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System Dynamics and Innovation in Food Networks 2010

Proceedings of the 4th International European Forum on System Dynamics and Innovation in Food Networks, organized by the International Center for Food Chain and Network Research, University of Bonn, Germany
February 08-12 2010, Innsbruck-Igls, Austria
officially endorsed by

EAAE(European Association of Agricultural Economists)
IAMA (International Food and Agribusiness Management Association)
AIEA2 (Assoc. Intern. di Economia Alimentare e Agro-Industriale)
INFITA (Intern. Network for IT in Agric., Food and the Environment)

edited by

M. Fritz, U. Rickert, G. Schiefer

ISBN 978-3-941766-03-7

Economic Development, Rural Zones and Farms in China

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1 Introduction

Because of the growing influence of China, the rapid economic development and the transformation of Chinese society have attracted the attention of analysts, politicians and *mass media.* There are, however, many aspects of these changes that are less well known. This is not only because of the sheer size of China - with a population of more than 1.3 billion – but also because of the lack of information on the enormously large and varied rural areas, where still now more than 55% of the Chinese population lives.
The great reform of the Chinese economy began 30 years ago in 1978. The basic change was liberalization of foreign trade, the so-called "Open Door Policy". This involved a deep reform of the economy and in particular of agriculture, which entailed the dismantling of the collectives and the establishment of a family-based farming structure, the so-called "*Household Responsibility System".* The rapid development of the Chinese economy in recent decades is the result of the combined effect of these reforms. However the role that reforms in agriculture and rural areas have played in this transformation have often been overlooked, and in particular the effect of reliable food supplies on a continually growing population, such as the Chinese one. The great reduction in hunger and malnutrition, which in the past affected millions of Chinese citizens, has had a decisive impact on the reduction of poverty, thus increasing the social stability of the whole country.
The aim of this work is to briefly describe the characteristics of the rapid Chinese economic development, then focusing on certain elements which have been co-responsible for the unequal development across China, pointing out the territorial disparities among the over thirty Chinese provinces and metropolitan zones and especially the differences between urban and rural areas. Particular attention will be paid to the role played by exports, one of the main driving forces of Chinese economic development in recent decades, and to the phenomenon of urbanisation, which has resulted in a widening gap between rural and urban households in terms of consumption, income per capita and disposable income. The differences are not only between rural and urban zones but also between the richer metropolitan areas and coastal provinces of the East and the Central and Western provinces which are more peripheral and marginal. The opening of the Chinese market and the development of the Chinese economy has increasingly highlighted its importance as a both a producer and a consumer of agricultural and food products and its influence on international markets, as well as on the negotiations at present taking place under the aegis of the WTO.
If we pause for a while to consider the role played in this process by the extraordinary agricultural reforms, which are without precedent in history in terms of the area, the number of farms, and people involved. It meant the definite transfer of the land from collective farms to some over 200 million (according to the 2006 census) small and very small households farms. Improving our knowledge of the reality of the vast area of rural China may help us to understand the role of agriculture in China better, in terms not only of what it means for assured food security in rural areas and thus the reduction of rural poverty, but also the contribution of the rural workforce to the development of other productive activities and the richer and more industrialised East provinces.

Indeed the continued presence of the many millions still involved in agriculture, about 70% of the total in rural areas, when linked to the enormous number of internal migrants - more than 130 million people who move long distances for long periods of time – are key characteristics of modern China.

Analysis of the changes in recent decades and in particular of the decade from 1996 to 2006 (using the census data for agriculture and rural areas) provides useful information on crucial questions about the future economic and social development of China, and in particular whether the regional differences will persist and the availability of workers to continue the recent development of industry and service industries. This is without ignoring the increasingly crucial question as to whether China can satisfy the food requirements of a growing and increasingly urbanised population. Even a brief analysis of the policies which have been adopted recently in favor of agriculture and rural areas provide important information which can help us to understand whether development in China in recent years will continue as it has in the past or whether there will be changes.

2 Economic development and structural changes

Chinese economic development in the last 30 years, together with that of other large emerging countries, has significantly changed world economic geography. According to World Bank estimates (World Development Indicators) China had a annual growth rate of about 10% between 1990 and 2006. It has increased its GDP three fold in less than two decades and is now the fourth largest economy in the world after the USA, Japan and Germany and in few years could reach the second position . Chinese economic growth has been far superior to that of India and Brazil, the other two large emerging countries. During the same period Indian GDP grew by 150% and Brazilian GDP by 50%. Even during the global financial and economic crisis of 2007 to 2009 the Chinese growth rate compared favorably with that of the developed economies, and recent data for 2009 confirms that the growth rate has returned to 8% a year.

Table 1. Principal Aggregate Indicators on National Economic and Social Development and Growth Rates in China (1978-2007)

Item	Aggregate Data				Growth Rates (%) Average Annual Growth Rate		
	1978	1990	2000	2007	1979-2007	1991-2007	2001-2007
Population (Million persons)							
Population at Year-end	963	1,143	1,267	1,321	1.1	0.9	0.6
Urban	172	302	459	594	4.4	4.1	3.7
Rural	790	841	808	728	-0.3	-0.9	-1.5
Employment (Million persons)							
Employment	402	647	721	770	2.3	1.0	0.9
National Accounting (Billion yuan)							
Gross Domestic Product	365	1,867	9,921	24,953	9.8	10.3	10.2
Primary Industry	103	506	1,494	2,810	4.6	3.9	4.1
Secondary Industry	175	772	4,556	12,138	11.4	12.7	11.4
Tertiary Industry	87	589	3,871	10,005	10.8	10.4	10.8
Final Consumption Expenditure	224	919	1,202	6,154	12,844		
Household Consumption	176	945	4,585	9,332			
Government Consumption	48	264	1,566	3,513			

Note: The growth rates are at constant prices. Fonte: China Statistics Yearbook, 2008

However China's generally strong economic development has underlined the great differences between different productive sectors and different regions. This is particularly true in agriculture. In 1978-1980 agriculture contributed 30% to Chinese GDP and by 2007 this had fallen to little more than 11%. During the same period services experienced the most growth, going from little more than 22% to more than 40% of GDP. Industry remained important and contributed more than 48% of GDP in 2007.

The strong Chinese growth rate is linked to the great increase in productivity, and is due to a move from a prevalently agricultural workforce with low productivity to one with much higher productivity in industry, construction and, above all, services.

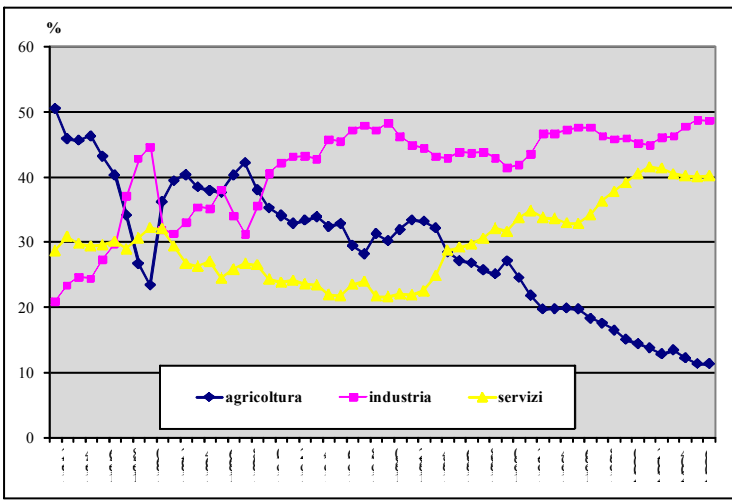


Figure 1. Composition of Chinese GDP by sectors (%) from 1952 to 2007
Source: China Statistics Yearbook, 2008.

