

Population Structure and Changes in the Tibet Autonomous Region¹

—An Analysis of the Recent Census Data

The Chinese government launched the “Developing West” campaign by the end of 20th century. This is a national strategic long-term project to promote social and economic integration between the more advanced coastal areas and the western regions in China. It is also a countermeasure to deal with the gap between the coastal areas and the “west”. The gap has increased significantly in the past two decades in aspects of infrastructure, economic development, and people’s income, which results in complaint and out-migration in the west.

The “west” in China include 5 autonomous regions (Tibet, Xinjiang, Inner Mongolia, Ningxia, Guangxi) and several provinces (Qinghai, Gansu, Guizhou, Yunnan, Sichuan, etc.) where are the traditional residences of many ethnic minorities. Geographically, the “west” or “western regions” are mainly mountains, plateau, grasslands, and deserts. On one hand, these areas usually have a very low population density, inconvenient transportation, and less developed in the sense of industrialization and modernization; on the other hand, there are natural resources in some areas (e.g. coal in Inner Mongolia, oil in Xinjiang) and rich cultural diversity in some other areas (e.g. unique traditional culture to develop tourism in Tibet). Among the western regions, the Tibet Autonomous Region (TAR) has been the priority area in the “Developing West” projects.

The TAR is located at the Qinghai-Tibet plateau, the southwestern part of China, with an area of 1.2 million square kilometers. Tibetans have inhabited in this area for centuries. The 2000 census reported that there were 5.416 million ethnic Tibetans in China. Among those Tibetans 2.427 million lived in the TAR and they consisted of 44.8% of the total. Since the early 1980s, the central government of China removed the agricultural tax and practiced a series of policies to improve the socioeconomic development in the TAR (Bass, 1998: 251). The construction of the Qinghai-Tibet railway completed and started to operate in 2006. This railway greatly improved the transportation between the TAR and other parts of China and will have a positive impact on the development of local economy and tourism.

In order to study the socioeconomic development in the western regions and the TAR in the past two decades since the system reform and new policies in practice, the analyses of population structure and changes in the TAR might be very helpful for understanding social dynamics in local communities. These data present age, gender and educational structures of the population, the size, industrial and occupational structures of its labor force, as well as their variations affected by fertility, mortality, and migration.

This paper introduces and analyzes the basic structures of the population in the TAR and other Tibetan-inhabited areas based on the 1982, 1990, and 2000 censuses. The major changes of the TAR population are also discussed in comparison with the national data.

I. Changes in Population Size

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Among the total five autonomous regions in China at provincial level of the administrative system, the TAR has the highest percentage of minority population in total (Table 1), much higher than the other four. During 1990-2000, the Tibetan population in the TAR increased by 519,611 in number while their percentage in total decreased by 2.7%. One of the main reasons was the census covered temporary in-migrants from Han regions who came to Tibet in larger numbers in recent years. In-migration, mainly as temporary laborers or businessmen, plays an important role in society of the TAR as well as in other western regions in today's China.

Table 1. Population Structure and Density of Autonomous Regions in China (1990, 2000)

Autonomous Region (AR)	Minority in total (%)		Major local minority In total (%)			Density (person / km ²)		Urban population (%)	
	1990	2000		1990	2000	1990	2000	1990	2000
TAR*	96.9	93.9	Tibetan	95.5	92.8	1.8	2.0	11.5	19.4
Xinjiang Uygur AR	62.3	59.4	Uygur	47.4	45.2	9.5	11.6	32.5	33.8
Guangxi Zhuang AR	38.9	38.4	Zhuang	33.7	32.4	183.7	206.6	14.9	28.2
Ningxia Hui AR	33.5	34.6	Hui	32.8	33.9	70.5	85.3	26.0	32.4
Inner Mongolia AR	18.6	20.8	Mongol	15.8	17.1	19.5	21.6	36.3	42.7
Whole China	8.0	8.5	Han	92.0	91.5	117.8	117.8	26.4	36.2

* The census data of the TAR include 108,682 temporary migrants from other provinces.

Sources: State Commission for Ethnic Affairs, 1991: 48.

State Census Bureau, 1992: 19; 2002: 18-22.

Besides the TAR, Xinjiang and Guangxi also experienced the decline of the minority percentage in total population. In contrast, the minority percentages in total increased in Inner Mongolia and Ningxia. It is noteworthy that all autonomous regions experienced a growth of urban population during 2000-2005. The percentage of urban population in total increased to 26.75% in the TAR, to 37.2% in Xinjiang, to 33.6% in Guangxi, to 47.2% in Inner Mongolia, and to 42.3% in Ningxia during this 5 year period (State Population and Family Planning Commission, 2006: 110).

Table 2 shows the general population changes in the TAR during 1953-2006. There are detailed introductions and discussions of the census data (1953, 1964, 1982 and 1990) in literature (Zhang Tianlu, 1989; Sun Jingxin, 1992; Ma Rong, 1996:33-40). The data in Table 2 are for the permanent residents who are registered officially in the TAR and do not include temporary migrants. The population in the TAR has continually grown during 1990-2006, increased from 2.18 million in 1990 to 2.67 million in 2005. The annual growth rate was 1.37%, much higher than the national growth rate of 0.90%.

Table 2. Total and Tibetan Population in the TAR (in 1,000)

year	Total	Tibetans	Tibetans%	year	Total	Tibetans	Tibetans%
1952	1150.0	-	-	1982	1892.5	1786.5	94.4
1953	1270.0	1270.0	100.0	1983	1931.4	1837.0	95.1
1959	1228.0	-	-	1984	1966.8	1876.4	95.4
1960	1269.8	-	-	1985	1994.8	1909.7	95.7
1961	1298.7	-	-	1986	2024.9	1937.4	95.7
1962	1301.7	-	-	1987	2079.5	1983.8	95.4
1963	1323.8	-	-	1988	2123.1	2026.7	95.5
1964	1346.7	-	-	1989	2159.1	2067.6	95.8
1965	1371.2	-	-	1990	2180.5	2095.6	96.1
1966	1396.7	-	-	1991	2217.8	2134.5	96.2
1967	1424.1	-	-	1992	2252.7	2168.0	96.2

1968	1451.6	-	-	1993	2288.8	2206.2	96.4
1969	1480.5	-	-	1994	2319.8	2235.9	96.4
1970	1512.0	-	-	1995	2355.5	2268.7	96.3
1971	1553.8	-	-	1996	2393.0	2305.2	96.3
1972	1592.8	-	-	1997	2427.4	2339.8	96.4
1973	1629.2	-	-	1998	2453.9	2361.3	96.2
1974	1661.2	-	-	1999	2477.2	2388.0	96.4
1975	1691.1	-	-	2000	2512.3	2421.8	96.4
1976	1724.0	-	-	2001	2537.0	2441.0	96.2
1977	1756.2	-	-	2002	2554.4	2449.2	95.9
1978	1788.2	1622.9	90.8	2003	2592.1	2464.7	95.1
1979	1828.2	-	-	2004	2634.4	2520.7	95.7
1980	1852.8	1718.2	92.7	2005	2675.5	2549.3	95.3
1981	1859.6	1747.2	94.0	2006	2685.8		

Source: Statistical Bureau of TAR, 1989 : 140 ; 1993 : 67-68 ; 1995 : 39 ; 2000 : 33 ; 2007 : 33。

Since 1983, the TAR has begun to enforce a “family planning” policy among the Tibetan government employees in urban areas of the TAR (Ma Rong, 1996: 44-45). They are allowed to have no more than two children. This policy certainly has some impact on the Tibetan population growth in the TAR.

