

Human Resources Development and Poverty Alleviation: A Study of 23 Poor Counties in China

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To reduce poverty, there first must be an improvement in human resources and increased investment in human capital

Most developing countries, including China, are faced with poverty problems. The World Development Report 1990 (World Bank, 1990) estimates that in 1985 more than one billion people in the developing world were living in poverty, earning less than US\$370 per capita a year. Of these people, 210 million were in China, accounting for about 20 per cent of the poor in all developing countries. (According to China's standards, the number of poor was about 120 million in 1985.¹) Since the time that economic reform was started in 1978, the Chinese economy has developed rapidly, and this has made it possible for the Government to come to grips with various poverty problems since the decade of the 1980s. The Office of the Leading Group of Economic Development in Poor Areas was set up under the State Council in 1986; it was charged with formulating and implementing a poverty alleviation plan during the period of the Seventh Five-Year Plan (1986-1990). The Office has since become a standing body of the Government and currently has branches in the provinces, prefectures and counties where poverty is a particular problem. The State and provincial governments supply huge amounts of financial support to poor areas each year; international organizations also contribute generously to poverty alleviation activities in rural China. Great achievements were made in China during the years 1986-1990, and millions of people were freed from poverty. However, since socio-economic conditions are quite backward in certain areas and development has been unequal in poor areas, by the end of 1990, there were still 90 million people living under the poverty line, i.e. about 8 per cent of the rural population, living mainly in the mountainous areas of middle and western China. There are great social, economic, cultural, geographic and population differences between the poor areas and prosperous areas of the country.

Although there are many reasons for poverty in rural China, such as remote and mountainous location, inconvenient transport, lack of natural resources, too many people and not enough arable land, one of the most important reasons is that human resources have not been developed very well. In this regard, there are problems such as low education, unskilled labour, lack of information, single occupation and limited labour force mobility. Therefore, the living standards of the people in poor areas need to be improved urgently.

The key factor in the development process is the central role of people (Jones, 1992). Streeten (1983) noted that to develop human resources involves improving the nutrition, health and skills of the people. Nadler and Nadler (1989) emphasized that the core of human resources development is enabling people to learn from experience and improve their job performance. Human resources development therefore has quite a broad meaning; in fact, some people contend that there is no precise definition for the concept. We think that in general the population's demands for employment, education and health are the main concern of human resources development. In developing countries, a human resources development strategy has often been advocated, as much for its anticipated impact on poverty and income distribution as for its impact on output productivity (Corner, 1986). This article focuses on the relationship between human resources development² and poverty alleviation, and shows that poor health, low education and inefficient employment are not only the results of poverty, but also the reasons for poverty.

Data and methods

The research is based on the Population and Economy Sampling Survey in 23 Poor Counties of China. Conducted in 1990, it was organized by the Institute of Population Research, Peking University, and supported financially by the United Nations Population Fund (UNFPA). Twenty-one institutes all over the country were involved in this project.

The county is the basic unit of administration in rural areas of China: in 1990, there were about 2,300 counties, of which 699 were poor counties according to the national and provincial poverty standard (State Statistical Bureau, 1992), constituting about 30 per cent of the total number of counties. The Survey covered 23 poor counties in 22 provinces: Wanxian (Hebei), Daixian (Shanxi), Helin (Inner Mongolia), Fengcheng (Liaoning), Tongyu (Jilin), Qinggang (Heilongjiang), Panan (Zhejiang), Linquan and Liuan (Anhui), Fuding (Fujian), Nankang (Jiangxi), Sishui (Shandong), Shangcheng (Henan), Zigui (Hubei), Mayang (Hunan), Longchuan (Guangdong), Longsheng (Guangxi), Xuanhan (Sichuan), Luodian (Guizhou), Luchun (Yunnan), Yichuan (Shaanxi), Dingxi (Gansu) and Shufu (Xinjiang). For each county in the Survey about 1,000 households were assessed: 500 under-developed households, 300 developing households and 200 developed households.³ This proportion reflects the distribution of households at different income levels in poor areas. Stratified random sampling with proportional three-stage allocation was adopted in the Survey; the three sampling units were poor townships, poor villages and households. The questionnaire consisted of three parts: for individuals under 14 years old, individuals 15 years and older, and households. The subjects of this research were employed individuals aged 15 years or older;⁴ 52,114 people comprised the

