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Poverty issues and policies in China

The case of Luliang District in Shanxi Province

Tong Ya-ming

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Key to symbols used in tables

n.a	Not applicable
..	Not available
-	Zero
.	Insignificant

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Abstract

The huge gap in economic development between rural and urban areas in China is gradually being eroded by the introduction of light industries into the traditional agricultural economies of rural areas. This has been especially evident in coastal and suburban regions but there has, as yet, been very little change in the mountainous areas of southwest and northwest China.

This study focuses on Luliang District in Shanxi Province in northwest China where the economy remains underdeveloped and where poverty (as defined by daily food consumption and household expenditure on basic needs) is widespread. Data collected at the household level yielded a whole range of indices with which to assess the level of poverty (for example, income, expenditure, cultivable land, taxes paid, subsidies received, employment and education). This has allowed the incidence of poverty to be explored further. The author has related its incidence in Luliang District to three basic factors: the intrinsic nature of the rural households themselves, environmental conditions/geographical location, and the impact of the State's macroeconomic policies.

In terms of the last factor, Shanxi Province suffers from the fact that its industrial structure is biased towards heavy industry (based on coal supplies). This has undermined any balanced growth of the regional economy and slowed the industrialization of agricultural enterprises. The farmers' per capita income in the Province is far below the levels of those in most other provinces and the local governments lack adequate funds to attempt any modernization of traditional agriculture. The problem is further exacerbated by the continuing growth of the population. Surplus rural labour is unable to move freely to find non-agricultural work and increasing numbers of households find themselves confronting the prospect of poverty.

The author assesses the impact of national economic policies and the State's own anti-poverty policies. In short, China simply cannot support a large population in poverty. The material payment policy, credit funds and tax reduction schemes have had mixed results so far, but the effect of increased prices for agricultural and side-line products has had a more far-

reaching effect on poverty. Nevertheless, many households trapped in the vicious cycle of poverty still find their conditions worsening and will need some protection from further harmful readjustments occurring within the national macroeconomy. Unless the government acts carefully in implementing its anti-poverty policies, it may find its scarce resources draining away in ineffectual schemes.

Poverty issues and policies in China: the case of Luliang District in Shanxi Province*

Tong Ya-ming**
Translated by Yiqi Wu

Background

It is now more than forty years since the founding of the People's Republic of China. Because China's rural and urban economies have been under the control of different management systems, serious inequities can be identified between rural and urban areas in terms of their economic, social, cultural and technological development. Owing to these inequities, the alleviation of poverty has been slower in rural areas than in urban areas.

Before the economic structural reform, China's rural economy was totally agrarian. This economy was required to meet the consumption demands of its ever-increasing population and provide materials and capital for the establishment and development of China's industries in the metropolitan areas. According to one estimate by the Chinese economist Yu Zhuyao, agriculture contributed more than Y20 billion each year to industrial development due to the unfair practice of fixing the prices of agricultural products at low levels. The combination of State government administrative pressure and economic planning has resulted in a high degree of unequal exchange between agricultural and industrial products. Since the 1980s, however, China's economic reforms have heavily promoted the development of industries in rural areas. The huge gap in economic development between rural and urban areas is thus gradually being reduced. This change is especially evident in coastal and suburban regions but there has been very little change in the mountainous areas of southwest and northwest China. The large variation in regional economic development has clearly bestowed an element of regionality to the rural poverty issue (Table 1).

* This study of poverty issues in China is restricted to rural areas, partly because the data for these areas are more complete and standardized, and partly, but more importantly, because the current Chinese economic system has made poverty endemic in many rural areas.

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Table 1
Economic indices for various rural regions, China

	Fertilizer use	Electricity consumption	Social total output	Income from agricultural side-production[b]	Agricultural output
	kg/mu[a]	kWh/head	yuan/head	yuan/head	yuan/head
Counties in coastal open districts	25.85	158.83	2204.17	293.22	743.2
Suburban counties[c]	16.07	117.99	1668.74	390.70	652.0
Counties alongside middle and downstream Yangtze River[d]	23.45	91.15	1432.83	253.90	602.0
Provincially-subsidized poverty counties	9.66	35.64	653.59	141.93	437.8
State-subsidized poverty counties	8.85	28.49	504.32	112.42	354.8

[a]A mu is an area of land, approximately one fifteenth of a hectare.
[b]Agricultural side-production shows agricultural products sold to government or to individual enterprises. It therefore gives an indication of market orientation.
[c]Includes 337 suburban counties.
[d]Includes 541 counties.
Source: *Statistical Summary of Rural Economy of China's Counties.*

Table 1 identifies five types of region using the county as the basic unit. (Using such a unit permits the direct influence of the State's macroeconomic planning policies to be excluded and allows the economic behaviour of rural households and local government to be more easily assessed.) The regional types, in descending order of economic development, are as follows:

Coastal counties

These are located in the northern and eastern coastal areas around the 14 'open' cities and, because of recent domestic and foreign investment, possess the most highly developed economies in China. Their main characteristics are:

- rapid economic development;
- rapidly improving standards of living.

The suburban counties

These include those under the jurisdiction of the large and medium-size cities and the county-level cities. Their main characteristics are:

- subordination of agriculture in the overall industrial structure;
- relatively complete transport and telecommunication systems serving developed industries;
- relatively high profitability of rural enterprises;
- low unemployment.