The annual growth rate of the total population of China, of which 91.6% are Han, declined from 1.3% to 0.6% during 1991-2005 (Table 3). In contrast, the growth rate of the Han population in the TAR varies by year: first a negative growth in 1991 and 1993, then a quick growth in 1998 (6.7%), a decline in 1999, followed by a growth in 2002 and 2003, and another decline again in 2004, then another growth in 2005. The variation indicates that Han population in the TAR is a very special group, its increase or decrease largely relies on the economic projects and the policy to control in-migration, both have been influenced by the central government.

Table 3. Annual Growth Rate of Total and Tibetan Population in the TAR* (1991-2005) (%)

Year	Growth rate of total population	Growth rate of Tibetan population.	Growth rate of Han population	National growth rate
1991	1.71	1.86	-3.42	1.30
1992	1.57	1.57	1.87	1.16
1993	1.60	1.76	-2.15	1.15
1994	1.35	1.35	1.32	1.12
1995	1.54	1.47	3.08	1.06
1996	1.59	1.61	1.41	1.04
1997	1.44	1.50	0.70	1.01
1998	1.09	0.92	6.70	0.95
1999	0.95	1.13	-5.01	0.82
2000	1.42	1.42	2.81	0.76
2001	0.98	0.79	6.77	0.70
2002	0.69	0.34	10.60	0.65
2003	1.48	0.63	23.73	0.60
2004	1.63	2.27	-11.46	0.59
2005	1.56	1.13	12.15	0.59

* Annual growth rate is calculated based on household registration records.

Source: Statistical Bureau of TAR, 1996: 35; 1997: 35; 2007: 33.

Planning Bureau of State Population and Family Planning Commission, 2006: 88.

Among the Han residents in the TAR, a large proportion belongs to the “circular worker-cadres” whose migration and works in Tibet are organized and managed by the central

government. The characteristics of the Han population in the TAR are clearly shown in its age and sex structure (Figure 1): large proportion of the Han population concentrated in age group 20-39, and more males than females. In contrast, the Tibetan population in the TAR is quite a normal pyramid (Figure 2). These two figures only show the percentage distribution of two populations, not refer to their absolute population sizes. The total Tibetan population was 2,427,168 (or 2.43 million) while the total Han population was 158,570 in 2000 in the TAR.

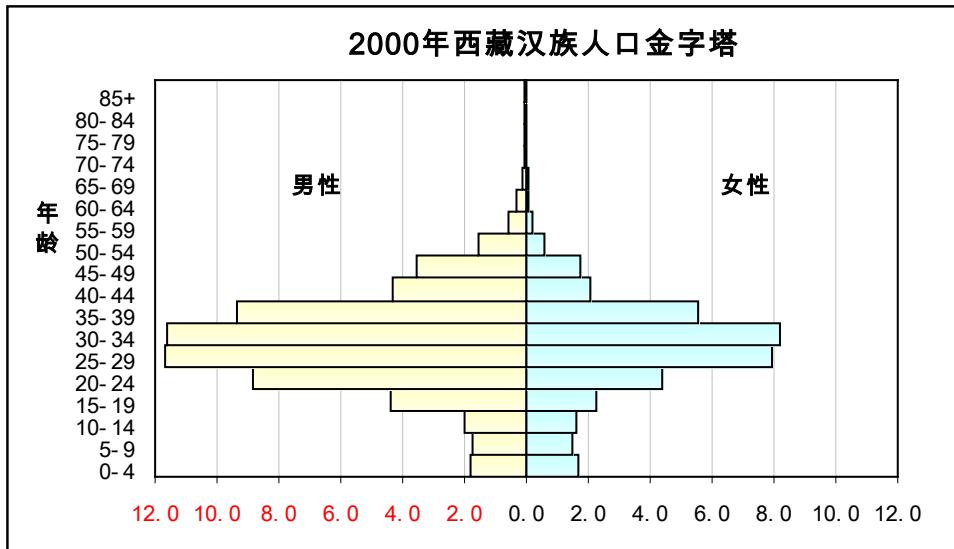


Figure 1. Age Structure of Han Population in the TAR in 2000

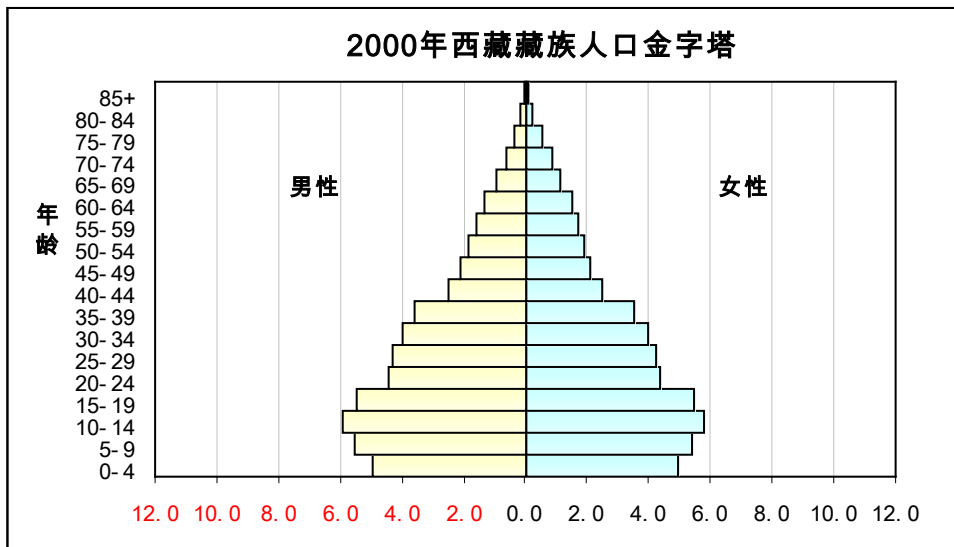


Figure 2. Age Structure of Tibetan Population in the TAR in 2000

Each year, the central government manages to call volunteers from young cadres, doctors, nurses, teachers, engineers, etc. from other provinces to work in the TAR for 3-4 years. They live in dormitories, often keeping their families and permanent registration in the place of origin, and have vacations each year to return home to meet their spouse and children. The number of “circular worker-cadres” varies each year depending on the government projects. The amount of investment and projects keep changing every year. Therefore, these changes would affect the size of Han population and make it fluctuate. On the other hand, the growth of Tibetan population has been

stable. A relatively low growth rate in 1998 and 2002, and a higher growth rate in 2004, might be related to the accuracy of the registration records on births and deaths.