Table 2. National Economic and Social Development in China (1978-2007)- Composition (%)of main Indicators

Item	1978	1990	2000	2007
Population		**Composition %**		
Urban and Rural %				
Urban	17.9	26.4	36.2	44.9
Rural	82.1	73.6	63.8	55.1
Employment %				
Primary Industry	70.5	60.1	50.0	40.8
Secondary Industry	17.3	21.4	22.5	26.8
Tertiary Industry	12.2	18.5	27.5	32.4
National Accounting				
Primary Industry	28.2	27.1	15.1	11.3
Secondary Industry	47.9	41.3	45.9	48.6
Tertiary Industry	23.9	31.6	39.0	40.1
Total Investment in Fixed Assets (%)				
Urban		72.5	79.7	85.5
Rural		27.5	20.3	14.5

Source: China Statistics Yearbook, 2008

2.1 An export driven development model

Chinese economic development in recent decades has been largely export driven. This has seen China play an increasingly important international role, with a noteworthy level of economic openness. Today the sum of imports and exports amounts to almost 70% of the GDP and since the reforms of 1978 to today China has gone from 27th to 3rd place in the world in terms of exports and imports. China's positive balance of payments has increased markedly since it joined the WTO in 2001, going from $22.5 billion in 2001 to more than $260 billion in 2007, and exports in 2007 amounted to almost $1,220 billion[1].

There have however been significant changes in the Chinese economy since 2000, above all after China joined the WTO in 2001. China has moved from being mainly self-sufficient in food, and thus an exporter, to being a net importer of foodstuffs and agricultural products. The increase in imports of agricultural commodities, in particular soya and cotton, is largely due to the reduction in tariffs on these products. It has only been partly compensated for by an increase in exports of processed foodstuffs and fresh vegetables. However this must be contrasted, as we have said above, with the unprecedented growth in the positive balance of payments for manufactured products.

1. The Chinese balance of trade has grown exponentially since China joined the WTO in 2001. Chinese data for 2007 estimates it at over $300 billion. However this does not include the balance with Hong Kong, which is then re-exported, mainly to the USA. Estimates, which more than double this surplus (to more than $650 billion), are obtained by calculating the deficits which the main trading nations have with China, using data from the IMF.

Table 4. Total Value of Imports and Exports in China (1978-2007)

Year	(USD billion) Total Imports & Exports	Total Exports	Total Imports	Balance
1978	21	10	11	-1
1980	38	18	20	-2
1985	70	27	42	-15
1990	115	62	53	9
1995	281	149	132	17
2000	474	249	225	24
2005	1,422	762	660	102
2006	1,760	969	791	177
2007	2,174	1,218	956	262

Fonte: China Statistics Yearbook, 2008 (A negative value indicates trade deficit.)

In 2007 imports of raw materials (which includes agricultural products and crude oil) were more than $243 billion, more than three times greater than that of 2003, while exports were less than $61 billion, less than twice that of 2003, with a negative balance of more than $180 billion. If one narrows down the balance to only agricultural products, then one finds that there has been a marked growth in imports, from $11 billion in 2002 to $57 billion in 2007, according to USDA estimates, while exports grew from $13 billion to $19 billion in the same period.

China is becoming increasingly an importer of raw materials, in particular of commodities such as soya and cotton. These are then processed for use for human and animal food (soya) or as raw material for the textile industry (cotton). For soya in particular China is no longer self-sufficient. In recent decades production has fallen, reaching a level of little more than 30% of requirements in 2007. This is also because Chinese soya production fell between 2000 and 2007.[1]

Table 5. China: Foreign Trade (USD billion)

Item	2003	2004	2005	2006	2007
Total Value of Imports and Exports	**851**	**1,155**	**1,422**	**1,760**	**2,174**
Total Exports	438	593	762	969	1,218
Primary Goods	**35**	**41**	**49**	**53**	**62**
Manufactured Goods	403	553	713	916	1,156
Total Imports	413	561	660	791	956
Primary Goods	**73**	**117**	**148**	**187**	**243**
Manufactured Goods	340	444	512	604	713
Balance	**25**	**32**	**102**	**177**	**262**

Fonte: China Statistics Yearbook, 2008

The increase in imports, especially after 2002, has resulted in China becoming the world's fourth largest importer. It imports 40% of world production of soya and palm-oil. Chinese exports have, by contrast, increased much less and their type and destinations have remained substantially stable.[2]

The changes in China's agricultural products trade, especially after joining the WTO, have resulted in an increase in imports and China losing its position as a net exporter. China is still, however, self-sufficient in cereals (rice, maize and wheat) and a net exporter of these

1. China's soya imports come mainly from the USA (25%), followed by Brazil (14%) and Argentina (14%). Cotton is imported almost exclusively from the USA and is connected to the important Chinese textile industry. Imports from the EU, while increasing (less than two billion US dollars in 2007) are losing market share (at the moment they are stable at some 6.5%).

2. The principal exports are fresh and processed vegetables, poultry and maize. The fresh and processed vegetable products (mainly garlic) are exported to Japan, as are almost all the poultry, and thus Japan is China's principal partner for Chinese products (some 25% of the total). The maize is mainly exported to neighboring Asian countries such as Korea, while the guts and bladders are exported mainly to the EU (some 14%). The EU also imports 50% of its apple juice from China and most of its Kashmir.

products, although many analysts believe that this will change with time. This is especially true in the case of maize, which can be used as animal feed, and consumption can be expected to increase because of increased meat consumption in the next few years.
Given this new situation, China is establishing new strategies to assure the availability of these important products. It is arranging bilateral trade agreements with major soya and cotton producers. In certain cases these agreements are becoming increasingly precise, with more or less direct Chinese management of large areas of cultivated land in developing countries. The classic case is Africa where Chinese influence has increased greatly in recent years. In 2007 alone China signed more than thirty "agricultural cooperation" agreements with African countries which involved more than two million hectares of land. The Chinese have obtained the right to cultivate palm-oil for bio-fuel on 2.8 million hectares of land in the Congo, which will thus become the largest palm-oil plantation in the world.[1]. In a continent such as Africa obtaining credits for agricultural production and innovation is very difficult or impossible (sub-Saharan Africa spends much less than India on R&D). China, however, has established eleven research centres in Africa for improving cereal production and this investment will also have positive effects for local producers.

