. There are still cases of children who do not attend school at all, and about a quarter of those of school age are estimated to be unenrolled. Temporary migration for work appears common amongst older children. Substitute teachers remain in Zhaojue. In contrast to Ansai where some of the teachers are in older age groups there are very few teachers in Zhaojue who are over 35 years old. There are many more girls in school than in 1990 but they are still in the minority. HIV/AIDs orphans and “left behind” children are now prominent as part of the school community and some special arrangements are made, though there does not appear to be a consistent policy across schools. The physical condition of all but the central primary and junior secondary schools is poor with dark classrooms, insufficient furniture, shortages of learning materials, unsatisfactory sanitation and buildings lacking adequate construction standards.

In each of the case study locations the social and economic changes between now and 1990 have been dramatic. These are reflected in changes in access to schooling and the quality of infrastructure. An overall judgement is that the gaps between Tongzhou and Ansai have narrowed. In both, almost all children go to school, physical provision is now more uniform across the villages partly as a result of the merger of small schools and the extension of boarding for rural children, and it has been possible to increase investment per child as numbers have fallen. In Zhaojue the changes have been greatest since 1990. Here the number of children has grown as has the number of small schools, though new boarding schools have recently been built. The poorest schools in this area have changed little, though those near transport infrastructure have benefitted greatly from new investment in buildings. The judgement here is that despite the improvements it is likely that the gaps between Zhaojue and the other two case study areas are getting bigger, rather than smaller. Both horizontal and vertical equity remain an issue that has to be addressed.

5.2 Ten Issues for Nine Year Compulsory Education

Each case study explores in some detail the achievements and challenges that face local authorities in Tongzhou, Ansai and Zhaojue. The story of the last twenty years is clearly one of considerable achievement, but it is also one that illustrates that the ambitions of the 1986 Compulsory Education Law and the ambitions of 1990s have yet to be realised, at least in two of the three counties. There are many issues that the details in the case studies raise. Ten are listed below as ones which are likely to have relevance to other parts of China as well as to one or other of the case study areas. These summary conclusions serve to provide material for the policy dialogue that must continue around implementing nine year compulsory education.

1. Early Childhood Care and Health and Nutrition

Poverty remains a serious issue in Zhaojue and is clearly still present in Ansai. This research did not attempt to develop indicators of health and nutrition or of cash or asset based poverty.

Nevertheless it was clear from interviews and from observation that children attending the poorest schools would benefit from pre-emptive interventions to ensure adequate nutrition, freedom from common medical conditions associated with poverty and poor hygiene, and early diagnosis of disease that might lead to disability or debilitation. Poor nutrition and health status are likely to be associated with late entry to school, lower enrolment rates, and premature drop out. Some of the problems of achieving universal nine year compulsory education have their origins in events that occur below the school entry age. The earlier these problems are addressed the more likely they are to be resolved.

2. Age of Entry, Preschool, and Over Age Progression

The logic behind nine year compulsory education is to give every child an equal opportunity to benefit from a quality basic education. Entering school at seven years old rather than six is a disadvantage. At ten years old those starting at six have had 25% more schooling than those starting at seven. Developmental psychology confirms that many basic skills are acquired most rapidly amongst younger rather than older children. Some studies also indicate that early under achievement is rarely recovered in, for example, reading ability. Late entry leads to over age progression which may be exacerbated by repetition of grades as is the case in two of the case studies. Overage children are more likely to fail to progress successfully, especially if they are two years or more behind their age group. Those who experience pre-school are less likely to enrol late. They also have a head start over children who do not have the opportunity to go to preschool which is widely felt paying and thus rationed by price.

This cluster of challenges is therefore important to address. The medium term goal should be to ensure all children enter school at the age of six whether they are rural or urban. They should also progress and graduate largely on schedule i.e. at 12 from primary school and 15 years old from junior secondary. All high enrolment countries have a low variation in age in grade and this should be realised in China. Pre-school provision is becoming more common. If it is not to embed disadvantage amongst the poorest then ways must be found to subsidise access and extend the reach of pre-schools in affordable ways. This may be premature in the poorest counties. However, it is already the case that some rural village schools are including pre-school grades as demography results in falling enrolments in primary grades. This may provide an opportunity to develop initiatives that take advantage of this opportunity.