The Tibetan population growth rates in the TAR had been kept between 1.3% and 2.27% during 1990-2005 (Table 3), showing that its growth rate is slowing down and varying (lower than 1% in 1998, 2001-2003 and 2.27 in 2004). There might be three explanations for the relatively low growth rate of Tibetan population: (1) the registration stations undercounted the new births, (2) the growth speed of Tibetan population did slow down, and (3) out-migration had some negative impacts. But it must point out that the growth rate of Tibetan population has always been higher than the national level of China.

II. Comparison between the Data from Registration and Sampling Survey

In Tables 2 and 3, we mainly refer to the residential registration records provided by the administration. These data only represent the “permanent residents” in the TAR with an official registration in local public security stations. In past decades, there has been a significant in-migration flow into cities and towns in Tibet (Lhasa, Shigatse, Chamdo, etc.). The in-migrants mainly come from nearby provinces such as Sichuan and Gansu.² They are various kinds of laborers in retail sale, restaurants, taxi service, repairing, and construction workers. The majority of migrants are the Han, the others are Hui and Tibetans from other areas.

There is another series of statistics for “permanent residents” released by the government, which were estimates based on census and annual sampling survey on population changes (e.g. the national 1% sampling survey in 1995). Theoretically, these data do not include the temporary migrants and they work as amendments of registration records.

A comparison is presented in Table 4 between registration records and sampling survey results. First, it is noticed that the household sizes in registration records were stable during 1990-1998, varied between 5.57-5.75 persons per household. The size has begun to reduce since 2000. The average household size was 4.5 persons in 2005, or one person less than the size of 1995. This decline indicates that the family structure of permanent residents in the TAR has been transformed from big families to “nuclear families” (a couple with unmarried children).

The 1964 and 1982 censuses reported 1.25 million and 1.86 million population respectively, while the registered population was 1.35 million and 1.89 million population at the same year. The difference of 95,500 and 28,900 persons needs an explanation. The less residents reported by the census mean that the census did not cover remote pasture areas where was covered by registration. The coverage of the 1982 census was improved compared with the 1964 census. The 1990 and 2000 censuses reported more population than registration did, this indicated that the coverage of census survey has been improved and covered temporary migrants as well (Table 4).

Table 4. Statistics of Household and Population of the TAR (1990-2006)*

Year	Total households at the end of year in registration (in 1000)	Average size of household in registration (person)	Total population at the end of year (in 1000)	Population by sampling at the end of year (in 1000)	Difference between registration and sampling(in 1000)
1990	382.9	5.69	2180.5	2214.7	34.2
1991	392.1	5.66	2217.8	2250.3	32.5

² According to a survey carried out in 2005, the temporary in-migrants in Lhasa mainly from Sichuan (30.3%) and Gansu (24.3%)(Ma Rong and Tanzen Lhundup, 2006:146).

1992	402.1	5.60	2252.7	2285.3	32.6
1993	397.8	5.75	2288.8	2322.2	33.4
1994	414.4	5.60	2319.8	2361.4	41.6
1995	423.1	5.57	2355.5	2398.4	42.9
1996	431.7	5.54	2393.0	2437.0	44.0
1997	454.2	5.34	2427.4	2476.0	48.6
1998	446.8	5.49	2453.9	2515.4	61.5
1999	472.3	5.24	2477.2	2555.1	77.9
2000	499.6	5.02	2512.3	2598.3	86.0
2001	501.7	5.06	2537.0	2629.5	92.5
2002	509.1	5.02	2554.4	2668.8	114.4
2003	543.3	4.77	2592.1	2701.7	109.6
2004	545.6	4.82	2634.4	2736.8	102.4
2005	588.9	4.54	2675.5	2770.0	94.5
2006	596.8	4.50	2685.8	2810.0	124.2

* The data in this table are based on the registration at the end of year.

Sources: Statistical Bureau of the TAR, 2007: 29.

The Public Security Bureau of Lhasa estimated 0.1-0.2 million temporary migrants in urban Lhasa. The number varies by season of tourism. This indicates that the size of temporary migrants in cities and towns in the TAR has become significant. The 2000 census reported 108,682 persons who lived in the TAR but registered in other provinces, among them 48,858 lived in urban Lhasa (SBT, 2002: 23). The total interviewed temporary migrants in 2006 consisted 4.6% of the permanent residents, majority were Han. Therefore, the temporary migrants and their social and economic activities in Tibet cannot be ignored in the studies of Tibetan society.

Further investigation should be taken place to explain the differences between the data from the residential registration and the data from sampling surveys. One explanation is that accompanying the socioeconomic development and exchanges between the TAR and other regions, many local residents increased their geographic mobility. Then some permanent residents (especially their children who were born in the place of destination) were omitted by registration but covered by sampling survey.

The second possible explanation is that some temporary migrants were incorrectly counted as “permanent residents” in sampling survey. It is difficult to check how serious this miscounting. In theory, when the total size of temporary migrants becomes very large, the possibility of this miscounting also increases.

What are the major factors to abstract temporary migrant to move into Tibet? Why their number increased so rapidly in recent years? Based on literature and our field research on temporary migration in Tibet, two factors might be significant:

First, the “per capita annual disposable income” of urban residents in the TAR had increased from 565 RMB in 1978 to 1,477 RMB in 1989, and then increased to 8,941 RMB in 2006. This was an increase of 605.3% during 1989-2006. The average annual income of employees at job increased from 854 RMB in 1978 to 3,181 RMB in 1990, then to 31,518 RMB in 2006. This was an increase of 990.8% during 1990-2006. The “per capita annual net income” of rural residents in the TAR increased from 582 RMB in 1990 to 2,435 RMB in 2006, an increase of 418.4% (SBT, 2007: 105). The rapid increase of rural and urban incomes provided a lot of business opportunities to the trade and various kinds of services (restaurants, entertainment, housing, construction, clothes, repairing, furniture, etc.), then many laborers and businessmen flowed into this big and rapidly increasing market to make money.