Counties of middle and downstream Yangtze River

Nearly a third of these are suburban counties. Their main characteristics are:

- abundant agricultural resources;
- high agricultural productivity;
- high productivity per land area.

Provincially-subsidized poverty counties

These are similar to the counties in the group below but the farmers' incomes are slightly higher.

State-subsidized poverty counties

These 300 counties, located in southwest, northwest and mountainous central China, are the poorest in China (based on a per capita net income each year of less than 150, 200 or 300 yuan depending on the region to which they belong).

The identification of a poverty line

It is difficult to determine an accurate poverty line for China. Even if an attempt is made to calculate one in terms of basic human needs, the resulting 'line' will still be nothing more than a rough estimation owing to differences in purchasing power of the currency, different consumption preferences and difficulties of actual calculation.

The determination of the poverty line used in this study follows that of the State Statistical Bureau and is based on two criteria: first, a daily level of food consumption which is less than 2400 calories per person; and second, the amount of expenditure on basic needs. With regard to the first

criterion, Table 2 provides an indication of food consumption in a sample of households whose daily consumption in 1988 was less than 2400 calories.

Table 2
Food consumption in a sample of rural poverty households, 1988

Commodity	Consumption per head (kg) Q_i	Mixed average price (yuan/kg) P_i	Value (yuan) Q_i*P_i
Grain	194.40	0.354	68.87
Vegetables	100.90	0.237	23.96
Vegetable oil	2.30	2.900	6.78
Pork	8.27	3.950	32.67
Beef and mutton	0.53	4.050	2.14
Milk	0.22	0.620	0.14
Fowls	0.05	4.050	0.20
Eggs	1.68	3.360	5.64
Fish	1.13	3.020	3.41
Sugar	1.45	2.240	3.25
Fruit	4.04	0.940	3.73
Total			150.79

Source: Agricultural Investigation Team of the State Statistical Bureau, *Research on Poverty Standards in China's Rural Areas*, Poverty Control Office of the State Council.

The total expenditure required for this nutrition is

$$\sum_{i=1}^{n} Q_i*P_i = Y150.79 \ (i = 1,2,3,...,11).$$

Using an estimated cost of Y151 per head for this food consumption which provides about 2260 calories, the cost of a basket of food which would provide 2400 calories can be estimated at Y160 per head.

The other determinant of the poverty line is expenditure on basic living requirements. This essentially consists of three elements:

(i) **Housing expenses.** The research of Lin Baipeng, a housing expert, indicates that the minimum living area for humans is $7m^2$/person. Because people living in rural areas require extra space for animals, storage of produce etc., the State Statistical Bureau fixed the lowest requirement for rural housing at $9m^2$ per person. Taking housing

quality and costs of construction into consideration, housing expenses per person are estimated to be Y14 a year.

(ii) **Day-to-day expenses (including clothing).** The State Statistical Bureau has calculated that, out of a yearly total expenditure of Y38 on day-to-day expenses, the poor households spent Y5 each year per head on non-necessities. The expenditure on necessities is therefore Y33.

(iii) **Necessary expenditure on transportation, fuel, medical care, education, recreation and services.** The amount spent on these elements is hard to estimate precisely. For the 10 per cent of the rural population with the lowest income, such expenditure is approximately Y24 per person each year.

A relatively accurate estimation of the poverty line is thus obtained:

$$Z = X1 + X2$$

$$= \sum_{i=1}^{n} Q_i * P_i / W + A + B + C$$

$$= 160 + 14 + 33 + 24 = Y231$$

where

Z = poverty line

$X1$ = expenditure for necessary nutrition

$$= \sum_{i=1}^{n} Q_i * P_i / W$$

W = actual amount of food consumption/2400

Q_i = consumption of i food

P_i = $P_i R_i + Pi*(1 - R_i)$ = average mixed price of i food

P_i = State price for i food

P_i* = Market price for i food

R_i = ratio of self-produced food in total consumption of the i food (this ratio tends to be high in rural poverty households)

$X2$ = other necessary living expenditures = A + B + C

A = housing expenditure

B = day-to-day expenses, including clothing

C = expenditures on transportation, fuel, medicare, education, recreation and services.

Households with an income of less than Y231 per person per year are therefore considered to be living below the poverty line.

Using the poverty line fixed in 1988, we estimated poverty lines for the years 1983 to 1989, using the sum of weighted averages. The commodities selected include 11 large categories and 25 small categories with more than 200 agricultural and side-line products. X1 and X2 are modified using, as weights, the purchasing price indices of rural products and the value of retail sales of industrial products, respectively. The results are shown in Table 3.

Table 3
Estimated poverty lines, 1983 to 1989 (yuan per head)

Year	Total consumption expenditure	Food consumption	Other consumption
1989	251.70	168.76	87.94
1988	231.00	149.34	81.66
1987	186.23	116.55	69.68
1986	175.81	113.05	63.36
1985	169.23	107.68	62.45
1984	155.42	97.86	57.56
1983	137.75	86.78	50.97

Poverty characteristics of the population of Luliang District

Using the 1988 poverty line, we can identify those living above and below it and compare their characteristics. In Tables 4, 5 and 6 the three types of characteristics are identified: (i) general household characteristics, including financial capital; (ii) grain production and consumption; and (iii) types of rural businesses.