total effective sample. The survey data represent the demographic and economic situation of individuals and households at the end of 1989, if without special note. The analysis for each county was done by many Chinese demographers (Zhang, 1992 and 1993) and some common features have been found among these poor counties (Li and Liao, 1992), so this study takes the 23 counties as a whole and tries to explore the relationship between human resources development and changes in poverty status of China's poor rural areas.

Some two-way cross-tabulations of bivariate analysis are made in this study to compare human resource indicators among under-developed, developing and developed households in selected poor areas, and to determine whether there are some obvious differences among the three kinds of household. Chi-square (χ^2) is used to test the independence of two variables in a cross-tabulation, and phi-coefficient (ϕ) tests the strength of association between the two variables. Multivariate analysis uses multinomial logistic regression to test the significant level of human resource indicators affecting poverty alleviation, and seeks the main reasons for poverty in the same external environment.

The main indicators of human resources being considered as explanatory variables are shown in table 1: health, education, skill, mobility and occupation of working people. The response in the model is the poverty status of individuals, which is classified into three categories: under-developed, developing and developed. All explanatory variables and response variables in the model are qualitative.

Table 1: Explanatory variables used in multivariate analysis on human resources development and poverty alleviation in 23 poor counties of China

Variable	Description
Health	Coded 1 if the person is healthy; 0, if not.
Education	Education level that the person reached: coded 1 if category applies; 0, if not.
Illiterate and semi-literate	
Primary	
Junior middle	
Senior middle or higher	
Skill	Coded 1 if the person has skill or experience in some aspect; 0, if not.
Mobility	Code 1 if the number of times the person goes away from home to pursue economic activities is more than 10 during the years 1987-1989; 0, if not.
Occupation	Occupation refers to the main one on which people concentrate and spend most time: coded 1 if category applies; 0, if not.
Farming	
Forestry, livestock, fishery and water conservation	
Non-agriculture	

Since the response variable is trichotomous, a multinomial logistic regression model is set up. The basic principle of the method is similar to ordinary logistic regression. We suppose that P_1, P_2, P_3 are the probability that the i th individual in the sample is in categories 1, 2, and 3 of the response ($P_1+P_2+P_3 = 1$), and we let X_1, X_2, \dots, X_k be a vector of predictors measured on the i th individual in the sample. As in the dichotomous case, we model the log odds (odds represent the ratio of the probability that an event will occur to the probability that it will not) of being in the category of interest as a linear function of the explanatory variables. However, more than one equation is required, since there are two independent contrasts that can be constructed with the odds, instead of one. For example, we can consider the log odds of being in category 1 versus category 3; expressed as a linear function of the predictors, this becomes as follows:

$$\ln(P_1/P_3) = b_0 + b_1X_1 + b_2X_2 + \dots + b_kX_k$$

where b_0, b_1, \dots, b_k are the constant and coefficients of regression. Since it is easier to think of odds rather than log odds, the equation can be written in terms of odds as follows:

$$\text{Odds} = (P_1/P_3) = \exp(b_0 + b_1X_1 + b_2X_2 + \dots + b_kX_k)$$

e raised to the power b_j is the multiplicative factor by which the odds of being in category 1 versus category 3 changes when the j th explanatory variable increases by one unit. By the same procedure, the equation for odds of being in category 2 versus category 3 can be worked out. The odds of being in category 1 versus category 2 can be derived from the above two equations. In this model, the categories 1, 2 and 3 are developed, developing and under-developed households, respectively. Thus, according to the value of odds, it is possible to find which variables have a stronger effect on people changing their poverty status from under-developed to developing or to developed. The model is made by SAS procedure CATMOD (SAS Institute Inc.,

Results

Bivariate analysis

Table 2 shows five cross-tabulations, which indicate the relationships between health, education, skill, mobility, occupation and the three kinds of household.⁶ All chi-squares are very significant ($p < 0.001$), so the human resource indicators are obviously different among the under-developed, developing and developed households. Education levels ($j = 0.169$) seem to have the strongest association with response (poverty status). Occupation ($j = 0.148$) and skill ($j = 0.144$) follow education according to the values of the phi-coefficient. From table 2, we find the following information.