2.2 The great regional differences: urban and rural zones

Chinese economic development has, however, been accompanied by other changes which have resulted in great regional differences as well as the enormous demographic changes. There has been, on one hand, an increase in the population, albeit at a rate less than in the past, and, on the other, an increase in urbanisation. The ageing population has also increased the differences between urban and rural areas and between the coastal and metropolitan areas, on one hand, and the interior and Western provinces, on the other. A brief description of these important processes may help us to understand the ongoing transformation in China better.
In 2007 the Chinese population was more than 1.3 billion, compared to just over 962 million in 1978.[2] This population increase was, however, concentrated almost exclusively in the urban areas. Indeed the rural population fell from 790 million, or 82% of the population, in 1978 to less than 730 million, or 55% of the population, in 2007. This phenomena was particularly evident after the 1980's. During the same period the urban population grew from a little more than 172 Million to more than 593 million, with an average rate of increase of 4.4% a year. The population increase of more than 400 million was almost exclusively concentrated in the urban areas. Today almost 45% of the Chinese population live in urban areas, compared with just over 18% thirty years ago[3].
To this growth of the urban population itself one must also add the enormous number of immigrant workers, some 130 million according to the 2006 census of agriculture and rural zones. These workers are still resident in rural zones but work for long periods in the industry, construction and service industries in the more developed provinces.
The concentration of the population in urban areas and the enormous internal migration will also characterise the changes in progress in the next few years, and will have an enormous

1. The Chinese authorities are also negotiating with Zambia for the use of two million hectares to be used for oil-palms for bio-fuels. This has provoked protests from the Zambian opposition. Chinese companies in Zambia already produce 25% of the eggs sold in the capital, Lusaka. Finally it is estimated that about one million Chinese farmers worked in Africa this year, which is an enormous number.

2. The rate of population increase was more than 1.1% per year for the last thirty years, although there was a marked reduction due to birth control policies. Thus it fell from 1.5% in the 1980's to just over 0.6% in the new millennium (2000-2007).

3. OECD estimates say, however, that only in 2016 will the Chinese urban population be greater than the rural one, while in many developing countries this threshold has already been passed.

impact on the economic and social structure of both the areas where the immigrants come from and those where they go to work. Urbanisation plays an important role not only in increasing the inequalities in the provinces themselves and between the rural areas and the cities, but also, and above all, at family level. Data on net disposable household income shows this very clearly. In 2007 urban households had an income of some 14,000 Yuan ($2,000) while rural households had an income of only 4,000 Yuan (just under $600). The increase in this difference can be seen from consumption patterns. While in the middle 1980's urban households consumed 2½ times as much as rural households, today they consume 3½ times as much.

The combination of urbanisation and the increase in unequal consumption has resulted in a situation where in 2007 consumption by urban households now amounts to three quarters of total consumption, while that of rural households has fallen from 60% in 1978 to little more than a quarter today. This also helps us to understand the immensity of the changes which have taken place in recent decades.

Table 6 - Household Consumption Expenditure Per capita in China (1978-2007) – yuan at current prices

Year	All Households	Rural Household	Urban Household	Urban/Rural Ratio (Rural= 1)
1978	184	138	405	2,9
1980	**238**	**178**	**489**	**2,7**
1985	**446**	**349**	**765**	**2,2**
1990	**833**	**560**	**1596**	**2,9**
1995	**2355**	**1313**	**4931**	**3,8**
2000	**3632**	**1860**	**6850**	**3,7**
2005	**5463**	**2560**	**9410**	**3,7**
2006	6138	2847	10423	3,6
2007	7081	3265	11855	3,6

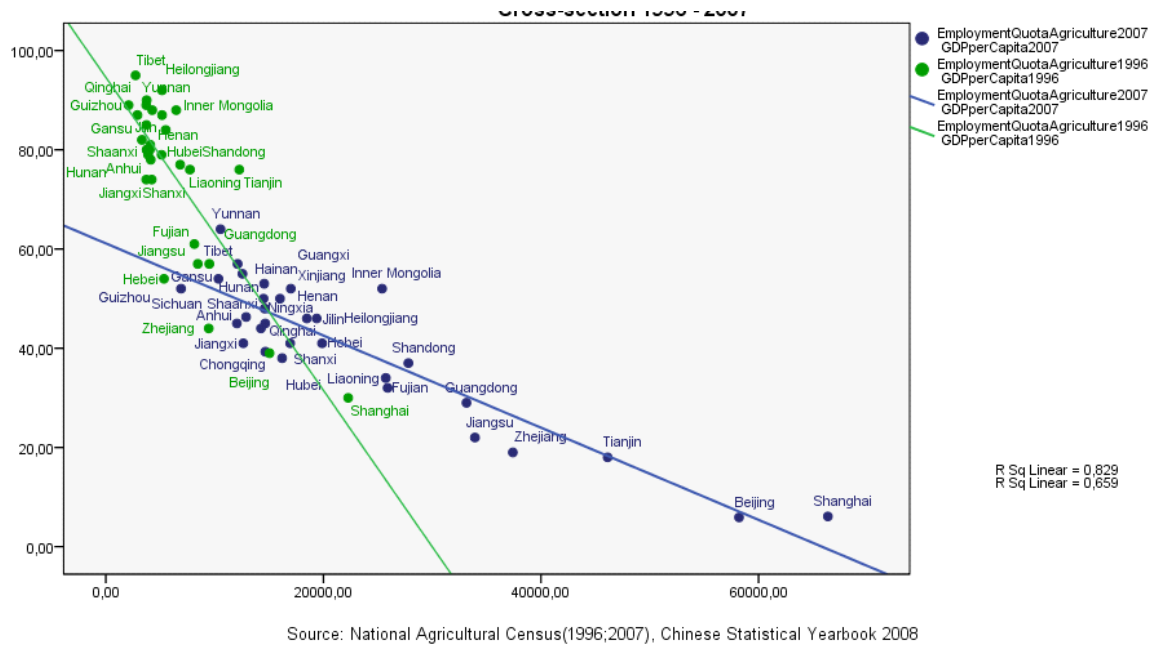
a) The effect of price differentials between urban and rural areas has not been removed in the calculation of the urban/rural consumption ratio.

2.3 The great regional differences: provinces and rural zones

This disparity between the provinces and the municipalities has been increasing in favour of Peking, Shanghai and the East coast provinces during the same period, and particularly in the last twenty years. Little more than a third of the Chinese population live in Peking, Shanghai and the East coast provinces, yet they produce more than 55% of the GDP and are responsible for almost 80% of Chinese trade with the rest of the world. Development and per capita income are much lower in the vast central provinces and particularly in the mountainous Western frontier provinces. To illustrate this, per capita GDP in China in 2007 was on average almost 19,000 Yuan (about $2,480), but was over 32,000 Yuan in the Eastern provinces, which is more than double that of the central provinces (15,000 Yuan), while in the peripheral mountainous Western frontier provinces it was 13,000 Yuan.

This disparity is accentuated and more evident when one considers the different structural realities. Looking at the data for 2007 with respect to the percentage of the population involved in agriculture as an indicator of the level of economic development, and the per capita GDP as an indicator of wealth, we find that there is a clear negative correlation between these variables. In most Chinese provinces the agricultural workforce makes up between 40% and 60% of the total (with Tibet being the extreme case with 65%) , and the per capita income is between 10,000 and 20,000 Yuan, while a growing number of provinces are reducing the agricultural workforce and thus increasing by a still greater extent the per capita income of the population. These are the richer Eastern provinces, with Peking and Shanghai being the extreme cases. Here the agricultural workforce makes up about 5% of the

population and the per capita income is 57,000 and 67,000 Yuan respectively, which is four times higher than that of most of the other Chinese provinces.