Table 4 shows that there are no apparent differences between the poor and non-poor in terms of average family size, the number of workers, the number of people a working member has to support, and the average area of cultivated land. However, some trends can be identified. The level of education of workers in poor households tends to be lower than for workers in non-poor households. Non-poor households have more productive fixed capital per worker and $4m^2$ more housing space per head than poor households.

Table 4
General comparison of poor and non-poor families in Luliang District

	Poor	Non-poor	Deviation	$\bar{X}$	$\lvert t \rvert$[a]
1. Average number of family members	5.278	4.806	0.473	4.933	0.815
2. Average number of workers in a family	2.969	2.567	0.403	2.675	
3. Number of members supported per worker	1.778	1.872	-0.095	1.844	
4. Level of education of the employed					
a. Per cent illiterate and semi-illiterate	21.88	15.70	6.18	16.93	1.361
b. Per cent primary school graduates	46.18	40.89	5.29	42.47	
c. Per cent junior middle school graduates	31.94	35.11	-6.98	33.02	
d. Per cent high school graduates	0	7.56	-3.05	7.56	
5. Average cultivated land per person (mu)	3.06	3.186	-0.126	3.149	0.156
Average cultivated land per worker	5.433	5.966	-0.533	5.807	
6. Productive fixed capital[b]					
a. Total (yuan)	381.76	643.06	324.30	555.65	
b. Per worker (yuan)	107.36	250.54	-143.19	207.72	1.921
7. Average housing area per person (m^2)	11.77	15.69	-3.92	14.56	12.558

[a] t statistic for test of whether the characteristic in question differs significantly between poor and non-poor households.
[b] Value of all production tools used for at least two years and valued over 50 yuan each (including draft animals).

In general, grain production and consumption has become less and less important for farmers. But, where there is a concentration of poverty in communities lacking any industrial development, grain supply remains a very sensitive indicator for identifying poor households (Table 5).

Although the poor and non-poor households possess almost the same amount of cultivated land per person, the poor households spend less capital on grain production than non-poor households (including fixed capital shown in Table 4 and agriculture expenditure per mu shown in Table 6). This leads to an average difference of 77.81 kg of self-produced grain per person. The difference in average grain output per worker and average grain output per mu are also quite obvious. The test statistic of the difference between means is greater than 2, and significant at the 5 per cent level.

Table 5
Differences in grain production and consumption in poor and non-poor households, Luliang District

	Poor	Non-poor	Deviation	$\bar{X}$	$\|t\|^a$
1. Average grain output per household	1698.97	1920.94	-221.97	1861.13	
a. Average amount of self-produced grain per head (kg)	321.88	399.69	-77.81	377.26	2.511
b. Average amount of grain produced per worker	572.22	748.47	-176.24	695.75	2.494
c. Average grain output per mu	104.1	125.92	21.82	119.81	
2. Average grain purchase per head	28.88	43.16	-14.28	39.04	
3. Average grain sale per head	49.40	76.94	-27.54	69.00	1.714
4. Grain purchase/grain sale (per cent)	58.46	56.10	2.36	56.58	
5. Average grain consumption per head	189.88	223.19	-33.31	213.59	3.775

[a] t statistic for test of whether the characteristic in question differs significantly between poor and non-poor households.

Both poor and non-poor households tend to use grain as a subsistence crop with very little being traded. From the data, the amount of grain purchased per head by each poor household is only 8.2 per cent of the average total amount of grain for each person (self-produced grain + purchased grain), and the amount of grain sold is only 15.2 per cent of the total grain output and 14.1 per cent of the total grain available to each person. However, for non-poor households, the ratio of grain purchased to total amount of grain available is 9.7 per cent. The percentage of grain sold against grain output is 19.2 and the rate of grain sold against total grain available is 17.4 per cent. It should be noted that the small-scale grain trade is usually not considered a commercial activity. Sales and purchases are conducted in order to:

- fulfil the grain purchase contract with the State (about 14.67 kg per head);
- purchase seeds; and
- improve the grain consumption structure. Of the 214 kg of grain consumed per capita, only 78.5 kg is wheat (36.7 per cent) and the average consumption of rice is as little as 0.15 kg. Other crops

including corn, sweet potatoes, potatoes and barley make up at least 60 per cent of local farmers' grain consumption.

The difference in grain consumption between poor and non-poor households is very obvious (t value = 3.775). On average, the grain consumption of poor households is lower than the 194.4 kg calculated by the State Statistical Bureau (Table 2).

Table 6 indicates the financial situation of rural households in Luliang District. The data show that the per capita total income of those in the poverty group is only 60 per cent of the non-poverty group, and the former's per capita net income is only 67.6 per cent of the latter. The reason for this is that poor households earn much less income from agriculture, industry and other sideline activities. Furthermore, the non-poor households receive twice as much income from industrial and side-line activities than do the poor households. The income structures of these groups also reflect such differences (Table 7).

Agriculture earns the poor households more than 50 per cent of their total income, a proportion similar to that earned by industrial and side-line production among non-poor households. This indicates that the latter have been more successful in diversifying their income-earning activities into non-agricultural sectors in which their labour has higher productivity.