Table 2: Percentage distribution of working people by human resources indicators and three kinds of household in 23 poor counties of China (sample size = 52,114)

Variable	Under-developed	Developing	Developed
Health			
Poor	10.7	5.2	4.0
Good	89.3	94.8	96.0
	100	100	100
$\chi^2=686$	df=2	p=0.000	$\phi=0.115$
Education			
Illiterate and semi-literate	37.1	27.8	22.2
Primary	39.8	39.4	37.9
Junior middle	19.0	25.9	30.6
Senior middle or higher	4.1	6.9	9.3
	100	100	100
$\chi^2=1,489$	df=6	p=0.000	$\phi=0.169$
Skill			
No	83.9	74.8	69.4
Yes	16.1	25.2	30.6
	100	100	100
$\chi^2=1,084$	df=2	p=0.000	$\phi=0.144$
Mobility			
None or few	98.4	96.4	94.4
Many	1.6	3.6	5.6
	100	100	100
$\chi^2=412$	df=2	p=0.000	$\phi=0.089$
Occupation			
Farming	78.3	72.4	62.5
Forestry, livestock, fishery and water conservation	4.8	4.4	4.6
Non-agriculture	16.9	23.2	32.9
	100	100	100
$\chi^2=1,145$	df=4	p=0.000	$\phi=0.148$
Total number	24,306	16,627	11,181

The three kinds of household have different situations in terms of health ($c^2 = 686$). In under-developed households, 10.7 per cent of working people had health disorders such as physical or mental impairment, bronchitis, anaemia, heart disease and tuberculosis; this was 5.5 percentage points higher than the people in developing households and 6.7

percentage points higher than those in developed households. Overall, 92.5 per cent of working people in the Survey were healthy; the working people living in more developed households had a higher proportion healthy.

Education level had a strong positive relationship with the economic situation of the household ($c2 = 1,489$); the phi-coefficient in this cross-tabulation was the highest of all. The illiterate and semi-literate accounted for 37.1 per cent of working people in under-developed households, for 27.8 per cent in developing households and 22.2 per cent in developed households. With an increase in economic income of the household, the proportion of less educated working people decreased and the proportion of better educated working people increased. The proportion of working persons with a junior middle or higher education in developed households was 39.9 per cent, i.e. 7.1 percentage points higher than that in developing households and 16.8 percentage points higher than in under-developed households.

The proportion of working people having skill or experience in non-farming production is obviously different in the three kinds of household ($c2 = 1,084$). The Survey shows that 25.2 per cent of working people in developing households and 30.66 per cent in developed households had one or more skills such as raising poultry, sewing, carpentry, or weaving. In under-developed households, only 16.1 per cent of working people had such skills.

As the household gets relatively richer, the number of times that working people leave home to pursue economic activities increases ($c2 = 412$). During the period 1987-1989, 98.3 per cent of working people in under-developed households had seldom or never gone away from home for economic activities; the proportions in developing and developed households who had seldom or never gone away for such purposes were 96.4 per cent and 94.4 per cent, respectively. The working people who often went away (over 10 times in the two years) accounted for 5.6 per cent in developed households, 2.0 percentage points higher than in developing households and 4.0 percentage points higher than in under-developed households.

The occupation variable is also related to the three kinds of household ($c2 = 1,145$). Working people in developed households spent more time in non-agricultural activities and 32.9 per cent of them had a non-agricultural activity as their main occupation: for example, manufacturing, construction, transport, mining, service and commerce. Compared with developed households, the proportions of non-agricultural working people in under-developed and developing households were much lower, being 16.9 per cent and 23.2 per cent, respectively, in 1989.