3. Out of School Children

A small but significant number of children never enrol in Zhaojue. Much larger numbers enrol but drop out. In all three areas enrolment through to the end of junior secondary appears not to be universal, though it is much higher in Tongzhou than elsewhere. There are several steps that need consideration. First, there needs to be a clear and accurate accounting of out of school children. The number and location appears not to be known accurately. Second, it should be clear which agency is responsible for locating and acting to encourage unenrolled children back into school. Third, the steps that might be taken depend on the diagnosis. Most certainly the reasons will be different for older and younger children, boys and girls, those with disability, orphans, and others. Some reasons invite a supply side response – if school buildings are dark, uninviting, cold and empty of furniture the problem is on the supply side. If children value paid employment more than the benefits of schooling the issue is on the demand side. Fourth, most obviously the solutions to drop out first lie within the school once children are enrolled. Monitoring and evaluation systems should be sensitive to the likely

precursors of drop out (e.g. irregular attendance, low achievement, repetition of grades) and should seek to intervene before rather than after the event.

4. Boarding and Small Schools

National policy on rural education favours increasing the proportion of boarding schools with the aim of improving quality and concentrating resources. In Ansai this has resulted in a radical reduction of the number of small schools. In Zhaojue the existing boarding schools have been upgraded and expanded but the proportion of boarders has remained about the same as in 1990. The debate about the desirability of boarding has been discussed in the case studies. Key issues include the costs to the state, as these may be higher since staffing levels have to be greater; the cost to parents, the effects on younger and older children's learning and emotional development; the impact on teachers' quality of life; the quality of the environment for children's development; and the educational potentials and benefits. Topography, demography, and macro economic development, and patterns of migration are all also relevant to strategy on boarding. So also is investment in small schools. As communication improves, transport reaches out across rural areas, and information technology connect the remote with the metropolitan it may be that the original reasons for promoting boarding schools are less compelling. The issues should be revisited in the light of changing conditions and local circumstance to establish which pathways forward are most efficient and equitable.

5. The Education of Migrants, Girls and Orphans

Migration has become a feature of the educational landscape in Tongzhou and Ansai. In the former migration is from the countryside to Tongzhou and from Tongzhou into Beijing suburbs. In some places there are now more migrants than locally born residents. This creates instabilities in patterns of schooling and imbalances between schools and districts. It also generates problems of transition into junior and senior secondary school since migrants may return to areas of domicile to improve their chances of enrolling in the best secondary schools. Migrants do not qualify for regular senior secondary schools in Tongzhou, but can enrol in technical and vocational schools where demand for places is less competitive. Migrant children may also have difficulty adjusting to Tongzhou schools when they arrive since standards can vary as well as language dialect and curricula experience. There is no monitoring system to track migrant children in the county, nor is there any systematic policy on managing the flows and the supporting the special needs of this growing number of children. Teachers in rural schools are now themselves increasingly likely to be "local migrants" in the sense that they live in the towns and commute daily to the schools and thus no longer live in the communities whose children they teach.

In Ansai migration has a different character. Most migration is outbound and is reflected in falling enrolments. This has generated the need for demographically driven adjustments to the school system and has hastened the pace at which boarding has been introduced on a large scale across the area. Urbanisation is occurring alongside the development of improved infrastructure that has made many rural areas much more accessible. Outward migration of older children in search of work is appearing and is affecting secondary school enrolments. The numbers of "left behind children" have also been increasing as parents seeking work leave behind school age children with grandparents and other relatives. As in Tongzhou the changing patterns of migration and their impact on the education system do not appear to be systematically monitored and managed, and there is no clear view about how these can and should develop.

In Zhaojue migration is on a smaller scale than in Tongzhou and Ansai and is all outbound. As in Ansai, there are some “left behind” children, and it is clear that some older children seek work in other parts of China before they complete secondary schooling. They may or may not return and try to re-enrol. A small proportion of children succeed in being transferred to schools outside Zhaojue. Most of these are from richer households who can pay the costs of private schools, or are scholarship holders.

Participation rates in schooling for girls are now much closer to parity than in 1990 in Ansai and Zhaojue so considerable progress has been made. This has happened alongside a general increase in enrolment rates. More may need to be done to ensure that schools are girl friendly, travel to and from them is safe, that boarding arrangements are conducive to well being, and that subsidies and incentives are offered to those who might otherwise exit schooling early. Though there are some girl only classes it remains unclear what effect they have. As they have been operating since 1990 there should be enough evidence to decide whether to replicate them throughout the system, or at least to introduce those elements that have few costs if these are effective. Thus grouping girls together for teaching has few costs unless class sizes are very small. Providing additional stipends is an additional cost.