Because the construction projects and tourism in Tibet are affected by the seasonal climate, a

large proportion of temporary migrants stay in Tibet during May and October. The sampling surveys were usually taken place around the end of December, so the number of temporary migrants covered by these surveys was less than their size in summer.

Second, the investment in fixed assets in the TAR was 23.24 billion RMB in 2006, 30.6 times of that in 1990. Among the total investment, there were 12.92 billion RMB for new projects and 7 billion RMB for extension and reconstruction of previous projects (SBT, 2007: 65). These data indicated the rapid increase of the government investment, mainly in new projects. The implementation of those new projects needs high quality construction teams and managers. It is inevitable to introduce the construction teams from outside TAR into the TAR because the local construction companies cannot carry out so many projects and are less experienced. This factor might explain why the size of temporary migrants has varied by time.

The comparison between the registration records and sampling survey results is shown in Table 5 for fertility and mortality. The registration records provided less births compared with survey data. The difference varies from 1.0‰ in 1991 to 7.4‰ in 2006. This difference leads us to guess that coverage of sampling survey must include some of temporary migrants, not has been restricted to official permanent residents as registration records. Since most sampling survey took place in urban areas and urban residents usually have a lower fertility compared with farmers, people expect the survey would find a lower fertility.

One possible explanation is that the survey covered newly born babies who had not been registered yet by local public security stations. If their parents who are permanent residents in the TAR but lived and worked outside the place where they are officially registered, their babies would not be counted by registration but by survey. Another possibility is that sampling survey might include some temporary migrants who came from other provinces. These laborers were mainly at working age and child bearing period. They would have reported their newly born babies.

Table 5. Fertility and Mortality in the TAR during 1990-2006

Year	Fertility (‰)			Mortality (‰)			Natural Increase rate (‰)		
	Regis.	Survey	Diff.	Regis.	Survey	Diff.	Regis.	Survey	Diff.
1990	22.6	26.0	3.4	7.4	8.9	1.5	15.2	17.1	1.9
1991	23.5	24.5	1.0	7.4	8.4	1.0	16.1	16.1	0.0
1992	22.6	23.6	2.0	7.7	8.1	0.4	15.0	15.5	0.5
1993	21.3	23.8	2.5	7.3	7.6	0.3	14.0	16.2	2.2
1994	19.5	24.9	5.4	7.8	8.7	0.9	11.8	16.2	3.4
1995	20.6	24.9	4.3	7.6	8.8	1.2	13.0	16.1	3.1
1996	19.2	24.7	5.5	7.0	8.5	1.5	12.2	16.2	4.0
1997	18.4	23.9	5.5	7.5	7.9	0.4	10.9	16.0	5.1
1998	16.2	23.7	7.5	6.9	7.8	0.9	9.3	15.9	6.6
1999	14.5	23.2	8.7	6.5	7.4	0.9	8.0	15.8	7.8
2000	17.6	19.5	1.9	6.6	6.6	0.0	11.0	12.9	1.9
2001	14.2	18.6	4.4	6.6	6.5	0.1	7.6	12.1	4.5
2002	13.6	18.8	5.2	6.1	6.1	0.0	7.5	12.7	5.2
2003	14.2	17.4	3.2	6.7	6.3	- 0.4	7.5	11.1	3.6
2004	14.1	17.4	3.3	6.6	6.2	- 0.4	7.5	11.2	3.7
2005	12.0	17.9	5.9	5.9	7.2	1.3	6.0	10.8	4.7
2006	10.0	17.4	7.4	4.5	5.7	1.2	5.5	11.7	6.2

Source: Statistical Bureau of TAR, 2007: 30.

The difference between registration records and survey results on mortality is smaller compared with fertility, never exceeded 2.0‰. The registration records even reported higher mortality rate

than surveys in 2003 and 2004. The difference of natural increase rates between two resources varied between 0‰ and 6.6‰ following the changes in fertility and mortality.

In general, the mortality rate of the people at working ages should be lower than that of the total population of a region (with a normal pyramid age structure). But the survey results show higher death rates than registration. Sampling survey and census covered a part of temporary migrants (about 5% of the total sample). Therefore, these migrants (including Han, Tibetans and other groups) must have very high death rates to significantly raise the mortality rate of the whole sample. At the national statistics, death rate of Tibetan population is higher than that of Han. According to the 1990 and 2000 censuses, the death rates were 6.94‰ and 5.87‰ respectively, compared with 9.00‰ and 7.29‰ for Tibetan population (Huang Rongqing, 2004: 324). The death rate of the Han population in the TAR was much lower than Tibetans mainly due their young age structure (Table 6). When a Han government employee get sick, he/she would usually be sent back to their home city for medical treatment. Then why the sampling survey shows a higher death rate for total population of the TAR?

Because of the majority of temporary migrants were Han who are not registered at local public securities³, the higher death rate of sampling survey indicates, to a certain extent, that some temporary Han migrants cannot not adapt plateau climate physically and then had a high death rate compared with local Tibetans. A very high sex ratio of the deaths for Han population (379.2 males vs. 100 females) was due to the high sex ratio of registered Han population in the TAR⁴. The difference between registration records and sampling survey should be studied more carefully in the future.

Table 6. Birth and Death Rates of Tibetan and Han population in the TAR (1989)

	Population	Births	Birth rate(‰)	Sex ratio of births	Deaths	Death rate (‰)	Sex ratio of deaths
Tibetan	2047129	67604	33.02	103.2	17764	8.68	111.5
Han	77430	784	10.12	113.6	115	1.49	379.2

Source: Census Office of the TAR, 1992: 444,456.

III. Population Changes in other Tibetan Autonomous Areas

Besides the TAR, there are another 10 autonomous prefectures (between province and county in administrative system of China) and 2 autonomous counties (Tianzhu in Gansu and Muli in Sichuan) established for ethnic Tibetans (Figure 3). Haixi is Mongolian-Tibetan autonomous Prefecture in northwestern Qinghai province. There are also three autonomous counties within Tibetan autonomous prefectures for other ethnic minorities: Menyuan Hui Autonomous County in Haibei Tibetan Autonomous Prefecture (Qinghai), Henan Mongolian Autonomous County in Huangnan Tibetan Autonomous Prefecture (Qinghai), and Weixi Lisu Autonomous County in Diqing Tibetan Autonomous Prefecture (Yunnan). There are many multi-ethnic inhabited areas around the margins of Qinghai-Tibet Plateau.