Of the various indices for expenditures, the difference in day-to-day living expenses between poor and non-poor households is the most spectacular. Non-poor households spent Y227.44 per head more than poor households. Per capita day-to-day living expenses accounted for 69.3 per cent of the total per capita expenditure of poor households, whereas in non-poor households the proportion was 73.9 per cent. The Engel Index is as high as 68.3 per cent for poor households and 59.4 per cent for non-poor households. This has two implications. First, in this district, the financial situations of both poor and non-poor households are low by both national and universally adopted standards (the Engel Index). Second, the per capita total expenditure of poor households is only Y14.64 higher than the State-determined poverty line (Y231), while the per capita living expenditure is only Y170.15, some Y60.85 lower than the poverty line.

Table 6
Comparison of family business income and outlays between poor and non-poor households, Luliang District

	Poor	Non-poor	Deviation	$\bar{X}$	$\|t\|^a$
1. Per capita net income[b]	292.00	431.71	-139.71	391.43	5.498
2. Per capita total income per year	348.73	576.46	-227.73	510.81	6.8976
3. Per capita income from agriculture	183.66	259.62	-75.96	237.72	3.7419
4. Agricultural income per worker	326.50	486.17	-159.67	438.42	
5. Per capita income from forestry	2.03	8.48	-6.48	6.62	
6. Per capita income from animal husbandry	50.15	47.11	3.04	47.99	
7. Per capita income from industry and sideline activities	112.89	261.25	-48.36	281.48	5.1415
8. Per capita total expenditure	245.64	537.58	-291.94	453.42	
9. Per capita living expenditure	170.15	397.56	-227.41	332.00	
10. Per capita expenditure on food	117.09	236.00	-118.91	207.72	
Food as a percentage of living expenses	68.28	59.36	8.92	62.57	
11. Expenditure on agricultural production costs (yuan/mu)	9.53	17.44	-7.91	15.22	2.821
12. Per capita taxes paid	4.75	6.53	-1.78	6.02	1.361
13. Per capita income handed to the State	9.65	17.70	-9.05	15.38	3.375
14. Per capita financial subsidy received from the State	4.91	9.72	-4.81		1.677
15. Per capita bank loans	10.24	15.90	-5.66		0.577
16. Per capita bank deposits	9.25	35.26	-26.01		2.272
17. Cash deposits at the end of the year	165.86	204.64	-38.78		2.178
18. Per capita income from sale of own products	114.87	177.71	62.84	159.74	3.121
19. Per capita income from sale of farm products	61.15	110.89	-49.74	96.55	

[a] t statistic for test of whether the characteristic in question differs significantly between poor and non-poor households.
b Net income is defined as gross income (including production for own consumption) less production costs.

The percentage of tax in total expenditure is fairly low since the agricultural tax is fixed uniformly by the State at a very low rate. The survey reveals that the average per capita tax is only Y6. The average tax paid by poor households is Y4.75; for the non-poor households it is Y6.53, although the difference is not significant. However, in terms of turn-overs handed to the collectives, the difference between the two groups is significant, with a t value of 3.375.

Table 7
Comparison of income sources, poor and non-poor households (per cent)

	Agriculture	Forestry	Animal husbandry	Industry and side-lines	Total income
Poor households	52.7	0.5	14.4	32.4	100
Non-poor households	45.0	1.5	8.2	45.3	100

There are two types of economic subsidies farmers can obtain from the government. One is a financial subsidy which includes relief funds and pensions. The other is a bank loan. Financial subsidies are usually appropriated by the central and local governments. According to the survey, few such subsidies are released. The bank issues three types of subsidized loans: (i) ordinary loans for production; (ii) long-term loans issued to help eliminate poverty with low lending rates (this type of loan is usually accompanied by a certain amount of subsidized materials); and (iii) a temporary loan to provide for basic necessities. In quantitative terms, non-poor households obtained more loans than poor households. However, the difference is not significant. In terms of the percentage of beneficiaries, 25 per cent of poor households received subsidized loans as against 16 per cent of non-poor households.

One useful index of a household's economic position is the per capita income from the sale of own produce. The survey shows that non-poor households earn 30 per cent more from produce sales than the poor households, with the difference being significant. In terms of the percentage of such sales in the total income, however, the poor households have a higher ratio (33 per cent) than the non-poor (30.82 per cent). But, one cannot simply conclude from this that poor households conduct more commercial transactions than non-poor households; it is merely an indication that the area has only limited agricultural and forestry resources. The income from the sale of own produce is not a major source of income for a non-poor household. As already noted, the income from industry and side-line activities is very significant.

The amount of savings deposited with banks by poor households is very small, less than Y10 per head, and represents only a quarter of the amount deposited by non-poor households. Average differential is also

significant with a t value of 2.272. Curiously, however, the poor households usually keep 50 per cent of their total income to hand rather than in banks. Traditional farming customs as well as the seasonality of production may explain a great deal of this behaviour. Autumn is the harvest season for farmers in Luliang and also the time when those who work outside return with their annual earnings. Therefore, a substantial amount of cash can be accumulated within a short period of time. In addition, farmers in China traditionally accumulate money to spend during the New Year or for weddings or funerals. This cash also includes the production capital for next spring as well as that earmarked for future living expenses.

