including reverting farmland to forest and restoring artificial pastures to natural grasslands.

BIBLIOGRAPHY

Tibet Autonomous Region Environmental Protection Bureau, Chengdu Institute of Mountain Hazards and Environment (CIMHE), Chinese Academy of Science (2001). *Investigation Report on the Ecological Environment of the Tibet Autonomous Region*. Chengdu: CIMHE

Tibet Autonomous Region Environmental Protection Bureau (EPB) (2003). *Communiqué on 2002 Environmental Conditions of the Tibet Autonomous Region*. Lhasa: EPB

Tibet Autonomous Region Environmental Protection Bureau (2003). *Report on Ecological Functional Zoning of the Tibet Autonomous Region*. Lhasa: EPB

Information Office of the State Council (IOSC) (2003). *White Paper on Ecological Construction and Environmental Protection of Tibet*. Lhasa: IOSC

Chapter 9

Regional Disparities and the Rural Urban Gap in the Tibet Autonomous Region (TAR)

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INTRODUCTION

Tibet Autonomous Region (TAR) is one of the five provincial level, minority autonomous regions and is an economically backwards and marginal area in China. It has special physical conditions which are rather different from the other minority autonomous regions. Table 1 shows the socioeconomic changes that the TAR has undergone over the last few decades.

Table 1. Aggregate socioeconomic indicators for selected years

Indicator	1952	1965	1978	1990	2002
GDP (100 million RMB)	1.32	3.27	6.65	27.70	161.42
Per capita GDP (RMB)	115	241	375	1276	6093
Agri. output (100 million RMB)	-	2.64	3.92	19.50	55.85
Sec. Industry (100 million RMB)	-	0.22	1.84	3.57	32.92
Ter. Industry (100 million RMB)	-	0.73	1.44	10.03	88.81
Revenue (100 million RMB)	-	0.22	-0.16	0.18	8.73
Expenditure (100 million RMB)	-	1.13	4.57	12.92	139.89
Urban income per capita (Yuan)	-	-	565	1613	7762
Rural income per capita (Yuan)	-	-	175	582	1521
Population (10,000)	115.00	137.1	178.8	221.47	266.88
Urban pop. (10,000)	-	-	20.21	36.32	52.85
Hi. Education (No)	-	2251	2081	2025	8438
Spe. School (No.)	-	455	4640	4175	6437
Mid. School (No.)	-	1059	17679	21303	90469
Pri. School (No.)	-	66800	262600	157400	320000
Hosp. Beds (No.)	-	1570	4198	5015	5694
Me. Personnel (No.)	-	2424	5780	7498	7117

Source: 2002 Tibet Statistical Yearbook, China Statistics Press, Beijing; 2003 Tibet Statistical Yearbook, China Statistics Press, Beijing

From Table 1, it can be seen that Tibet has been developing rapidly since the 1950s, particularly since when the open policy reform was carried out in China. The rates of increment for various parameters during the period from 1978 to 2002 are shown in Table 2. There has been a tremendous increase in per capita income and GDP, as well as in the output of tertiary industries. Significant improvements are also seen in the social sectors of education and health.

Table 2: Increment rates for various parameters from 1978 to 2002 for Tibet

Indicator	Increment rate	Indicator	Increment rate
GDP	5	Population	1.5
Per GDP	16	Urban population	2.6
Agri. output	14	Hi. education	4
Sec. Industry	17	Spe. School	1.4
Ter. Industry	61	Mid. School	5
Revenue	30	Pri. School	1.2
Urban income	14	Hosp. Beds	1.4
Rural income	9	Me. Personnel	1.2

Source: based on the data from Table 1

However, from the national point of view, the TAR is still an economically backward area in China, and the disparity between rural and urban areas is greater than in China. For instance, in 2002, the GDP for the region was only 16,142 million yuan, which is a mere 0.15% of the total GDP of China for the year. Considering that the TAR accounts for 12.5% of China's total territory, the low GDP is an indication of its overall economic status *vis-à-vis* the national economy of China. As far as the balance of per capita income is concerned, the per capita income of the Tibetan urban household ranks eighth in China and is higher than the average level of China, but the per capita income of the Tibetan rural household ranks only 30th in China, which is 62% of the average of rural areas in China. The disparity ratio between urban and rural areas in Tibet is 1: 0.20, but 1: 0.32 for China; that is to say, its urban-rural gap is greater than that of China (Tables 3 and 4). The per capita GDP for the TAR is only 74% of the average for China (2004 China Statistical Abstract).