Orphans were not visible in the 1990 research. By 2010 “left behind” children who were virtual orphans were present in Ansai and Zhaojue. Zhaojue had also experienced orphanhood related to HIV and AIDs. The vulnerabilities of orphans should be addressed both diagnostically and in terms of special support where this is needed. Without access to household resources any fees charged become exclusionary, so all fees should be waived for all orphans. Stipends are needed to cover living costs. Sponsored orphan classes offer assistance to some but not all orphans. There needs to be a clearer acceptance of public responsibility for orphaned children who fall under the mandate of the nine year compulsory education law.

6. Buildings and Infrastructure

New buildings have been provided in all the case study areas. They co-exist with the stock of older buildings some of which are no longer fit for purpose, especially in Zhaojue where rural village schools are still of very poor quality. This research could not assess needs for the construction and rehabilitation of buildings. It was able to identify some issues that may be relevant to future planning. First, investment appears to have been concentrated more on large scale central sites than distributed across the school system. Second, several sites had dormitory accommodation that was cramped and overcrowded, even after new construction. Third, sanitation and washing facilities were often of lower quality than the quality of the buildings. Fourth, lack of heating in harsh climates may save money but may undermine health and well being. Fifth, impressive investments have taken place in some information technology facilities but it is not clear how much value they add to learning. Similarly library space and stock were well provided in new school buildings, but evidence of usage and borrowing was not indicative of intensively used resources.

From the fieldwork it was clear that some dangerous and inappropriate buildings remain. Some have facilities that cannot meet standards necessary for safe, secure and welcoming learning spaces for young and older children with appropriate furniture and learning materials. Resolving these issues therefore remains a priority.

7. Management and Finance

More resources have been made available and the basic system of managing and financing nine year compulsory education has been transformed. The state now takes the responsibility for providing the great majority of the resources needed, which is the common mechanism in high participation countries. This replaces the system dependent upon local revenue raising which failed to work efficiently, especially in the poorest counties and when there were slowdowns in economic growth. The amounts allocated per child have grown considerably and are more evenly distributed than they were in 1990. However, they may still be insufficient in the poorest areas to compensate for the lower levels of accumulated stock of buildings, equipment and learning materials in poorer counties. They may also not be sufficiently sensitive to the varying conditions from place to place that generate different needs and costs e.g., of transport, housing, food and communications

Though the basic system has changed at the county level it remains the case that central primary schools administer funds and manage lower level schools. This remains and subject of discussion since it appears that some central schools are reluctant to pass on the full benefit of capitation and subsidies to the schools they administer. The dynamics are understandable but not necessarily the best mechanisms for efficient and effective disbursement that is equitable across schools and children.

8. Teachers

Teachers are now much better qualified in 1990. However, some substitute teachers remain despite policy which has sought to place every teacher on the government payroll and ensure they are fully qualified. This is an anomaly that should be resolved since these teachers undertake the same work as others with far less salary and no job security.

Teacher deployment remains very uneven. Pupil teacher ratios fluctuate between the over generous (less than 10:1) to the under staffed (over 45:1). Successful high enrolment basic education systems gradually eliminate wide variations in pupil teacher ratios to ensure all children have more similar access to teachers. They also deploy teachers and classrooms, and arrange timetables so that teachers work with 20 to 30 children in a class and teach for 80% or more of timetabled time at primary level. Schools which have pupil teacher ratios much below 20:1, class sizes over 40, and the number of teachers per class over 2:1 are likely to be expensive and relatively inefficient. Too many schools remain like this in the case study areas.

Teachers in rural and remote schools, and working in areas away from their home towns may have to be offered incentives to remain motivated and effective. The current structured salary scheme attempts to do this but may not be sufficient to compensate for the deprivations associated with rural postings. Higher quality living accommodation, travel subsidies, accelerated promotion, and bonus payments are all mechanisms that may encourage teachers to work in difficult environments.

9. Assessment and Monitoring

Children's attendance, progress, and achievement needs monitoring regularly if all children are to successfully complete nine years of schooling. This occurs systematically in larger central schools where record keeping is fairly comprehensive and systematic. It still seems problematic in small and incomplete schools where there appear to be few records and little

historic record of children's progress and achievement. Some standardised tests are used at a local level but it is not clear how much this leads to diagnostic evaluation rather than simple summative judgements.

In 1990 inspection and evaluation systems were under development. These have now matured, to the extent to which we could ascertain how they were operating, it appeared to be the case that the inspection and evaluation system was preoccupied with simple quantitative targets, and rarely extended its interests and visits away from the larger central schools. The infrastructure that supports teachers in small schools depends on the central primary schools and the effectiveness of their teaching and learning groups. More sensitive local level inspection and monitoring may be needed to track progress and needs and to direct resources to where they will make most difference.