Some conclusions

So far, we have discussed and analysed the general situation of poor and non-poor households in Luliang District. The static and cross-regional analyses help us to understand the different features of these households within a specific time-frame. The following conclusions can be drawn:

- Poor households have lower levels of education than non-poor households. The former have a higher percentage of illiterate or semi-illiterate members and a lower percentage with secondary or higher level education.
- Poor households have inadequate productive fixed assets for viable agricultural production (only 43 per cent of that possessed by the non-poor group).
- Poor households have fewer employment alternatives. Under the socialist system, productive resources, including cultivated land and forests, are equally divided between labourers. Each labourer has equal agricultural employment opportunities. In non-agricultural areas, labourers have to compete to obtain employment opportunities. The small income that poor households earn from industrial and side-line production shows that poor households are not competitive in these areas.

An analysis of the causes of poverty in Luliang District

The causes of poverty can be considered to lie in three general areas:

- the nature of rural households themselves;
- environmental conditions and geographical location; and
- macroeconomic policies of the State.

Poverty caused by the nature of rural households

Shortage of fixed productive capital. Because a major cause of poverty is the shortage of fixed productive capital, it is more realistic to use the farmers' real consumption level as the poverty index than their per capita income. Although income is highly correlated with consumption levels, the correlation is not perfect. If the consumption level is taken to be the dependent variable, all the possible independent variables derived from the nature of rural households can then be indirectly related to the consumption level. The following regression model is based on the relations between the elements that influence a farmer's income and consumption levels:

$$Y = f(XG1, XT2, XT3, XT4)$$

where

Y = farmer's consumption level (poverty level)

XG1 = selected per capita fixed assets

XT2 = annual precipitation

XT3 = available bank loans

XT4 = government transfer payments to poverty areas.

The regression results are as follows:

$$\begin{array}{lllll} Y = 115.8425 + & 0.2200XG1 + & 0.0018XT2 + & 0.0575XT3 + & 0.0523XT4 \\ \quad (2.8298) & \quad (27.7121) & \quad (0.0285) & \quad (3.0295) & \quad (1.0295) \end{array}$$

$R^2 = 0.84011$ $\bar{R}^2 = 0.8671$ SE = 50.7833

The annual precipitation and the government transfer payment variables can be disregarded because they are essentially constant throughout the counties. Thus, the two key elements influencing consumption in farm households are fixed capital and the availability of bank loans. The regression using these two elements as the variables gives:

$$\begin{array}{llll} Y = 128.2982 + & 0.214333XG1 + & 0.0529XT3 + & 24.9166I \\ \quad (20.3075) & \quad (34.2076) & \quad (4.0320) & \quad (3.048) \end{array}$$

R^2 = 0.86886 $\bar{R}^2$ = 0.8671 S.E. = 52.3347

Y = farmers' per capita consumption (yuan)

XG1 = per capita fixed productive capital of rural households

XT3 = per capita bank loans of rural households

I = dummy variable = 0 for mountainous region
= 1 for hills or plains.

From the three variables in the model, three ways of improving farmers' consumption levels would be to:

- increase the amount of fixed productive capital;
- increase the availability of bank loans;
- help farmers move from mountainous areas to lower areas.

Although elimination of poverty through improved availability of bank loans is theoretically possible, it would likely require large investments. A more efficient path would be to assist farmers directly to increase their fixed productive assets, thereby improving conditions for production and increasing output.

Human resource factors and the incidence of poverty. The poor quality of human resources at the household level is also a critical element in the incidence of poverty.

(i) ***Low education levels***

We have already shown that the highest level of education achieved within a poor household was that of junior high school. The percentage of illiterate and semi-illiterate households is 22 per cent; the percentage with lower than primary school education is 46 per cent. We tested the poverty rate relative to the highest education received by a household. As might be expected, families with low education levels have higher poverty rates than families with higher education levels.

Table 8
Poverty rates according to workers' level of education

Year	Illiterate and semi-illiterate	Primary school	Junior high school	Senior high and beyond
1984	61.29	46.45	35.98	36.79
1988	31.58	30.92	29.15	23.79

(ii) ***Malnutrition and disease***

The other aspect that reflects poor human resources is the loss of working hours due to malnutrition or disease. Investigations show that some poor households have annual per capita consumption of less than Y100 and annual major grain consumption of less than 100 kilograms. If we eliminate the possibility of statistical error, it is certain that these households must have a serious malnutrition problem. But such households are very few; generally, households do not reach their optimum level of productivity due to the illness of their main bread-winners or a lack of labour. Five per cent of the farm households in Luliang fall into this category and all of them lie below the poverty line.

(iii) ***Slowness to adapt to change and new technologies***

This factor in the slide into poverty is evident in many of the households' outdated way of thinking, their apparent 'laziness' and lack of aggression in marketing. A considerable percentage of households belong to this type, but we cannot conduct a precise analysis due to a lack of statistical data.