Multivariate analysis

Three equations of the multinomial logistic regression model are established to describe the effect of human resource indicators on poverty alleviation. The dependent variables are the odds of being in a developed versus under-developed household; developing versus under-developed household; and developed versus developing household. Table 3 gives the odds ratios of these equations. Most classification variables are very significant, and the odds ratios of all significant variables are greater than 1, which means they have a strong positive influence on response.

Table 3: Effects of human resource indicators on poverty alleviation: results of multinomial logistic regression model (odds ratios) in 23 poor counties of China

Variables	Developed versus under-developed	Developing versus under-developed	Developed versus developing
Health			
(Poor)	1.000	1.000	1.000
Good	2.385 ^{**}	1.971 ^{**}	1.210 [*]
Education			
(Illiterate and semi-literate)	1.000	1.000	1.000
Primary	1.426 ^{**}	1.240 ^{**}	1.150 ^{**}
Junior middle	2.112 ^{**}	1.584 ^{**}	1.334 ^{**}
Senior middle or higher	2.736 ^{**}	1.894 ^{**}	1.445 ^{**}
Skill			
(No)	1.000	1.000	1.000
Yes	1.939 ^{**}	1.618 ^{**}	1.199 ^{**}
Mobility			
(None or few)	1.000	1.000	1.000
Many	1.968 ^{**}	1.560 ^{**}	1.261 ^{**}

Occupation			
(Farming)	1.000	1.000	1.000
Forestry, livestock fishery and water conservation	1.243 ^{**}	n.s.	1.215 [*]
Non-agriculture	1.973 ^{**}	1.306 ^{**}	1.511 ^{**}
Constant	0.098 ^{**}	0.248 ^{**}	0.395 ^{**}
Total number	52,114	52,114	52,114

Notes: ** p < 0.001

* p < 0.005

n.s. = not significant at 0.1 level.

Reference category is in parentheses.

The equation of developed versus under-developed household shows the relationship between human resource indicators and the elimination of poverty. The values of odds ratios in this equation are greater than relative ones in the other two equations. This shows that the explanatory variables have a stronger effect on the changes for a person from an under-developed than a developed household. Among all explanatory variables, a senior middle or a higher education level has the greatest odds ratio, at 2.7. This means that when explanatory variables change one unit, from illiterate and semi-literate to senior middle or higher, the odds of being in a developed versus under-developed household will increase by the largest margin; it seems that higher education levels would contribute most to the elimination of poverty. There are four categories in the educational variable; as the educational level increases, the odds ratios rise. The odds of senior middle or higher, junior middle, and primary are 2.7, 2.1 and 1.4 times higher, respectively, than the reference category (illiterate or semi-literate). Health status has the second largest odds ratio: with a person's health changing from poor to good, the possibility of the person's poverty status changing from under-developed to developed will be multiplied by 2.4. Working people with skill or experience have the odds of being in developed versus under-developed status 1.9 times higher than those of people without a skill or experience. Although a little mobility produces no obvious difference over no mobility in affecting the response variable, more frequent mobility has a significant function, with the odds ratio being 2.0. The odds ratio in the occupational category of forestry, livestock, fishery and water conservation is 1.2; it is 2.0 in non-agriculture. Thus, changing one's occupation from farming to non-agriculture will increase the odds of being in a developed status more than changing from farming to forestry, livestock, fishery and water conservation.

The developing versus under-developed equation describes the reduction of poverty. Similar to the previous equation, good health and higher education have a stronger influence on response; their odds ratios are 2.0 and 1.9, respectively. The odds for working people from under-developed status rising to developing status increase with the increase in their education level. Skill and frequent mobility also contribute to reducing poverty. The second equation has smaller odds ratios in all variables than the first one. The two equations also differ in the effect of the occupation variable: in the second equation, the forestry, livestock, fishery and water conservation occupations are not significant, and the odds ratio of non-agriculture occupation is smaller.

The last equation (developed versus developing) implies the process of consolidating the reduction of poverty. It appears that non-agricultural occupation and higher education have the greatest odds ratios (1.5 and 1.4), a result which is a little different from that of the other two equations. The occupation variable becomes important and the health variable loses its position. This shows that when one wants to change from developing to developed status, the two most important factors seem to be selecting a good occupation and increasing investment in education. Health, skill and frequent mobility are still significant in this equation, but their odds ratios are much smaller than in the other two; this means that the effect of these variables on response decreases.