Some social and household possession indicators also show the relative underdevelopment of Tibet compared to the national averages. Student enrollment per 10,000 people is 36 in Tibet, but 70.3 in China (51.2%); hospital beds per 10,000 people is 16.1 in Tibet, but 23.2 in China (69.3 %); the TV viewer coverage rate is 81.14% in Tibet, but 94.6 in China;

the radio listener coverage rate is 82.59%, but 93.3% in China; colour TV sets per 100 urban households is 122 in Tibet, but 126.4 in China; colour TV sets per 100 rural households is 18.96 in Tibet, but 60.5 in China (2003 Tibet Statistical Yearbook, 2004 China Statistical Abstract).

Table 3. Ranking of per capita income for Tibetan urban households among the provinces in China (2002)

Province	Rank	Amount	National average
Tibet	8	7762.0	7702.8
Shanghai, Beijing, Zhejiang, Guangdong, Tianjin, Fujian, Jiangsu,	1 to 7	Per capita income in these provinces is higher than in Tibet	
Shandong, Guangxi, Yunnan, Chongqing, Xinjiang and others	9 to 31	Per capita income in these provinces is lower than in Tibet	

Source: 2003 Tibet Statistical Yearbook, China Statistics Press, Beijing

Table 4. Ranking of per capita income for Tibetan rural households among the provinces in China (2002)

Province	Rank	Amount	National average
Tibet	30	1521.0	2475.6
Shanghai, Beijing, Zhejiang, Guangdong, Tianjin, Fujian, Jiangsu and others	1 to 29	Per capita income in these provinces is higher than in Tibet	
Guizhou	31	Per capita income of this province is lower than in Tibet	

Source: 2003 Tibet Statistical Yearbook, China Statistics Press, Beijing

Regional disparities in Tibet
Regional disparity at prefecture level

Population distribution among prefectures can be divided into four grades. Prefectures in the first grade include Shigatse and Chamdo (1.23 million in total, that is to say 46% of the total population of Tibet is concentrated in these two prefectures); Lhasa and Nakchu rank the second (0.78 million in total, 29.3% of the total population of Tibet); Lhoka is in the third grade (0.32 million in total, 12% of the total population of Tibet); Nyingtri and Nagri are in the fourth grade (0.23 million in total, 8.6% of the total population of Tibet). The population in Shigatse is 8.6 times the population in Nagri.

GDP disparity can also be divided into four grades. Lhasa ranks the first (5.5 billion yuan), Shigatse and Chamdo are in the second grade (2.9 billion to 2.1 billion yuan), Nyingtri, Nakchu and Lhoka are in the third grade (1.6 billion to 1.3 billion yuan), and Ngari is in the fourth grade (0.5 billion yuan). The disparity between the highest GDP prefecture of Lhasa and the lowest GDP prefecture of Nagri is 1: 0.08, the

absolute disparity between them is 0.92 (the national disparity between Guangdong and Ningxia is 0.97). The prefecture of Nagri is the poorest area in Tibet.

Table 5. GDP, Population and Per Capita GDP by Prefectures(2002) (10000 yuan)

	Lhasa	Chamdo	Lhoka	Shigatse	Nakchu	Ngari	Nyingtri
GDP	550691	209586	130000	290231	138000	46204	158874
Population	409500	582200	317800	641400	376800	76600	150100
Per GDP	13447	3599	4090	4524	3662	6031	10584

Source: 2003 Tibet Statistical Yearbook, China Statistics Press, Beijing

The regional disparity distribution of per capita income is different from the regional GDP and population distribution and can be divided into five grades. Lhasa and Nyingtri rank first (from 13,447 to 10,584 yuan); Nagri, where the total GDP is in the lowest rank, stands next (6,031 yuan); followed by the prefectures of Shigatse and Lhoka in third place (from 4,524 to 4,090 yuan). Chamdo, where the population and total GDP rank in second place, is in the lowest grade. The disparity between the highest per capita GDP and the lowest per capita GDP is 1:0.26, the absolute disparity is 0.73, which is lower than the absolute disparity of the regional GDP in Tibet. Except for the per capita GDP in Lhasa and Nyingtri, the per capita GDP in the other five prefectures is much lower than the national average (8,187 yuan as per 2004 China Statistical Abstract). An interesting observation is that, when per capita GDP is considered, the lowest GDP prefecture of Nagri is then listed in second place. The possible explanation is its small population scale helps it to have a high per capita GDP (See Tabel 5).