Educational management and information systems are being developed to contain data on schools and children. These need to be used actively to manage towards defined objectives set at a local level as well as within national frameworks. Flexibility to respond to local circumstance is important.

10. Equity and Distribution

It was clear in 1990 that there were tensions between national policy and planned resource allocation, and local level decision making subject to local priorities. The decentralised system allowed large differences to develop and be reinforced between districts and within them. There were commitments to promote more equitable distribution of resources for nine year compulsory education to favour those with greatest disadvantage, the mechanisms that existed seemed unlikely to deliver the result. The case studies illustrate that in some respects these observations from the past were prescient. The data from the case studies too often suggest that growth in participation has exaggerated some pre-existing inequalities, and has generated new ones, despite the renewed commitments to universalise access and extend opportunities to the most disadvantaged.

There is, therefore, a need to identify new targets for implementation that assess distribution and progress on equity issues, and go beyond the simple averages and aggregates that conceal large inequalities. Public expenditure per child should be fairly similar in different parts of China with more allocated to the most challenged counties. The variation in pupil teacher ratios, class sizes and teachers per class between schools should fall within an accepted margin of efficiency and effectiveness. The chances of completing nine year compulsory education should be similar across the country and not be strongly related to household incomes. And achievement levels on tests of basic competencies should reveal less rather than more difference between the highest and lowest scoring administrative areas.

5.3 Growing Needs to Address Inequalities

Twenty five years after the first Compulsory Education Law nine-year participation in compulsory education is a reality in many parts of China. In 1991 there was considerable inequality between and within the three case study districts. Teachers' income, expenditure per student, pupil teacher ratios, amount of books and desks and chairs per child and other indicators varied across sites by a factor of three or more. There was clearly a risk that rapid growth might exacerbate rather than reduce these differences. Such was the increasing concern about growing inequalities that a revised Compulsory Education Law was issued in

2006. This, and the Mid and Long Term Educational Development Programme (2010-2020) published in 2010 identified several major equity issues for attention. The need for ***balanced development*** of basic education has at least four dimensions.

Firstly, in many areas physical access has not been assured. However, there remain large gaps in teaching quality, the availability of resources for learning, and learning outcomes. The three main concerns are first with ***disparities between regions***. In the economically more developed areas parents have much higher incomes and are willing to invest more in their children's education. This enables them to support schools more actively, contribute financial and non financial resources, and encourage the employment of high quality teachers who may be paid additional income over and above their public salaries. State resources, and those of parents, are less in under developed regions. This has negative impacts on investment into the development of compulsory education which is not compensated for sufficiently by transfers to the poorest regions (Zhang Xianwei & Zou Fenping, 2010, Reflections on Balanced Development of Compulsory Education, Theoretical Guide, 2010, No. 4, pp.38-39).

Regional disparities noted by the Task Force on Narrowing the Gap in 2005 indicated that variations between the eastern, middle and western Provinces in overall expenditure per student. In 2001 average spending per student at primary and junior secondary level in the middle region of China was 41% and 44% respectively of that in the eastern region; the figures were 48% and 56% for primary and junior secondary in the western region. Thus children in the more developed eastern region had nearly twice as much spent on them per student. Task Force (2005:19/20). By 2010 the figures for the middle region were 45% and 54%, and for the western region 50% and 56%. The gap had closed most between the eastern and middle regions, but had not changed much between the eastern region and the west. Spending on non-salary items has become more equitable. In 2001 in primary and junior secondary in the middle region the allocation was only 15% and 18% of that in the eastern region. In the west it was 25% and 27%. By 2010 in the middle region it had reached 46% and 61%, and in the west 62% and 74%. This reflects the implementation of new policies to give subsidies to poor students and free text books. Non salary expenditure is however only about 20% of total expenditure per student so the other inequalities remain more significant (Research Centre for Inspection and Evaluation (2010:85/86).

Secondly, there are growing ***disparities between urban and rural areas***. County towns and local economic and cultural centres have concentrations of better quality educational resources. Elitist educational practices encourage schools and parents to compete for entry to the better schools in the belief that better students should go to better schools. The education resources of schools in cities and towns benefit from being on a larger scale and having more specialised facilities and thus can offer higher quality. Rural schools have fewer facilities from the outset and have difficulty offering quality at higher levels. They are often relatively short of public and private investment and have difficulty in attracting and retaining better quality teachers and students. They can therefore suffer from a spiral of declining quality. Paradoxically the policy to increase the number of rural children who are boarding may further reduce quality in the remaining rural schools

The Task Force in 2005 (ibid) identified cost ratios in urban and rural areas of 1.9 at primary and at junior secondary, and for non salary recurrent funding 3.3:1. It also noted that only 5% of dangerous classrooms and school buildings were thought to be in urban areas. Rural areas also had much lower proportions of qualified teachers, and more than 10% substitute teachers

remained, almost all of whom were in rural schools. Pupil teacher ratios were consistently lower in urban areas by an average of 20%.