Source: National Agricultural Census(1996;2007), Chinese Statistical Yearbook 2008

Figure 2. China: Agricultural (%) workforce (X) and per capita GDP (Yuan) (Y) by provinces in 1996 and 2007

This great structural, area and zonal difference has also drawn attention to the problem of assured food supplies and the contribution that agriculture and the rural zones make to general economic development in China. The great increases in both food production and consumption, especially during the 1990's, have made China one of the world's major producers and consumers of agricultural products. Today China is the greatest producer and consumer of pork poultry and eggs, as well as of agricultural commodities such as rice and wheat. There has also been strong growth in production and consumption of fruit and vegetables - including potatoes, tomatoes, asparagus and garlic – and China is the world leader here.

3 Rural China as seen from the Censuses of 1996 and 2006

Knowledge of rural China and in particular of Chinese agriculture was and still incomplete and fragmentary. This is because of the vast size of the territory and the vastly different situations, as well as the enormous changes which have taken place in recent decades. One must remember that in 1949 Chinese agriculture was still basically feudal, while from the 1950's to the 1970's land management and cultivation was first based on cooperatives and then on collective management at commune of village level. Since 1978 there have been further profound changes, with land management and cultivation being entrusted to the rural households, while the land itself has remained the property of the village, the city or the state[1].

3.1 Households and population in the rural zones (1996-2006)

The Chinese censuses of agriculture and rural zones in 1996 and 2006 were the largest statistical investigations ever carried out in the world. They provided important information on the social and economic reality of large part of the country. The censuses considered not only agriculture and farm types but also private and public non-agricultural companies and also provided information on the living conditions, education and mobility of a large part of the Chinese population.
The image of rural China which emerges shows that the was a significant increase in both household and non-household farms in the period 1996 to 2006 and by the latter date there were more than 225 million of these. More than 200 million were households farms, an increase of 3.7% from the 193 million in 1996. There were also 395,000 non-households farms which belonged to the village, the city or the state, or in a smaller number of cases, were in private hands.
Overall households farms manage some 122 million hectares of arable land. Thus they are on average very small, with on average less than half a hectare of land each, or about 8 *mu* in Chinese measurements. The increase in the number of farms was, however, accompanied by a great reduction in the rural population. The number of permanent residents (resident for more than six months a year) fell from 874 million in 1996 to little more than 745 million in 2006. This is a reduction of 128 million or about 15% of the total.

Table 7. CHINA: Number of permanent residents and family and other farms in 1996 and 2006 (thousand)

	1996 *(thousand)*	2006 *(thousand)*	Growth Rate(%)
Rural permanent residents	**873.800**	**745.800**	**- 0,15**
Rural permanent household	**220.600**	**221.100**	
Agricultural Holding (Farms)			
Household Agricultural Holding (number 000)	**193.100**	**200.200**	**3,7**
Labour in Households (000)	*425.095*	*342.464*	*-19,4*
Non-Household Agricultural Holding (number 000)	**358.000**	**395.000**	**10,4**
Labour in Non-Households (000)	*8.511*	*6.824*	*-19,8*

Note: In the paper we use the term Household Farm and Non-Household Farm instead the Census items.
Source: National agricultural census of 2006, China Statistics Press, Beijing 2009

Table 8. CHINA: number of workers and migrants in rural zones (2006)

	Total	East	Central	West	North-east
Number of workers (Millions)	**531.0**	**198.3**	**145.8**	**151.4**	**35.5**
% workers	*100.0*	*37.3*	*27.5*	*28.5*	*6.7*
Number of migrants (Millions)	**131.8**	**38.5**	**49.2**	**40.3**	**3.8**
% migrants	*100.0*	*29.2*	*37.3*	*30.6*	*2.0*
Migrants/workers (%)	**24.8**	**19.4**	**33.7**	**26.6**	**10.7**

Source: Second national agricultural census of 2006, China Statistics Press, Beijing 2009

More than 531 million people live permanently (i.e. for more than six months a year) in rural family companies. Of this total 478 million make up the working population (i.e. those over

1. Agricultural reform in China began in 1978 in the province of Anhui in Central West China with the dividing up of the land of a commune by the peasants. Other groups of peasants followed their example. The formal disbandment of the agricultural communes and the management of the land by the villages began in 1984.

sixteen years of age). There are 342.5 million farm workers, or in other words a little over 70% of the total rural workforce.

The reduction in the resident population and the increase in the number of family run concerns has been anything but homogeneous in the different provinces, and this has also contributed to accentuating the disparities in income and wealth between the rural and urban zones of China.

In the Eastern provinces, which are the richest and most developed, the number of family run concerns increased by 6.6% between 1996 and 2006, which was more than double the national average, but at the same time the workforce fell by some 25 million, or by 8.3%, which was about half the national average. Among the Eastern provinces, which are the most developed and urbanised Chinese provinces, the greatest increases in populations in rural areas were in Peking (+32%) and Shanghai (20%), while the other Eastern provinces reported a reduction in their rural population.

Table 9. CHINA: workers employed in rural areas by sector in 2006 (Millions)

	Total	East	Central	West	Northeast
Number of workers employed in rural areas (millions)	478.5	176.5	130.4	139.3	32.3
	% composition by sector				
Agriculture (%)	70.8	52.4	76.8	86.3	80.1
Industry (%)	15.6	28.8	10.6	5.2	7.8
Services (%)	13.6	18.8	12.6	8.5	12.1

Source: Second national agricultural census of 2006, China Statistics Press, Beijing 2009

More than three quarters of the reduction in the rural population between 1996 and 2006 took place in the Central and Western provinces. Indeed in these provinces the increase in the number of family run concerns was very modest (+2.3% in the Central provinces and zero in the Western ones), while the permanent population fell by more than 100 million, or about a fifth. In the Western provinces of Chongqing and Sichuan the fall was still greater, 32% and 35% respectively, or by more than 21 million during the decade.

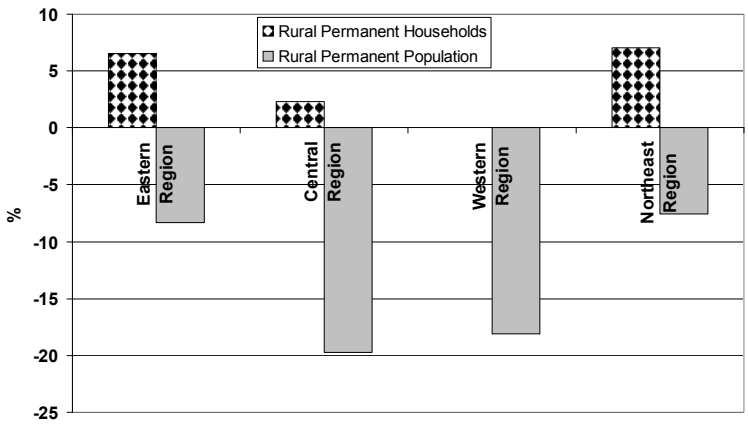


Figure 3. China % change in rural household and in rural population by 1996-2006

3.2 Transformation of households farms between 1996 and 2006

The reduction in the permanent population resulted in a great reduction in the average size of rural households, which fell from more than four in 1996 to a little less than 3.5 in 2006. There was little difference in average household size in the main geographical areas, although there were great differences between different individual provinces. The largest household sizes were found in the Western border areas were they were more than four per household. Tibet had the largest with more than five per household in 2006.