Regional disparity of total GDP at county level

There are 71 counties, one district and one county level city in Tibet. Based on the statistical data, the total GDP of these 73 administrative units is 10.5 billion yuan and can be divided into five grades. Roughly, the first two grades could be considered the richest and the richer counties, and the other three grades the poorer and poorest counties.

District and counties in the first grade (GDP ranges from 0.32 billion to 0.79 billion yuan) are the City of Lhasa proper, County of Nedong, Shigatse City, County of Nyingtri, County of Nakchu and County of Gyantse, accounting for 8.4% of the county number although the total GDP of these six counties is 3.2 billion yuan which makes up about 30.5% of the total GDP by counties in Tibet.

The second grade (GDP ranges from 0.32 billion to 0.17 billion yuan) includes nine counties: the county of Damshung, county of Tolung Dechen, county of Medro Gongkar, county of Changdu, county of Gyamda, county of Tengchen, county of Markham, county of Gonggar, and the county of Pome, accounting for 14.1% of the total number of counties. The total GDP of these nine counties is about 2.0 billion yuan, accounting for 19% of the total GDP of the counties of Tibet.

There are 17 counties, which is about 23.2% of the total number of counties in Tibet, in the third grade (from 0.11 billion to 0.17 billion yuan); and they are the counties of Lhundup, Chushur, Taktse, Rioche, Dayak, Zogong, Lhorong, Namling, Tingri, Lhatse, Dirl, Palgon, Kongpo Gyamda, Miling, Zayul, and Ngamring. The total GDP of these counties is about 2.4 billion yuan, accounting for 22.9% of the total GDP of the counties of Tibet (See Tabel 6).

The number of counties in the fourth grade (from 74 million to 0.11 billion yuan) is larger than in the third grade, containing the 20 counties of Nyemo, Gongjo, Paksho.

Table 6: GDP, population and per capita GDP of counties in Tibet (2002)

Region		GDP (10000)	Popu-lation	Per capita GDP	Region		GDP (10000)	Popu-lation	Per capita GDP
Total		1050961	2554434	4114.26					
Lhasa		191781	409455	4683.81	Counties cont.	Ngamring	13020	41477	3139.09
Counties	City proper	78508	144485	5433.64		Thongmon	10610	45666	2323.39
	Lhundup	16161	55651	2903.99		Tingkye	6736	18108	3719.90
	Damshung	21178	39767	5325.52		Dongpa	10205	18323	5569.50
	Nyemo	9313	29223	3186.87		Kyirong	6943	11831	5868.48
	Chushur	11018	32665	3373.03		Nyalam	10176	14306	7113.10
	Tolung Dechen	20052	40677	4929.57		Saga	6576	12193	5393.26
	Taktse	14330	25815	5551.04		Gyantse	32040	61893	5176.68
	Medro Gongkar	21221	41172	5154.23		Panam	16708	41802	3996.94
Chamdo		176576	582149	3033.17		Rinpung	6441	30934	2082.17
Counties	Changdu	27185	89484	3037.97		Khangmar	8243	19691	4186.18
	Gyamda	22066	68414	3225.36		Gampa	4596	11681	3934.59
	Gongjo	10056	43533	2309.97		Yatung	8582	9468	9064.22
	Rioche	14449	41709	3464.24	Nakchu		131278	376854	3483.52