³ In our sampling survey held in Lhasa in 2005, about 67.3% were Han (Ma Rong and Tanzen Lhundup, 2006:142).

⁴ The 2000 census shows a relatively more balanced sex ratio 161: 100 (Census Office of the TAR, 2002:34). Our survey in 2005 indicates a higher sex ratio of temporary migrants (232 : 100) (Ma Rong and Tanzen Lhundup, 2006:140).

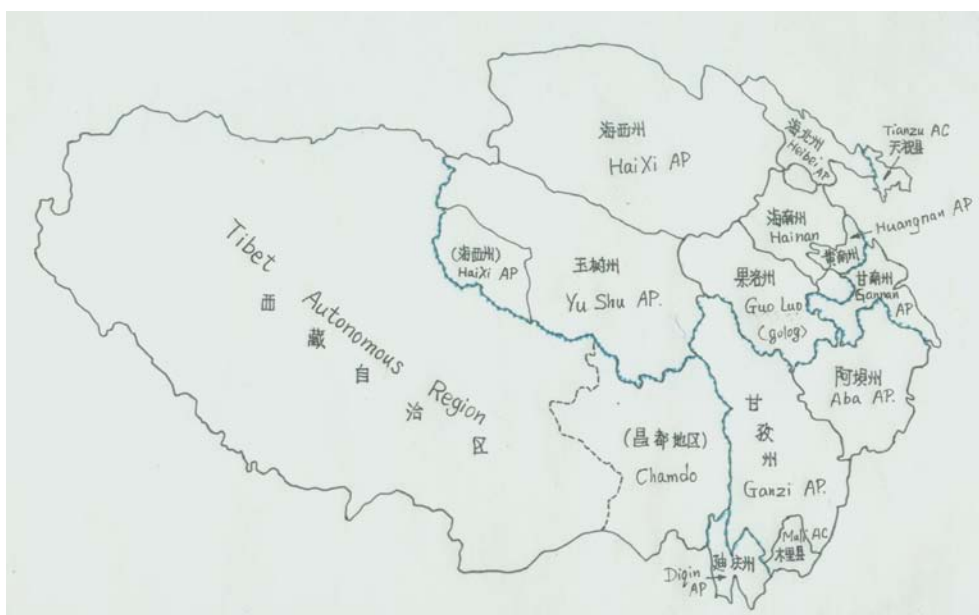


Figure 3. The Geographic Location of Tibetan Autonomous Areas

Table 7. Tibetan Population Changes in Tibetan Autonomous Areas outside the TAR

Changes in Tibetan population	1964-1982		1982-1990		1990-2000	
	# county	%	# county	%	# county	%
Decreased	0	0.0	0	0.0	1	1.4
Increased 1-1.5 times	20	28.6	66	93.0	65	90.3
Increased 1.5-2 times	39	55.7	4	5.6	4	5.6
Increased 2 - 3 times	9	12.8	0	0.0	2	2.8
Increased 3 times or more	2	2.9	1	1.4	0	0.0
Total	70	100.0	71	100.0	72	100.0

Source: Census data of the Qinghai, Gansu, Yunnan, and Sichuan provinces.

There were some adjustment in administration during 1953-2000. For example, a new county (Delingha) was established in Tso nub (Qinghai) in the 1980s, a new county (Nima) was established in Nagchu (TAR) in the 1990s⁵, and a new Hezuo County was newly established in Kanlho (Gansu)⁶ in the 1990s. If three autonomous counties established for other minorities are not included, there were totally 72 counties for ethnic Tibetans in Qinghai, Sichuan, Gansu and Yunnan.⁷

⁵ It should be divided from previous Shenzhya County since the population of Shenzhya County reduced from 40,789 in 1990 to 16,301 in 2000 while the population of new Nima County had a population of 33,856 in 2000.

⁶ It seems to be divided from pervious Xiahe County. The population of Xiahe County reduced from 86,671 in 1990 to 60,681 in 2000 while the new Hezuo County had a population of 39,702 in 2000.

⁷ Dachaidan, Lenghu, and Mangya are three "special regions" in Haixi Mongolian-Tibetan autonomous Prefecture. Because the population density is very low and the main body of population in these three regions are workers for railway construction and maintaining. These three are not counted as "counties" here. In 1990, there were totally 68,790 persons living in the three regions, and among them 485 were Tibetans. In 2000, there were 27,640 people, among them 342 were Tibetans. The population in the three regions reduced 60% during 1990-2000 because the railway constructions moved towards the south.

During 1990-2000, only Batang County experienced a Tibetan population decline from 44,190 in 1990 to 41,802 in 2000 among all 72 counties. During the same period of time, Han population also reduced from 2,345 to 1,952 人 with unknown reasons. Except in very few counties, Tibetan population has continually increased in most counties (Table 7). Though the numbers of Tibetans are increasing, there are variations in their percentage in total population in different counties.

During 1982-1990, the percentage of Tibetan in total decreased in 15 counties while increased in other 57 counties in total 72 counties in the TAR. Among other 71 counties in four provinces, the Tibetans population increased in all counties. During 1990-2000, if Nima (the new county) is excluded, the percentage of Tibetans in the total population increased in 6 counties while decreased in rest counties. The decline is rather slight, less than 1% in 35 counties. In other provinces, the percentage of Tibetans in total decreased in 18 counties while increased in rest 54 counties.

In 1950-1970s, Han in-migrants were mainly farmers and concentrated in Han-Tibetan border areas. In the 1980s, following the reform in coastal areas which provide higher income, Han population moved out the Tibetan areas. The total Han population in all Tibetan autonomous areas reduced about 20,000 during 1982-1990 (Ma Rong, 1996: 68-71). During 1990-2000, when more and more development projects launched in the TAR, Han in-migrants started to flow into the TAR in terms of temporary and seasonal labor-business migration.

Table 8. Population Changes in All Tibetan Autonomous Areas in China

Total Tibetan autonomous areas (145counties plus 3 regions)	1982		1990		2000	
	Number	%	Number	%	Number	%
Total population:	5,570,949	100.00	6,310,784	100.00	7,204,291	100.00
Han	1,472,694	26.44	1,583,821	25.10	1,491,735	20.71
Tibetan	3,625,120	65.07	4,273,920	67.72	5,011,433	69.56

Table 8 introduced the population changes in total Tibetan autonomous areas based on the 1982, 1990, and 2000 censuses, total 145 counties plus 3 special regions. The main changes can be summarized as below:

(1) The total population has increased continually. First it increased from 5.57 million in 1982 to 6.41 million in 1990, then to 7.2 million in 2000. A growth rate was 29% in this 18 year period and an annual growth rate was 1.44%, which is higher than the national level of China (1.27%).