Table 10. Number of Rural Permanent Households and Permanent Population in 1996 and 2006 by Region

Regions	Rural Permanent Households(Household)		Rural Permanent Population(person)		1996/2006 Household		1996/2006 population	
	1996	2006	1996	2006	number	%	number	%
National total	213,827,500	221,078,163	873,772,239	745,761,148	7,250,663	3.4	-128,011,091	-14.7
Eastern Region	73,773,228	78,631,594	296,303,700	271,596,731	4,858,366	6.6	-24,706,969	-8.3
Central Region	63,227,425	64,699,685	261,306,750	209,884,145	1,472,260	2.3	-51,422,605	-19.7
Western Region	63,528,160	63,516,781	265,688,732	217,611,528	-11,379	0.0	-48,077,204	-18.1
Northeast Region	13,298,687	14,230,103	50,473,057	46,668,744	931,416	7.0	-3,804,313	-7.5

Note: the reason of difference with 7-1-1 is that "Rural Permanent Household in 1996" do not include "Wu Bao Hu " and "non-household agricultural holding".

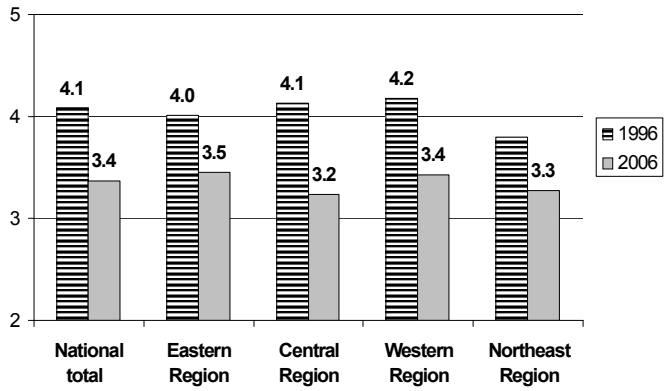


Figure 4. China: Number of Person per rural household

The number of household farms increased in all the large regions and the single provinces but it was greatest in the Eastern coastal provinces (+7%), less in the Central provinces (+2.3%) and least in the Western mountainous border provinces (+1%).
There was also a marked difference in the number of non- family run farms, which mostly belonged to villages or cities. These increased by more than 10% but mainly in the richer Eastern coastal provinces (+32%). This increase, however, took place almost exclusively in Fujian and Zhejiang, while in the other Eastern provinces there was a marked reduction in the number of these types of farms.

Table 11. Number of Agricultural Holdings by Region in 1996 and 2006

Region	Household Agricultural Holdings (household)		Non-Household Agricultural Holdings(unit)		Household Agricultural 2006/ 1996		Non-Household Agricultural 2006/ 1996	
	1996	2006	1996	2006	number.	%	number.	%
National total	193,088,158	200,159,115	357,736	395,180	7,070,957	3.7	37,444	10.5
Eastern Region	60,940,891	65,500,377	145,693	193,181	4,559,486	7.5	47,488	32.6
Central Region	59,250,561	60,599,525	92,431	90,077	1,348,964	2.3	-2,354	-2.5
Western Region	60,613,762	61,280,654	91,403	86,921	666,892	1.1	-4,482	-4.9
Northeast Region	12,282,944	12,778,559	28,209	25,001	495,615	4.0	-3,208	-11.4

Source: Secondo Censimento Nazionale dell'agricoltura 2006, China Statistics Press, Beijing 2009

Analysis of developments in the rural workforce, which, as said above, was some 70% of the total rural population in 2006, allows us to define more precisely the transformaton taking place in the rural areas of China, and in particular in the farm and non-farm household concerns. Above all one should note that the workforce in family househols farms fell by more than 82.5 million between 1996 and 2006, which is almost the whole reduction in the general rural workforce in the same period.

The reduction in the agricultural workforce in rural areas was much greater that the general reduction of the workforce in these areas. It fell by almost 20% in ten years. This reduction was, however, more homogeneous among the great zones and the principal provinces, which indicates that the fall was due to workers looking for work outside the households farms (the push effect), as a result of the very small size and fragmentation of the households farms set up after the agricultural reforms of 1978.

In the two major regions of China, the East and the Centre, the reduction in the workforce was, indeed, almost uniform, at about 23%, while in the mountainous Western frontier regions it was little more than 16%. By contrast, in the North Eastern provinces the agricultural workforce only fell by 2.3%.

Table 12. Number of Agricultural Holding and Employed Labour in 1996 and 2006

Item	1996	2006	Growth	Growth Rate(%)
- Number of Household Agricultural Holding (000 households)	193,088	200,159	7,070	3.7
- Number of Non-Household Agricultural Holding (000 units)	358	395	37	10.4
- Number of Labour Engaged in Agricultural Sector (000 persons)				
- by Households	424,995	342,464	-82,530	-19.4
Farming	403,743	321,553	-82,190	-20.4
Forestry	1,040	2,437	1,400	134.3
Animal Husbandry	14,835	14,708	-130	-0.9
Fishery	2,934	2,656	-280	-9.5
Agricultural service	2,443	1,110	-1,330	-54.6
- by Non-Households Agricultural Holding (000 person)	8,511	6,824	-1,690	-19.8
Farming	4,833	2,612	-2,220	-46
Forestry	1,505	1,566	60	4.1
Animal Husbandry	842	664	-180	-21.1
Fishery	951	653	-300	-31.3
Agricultural service	380	1,329	950	249.9

Source: Secondo Censimento Nazionale dell'agricoltura 2006, China Statistics Press, Beijing 2009

Table 13. Number of Agricultural Employed Labour by Region in 1996 and 2006 (person)

Region	In Households		2006/1996	2006/ 1996	In Non-Households Agricultural Holding		2006/ 1996	2006/ 1996
	1996	2006	number	%	1996	2006	number	%
National total	424,995,486	342,463,995	-82,531,491	-19.4	8,510,934	6,824,418	-1,686,516	-19.8
Eastern Region	120,602,375	93,189,942	-27,412,433	-22.7	2,516,420	2,461,769	-54,651	-2.2
Central Region	131,640,417	100,987,949	-30,652,468	-23.3	2,245,273	1,251,538	-993,735	-44.3
Western Region	145,694,488	121,977,083	-23,717,405	-16.3	2,450,821	1,644,593	-806,228	-32.9
Northeast Region	27,058,206	26,309,021	-749,185	-2.8	1,298,420	1,466,518	168,098	12.9

Source: Secondo Censimento Nazionale dell'agricoltura 2006, China Statistics Press, Beijing 2009

A brief mention should be made of developments in the workforce in non-households farms. These increased in number by more than 10%, from 358,000 in 1996 to more than 395,000 in 2006. There was a similar reduction in the workforce on these farms (-19.8%) as there was in households farms, but it was much less in the more developed Eastern provinces (-2.2%) and much greater in the Central (-44%) and Western provinces (-33%), while in the North Eastern provinces the workforce actually grew by 12%.
The non-households farms and concerns are increasingly located in the Eastern coastal provinces (almost 50% of the total), and are also characterised by being used for different types of agricultural activity. They are much less involved in agricultural production and more in forestry, fish farming and, in particular, agricultural services (more than 35% of these firms) and animal husbandry. The development of agricultural services should be noted, above all when one bears in mind the very small size of the households farms which means that they cannot afford to own machinery and other technical equipment. Supplying such machinery and services, which are mainly owned by the state, the villages, the cooperatives or private companies, to households farms is an important step in mechanising households farms and encouraging them to use new technology.