	Tengchen	19853	62191	3192.26	Counties	Nakchu	44165	82616	5345.82
	Dayak	12600	53318	2363.18		Chali	6444	25535	2523.60
	Paksho	10162	36949	2750.28		Dirl	13795	46971	2936.92
	Zogong	14727	42578	3458.83		Nyerong	7411	29453	2516.21
	Markham	22511	71862	3132.53		Amdo	10082	33911	2973.08
	Lhorong	14118	41528	3399.63		Shantsa	10662	16791	6349.83
	Palbar	8849	30583	2893.44		Sokshan	8047	35566	2262.55
Lhokha		132578	317800	4171.74		Palgon	11980	33395	3587.36
Counties	Nedong	48261	54019	8934.08		Bachen	7972	37655	2117.12
	Danang	9118	36841	2474.96		Nima	10720	34961	3066.27
	Gonggar	17024	46265	3679.67	Ngari		34943	76619	4560.62
	Sangri	5717	15876	3601.03	Counties	Purang	4698	7881	5961.17
	Chong-Gye	5745	17414	3299.07		Tsada	4664	5710	8168.13
	Chosum	6525	15917	4099.39		Gar	3784	12644	2992.72
	Tsome	3487	13758	2534.53		Rutok	5598	7560	7404.76
	Lhodak	5027	18558	2708.80		Gakyi	5437	13039	4169.80
	Lhuntse	8695	32442	2680.17		Gertse	7106	17787	3995.05
	Tsona	7278	14854	4899.69		Tsochen	3656	11998	3047.17
	Nakartse	8096	33854	2391.45	Nyingtri		145260	150174	9672.80
	Gyatsa	7605	18002	4224.53	Counties	Nyingtri	72944	33011	22096.88
Shigatse		238545	641383	3719.22		Kongpo Gyamda	12613	24532	5141.45
Counties	Shigatse City	45611	91424	4988.95		Miling	15168	17267	8784.39
	Namling	14376	73592	1953.47		Metok	4149	9852	4211.33
	Tingri	12890	45907	2807.85		Pome	20607	26298	7835.96
	Sakya	9919	44919	2208.20		Zayul	12228	24609	4968.91
	Lhatse	14873	48168	3087.73		Namshan	7551	14605	5170.15

In general the regional GDP disparity characteristics by counties in Tibet could be described as follows.

1) The richest and richer administrative units at county level (from first grade to second grade) are mainly distributed in eastern Tibet, particularly in south-east Tibet and the poorest and poorer county-level administrative units (from third grade to fifth grade) in western Tibet, particularly in west-north Tibet.

2) Apart from the second grade whose percentage of GDP is lower than the third grade, the larger the land area, the smaller the GDP.

3) The disparity between the highest GDP county and the lowest GDP county is 1: 0.04 and the absolute disparity is 95.6.

4) Among the five grades, the absolute disparities are 78.3 between the first grade and the second grade, 65.6 between the second grade and the third grade, 56.5 between the third grade and the fourth grade, and 68.4 between the fourth grade and the fifth grade. It seems the higher the grade, the larger the disparity, except for the lowest grades.

5) Within the five grades, the absolute disparities are 59.2 for the first grade, 46.8 for the second grade, 35.3 for the third grade, 32.7 for the fourth grade, and 52.9 for the fifth grade. It also seems that the higher grade, the greater the disparity is. Not withstanding, for the poorest areas in the fifth grade, the disparity is also very great.

Regional disparity of per capita GDP at county level

The average per capita GDP is 4,114.26 yuan in Tibet. According to statistical data, the per capita GDP regional distribution of the 73 administrative units is also divided into five grades, ranging from the highest of 22,096 to the lowest of 1,953 yuan.

There are only two counties, Nyingtri and Yatung, which can be classified in the first grade, accounting for 2.7% of the total 73 administrative units and their per capita GDP ranges from 9,064 to 22,096 yuan. The absolute disparity in this grade is 58.9.

The seven counties of Shantsa, Nyalam, Tsada, Miling, Rutok, Pome, and Nedong are in the second grade, accounting for 8.2% of the 73 administrative units. Their per capita GDP ranges from 6,349 to 9,063 yuan. The absolute disparity in this grade is 29.9, about 50% of that in the first grade.

There are 16 counties in the third grade, and among them are the three counties of Damshung, Namshan, and Shigatse county. These 16 counties make up 21.9% of the total 73 administrative units. Their per capita GDP ranges from 4,229 to 6,349 yuan. The absolute disparity in this grade is 33.3, about 56% of that in the first grade.

As for the fourth grade, there are 20 counties, among which are Nyemo, Chushur, and Metok. These 20 counties account for 27.4% of the total 73 administrative units and their per capita GDP ranges from 3,139 to 4,224 yuan. The absolute disparity in this grade is 26.2, about 44% of that of the first grade.