(2) Han population increased by 111,127 during 1982-1990, then reduced by 92,086 during 1990-2000. The percentage of Han in total population of the Tibetan autonomous areas reduced from 26.4% to 20.7%.

(3) The Tibetan population has increased by 648,800 during 1982-1990, then increased by 737,513 during 1990-2000. The average annual growth rate was 1.82% during the 18 years. The percentage of Tibetans in total population increased from 65.1% to 69.6%.

Two factors have affected the population changes in Tibetan autonomous areas. The first is the fertility. Tibetans usually have a higher birth rate than Han. The birth rate of Tibetans was 3.3 times of that of Han in 1989 (the year before 1990 census). The second factor is migration. The growth of Han population during 1982-1990 and its decline during 1990-2000 was mainly due to in-migration and out-migration. It is expected that accompanying the rapid development of tourism in the TAR (Lhasa and other major cities), the temporary Han in-migrants will increased in the future. Meanwhile, some Tibetans will move to coastal areas and big cities (Beijing, Chengdu,

and Shanghai) to find new opportunities for employment and making money. The Tibetans lived and worked outside Tibetan autonomous areas increased from 319,152 in 1990 to 404,588 in 2000, an increase of 85,436 or 26.8% in the period of 10 years.

IV. Educational Structure in the TAR

Economic development of a society largely depends on its productivity, which depends on development of sciences and technology. The innovation and application of sciences and technology depends on human capital produced by education. Therefore, educational development is the key to measure the development of a society and to predict its future. There might be two important indicators to measure a degree of educational development of a society. One is how many leading scientists and scholars it has. Another indicator is how its mass education has developed, and what school level the majority people can completed.

“Educational structure” shows the percentages of people at different ages (sometimes 6, sometimes 12 or 15) who have completed a certain level of school education. In Chinese educational system, educational achievement is classified into several categories: Master or Ph.D graduates, university graduates (4 years), college graduates (2 years), vocational school graduates (3 years), high school graduates (3 years), junior middle school graduates (3 years), and primary school graduates (6 years). After graduation from junior middle school, students can enter either vocational school or high school. After graduation from high school, students can enter college or university (largely depends on their exam scores). Table 9 presents the educational structure of Han and Tibetan population at age 6 and above in the TAR. The data sources were the 1982, 1990 and 2000 census. The main characteristics of Han and Tibetan population in educational achievement can be summarized as below.

Table 9. Educational Structure of Han and Tibetan Population in the TAR.

Educational Structure ****	Tibetan in TAR						Han in TAR					
	1982		1990		2000		1982		1990		2000	
	number	%	number	%	number	%	number	%	number	%	number	%
University ***	2,806	0.9	7,062	1.2	17,421	1.9	5,021	6.5	6,551	7.9	15,575	10.6
Vocational school	-	-	20,656	3.5	37,845	4.1	-	-	6,923	8.3	11,869	8.1
High school	9,441	2.9	10,312	1.7	19,077	2.1	13,172	17.1	15,401	18.6	22,534	15.3
Junior middle school	38,406	11.7	64,151	10.9	101,441	10.9	29,093	37.7	33,702	40.6	61,270	41.7
Primary school	276,699	84.5	487,932	82.7	751,651	81.0	29,902	38.7	20,429	24.6	35,741	24.3
Total above	327,352	100.0	590,113	100.0	927,435	100.0	77,188	100.0	83,006	100.0	146,989	100.0
Illiterate above 6	1170,626	78.1	1180964	66.7	1203,605**	56.5	5,667	6.8			4,494	3.2
Total pop above 6	1497,978	100.0	1771077	100.0	2,131,040	100.0	82,855	100.0			151,913	100.0
Illiterate above 15	-	-	969792*	72.8	-	-	-	-	2,180	3.1	-	-
Total pop above 15	1110,720	-	1332132	100.0	-	-	65,981	-	70,620	100.0	-	-
	Whole China (in 1,000)*											
	1982		1990		2000							
Educational Structure ****	number	%	number	%	number	%						
University ***	6,037	1.0	15,757	2.0	44,020	4.2						
Vocational school	-	-	17,284	2.2	39,209	3.7						
High school	66,529	11.0	72,604	9.2	99,075	9.5						
Junior middle school	178,197	29.4	263,385	33.4	422,386	40.4						
Primary school	355,347	58.6	420,205	53.2	441,613	42.2						
Total above	606,110	100.0	789,235	100.0	1046,303	100.0						
Illiterate above 6	283,677	31.9	203,855	20.6	110,397	9.5						

Total pop above 6	889,787	100.0	994,090	100.0	1156,700	100.0					
Illiterate above 15	-	-	181,609	22.2	86,992	9.1					
Total pop above 15	669,088	-	817,509	100.0	958,085	100.0					

* This for all ethnic minorities; ** Including 145,547 persons who attended “literacy class”;

*** Include 4 year and 2 year students and graduates;

**** All education levels include graduates, in school students, and those left without certificates.

Sources: SBT, 2002:164-171; SBC, 2002: 593-601, 633.

1 Among the Tibetan population at age 6 and above, percentage of illiterate and semi-illiterate reduced from 78.1% in 1982 to 66.7% in 1990, then to 56.5% in 2000. But it was still below the national level in respective years (31.9%、20.6% and 9.5%) and the gap was obvious.

In 1982, the university students (including graduates, students in school and those left without certificate) consisted of 0.9% of the total. Meanwhile, high school students consisted of 2.9%, junior middle school graduates consisted of 11.7%, and primary school graduates consisted of 84.5%. In comparison, the structure of whole China was 1.0% for university graduates, 11.0% for high school graduates, 29.4% for junior middle school graduates, and 58.6% for primary school graduates respectively. For Tibetans, most significant increase occurred at the level of university graduates that increased from 2,806 in 1982 to 17,421 in 2000 while its percentage in total increased from 0.9% to 1.9% during the period. The vocational school graduates were not counted in 1982 because its size was too small, and its percentage reached 4.1% of the total in 2000.

2 .The illiterate and semi-illiterate consisted of 6.8% of the total Han in 1982 and only 3.2% in 2000 in the TAR. It was much lower than the national level (9.5%)。The “spindle” shape of the age pyramid, high employment rate, and unusual low illiterate rate, together demonstrate the characteristics of Han population in the TAR – “a working group”.

3 . All census data and statistical records confirmed that educational achievement of Tibetans in the TAR has been significant over time, but still behind the national level. This certainly has some negative impact on the social and economic development in the TAR in the future. To improve the school education in Tibet will be a long term task in the next several decades. Because Tibet has its special cultural traditions, the development of schools in Tibet should meet the local needs in economic and cultural development.