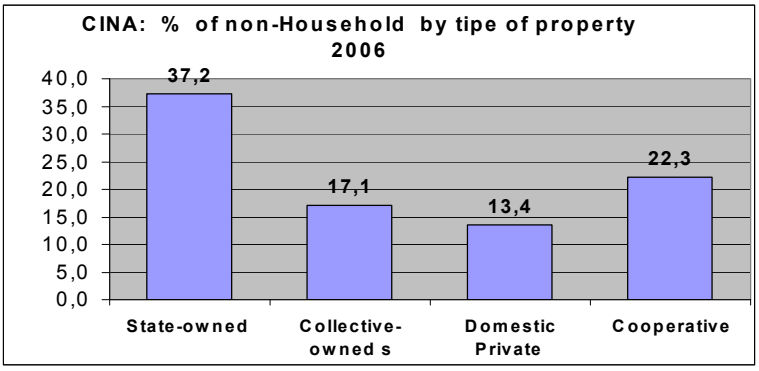


Figure 5. China: Non-household by type of property (/%) 2006

Changes in households farm employment by province
Although the agricultural workforce is falling it is still a very important segment of total employment in rural zones. Indeed according to the 2006 census 71% of workers work on households farms in rural areas. However between 1996 and 2006 the number of workers on households farms fell, both in total and as a percentage, and the differences between the Eastern coastal regions and the Central and Western ones became more marked. Indeed in the former now a little less than 53% of the workforce now work in agriculture, while in the other zones the numbers have fallen less. In 2006 in the Central regions more than 77% of the workforce were still employed in agriculture and in the Western regions the figure was more than 87%.

Figure 6 CHINA: % of agricultural labour on employed people in Rural households

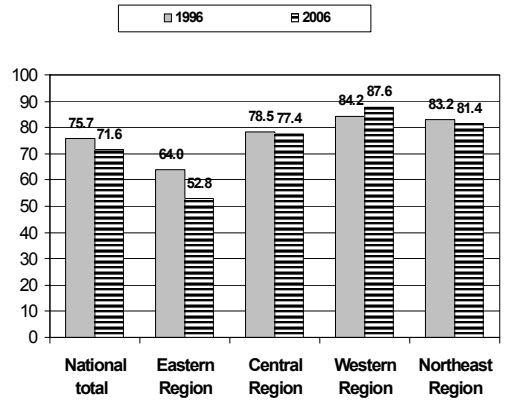
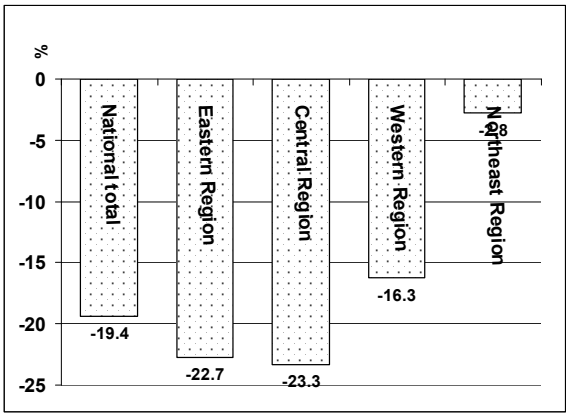


Figure 7 CHINA: Reduction of agricultural labour on employed people in Rural households



Source: Second national agricultural census of 2006, China Statistics Press, Beijing 2009

3.3 Small and very small households farms in China

It is of fundamental importance to bear in mind the size of households farms when trying to understand their ability to provide income and employment to households in rural areas, and thus to develop in the future. Different criteria can be used to determine the size of households farms. The census provides data on the physical structure of the farms, without providing economic information. The principal criteria used are the area of land, the workforce and whether the members of the household work on the farm or off the farm.

From the data of the 2006 census one can conclude that main change in the last decade has been that there has been a reduction in the number of "pure" farms, where all members of the household work on the farm. In 1996 58% of farms were of this type while in 2006 the figure was little more than 51%, with a concomitant increase in the number of farms where part of the household work off the farm. The important role played by these "part time" farms highlights and confirms the role played by agriculture and the agricultural workforce in the development of other productive activities, not only in rural zones, but also and more importantly in the urban areas of the great municipalities and the Eastern coastal provinces.

The increase in the number of households farms and the parallel rapid reduction in agricultural employment between 1996 and 2006 has markedly reduced the average number of workers employed on each farm and created greater disparity in rural China. The number of permanently employed workers per farm is very modest, not only because of the very small size of the farms but also because of the migration of large numbers of workers from rural zones to other areas for long periods of time (more than seven months a year), as we will show below.

Dimensions of households farms in terms of employment

The average number of permanent workers per farm went from 2.2 in 1996 to 1.7 in 2006. There was also a reduction on non-households farms where the number of permanent workers fell from almost 24 per farm to little more than 17 per farm in the same period. The average number of permanent workers on households farms is much lower in the coastal provinces (1.4 per farm in 2006), higher in the central provinces (1.7 per farm in 2006) and

highest in the Western provinces (more than two per farm in 2006). To be more precise, there is an inverse relationship between the number of workers employed on households farms and the importance of employment in agriculture as a percentage of total employment in the individual provinces. This inverse relationship became stronger between 1996 and 2006. For example, in 1996 there were on more than three workers per farm in Westernmost provinces of Tibet and Qinghai, while at the other extreme in the richest coastal provinces such as Peking and Shangai, the number of workers per farm was less than half that figure (1.5 workers per farm). In 2006 in Tibet and Xinjiang there were between 2.5 and 3 workers per farm while in Shanghai and Zhejiang there was less than one (0.6 and 0.8 respectively).

Table 14. CINA: number of workers in the households farms (2006)

	Totale	Est	Centrale	Ovest	Nord-Est
Agricultural workers employed (Millions)	342.5	93.2	101.0	122.0	26.3
	?Composition of agricultural workforce (%)				
Sex*:* - Male	46.8	44.9	45.7	48.6	49.7
- Female	53.2	55.1	54.3	51.4	50.3
age (%)	?				
< 20 years of age	5.3	4.2	4.9	6.4	6.4
21-30 years of age	14.9	13.5	13.8	16.5	17.2
31-40 years of age	24.2	22.0	24.5	25.3	25.4
41-50 years of age	23.1	25.0	23.5	20.6	25.3
>51 years of age	32.5	35.3	33.3	31.2	25.7
Educational level (%)	?				
Illiterate	9.5	7.7	8.9	12.8	2.9
Primary School	41.1	38.5	37.0	47.0	39.0
Secondary School	45.1	48.8	49.2	36.7	54.6
High School	4.1	4.8	4.7	3.3	3.2
Tertiaty Education	0.2	0.2	0.2	0.2	0.3

Fonte: Secondo Censimento Nazionale dell'agricoltura 2006, China Statistics Press, Beijing 2009

Figure 8: Number of agricultural employees per Household Agricultural Holdings (unit)