The other remaining 28 counties are in the fifth grade. They represent 38.4 of the total 73 administrative units. The per capita GDP of these counties ranges from 1,953 to 3,139 yuan. The absolute disparity in this grade is 37.7, about 64% of that in the first grade.

A general overview of the regional per capita GDP disparity characteristics by counties in Tibet can be given as follows.

1) There are only two counties at the highest and higher per capita GDP grade. These two counties are located in eastern and western Tibet, and this differs from the distribution of GDP as a whole. This distribution may have been determined by the two factors of high regional productivity and sparse population concentration.

2) As far as the per capita GDP is concerned, most of the counties within Lhasa are not in the first grade, but in the third grade. It shows that Lhasa as the regional centre plays a relatively weak role in promoting the economic development of its neighbouring country areas. On the other hand, high density of the population distribution may explain this phenomenon.

3) The relationship between the absolute disparities and the grade rank is not very close, though there seems to be a rule that the higher grade, the higher absolute disparities exist: the higher absolute disparity being in the lowest grade, the fifth, is much higher than that in the second and the fourth, for example

4) The disparity between the highest per capita GDP county and the lowest per capita GDP county is 1: 0.08; and the absolute disparity is 91.2, which is lower than the absolute disparity GDP at county level (95.6), but much higher than the per capita GDP examined at the prefecture level (73).

5) Among the five grades, the absolute disparities are 71.3 between the first grade and the second grade, 53.4 between the second grade and the third grade, 50.6 between the third grade and the fourth grade, and 53.8 between the fourth grade and the fifth grade. It seems that the higher the grade, the greater the disparity, except for a slight difference in the lowest grade.

6) Within the five grades, the absolute disparities are 59 for the first grade, 30 for the second grade, 33.5 for the third grade, 25.7 for the fourth grade, and 37.8 for the fifth grade. It also seems that the higher grade, the larger the disparity is. However, for the lowest per capita GDP areas in the fifth grade, the disparity is also great.

Regional distribution of population at county level

Regional distribution of population at county level is classified into five grades as well. The most densely populated areas are the city of Lhasa proper, the county of Changdu, Shigatse city, the county of Namling, and the county of Nakchu. The total population of the five county level areas is 0.48 million, making up 18.8% of the population of Tibet.

The next level of densely-populated areas embraces the 10 counties of Lhundup, Gyamda, Tengchen, Dayak, Markham, Nedong, Lhatse, Gonggar, Gyantse, and Dirl. The total population of these counties is about 0.57 million, which is 25.3% of the population of Tibet.

There are 26 counties in the third grade, with a population range from 29,454 to 46,168. The total population is 0.98 million or 38.4% of the total population of Tibet.

There are 14 counties in the fourth grade with a total population of about 0.30 million, accounting for about 12% of the total population of Tibet.

The remaining 18 counties are the most sparsely populated areas, mainly distributed in the marginal prefectures of Ngari and Shigatse. The total population in these counties is 0.22 million or 8.6% of the total population of Tibet.

The regional population distribution characteristics by counties in Tibet can be described as follows.

1) Counties in the third grade play a very important role in the population concentration of Tibet with about 38% of the total population of Tibet. But these counties are not rich areas as far as their total GDP and per capita GDP are concerned.

2) It seems the third grade of population distribution is a dividing line, and beyond this line are grades one and grade two: the higher the grade, the less the percentage share in the total population of Tibet. For the other two grades beyond this line, the lower the grade, the less the percentage share in the total population of Tibet.

Urban-rural gap in Tibet

There are several aspects to the urban-rural gap in Tibet discussed here, i.e., urban-rural income disparity, composition of per capita annual net income of rural households, urban-rural access to the outer world ,and urban-rural living expenditure.

Urban-rural income disparity

It is difficult to obtain data about the net income of rural households by counties in Tibet, except for the general information available about the whole autonomous region from the statistical yearbook. Based on the data, the general situation of income disparity between urban and rural households can be described.

Table 7 shows that, in 2002, urban household per capita income was 7,762 yuan, but only 1,521 yuan for the rural household, which is about one fifth of the income for the urban household. The absolute disparity is 0.80. Table 7 compares urban and rural households.

1) Per capita annual disposable income in Tibet is marginally higher than the average figure at national level. However, the rural net income in Tibet is much lower than the average at the national level. The per capita net income for the rural household in Tibet is only 61.4% of the per capita net income for the urban household.