Disparities remain in the promotion rates into junior and senior secondary schools. In urban areas, more than 98% of the primary school graduates can enter junior secondary schools. But in many rural areas the proportion who are willing and able to enrol is below 90%. From junior secondary to senior secondary (excluding vocational senior secondary schools), the promotion rate is over 60% for urban areas, but not much more than 20% in rural areas (ibid:12).

Thirdly *disparities between schools* may be growing. Key schools remain a feature of many local school systems. This minority of specially favoured schools benefit from preferential allocation of various resources from government as well non-government channels and they have superior infrastructure, equipment and learning materials. Their high prestige allows them to the privilege of charging high prices from students from outside the catchment area of the school. By contrast many rural schools face problems of having too few students, not least because of falling birth rates and temporary or permanent internal migration to richer areas and urban centres.

Lastly, *disparities between social groups* are becoming increasingly visible. In particular, these groups include many children from national minority groups, girls in some areas, migrant children without residence entitlements, children left behind in rural areas by parents who migrate for work in other places, and HIV/AIDS orphans. These groups can suffer from very unequal educational opportunities, be neglected and excluded prematurely, and can be subject to negative discrimination.

Two other points are worth noting. Issues remain for *tuition and fees*. The policy is that compulsory education is paid for by the state and is “free of tuition and fees”. However, fees can be charged for things other than tuition and this has led to some problems and abuses. National curriculum materials should be free, as should basic workbooks. Where it is necessary to charge fees for additional material this has to be agreed by local price departments. Schools cannot market services that they require children to pay for, whether it be school lunches, reference books, or teacher prepared materials.

Though physical access has improved in many areas **quality remains problematic**. With most children now enrolled the range of capability is wide but whole class teaching is the normal style of classroom teaching with all children proceeding at the same pace. In addition the national curriculum varies little from location to location, though there are many variations in environment, language and livelihoods across China. Much effective pedagogy is in use, but universalisation of access throws up new challenges of how to adapt these pedagogies to suit the needs of different communities, and the needs of special groups vulnerable to exclusion.

In conclusion, the responses to these concerns for horizontal and vertical equity, and reductions in growing inequalities that mirror the realities of China’s rapid economic growth and social transformation, will now shape progress on nine year compulsory education over the next decade. Growing disparities will not serve to achieve the goals of the compulsory education policy. Universalisation requires both better distribution of access through to grade nine, and much more investment in quality to address both the supply and demand side

constraints. Only then will the benefits of knowledge and skill that come with completing nine years of imaginative, attractive and engaging education be shared by all Chinese children.

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Consortium for Research on
Educational Access, Transitions & Equity
Funded by DFID

Report summary:

This study traces education and change over two decades in three areas, Tongzhou on the periphery of Beijing chosen as one of the richest 300 counties in 1990; Ansai in Yan'an which was one of the poorest 300 counties and a famous base for the 8th Route Army at the end of the Long March, and Zhaojue a poor Yi national minority area in the Liangshan mountains in southwest of Sichuan. Two of the case study areas have developed beyond recognition, whilst the third has improved but still lags behind. Many issues are highlighted by the rapid transformations including the impact of large scale demographic change and migration, which has seen falling numbers enrolled and increasing numbers of left behind children in sending areas and inbound migrants in receiving areas; large scale boarding of children from grade 4 and below in rural areas; recentralisation of responsibilities for school financing and teachers salaries; and growing concerns for horizontal and vertical inequalities in access and participation between regions, urban and rural areas, and different types of schools.

Author notes:

Professor Keith Lewin is Director of the Centre for International Education at the University of Sussex and of CREATE. He has extensive experience in Sub-Saharan Africa, South and South East Asia, and China, has published 18 books and over 100 scholarly articles and chapters, and supervised 40 D Phil students. He has worked extensively with the World Bank, DFID, DSE/GTZ, UNICEF, and UNESCO, and the International Institute of Educational Planning. Keith presented at the world education conferences at Jomtien and Dakar, and has contributed to sector development planning in Uganda, Tanzania, Rwanda, and South Africa, and in India, Mauritius, and Sri Lanka. His research interests include the economics of education, educational financing, educational policy and planning, teacher education, science education policy, assessment, and aid to education.

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