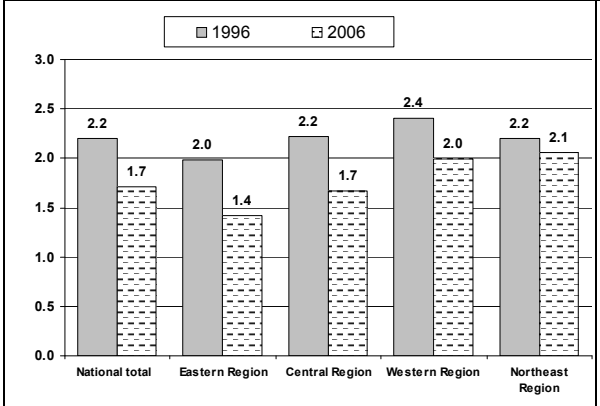
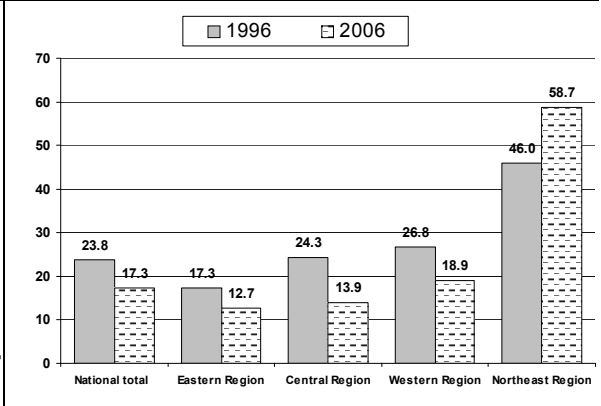


Figure 9: Number of agricultural employees per Non-Household Agricultural Holdings(unit



The number of workers on non-households farms also fell in a similar way, going from 24 workers per farm in 1996 to little more than 17 workers per farm in 2006, but with differences in what happened in the major areas when compared to households farms. In 2006 in the coastal provinces the average number of workers per farm on such farms was less than thirteen, while the figure for the Western provinces was almost 20, and in the North East almost sixty.

The size of households in terms of area

When attempting to understand Chinese agriculture one must bear in mind the average size of Chinese households farms. These are very small, little more than 8 *mu* according to the 2006 census, compared to 10 *mu* in 1996. The distribution of households farms by size demonstrates that the vast majority of farms are very small. Analysing the data from 1996, and bearing in mind that the situation has not changed substantially in recent years, one finds that more than 30% of the farms are smaller than 3 *mu*, while more than 53% were between 3 and 9 *mu*. In is worth mentioning that is was household members from the smallest farms who were most often employed in non-agricultural activities, i.e. off the farm. This was true for 49% of farms of less than 3 *mu*. The small size of the mainly part-time farms may thus have played an important role in male family members looking for non-agricultural employment.[1]

The presence and widespread use of animal husbandry on households farms confirms that the agricultural reforms have played a key role in reducing famine and malnutrition, and thus also poverty, in rural areas. To illustrate this, according to the 2006 census more than 335 million head of pigs and more than 2.6 billion head of poultry were raised on 130 to 140 million households farms.

The widespread presence of small and very small households farms also shows the very important social role of the 1978 agricultural reforms, while not forgetting that the movement from collective cultivation of the land to households farms also had notable economic effects. These included the overall increase in agricultural production and the maintenance of consistent levels of consumption in rural households and in the coastal provinces.

One important change taking place in Chinese agriculture is, however, the increasingly important role being played by non-households farms, which are run by the state, cities, villages, cooperatives, or private individuals. While the overall number of pigs and poultry raised on such farms are not of great importance, they are on average large concerns, with an average number of more than 5,300 head on poultry farms. Indeed in recent years developments in animal husbandry production, and in particular in pig and poultry production, have been concentrated in large intensive farms run collectively by villages cities and cooperatives. These large non-family concerns are of particular importance in fish-farming, as fish becomes an increasingly important part of the Chinese diet. They are mainly collectives, and are aimed at serving the growing demand for fish in China, in particular in the urban areas.

3.4 The great migration from rural areas

To understand the present situation in rural China one must consider the enormous number of migrants and where they move to. The total workforce in rural areas is over 531 million, of which 479 million are employed (70% in agriculture, 16% in industry and 14% in service industries). There are more than 131 million migrant workers from rural areas. Thus migrant workers make up almost 10% of the whole population, about 15% of the total population of rural areas, and almost 25% of the workforce in rural areas.

1. However this result may also be due to the possible reallocation by the villages which own the land of the land of farms where most members of the household work off the farms. In such cases the assignation of smaller parcels of land can be seen as form of guarantee or insurance which the villages provide to the migrant workers and their households, as we will discuss later.

Table 15. Number of Labour Migrants of Rural Household by Yearly Working Time and Region (person)

Region	Total	1 Month	2-3 Months	4-6 Months	7-9 Months	10 Months and over
National total	131.813.557	491.679	4.115.477	16.709.042	28.489.900	82.007.459
Eastern Region	38.465.054	117.377	1.026.074	4.787.688	9.332.367	23.201.548
Central Region	49.181.426	169.563	1.395.970	6.608.187	11.221.872	29.785.834
Western Region	40.349.590	171.004	1.441.347	4.336.855	7.070.943	27.329.441
Northeast Region	3.817.487	33.735	252.086	976.312	864.718	1.690.636
				Valori %		
National total	100,0	0,4	3,1	12,7	21,6	62,2
Eastern Region	100,0	0,3	2,7	12,4	24,3	60,3
Central Region	100,0	0,3	2,8	13,4	22,8	60,6
Western Region	100,0	0,4	3,6	10,7	17,5	67,7
Northeast Region	100,0	0,9	6,6	25,6	22,7	44,3

Source: Second national agricultural census of 2006, China Statistics Press, Beijing 2009

The main characteristics of migrant workers are very interesting. Two thirds are male and one third female. Two thirds are between 20 and 40 years of age, and most of these are between 20 and 30 years of age. The distance of the migrations are also noteworthy, with almost 50% of the migrants working in a different province from that where they are resident. The length of time that they work away from home in also very long and is often between seven and ten months a year. Almost 60% of the migrants move to work in industry, including the construction industry, while the rest work in the tertiary sector. Here more women work than men.

Figure 10a –CHINA: Agricultural labor by age classes(2006)

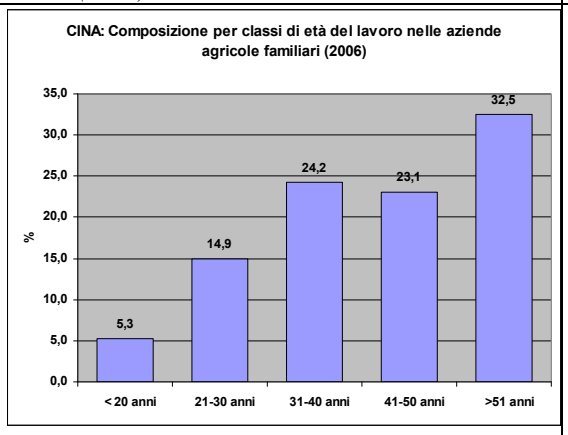
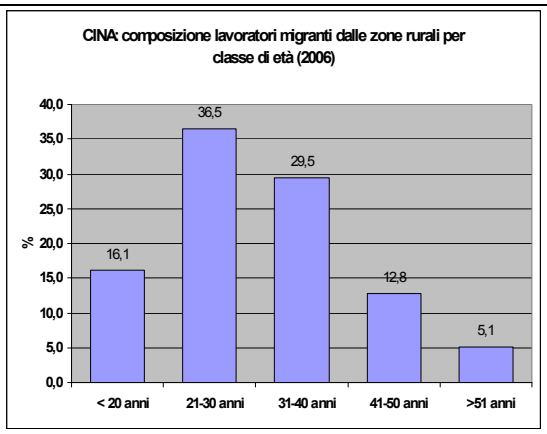


Figure 10 b –CHINA: migrants by age classes(2006)



Source: Second national agricultural census of 2006 China Statistics Press, Beijing 2009

The search for non agricultural work by many members of the households of small households farms has contributed in no small way to increasing this great migration by the rural population to urban areas. The continued links which the migrants have with the part-time farms and the villages has however provided an element of social and economic security, and has had a "social cushioning" effect. This became especially evident in 2007 and 2008 when the loss of jobs caused by the recession resulted in millions of workers - some 28 million according to some estimates - returning to their farms, which in the meantime had been run by the women of the household.