2) The income disparity ratio between urban and rural households in China is 1: 0.32 and 1: 0.20 for Tibet in the same year. The absolute disparity at national level is 0.68 compared to 0.80 for Tibet. The income disparity between urban and rural households in Tibet is greater than the national level, the ratio between the two is 1: 0.85.

Table 7: Income disparity between urban and rural households in China as a whole and in Tibet(in yuan) (2002)

	Urban	Rural	Ratio	Absolute disparity
China (Total)	7703	2476	1:0.32	0.68
Tibet	7762	1521	1:0.20	0.80

Source: 2003 Tibet Statistical Yearbook, China Statistics Press, Beijing 2003 China Statistical Yearbook, China Statistics Press, Beijing

Urban-rural expenditure disparity

Urban-rural expenditure disparity is another indicator showing the disparity between urban and rural areas. Based on a brief analysis of Tables 8 and 9, a similar trend in income disparity is also observed.

1) The living expenditure of urban households in Tibet is 6,952 yuan, which is higher than the national average in China (6,029 yuan). The percentage of the total expenditure of urban households in Tibet is 80.6% of the total income, which is higher than the 73.4% reported for China as a whole. Correspondingly, the living standard, as indicated by the Index of Engle (Engle and White 1999), is 40.8 for Tibet and 37.7 for the whole of China. It is clear that there is not much difference between the urban households in Tibet and the urban households in China.

Table 8: Percentage of expenditure from the income of urban households in China (total) and Tibet in 2002

	Income	Living expenditure	Percentage	Index of Engle
China (Total)	8177	6029	73.7	37.7
Tibet	8627	6952	80.6	40.8

Source: 2003 Tibet Statistical Yearbook, China Statistics Press, Beijing 2003 China Statistical Yearbook, China Statistics Press, Beijing

2) In rural areas, the picture is rather different. The living expenditure of rural households is 78.5% of the net income of Tibet and about 74% of the net income for the rural households in China as a whole. Correspondingly, the indicator that shows the living standard, the Index of Engle, is 63.6 for rural households in Tibet, but 46.3 for rural households in China as a whole. It can be seen that there is a significant gap between the rural households in Tibet and the rural households in China as a whole. That is to say, the disparity between the rural household in Tibet and the rural household in China is greater than the gap between urban households in Tibet and urban households in China as a whole.

Table 9: Percentage of expenditure from the income of rural households in China (total) and Tibet

	Income	Living expenditure	Percentage	Index of Engle
China (Total)	2476	1834	74.07	46.3
Tibet	1521	1194	78.5	63.6

Source: 2003 Tibet Statistical Yearbook, China Statistics Press, Beijing

2003 China Statistical Yearbook, China Statistics Press, Beijing

3) As far as the disparity between the expenditure for the urban household and the rural household within Tibet is concerned, it is safe to say that there is a significant gap. The absolute figure and the Index of Engle are 5,758 yuan higher and 22.8 points lower respectively. But in China as a whole, the Index of Engle is 46.3 for rural household and 37.7 for urban households, indicating that the gap is not so significant. Hence, urban-rural disparity for China as a whole is lower than that for Tibet.

4) According to the criteria set by the Food and Agriculture Organization (FAO) of the United Nations (UN), an Index of Engle above 59% indicates the incidence of poverty while between 50 to 59% indicates that a region is in the development stage at which people have enough to eat and wear. When the Index of Engle is between 40 to 50%, it is in the development stage of the so-called comparatively well-off, and when the Index of Engle is between 30 to 40%, it is in the so-called rich development stage. When the Index of Engle is lower than 30%, the society is considered to be in the richest development stage. So, according to the criteria of the FAO of the UN, urban areas in Tibet are in the development stage of the comparatively well-off or even in the rich development stage, but the rural areas of Tibet are still at the poverty stage. When rural China is seen as being in the development stage of the comparatively well-off, the disparity between rural and urban households in Tibet can be considered a serious problem that needs to be addressed urgently.