Generally, higher education is the most important human resource indicator for reducing and eliminating poverty. Good health is important for reducing poverty and non-agricultural occupation is important for changing from developing to developed status.

Case studies

Poor health is a common problem in many poor households. In rural China, heavy physical labour is very common, and without a healthy body, it is difficult to take part in productive activity. The reasons for poor health include malnutrition, poor sanitation, backward medical facilities and being the offspring of parents who are close relatives. The Handicapped Population Sampling Survey of China in 1987 shows that the proportion of people with disabilities⁷ in poor areas was much higher than the average level for the country as a whole (He, 1992). Most of the people with disabilities surveyed were illiterate or semi-literate; their employment rate was 20 percentage points lower than that of people without disabilities and 70 per cent of them needed economic support from their families for their daily necessities of life. In Fengjie county of Sichuan Province, there were about 96,000 poor households, 15,000 of which were poor because of disability problems among those of working age in the household. Hereditary disease was the main reason for people's disabilities in poor areas of Sichuan.

Education enables a society to accumulate the technical, managerial and entrepreneurial skills needed for overcoming physical, environmental and natural resource constraints to development, for increasing productivity and for raising living standards (Farooq and Ofosu, 1992). The better is the education that people attain, the higher will be their productivity, and the more income they will be able to earn. A survey of 300 poor households in Luliang prefecture of Shanxi Province showed that the per capita income in 1988 was 253 yuan for families with illiterate and semi-literate members, 373 yuan for families with primary education, 407 yuan for families with junior middle education and 432 yuan for families with senior middle or higher levels of education.

(Click here for photo)

Higher education is the most important human resource indicator for reducing and eliminating poverty. With education, people are able to perform higher-level tasks such as the computerized handling of population data and information.

Education is the foundation for obtaining skills, but skills differ from education, as they have a closer connection with production and have a direct effect on output. Thus, skill is often considered as one of the main factors in the alleviation of poverty in poor areas. In a survey of Longsheng county in Guangxi Province in 1989 (Zhang, 1993), 7.8 per cent of under-developed households, 10.3 per cent of developing households and 16.7 per cent of developed households thought that having no skill or experience in production was the first obstacle to the alleviation of poverty. The proportions that thought it was the second obstacle were 23.4 per cent, 20.6 per cent and 17.2 per cent of the three kinds of household, respectively. (Many people were of the opinion that a lack of capital is the leading problem of poverty.)

Mobility here means working people's leaving their place of origin for economic activities in other counties, prefectures or provinces. These activities mainly include working in enterprises, doing business, training, transporting, selling products and exporting labourers to other areas. People who are mobile move over different distances and for different periods: some of them may cross several provinces and stay away for more than one year; others just go to the small cities nearby for three days or more and return home soon. Certainly, people can get current or future benefits from being mobile. A study of 204 poor villages in Sishui county of Shandong Province showed obvious income differences between people who migrated for work and the ordinary labour force (Mu, 1993). In 1988, there were 4,892 migrants from that county, accounting for 3.4 per cent of population of the 204 poor villages. Their total income was 3,358,000 yuan. The annual income for each migrant was 686.4 yuan, which was 116.9 yuan higher than the average income of the ordinary labourer in these villages.

The selection of occupation has a substantial effect on income levels, because the input-output ratios differ greatly in farming, forestry, livestock, fishery and water conservation occupations, and non-agricultural occupations. In Shangcheng county of Henan Province, although agriculture is the main economic activity, the persons of working age in developed households spent 44.7 per cent of their working time on non-agricultural pursuits and these accounted for 54.5 per cent of their total income on average in 1989; those of working age in developing households and under-developed households spent 35.2 per cent and 26.2 per cent of their working time, respectively, on non-agricultural pursuits. The input-output ratio in forestry, livestock, fishery and water conservation occupations was also higher than that in farming. The labour force in developed households spent more than 50 per cent of their working time on non-farming industries and that caused their income to increase rapidly (Li, 1992).