V. Industrial Structure of Han and Tibetan Population in the TAR

In order to understand the social and economic development of a nation or a region, sociologists and economists usually examine the industrial and occupational structures of its labor force. Modernization is considered as a process of labor transition, first from agriculture to manufacture, then to service sectors. Therefore, the industrial structure of labor force of different ethnic groups is the common indicator of “ethnic stratification” in a multi-ethnic nation. A longitudinal review of its industrial structure of an ethnic group shows the trend of its position in the national or regional economy over time. The censuses of China provided the information of industrial and occupational distribution of labor force for all ethnic groups. Table 9 provides the industrial structure of Han and Tibetans in the TAR in the recent three censuses.

In the census of China, there are 18 “industrial categories”. In order to simplify the analysis, the 18 categories are regrouped into 13 categories (Table 10). The national industrial structural data are also provided in this table for comparison. The major characteristics of the Tibetan and Han

labor force in industrial distribution can be summarized as bellow:

Table 10. Industrial Structure of Labor Force in the TAR

Industrial category	1982 census				1990 census			
	Tibetan		Han		Tibetan		Han	
	Number	%	Number	%	Number	%	Number	%
Agriculture	852,973	89.1	2,158	3.9	874,250	84.1	1,977	3.3
Manufacture	18,574	1.9	8,464	15.5	32,230	3.1	8,187	13.8
Geological prospect	1,207	0.1	1,974	3.6	1,315	0.1	1,205	2.0
Construction	11,075	1.2	4,462	8.1	7,097	0.7	10,774	18.2
Transp./Communication	15,085	1.6	11,895	21.7	15,927	1.5	4,851	8.2
Trade/restaurant	9,679	1.0	3,944	7.2	18,756	1.8	7,669	12.9
Public services**	1,039	0.1	677	1.2	3,997	0.4	2,681	4.5
Health/sport/welfare	6,651	0.7	2,050	3.7	8,934	0.9	1,401	2.4
Culture/education/Arts	13,457	1.4	5,453	9.9	42,952	4.1	4,247	7.2
Research/technical Service	1,089	0.1	1,128	2.1	998	0.1	731	1.2
Finance/insurance	2,023	0.2	715	1.3	2,590	0.2	836	1.4
Party/adminis./mass orga.***	24,283	2.5	11,496	21.0	30,826	3.0	14,271	24.8
Others	186	0.0	423	0.8	5	0.0	5	0.0
Total	957,321	100.0	54,839	100.0	1,039,877	100.0	59,285	100.0
Industrial category	2000 census*				Census for whole China			
	Tibetan		Han		1982	1990	2000	
	Number	%	Number	%	%	%	%	
Agriculture	105,456	85.7	808	8.5	73.7	72.2	64.4	
Manufacture	3,714	3.0	1,240	13.0	13.7	13.4	14.1	
Geological prospect	129	0.1	100	1.0	0.2	0.1	0.1	
Construction	598	0.5	761	8.0	2.1	1.8	2.8	
Transp./Communication	1,297	1.1	505	5.3	1.7	1.8	2.6	
Trade/restaurant	2,530	2.1	2,910	30.5	3.0	4.0	6.7	
Public services**	819	0.7	755	7.9	0.5	1.0	2.4	
Health/sport/welfare	897	0.7	206	2.2	0.8	0.8	1.1	
Culture/education/Arts	2,465	2.0	453	4.8	2.5	2.3	2.5	
Research/technical Service	126	0.1	59	0.6	0.2	0.2	0.2	
Finance/insurance	393	0.3	161	1.7	0.2	0.3	0.6	
Party/adminis./ mass orga.***	4,277	3.5	1,413	14.8	1.5	2.0	2.3	
Others	308	0.2	160	1.7	0.0	0.0	0.2	
Total	123,009	100.0	9,531	100.0	100.0	100.0	100.0	

* The 2000 census only covered 10 percent of the total population for industrial information.

** "Public services": includes hotel, rental service, public and residential services, tourism, entertainment, information service, computer service, and other services.

*** "Party/adminis./ mass orga.": includes persons work in party organizations, administration, and Youth League, Woman Federation, and Worker Union.

Source: The 1982, 1990 and 2000 census data. Census Office of TAR, 2002: 502-507. SBC, 2002: 815-820.

1 . There were 89.1% of Tibetan laborers engaged in agriculture in 1982, a higher percentage than the national level (73.7%). At the same year, the percentage engaged in manufacture was only 1.9%, much lower than the national level (13.7%). Except the percentage of laborers in agriculture and Party-administration, the percentages of Tibetans in other industries were lower than the national level. It indicates that major economic activity in the TAR was still traditional agriculture. Because of large areas and low population density, there were more Tibetans working in administration (2.5%) compared with the whole China (1.5%).

2 . During 1982-1990, the percentage of Tibetans in agriculture reduced by 5% while in education, culture, arts increased 3 times. This indicates that the school system developed very fast during this period. In 1990, there were 29,000 Tibetan teachers working in various schools and universities. During this period, the percentages of Tibetans increased 3.8 times in social services, 94% in retail sale and restaurants, and 27% in manufacture. In comparison, the number and percentage of Tibetans in construction, and research institutions reduced. In general, the “reform” policies of the central government implemented in the 1980s promoted the development of education and social services in Tibet.

3 . During 1990-2000, the percentage of Tibetan engaged in agriculture increased by 1.6%, while the percentage in Party-administration increased to 3.5% (higher than the national level 2.3%). In contrast, the percentage of Han in party-administration increased from 21% in 1982 to 24.8% in 1990, and then reduced to 15.8% in 2000.

4 . The industrial structure of Han labor force experienced some significant changes during the 18 years. Besides the changes in Party-administration, the percentage of Han in retail sale and restaurants increased from 7.2% in 1982 to 12.9% in 1990, then to 30.5% in 2000. This means the service sector in the TAR developed very fast and many Han laborers transferred to this sector. In contrast, the percentage of Tibetans in retail sale and restaurants only increased from 1% in 1982 to 2.1% in 2000. There were totally 154,818 international tourists and 2,357,285 domestic tourists in the TAR in 2006. The total earning of tourism was 2770.7 million RMB in 2006 in the TAR (SBT, 2007: 242). How can the Tibetans take the advantages of rapid development of tourism should be studied in the future.

5 . Among the total Han population in the TAR in 1990, 73.3% were laborers at age of 15-64 (Table 11). In the same year, percentage of Tibetans at age 15-64 only consisted of 49.6%. In 2000, the percentage of Laborers of Han population consisted 89.3% while the percentage of laborers in total Tibetans consisted of 62.3%. The age structure comparison indicates that the majority of Han population in the TRA was either government-arranged circular employees or spontaneous seasonal migrant laborers.