Natural environment and geographical location

Climate. In an agricultural society frequently battling vicious and unpredictable weather, it is clear that climate plays a part in determining the occurrence of poverty. However, it is not easy to test such a proposition through careful and rigorous analysis. Here, we attempt to establish a relationship between annual precipitation, grain output per mu and the incidence of poverty. The following facts are essential to the discussion:

- Luliang is situated in the Yellow Plateau District with a dry or semi-dry climate; water is therefore the most important element in agricultural production.

- The region, with a large proportion of its population living in poverty, is dependent on agriculture with grain being the largest source of food and income.
- Due to the complexity of Luliang's physical geography, the annual precipitation of counties at different heights is variable. Therefore, some counties with large mountainous areas (preserved by the State as natural reserves) have been excluded from the analysis in favour of those poverty counties with similar topography.

We selected twenty observable values for correlation analysis. The correlation between average grain output per mu and the annual precipitation is 0.6579. Of course, grain production is also associated with the supply of production factors. We tested the correlation between the amount of fertilizer used per mu and grain output, and the correlation between electricity consumption (mainly for irrigation) and grain output. The coefficients were 0.5374 and 0.5499, respectively, both lower than the precipitation factor. The influence of production factors is not the only reason for the insignificant correlation between precipitation and grain output. One more important element is the seasonal distribution of the annual rainfall (Table 9). The growing season for Luliang is between May and October. Even if there is plenty of rain in any given year, a lack of rain in the middle of the year will seriously affect grain production.

Table 9
The distribution of rainfall and levels of grain output in five sample counties of Luliang District (May to October)

Type of rainfall district	*Linxian* Precip. (mm)	Output kg/mu	*Pangshan* Precip. (mm)	Output kg/mu	*Linlin* Precip. (mm)	Output kg/mu	*Lishe* Precip. (mm)	Output kg/mu	*Lanxian* Precip. (mm)	Output kg/mu
(1) 1986	358.7	63	378.6	108	374.4	106	327.3	130	267.3	39
(2) 1987	479.9	54	474.2	90	497.8	62	509.1	104	412.7	67
(3) 1988	623.7	85	619.5	132	577.7	140	593.7	165	737.2	74

Note: (1) Plenty of rain at start of season, little at the middle and end.
(2) Plenty of rain at the beginning and end, little in the middle.
(3) Plenty of rain at the beginning, little at the end.
Sources: *Economic Development Data of Luliang District*, Meteorological Bureau of Luliang; Economic Development Office of Luliang.

There was little rain in 1986, and most of it fell at the beginning of the season, thereby greatly affecting grain output that year. In 1987, the annual

precipitation was higher than that in 1986, but little rain fell during July and August when crops most needed water. The grain output in 1987 was less than that of 1986. (The only exception is Lanxin which encountered abnormally dry weather in 1986.) The year 1988 was a normal year with relatively high annual precipitation and the grain output increased with the increase in rainfall.

Having analysed the relationship between precipitation and grain output, we are now in a position to study the relationship between grain output and poverty rates. We have already seen that farmers in Luliang District mostly depend on their own production to meet household consumption needs. In addition to grain, farmers also raise income from oil crops which have a growing season similar to that of grain and which are similarly affected by the changes in annual precipitation. The impact of a reduction in grain production on farmers' lives is very remarkable. We correlated the poverty rate with the grain output, using the three-year data for four of the five counties above (Lishi County is excluded because it is the seat of the county government and has relatively developed non-agricultural industries). The correlation coefficient we obtained is ›0.8017. The poverty rate is negatively correlated with the grain output. The regression model is as follows:

$$PO = \underset{(8.3476)}{115.3182} - \underset{(-4.2420)}{0.2631PL}$$

$R^2 = 0.6426$ SE = 12.9117 F = 17.995

PO = poverty rate with county as unit

PL = per capita grain consumption (kg/head)

Since we cannot obtain sufficient annual data for regression analysis, it is difficult for us to develop the model. But the result still shows a significant relationship between per capita grain consumption and the rate of poverty.

Location and the remoteness of a district. Luliang District is part of the economic region with Taiyuan City as its centre. Within this economic region, the Spell Index (the indicator of the accessibility of each district or city) is as follows:

1. Taiyuan City	282.58	6. Changzhi City	493.32
2. Yici City	283.58	7. Jicheng City	556.36
3. Yizou City	340.58	8. Datong City	565.54
4. Linfen City	462.82	9. Yucheng City	598.63
5. Yangquan City	462.82	10. Lishi City	637.80

Calculation of Spell Index:

$$A(i,A) = \sum_{n} d(j,i) \qquad i, j \varepsilon N$$

where

A = Spell Index or index of accessibility

d = the freight cost distance from j to i in transportation network N.

Calculation: $d = K1*L1*P1 + K2*L*P2$

K1 = 1/3 K2 = 2/3 K = freight coefficient of railway or roads

P1 (freight cost): = 0.25 asphalt road (yuan/ton km); = 0.30 sandy road

P2 (railway freight): = .06 (yuan/ton km)

Luliang District has the highest Spell Index. The accessibility is the poorest in the province being the most closed area in Shanxi Province. This level of inaccessibility will inevitably affect the development of various industries. We conducted a correlation analysis using the per capita industrial output values of ten cities of Shanxi Province and the Spell Index. The coefficient obtained was -0.7087; the regression function is:

$$D1 = 3788.89 - 5.335T1$$
$$(4.0280)\ (-2.8408)$$

$R^2 = 0.5025$ SE = 686.823 F = 8.0702

where D1 = per capita industrial output value; T1 = Spell Index.