Discussion and conclusion

Just like the pattern of causation between population growth and poverty (Rodgers, 1989), the low level of human resources development is both a cause and a consequence of poverty. Our study's bivariate analysis shows that all explanatory variables have quite a strong positive association with the response variable. The three kinds of household have obvious differences in terms of human resource indicators. Usually, the more developed the household that the working people come from, the better their human resources are developed. The multivariate analysis indicates that the human resource variables have a substantial influence on change in working people's poverty status. Good health, higher education, the learning of skills, frequent mobility and the taking up of non-agricultural occupations contribute greatly to the reduction and alleviation of poverty; in this regard, the first two factors seem especially important. Education and health are an essential part of human resources development and significant factors in economic growth (Jones, 1990). The case studies of the 23 poor counties and other poor areas of China provide additional evidence in support of the above statements.

In almost the same external environment (with all the people living in poor townships and poor villages), why are some of them more developed and some less developed? The answer is that the most important factor is the human beings themselves. To reduce poverty, there first must be an improvement in human resources and increased investment in human capital. The local governments should put more capital and manpower into education, and meanwhile reduce the dropout rate, prevent new illiterates from appearing and increase the rate of those transferring from primary school to middle school. Occupational training can help working people to meet skilled labour requirements, so this factor also deserves more attention. Intermarriage with close family members is a very serious problem in poor areas, as it causes the birth of many physically and mentally handicapped babies and thus will have an adverse effect on the quality of the labour force in the future. Local governments should strengthen their efforts in the area of information dissemination, pass on knowledge through information, education and communication (IEC) programmes, and enhance health levels in these areas. If a place is too poor for people to live in, migration may be a good method to improve people's living

conditions in a short time. Increasing working people's mobility can mean not only more income, but working in new locations can also open their eyes so that they gain more useful information. In some extremely poor mountainous areas, many people have never travelled outside the immediate vicinity of where they live. They live in a relatively small space and know little about the outside world, a situation which is unfavourable for the development of a market economy. The migration of labour to cities or developed areas has become an important means for alleviating poverty in rural China. Although migration may lead to many social problems in the cities to which the agricultural labourers move, it has some positive aspects (Zhang, 1991). If migration is organized well and has a clear purpose, it should be encouraged. However, not everybody can find a job in other places; most working people have to work on their own land.

As noted previously, changing the traditional industrial structure is an effective method for enabling people to earn income in rural areas. Enabling people to spend more time in non-farming or non-agricultural pursuits, such as raising poultry, planting fruit trees, working in township enterprises, transporting goods or selling agricultural products, also can change the people's poverty status. Improvement in the quality of local officials also a very important approach to poverty alleviation for a poor area. To a great extent, one could find a relationship between the incapable, inefficient, corrupt and irresponsible leaders who have long been in charge of areas under the poverty line and the status of the people they are supposed to serve.

Poor households or populations usually have poor human resource indicators. In the poor areas of rural China, low educational attainment, low productivity, low income and high reproductivity usually occur at the same time and interact with each other, which forms a vicious circle in some areas. The development of human resources not only is desirable in itself, but also raises productivity and lowers reproductivity. A vigorous, healthy, skilled labour force is productive, and educated, healthy families tend to have fewer children (Streeten, 1983). In view of the current situation in rural China, the development of human resources is of very great significance not only for poverty alleviation and economic development, but also for family planning and population control.

Endnotes

At the time, the country-specific poverty line in rural China was about 200 yuan (US\$1 = 2.9 yuan in 1985) per capita net income; it has varied slightly by area and year (Office of the Leading Group of Economic Development in Poor Areas, 1989). The World Bank considers US\$370 (purchasing power parity dollars) as the universal poverty line, which is much too high for the situation in China.

In this article, human resources development refers mainly to improving the quality of the labour force (working people) in terms of health, education and employment.

The main standard to divide households into three categories was per capita net income, but the exact criteria were decided by the relevant department of the local government, because it would be very difficult to give a uniform poverty line for 23 poor counties in various regions.