4 Prospectives and recent policies

The great urbanisation and massive internal migration which has accompanied Chinese economic development will have a decisive impact in the next few years on the transformation of the small Chinese households farms and on the further reduction in the agricultural workforce in China. At present 40% of the Chinese labor force work in agriculture, with the figure rising to about 70% in rural areas. The type and timescale of these changes will be of decisive importance for the future development of China. If the future reduction in the agricultural workforce and migration from rural areas increasingly involves whole families and not only individual family members, there will be profound structural changes in agriculture and land management in rural areas, as well as in the urban areas that the rural population move to.

These changes will be particularly influenced by the recent reforms of 2001 (*Water law*) and 2002 *(Rural land contracting law)* which try to regulate the land management rights of agricultural households, allowing the land to be rented or to be used for contracting purposes. These reforms should encourage and stimulate the movement of whole families from rural zones and result in better allocation of land. The land will continue to belong to the villages, but an adequate solution must still be found to arbitrate the redistribution of land which is being progressively abandoned by the families that move to urban areas. Renting is thus an important step forward in overcoming one of the principal problems of Chinese agriculture, the small and very small size of households farms, which is often accentuated by the high level of fragmentation of the same farm into little packets of land.

Increasing the size of the farms could increase the farmer's income in the next years. This is one of the main current aims of Chinese agricultural policy, in order to limit the growth of the inequalities between urban and rural areas. Increasing the size of households farms could also improve productivity and efficiency and trigger off the modernisation, with mechanisation and use of technological innovations on the farms which at the moment are very little evident.

The implementation of the agricultural reforms together with the liberalisation of farm prices and the introduction of subsidies for financing of technical improvements has resulted in agricultural production growing by about 6% a year in the last twenty years, and also the end of food rationing for the urban population. During the 1990's certain measures for developing rural areas included not only the elimination of the tax on agriculture, but also agricultural policies similar to those of the USA or the EU, such as price support, farm income support, technical innovations, and rural development policies.

The problem of an assured food security remains, however, of importance for a country the size of China, where the food consumption of Chinese households is constantly increasing and changing. The food consumption of rural and urban families in China, while they differ greatly between them in the amount and the type of food consumed, is still radically different from that of developed countries. Vegetable products are far more important (in particular fruit and vegetables) as are fish, which is one of the principal sources of protein in the Chinese diet, particularly for urban families Meat consumption per head is far lower, and is still mainly pork. In order to satisfy the increasing demand for food China agriculture is not only aiming to increase production and productivity but also concentrating on food processing to give more added value to the products. Another factor here is the fact that there often enormous distances between the areas where the food is produced and those where it is consumed, especially given the move towards concentration and specialisation in agricultural production in recent decades.

Maintaining sufficient food supplies in the future must therefore take into consideration not only the increase in consumption and the productive capacity of Chinese agriculture but also

the structural changes in the food production chain. Guaranteeing food security in China is increasingly connected to the difficulties in and lack of organisation of the whole food production chain, its various components and its different branches (filieres). In addition to the need to aggregate the production of millions of small farms, there is also need a more efficient organisation of logistics and distribution. At present this is fragmentary with many different public and private operators and many stages before first the processing establishment are reached and then the consumer market. The concentration of millions of people in the urban zones means that an increasingly efficient logistics and distribution system is needed which will limit as much as possible the post harvest losses and waste which often occur along the food chain.

In an enormous country like China it is not enough merely to increase agricultural production, as has been the major aim of policy in recent decades, but also to pursue new strategies, which take into account the different productive branches (filieres) and areas of specialisation and concentration in agricultural production. New technology must be employed and actions taken to deal with the problems of conservation, processing, transport and distribution of agricultural products and foodstuffs.

In recent years other problems have arisen apart from the availability of food and a guaranteed food security. These are connected to health (hygiene, the health of produced food, wastes etc.) and the quality of foodstuffs designed for both the internal and the export market. The need to produce food which meets the highest safety standards has been highlighted recently by the avian flu crisis and the powdered milk for new born babies contaminated with melamine. These crises have resulted in many deaths and enormous damage to productive sectors involved. Many groups of consumers in urban areas with higher incomes are already demanding higher quality food products, and higher quality is also necessary to maintain and further develop food exports and competitiveness on the international markets.

Assured food security in China must, however, also take into account the limited resources available, and in particular those of land and water. Given the size of the Chinese population, cultivatable land is already very limited, and the level of exploitation is already very high, with high yields for many agricultural products and the use of the same land for cultivating double crops. China has one of the highest ratios between cultivated and irrigated land, some 50%, and this already imposes severe limits on the use of water. The search for bilateral agreements and contracts for foreign land management which we mentioned earlier are also connected to the lack of resources in China. The increasing competition for land and water use between agriculture, industry and civic requirements means that their use must be more carefully controlled and more sustainable production practices adopted, which will allow the resources to be preserved for the future development of China.

In 2008, on the thirtieth anniversary of the land reform, new changes were decided on and new policies established for the future development of rural areas and agriculture. These involve ambitious objectives such as doubling the income of rural areas in 2010 and protecting arable land from urban and industrial development, establishing a minimum level of 120 million cultivable hectares. This great renewed interest in the development of rural areas is also part of the packet of anti-recession stimulus measures established in 2009. This involved $586 billion dollars, a large part of which was to be spent on developing the infrastructure, and in particular on building roads and a methane and water distribution network, as well as on combating poverty in rural areas.

The migration of worker from rural areas in China, as we have said, is really impressive. This is the greatest movement of workers ever registered in the world inside a country. The 131 million of migrants are about two out of ten of total workers in rural areas. There are one or two migrants in numerous rural households, with at least one in about 60% of household

farms. The role of migrants on the reduction of poverty in rural China, also it is not easy to measure, has been relevant if we consider that the remittance of internal migrants are about 30% of rural income.

The presence of millions of migrants and a still large number of workers occupied in agriculture in rural areas are one of the major challenges on future economic and social development of China. There will be a clear trade-off between the need to continue a rapid economic development in urban areas and in the richest provinces of the East, and the requirement of specific policies of rural development and the diffusion of industries and services activities in rural areas and in the Central and Western provinces. This dilemma is a crucial issue of political economy in now day China. The future economic and social cohesion of a great country will depend to a great extent to the answers to these tremendous problems and how China will move toward a more equilibrate and sustainable type of development devoted to reduce the disparities between sectors, regions and families. Thus the renewed greater interest in developing rural areas is not only because this will encourage more balanced and sustainable economic development, but also because it is seen as essential for China's social stability.

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