The process of economic development of a district is also the process of regional industrial development. A district with abundant agricultural resources may find its regional industries completely dominated by agriculture, but it can overcome this by abandoning its traditional farming practices and adopting a more industrialized approach. However, Luliang is

an agricultural district with a dry and semi-dry climate. Its population density has reached 133 per square kilometre. Without the development of non-agricultural enterprises, especially industrial ones, the agricultural production of Luliang District will be unable to satisfy the ever-growing demand for food. In fact, even if an agricultural revolution can be realized, the excess labour from agriculture still needs to be absorbed by industries or other non-agricultural enterprises to avoid the occurrence of high unemployment. The inaccessibility of a district is clearly a significant factor in slowing down the process by which a district shifts away from dependence on traditional industries towards the modernization of agriculture and the development of regional enterprises. Because of this, the district becomes economically marginal relative to others and sinks into poverty.

At this point, we used the freight distances from the economic centre, Taiyuan City, to the capital cities of every county as an indicator of the accessibility of each county. This was then correlated with their respective agricultural and industrial total output values. The correlation between the freight distance and combined agricultural and industrial total output values is -0.6827; the correlation between freight distance and the total industrial output value is -0.7471. The regression model on the second result gives:

$$ID = \underset{(9.6657)}{76.5359} \; \underset{(-3.6617)}{-0.07971LP}$$

$$R^2 = 0.5493 \quad SE = 14.8571 \quad F = 13.4080$$

where

ID = industrial output value

LP = freight distance

The correlation coefficient between freight and agricultural output values is very low. We therefore conclude that: (i) there is effectively no economic centre in Luliang District, or if there is, the function of Lishi City as the economic centre is very weak; (ii) the output from self-sufficient agriculture has little correlation with the development of the transport network; and (iii) inaccessibility mainly restricts the development of industry.

The macroeconomic policies of the State

The national planning of enterprises has an impact on regional economic development which extends down to the level of the rural economy.

In the State's macro-production planning, Shanxi Province is designated as the major coal producer. Shanxi Province alone provides a quarter of the nation's total coal output. Each year, Shanxi sells 175 million metric tons of coal to other provinces, involving 78.8 per cent of the coal traded outside the producing provinces. In other words, Shanxi provides 80 per cent of the commercial coal for trading between provinces. This indicates that heavy industry plays a dominating role in Shanxi's industrial structure. For instance, in the year 1988, the ratio between light and heavy industries was 0.4:1, whereas the national ratio was 0.97:1. Jiangxu Province, relatively well-developed economically, had a ratio of 1.25:1, while Luliang, within Shanxi Province, had a ratio of 0.72:1 (Table 10). Due to the low price policy for resources and raw materials, this bias towards heavy industry undermines the regional economy and slows down the industrialization of agricultural enterprises (except through the employment opportunities it provides).

A two-sector economic structure has thus been created consisting of a modern urban industrial sector and a traditional rural agricultural sector. This structure heavily influences the path of regional economic development. Under an economic planning system in which city and county are separated (as demonstrated by the prohibition of free movement of labour and citizens between different regions), this two-dimensional economic structure fails to develop according to conventional 'two-dimensional economic theory'. If we try to measure the industrialization level of a district using the proportion of total industrial output in total industrial and agricultural output value, Shanxi Province would be classed with the coastal provinces which are currently the most developed in China. However, in reality, the farmers' per capita income in Shanxi Province is far behind the levels of those provinces, being ranked 22 out of a total of 30 provinces, cities and autonomous regions.

Table 10
Comparison of the composition of industry, various provinces, 1988

	Luliang District	Shanxi Province	Jiangsu Province	National average
Light industrial output as percentage of total industrial output	41.74	29.02	55.83	49.27
Percentage of raw materials from agriculture consumed by light industries	84.6	63.66	63.81	68.54
Percentage of non-agricultural raw materials used by light industries	15.41	36.33	36.19	31.46
Heavy industrial output as percentage of total industrial output	58.26	70.98	44.17	50.73
Percentage of raw material and mining industries in heavy industry	61.85	64.82	29.55	49.92
Percentage of manufacturing industries in heavy industry	38.51	35.18	70.35	50.08
Per capita output value from enterprise	333.77	614.54	2300.15	833.67
Per capita annual net income (yuan)	382.50	438.73	1098.00	544.94

Sources: *Forty Years in Shanxi*, 1989, Statistics Bureau of Shanxi Province; *Statistics Almanac of China*, 1989, State Statistics Bureau; *Economic Statistical Data of Luliang District*, 1988, Statistics Bureau of Luliang.

Table 11
Comparison of industrial and agricultural structures between Shanxi Province and those of other developed coastal provinces (per cent)

	Shanxi	Liaoling	Jiangsu	Zhejiang	Guangdong
Industry/total industry and agriculture	80.02	85.16	80.22	80.15	73.57

Source: *Statistical Almanac of China*, State Statistical Bureau.