In rural areas of China, the labour participation rate of the population aged 15 and older is quite high. The Survey in 23 poor counties showed that the labour participation rate for those people reached 80.3 per cent. The distribution of non-working people was students (23.9 per cent), domestic duties (26.4 per cent), illness and disability (19.6 per cent), old and infirm (28.7 per cent) and others (1.4 per cent), so the absolute majority of the non-working people were not the unemployed. The difference in labour participation rates among the three kinds of household was small, and the main problem of employment in poor areas was the quality of employment. Working people undertake economic activities and earn money, and they play a determinative role in alleviating poverty. These are the reasons for our choosing employed people as research subjects.

The poverty status of individuals actually depends on the poverty status of households. The working people coming from each kind of household are labelled in the relevant category.

Working women usually have a lower level of human resources development than working men, but the relationships between their human resource indicators and poverty status are similar, so we do not give the crosstables or models by sex.

In this context, people with disabilities include those who are blind, deaf, speech-impaired, intellectually disabled, mobility-impaired and mentally ill.

"families with illiterate and semi-literate education", which means that the highest educational level of those in the working-age group in the families was so low that they could be classified only as illiterate or semi-literate.

In China, farming refers mainly to the cultivation of agricultural crops, which include grain crops (such as rice, wheat and maize), industrial crops (such as cotton, oil-bearing crops and sugar crops) and other farm crops (such as vegetables, melons and green manure). These aspects comprise only one part of agriculture in China.

References

Corner, Lorraine (1986). "Human resource development for developing countries: a survey of the major theoretical issues", in Human Resources Development in Asia and the Pacific: Its Social Dimension (ST/ESCAP/472), ESCAP, Bangkok, pp. 1-28.

Farooq, G. M. and Y. Ofosu (1992). Population, Labour Force and Employment: Concepts, Trends and Policy Issues (Geneva, International Labour Office).

Halli, S.S. and K.V. Rao (1992). Advanced Techniques of Population Analysis (New York and London, Plenum Press).

He, Ping (1992). "Analysis of the handicapped population issue in poor areas of China" (in Chinese), Population and Development, 2:55-60.

Jones, G.W. (1990). Population Dynamics and Education and Health Planning (Geneva, International Labour Office).

_____ (1992). "Population and human resource development", Asia-Pacific Population Journal, 7(2):23-48.

Li, Wei (1992). "Impacts of the traditional industrial structure of population on economic development in poor areas" (in Chinese), Population Research, 6:15-19.

_____ and Min Liao (1992). "An overview of the symposium on population structure and migration in China's under-developed regions" (in Chinese). Population and Economy, 6:57-60.

Mu, Guangzong (1993). "Promoting labour force exporting, speeding up poverty alleviation" (in Chinese), In: Zhang, 1993, pp. 292-300.

Nadler, Leonard and Zeace Nadler (1989). Developing Human Resources (San Francisco and London, Jossey-Bass Publishers).

Office of the Leading Group of Economic Development in Poor Areas under the State Council (1989). Outlines of Economic Development in China's Poor Areas (Beijing, Agricultural Publishing House).

Rodgers, R. (1989). Population Growth and Poverty in Rural South Asia (New Delhi, Sage Publications).

SAS Institute Inc. (1990). SAS/STAT User's Guide, Version 6, Cary, NC, United States.

State Statistical Bureau of the People's Republic of China (1992). The Outline of China Rural Economic Statistics by County-1990 (Beijing, China Statistical Publishing House).

Streeten, Paul (1983). "Introduction to Part One", In: P. Streeten and H. Mailer (eds.), Human Resources, Employment and Development, Volume 2, Concept, Measurement and Long-Run Perspective (New York, St. Martin's Press).

Zhang, Chunyuan (1991), "Rural population mobility and economic income growth" (in Chinese), Population Science of China, 5:13-19.

_____, (ed.) (1992). The Demographic and Economic Information in 23 Poor Counties of China (Beijing, Peking University Press).

_____, (ed.) (1993). The Strategy for Poverty Alleviation, (in Chinese) (Beijing, Peking University Press).

World Bank (1990). World Development Report 1990 (New York, Oxford University Press).