Composition of per capita annual net income of rural households

The composition of per capita annual net incomes of rural households in Tables 10 and 11 shows that the total income of rural households is not only much lower than that of rural households in China as a whole, but the structure is also different. In 2002, about 51% of the total income of the rural household in Tibet was contributed by the primary sector, about 28% by the secondary sector, about nine per cent by the tertiary sector, and about 12% by non-productive income (such as financial transfers). But the structure in China shows that about 47% of the total income of the rural household is contributed by the primary sector, about 24% by the secondary sector, about 23% by the tertiary sector, and only about 0.6 per cent by non-productive income (maybe rural households in Tibet receive more financial transfers than rural households in the inner areas in China).

Table 10: Composition of the per capita annual net income of rural households 2002 (yuan)

Total income	Productive income			Non-productive income
	1339			
1521	Primary	Secondary	Tertiary	182
	775	431	133	
% of the total	50.95	28.33	8.7	11.96

Source: 2003 Tibet Statistical Yearbook, China Statistics Press, Beijing

Table 11: Composition of per capita annual net income of rural households 2002 China (yuan)

Total income	Productive income			Non-productive income
	2326.79			
2475.6	Primary	Secondary	Teriary	148.9
	1167.8	586.9	572.1	
% of the total	47.2	23.7	23.1	0.6

Source: 2003 China Statistical Yearbook, China Statistics Press, Beijing

Urban-rural access to the outer world

Tibet is a comparatively isolated region of China because of its unique physical conditions. So, the all-round development of Tibet is, to a great extent, dependent upon accessibility to the outside world. Modern communication tools, represented by telephones, computers, and televisions, serve as indicators of accessibility and exposure to the outside. From Table 12, the disparities between rural and urban areas in Tibet and China, in terms of possession of these tools, are shown.

1) Telephones owned per 100 households in rural Tibet are about four per cent of the total owned in urban Tibet and eight per cent of the total owned in rural China. However, the disparity between urban Tibet and urban China is not very significant. TV sets owned per 100 households in rural Tibet total 15% of those owned in urban Tibet and 17.6% of those owned in rural China. The disparity between urban Tibet and urban China is also very small. As far as household computer ownership per 100 households is concerned, the disparity could be much greater, although there are no data about access to computers in rural areas. There is also a marked disparity between urban Tibet and urban China in terms of access to computers, with urban Tibet having only about 43% of the access in urban China. The comparative discussions above show the very poor accessibility of Tibet to the outer world.

2) There are not enough data on the social welfare and education disparity between rural and urban areas, but the available data show the general disparity between Tibet and China. The number of students per 10,000 people in Tibet is 32, which is 45.5% of that in China. There are 16 hospital beds per 10,000 people in Tibet, but 23 in China, the rate in Tibet is 69.6% that of China.

Table 12: Urban-rural access to the outer world and education disparity, Tibet and China 2002

Item	Tibet	Rural Tibet	Urban Tibet	China	Rural China	Urban China
Stud. per 10000 population (person)	32	-	-	70.3	-	-
Hos. beds per 10000 population	16	-	-	23	-	-
Telephones per 100 households		3.30	80		40.8	93.7
Household computers per 100 households		-	9		1.1	20.6
Colour TV sets per 100 households		18.96	122		108.6	126.4

Source: 2004 China Statistical Abstract, China Statistics Press, Beijing, 2004. 2003 Tibet Statistical Yearbook, China Statistics Press, Beijing

Changes in employment structure and employment opportunities in Tibet

Table 13 provides the data for structural changes in employment in Tibet from 1978 to 2002. It can be seen very clearly that in the last twenty years and more, there have been great changes in employment structure in Tibet.

1) The employment rate in the primary sector decreased by 13.2%, but increased 0.3% in the secondary sector and 12.9% in the tertiary sector.

Table 13: Proportion of employed persons by type of industry (1978 to 2002)

	1978	1985	1990	1995	2002
Primary	82.0	81.0	80.7	77.8	68.8
Secondary	5.9	4.6	3.8	4.9	6.2
Tertiary	12.1	14.4	15.5	17.3	25.0
Tot. employee	930900	1057200	1078800	1150900	1302000

Source: 2003 Tibet Statistical Yearbook, China Statistics Press, Beijing

2) As for employment opportunities, the primary data are insufficient. However, deducing from the data given in Table 13, some clues about employment rates emerge. As per the statistical yearbook (TAR 2003), the total population was about 1.8 million in 1978,

which means that the employment rate was about 52% in 1978. Despite the increase in population to over 2.6 million in 2002, the percentage of employment remained similar at 51%, indicating a corresponding growth in jobs. The total number of people employed in China in 2002 was about 57% of the total population (2004 China Statistical Abstract), six per cent points higher than Tibet.