Table 11. Percentage of Han and Tibetans in Total Labor Force in the TAR.

	1982			1990			2000		
	Total population	Total laborer	%	Total population	Total laborer	%	Total population	Total laborer	%
Tibetan	1,786,500	957,321	53.6	2,096,718	1,039,877	49.6	2,427,168	1,513,275	62.3
Han	91,720	54,839	59.8	80,837	59,285	73.3	158,570	141,578	89.3

VI. Occupational Structure of Labor Force in the TAR

Industrial structure demonstrates the distribution of social labor force in various industries and the labor transfer between industries. Occupational structure demonstrates the nature of individual laborer engagement in economic activities. The employees belong to different occupations such as managers, office stuff, technician, and workers might work in the same industry. Therefore, the occupational structure shows the extent of labor division and modernization in a society.

In the Chinese censuses, there are 7 occupational categories plus “others”. The occupational

structure of the labor force in the TAR is presented in Table 12. The data come from the 1982, 1990, and 2000 censuses. The major characteristics can be summarized as below:

1 . During 1982-1990, the number of “professionals” and its percentage in total Tibetan labor force increased about 3 times. In contrast, the percentage of Han in this category reduced from 25.4% to 18.8% in total Han labor force. During the same period, the percentage of “cadre” (leaders of units) in total Han laborers reduced by 0.7% but the absolute number did not change much. But the number of “office stuff” among the Han increased by 2,749. Therefore, the increase of Han in “Party-administration” was mainly due to the growth of “office stuff”, not “cadres”. During the same period, the Tibetan cadres increased by 1,895 or 14% while Tibetan office stuff increased by 2,321. This period was the one with a fast growth of Tibetan cadres and office stuff.

Table 12. Occupational Structure of Labor Force in the TAR

Occupation	1982 Census				1990 Census			
	Tibetan		Han		Tibetan		Han	
	Number	%	Number	%	Number	%	Number	%
Professional	28,041	2.9	13,945	25.4	60,024	5.8	11,155	18.8
Cadre	13,611	1.4	4,986	9.1	15,506	1.5	4,975	8.4
Office staff	9,246	1.0	7,081	12.9	11,567	1.1	9,830	16.6
Trade	4,166	0.4	1,291	2.4	12,696	1.2	4,629	7.8
Service	8,406	0.9	4,170	7.6	11,038	1.1	4,828	8.1
Agriculture	833,714	87.1	1,276	2.3	868,644	83.5	1,987	3.4
Industrial worker	59,926	6.3	21,893	39.9	60,402	5.8	21,880	36.9
Others	211	0.0	197	0.4	0	0.0	0	0.0
Total	957,321	100.0	54,839	100.0	1,039,877	100.0	59,285	100.0
Occupation	2000 Census*				Census for whole China			
	Tibetan		Han		1982	1990	2000	
	Number	%	Number	%	%	%	%	
Professional	5,325	4.3	1,451	15.2	5.1	5.3	5.7	
Cadre	1,233	1.0	583	6.1	1.6	1.8	1.7	
Office staff	2,130	1.7	942	9.9	1.3	1.7	3.1	
Trade	3,769	3.1	3,697	38.8	1.8	3.0	9.2	
Service**					2.2	2.4		
Agriculture	106,474	86.6	758	7.9	72.0	70.6	64.5	
Industrial worker	3,930	3.2	2,046	21.5	16.0	15.2	15.8	
Others	148	0.1	54	0.6	0.0	0.0	0.0	
Total	123,009	100.0	9,531	100.0	100.0	100.0	100.0	

* 2000 census only covered 10 percent of the total population for occupation information,

** The 2000 census combined the categories of “trade worker” and “service worker” together.

Source: Census Data; SBT, 2002: 508-511; SBC, 2002:821-824.

2 . During 1990-2000, the percentages of both Han and Tibetan “professionals” in their total labor forces reduced. But the percentage of Han in “professionals” (15.2%) was still higher than the national level (5.7%). During this period, both the percentages of Han and Tibetans in total working as “manufacture and transportation workers” reduced. The percentage of Han reduced from 36.9% to 21.5% and that of Tibetans reduced from 5.8% to 3.2%. This change demonstrates the shrink of the manufacture sector.

The percentage of the workers in trade and services in total Han laborers increased from 15.9% to 38.8% during 1990-2000. This difference even exceeds the changes in industrial structure. It indicates that the service sector has become the major occupation for Han laborers. The above changes demonstrate the adjustment of occupational structure within this ten-year period. Because the industrial and occupational data of the 2000 census were from 10% sample, the comparison only can be made through percentages and there might be some sampling errors.

Since the percentage of farmer-herdsman in total Tibetan labor force was still around 86.6% in 2000, the rural development and income improvement of farmers is the priority in current social and economic development in Tibet.

3 . The number and percentage of cadres (leader of units) in total Tibetans reduced from 1.5% in 1990 to 1.0% in 2000. How to explain the change needs a further study. The percentage of office stuff among Tibetans increased from 1.1% to 1.7% during 1990-2000, but the percentage was still lower than that of Han (9.9%) and the national level (3.1%).

One phenomenon is noteworthy. The percentage of Han laborers engaged in agriculture was 7.9% in 2000, compared with 3.4% in 1990 and 2.3% in 1982. Because all cultivated lands in the TAR were redistributed among local Tibetan farmers, the only way for a Han farmer to get a piece of land was to rent it from local Tibetans. Some studies reported that some Han farmers rent the land in suburbs to build greenhouse for vegetable production (Ye, 2003). Since the vegetables can be sale at good prices, the suburb greenhouses have become popular in Lhasa and other cities in the TAR. This is the reason why the Han “farmers” increased in occupational structure.

Summary

In general, the population in the TAR had continually increased during 1982-2000. The growth speed of Tibetan population turned to slow down in recent years due to a decline of fertility. The size of Han population whose migration was arranged by the government varies according to the government adjustment and construction projects.

There are differences of fertility and mortality data between registration and sampling survey. The reason needs further investigation. Accompanying the “Developing West” strategy and development projects launched by the central government as well as the rapid increase of people’s income in Tibet, many Han construction workers and service laborers moved into Tibet for employment opportunities and a higher income. Some other ethnic groups (especially Hui from Gansu and Salar from Qinghai) also joined this flow. The service sector developed very fast in cities of the TAR and it has been promoted by seasonal tourism. When railway extends to Shigatse and other towns in the TAR in the coming years, the transportation condition will be further improved. These factors will have significant impacts on population changes in Tibet in the future.

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