3) It seems that the total number of staff and workers was 0.15 million in 2002 (Table 14), which is about 12% of the total employed. The data are far from accurate and there is a lack of records that can be used for analysis of the other 88% of employees and the general employment patterns for the population in Tibet.

Table 14: Number of staff and workers and their wages 2002 (10,000 yuan)

	Lhasa	Chamdo	Lhoka	Shigatse	Nakchu	Ngari	Nyingtri	Others
Tot. staff	21688	15378	14081	22851	9966	3983	10778	49300
Tot. wage	51538	22509	37326	52054	35760	11973	21170	131736

Source: 2003 Tibet Statistical Yearbook, China Statistics Press, Beijing

Inner disparity of urban areas

Tables 15 and 16 provide some data on the inner disparity of urban areas in Tibet. As shown in Table 16, the inner disparity of urban areas in Tibet can be described as follows.

1) The lowest income (2,131 yuan) is only 13% of the highest income (16,780 yuan) in urban areas. The absolute disparity within urban areas is 0.87.

2) The absolute disparity within urban areas is even greater than the absolute disparity between urban and rural areas, which is 0.80 as shown in Table 7.

3) Compared to the inner disparity in China, the inner disparity of urban areas in Tibet is the same as the inner disparity in China, the national absolute disparity between rural areas and urban areas is 0.68.

4) As far as the inner disparity of urban areas in Tibet is concerned, it may be as serious as that in China.

Table 15: Income disparity between the highest and the lowest incomes in urban households, Tibet (2002) (yuan)

Highest income	Lowest income	Ratio
16780	2131	1 : 0.13
Absolute disparity	0.87	

Source: 2003 Tibet Statistical Yearbook, China Statistics Press, Beijing

Table 16: Income disparity between the highest and the lowest incomes in urban households, China (2002) (yuan)

Highest income	Lowest income	Ratio
18995.85	2408.60	1 : 0.13
Absolute disparity	0.87	

Source: 2003 China Statistical Yearbook, China Statistics Press, Beijing

Conclusions

Summing up the above discussions, the conclusions of this paper are as follows.

1) Regional disparity can be seen from two aspects: regional disparity at prefecture level and at county level. The absolute disparity between the richest prefecture and the poorest prefecture is 0.92, which is smaller than the absolute disparity at national level (0.97 between Guangdong and Ningxia). The absolute disparity between the richest county and the poorest county is 0.96, higher than the disparity at prefecture level.

2) The development level between urban Tibet and urban China as a whole is similar. As far as the per capita income is concerned, Tibet's average is even higher than the national average level, but the gap between rural Tibet and rural China is very great.

3) As for the urban-rural disparity, it can be seen from the three aspects of income disparity, expenditure disparity, and social welfare and education disparity. The absolute income disparity is 0.80, higher than the national one (0.68); the expenditure disparity expressed by the Index of Engle is about 40 for urban areas in China, but more than 60 for the rural areas in Tibet, 20% higher. Students per 10,000 population in Tibet number 32, which is 45.5% of the number in China. There are 16 hospital beds per 10,000 population in Tibet, but 23 in China, 69.6% of the number in inner China .

4) The inner urban absolute disparity in Tibet is 0.87, which is as great as that in China: higher than that between the rural and urban areas in Tibet (0.80), but lower than the regional disparities at prefecture and county levels.

5) The difference in accessibility of Tibet to the outer world— measured by telephones owned per 100 households, TV sets owned per 100 households, and household computers owned per 100 households—illustrate greater disparity between rural and urban areas in Tibet than in inner China.

REFERENCES

Government of China (2002) 2002 Tibet Statistical Yearbook. Beijing: China Statistics Press

Government of China (2003) 2003 Tibet Statistical Yearbook. Beijing: China Statistics Press

Government of China (2004) 2004 China Statistical Abstract. Beijing: China Statistics Press

Government of China (2003) 2003 China Statistical Yearbook. Beijing: China Statistics Press

Engle,R.F.; White,H. (eds) (1999) Cointegration, Causality, and Forecasting: A Festschrift in Honour of Clive W.J. Granger. Oxford,U.K. and New York, U.S. : Oxford University Press