The economies of the coastal areas indicate that the rapid increase in rural incomes is based on the rapid development of industrial output value in rural areas. The percentages of rural industrial output value in the rural total social output value of China's 30 provinces and regions are here used as the explanatory variable, and the per capita net income of farmers from various districts as the explained variable. The correlation coefficient gives 0.7689 and the result of regression yields:

$$Y = 102.54 + 0.4X$$
$$(1.1027)\ (5.7667)$$

$$R^2 = 0.5911 \qquad SE = 153.071 \qquad F = 33.2551$$

We suggest three reasons for this result:

- The State has chosen Shanxi as the energy production base and fixes the prices of energy products at low levels so as to stabilize the national industrial production system. Low prices mean low profits which results in low financial revenue for local governments. The financial subsidy from the central government is only sufficient to cover part of the losses incurred due to the low prices of energy products and high prices of industrial products. Insufficient financial income and low productivity of enterprises tend to weaken the local economy.
- The industrial structure of State planning and the features of industrial production determine that the industrial economy of Shanxi relates more readily to economies outside the province. It actually does very little to accelerate the development of local industries, especially rural industries.
- The low level of rural industrial development is largely the result of a lack of adequate funds from local government to modernize traditional agriculture and the continuing growth of the rural population. The growing population is unable to shift beyond the agricultural sector according to the classical 'two dimension structure theory'. The limited natural resources are further divided among this growing rural population, leading to a rise in the poverty rate.

According to national data from the State Statistical Bureau, the net per capita income of farmers in 1989 reached Y601.5, an increase of Y56.57 over the 1988 figure. However, after taking inflation into account, the actual net income dropped by 1.3 per cent. In Luliang District, the net per capita income of farmers in 1988 was Y382.5 which increased by Y8.5 to Y391 in 1989. With the inflation factor, the net income actually declined by Y9.45. The influence of the State's macroeconomic adjustment is greater in coastal areas and cities than in the self-sufficient 'poverty' areas. However, given the fragile economy of these areas, any 'small' influences can be fatal.

Essentially, the impact of macroeconomic adjustment on these areas of poverty can be characterized under three headings.

A tightening of the national economy. The township enterprises set up by the poverty relief funds from the central or local governments

experienced a decline in economic profitability; some even faced the prospect of having to shut down. According to the information provided by the Statistical Bureau of Luliang District, the output value of the township enterprises of Luliang have not changed in recent years, yet profitability has declined and total profits decreased (Table 12).

Table 12
The economic situation of township enterprises in nine poverty counties of Luliang

	1984	1985	1986	1987	1988
Output value of township enterprises (Y10,000)	12,321	26,691	20,127	22,033	21,954
Profitability (per cent)	15.99	14.05	11.63	14.01	11.11
Net profit (Y10,000)	1970	3749	2340	3086	2439

Source: Statistical Bureau of Luliang District.

Township enterprises here refer to the non-agricultural enterprises in rural areas (there are very few agricultural enterprises). As already pointed out previously, the development of non-agricultural enterprises affects farmers' income as well as the poverty rate. To test this relationship further, we chose poverty rates of various poverty counties as the dependent variable and per capita non-agricultural output value as the independent variable. The coefficient obtained is -0.75. The regression model is as follows:

$$PO = \underset{(16.342)}{54.8513} - \underset{(-4.559)}{0.0583RI}$$

$R^2 = 0.565 \qquad SE = 10.119 \qquad F = 20.785$

where

PO = poverty rate

RI = farmers' non-agricultural output value

The relationship between non-agricultural output value and farmers' per capita net income is:

$$I88 = \underset{(10.383)}{261.201} + \underset{(5.248)}{0.212X88}$$

$R^2 = 0.715$ SE = 52.398 F = 27.545

where

I88 = farmers' per capita net income in Luliang District, 1988

X88 = per capita non-agricultural output value of poverty counties, 1988

The prevention of outflows of surplus rural labour. The surplus agricultural labour in Luliang District is mainly employed in two areas: (i) rural industrial enterprises; and (ii) service industries (or tertiary industries) inside or outside the District. Initially, a key poverty-reducing policy was to arrange for this surplus labour to move to large or medium sized cities, and find at least temporary employment in industrial or mining enterprises or in the various State/local government development projects. Very little cost is involved in the implementation of this policy and the labourers' income is relatively stable. Local banks are also glad to issue poverty supportive loans to these kinds of projects. This export of labour has been an important element in the economy of Luliang District. At the end of 1987, however, the State began to abandon some of its construction projects, and began sacking the temporary and non-resident workers. Even though the poverty control departments of the State Council and local governments work hard to reserve jobs for workers from poverty regions, few can provide them on the same scale as Beijing. The labour involved in non-agricultural production within the district also received a blow due to the stagnation of the economy. Since 1987, the number of workers engaged in service industries has declined.

With regard to the impact of non-agricultural employment on the rural poverty rate, results show that among the local farming households with labour permanently employed in non-agricultural enterprises, the poverty rate is only 14.5 per cent. Those without members working permanently in non-agricultural enterprises have a poverty rate as high as 30 per cent.

Table 13
Labour employment status of various enterprises, Luliang District, 1984 to 1988

	1984	1985		1986		1987		1988	
	No.	No.	Per cent increment	No.	Per cent increment	No.	Per cent increment	No.	Per cent increment
Total labour	44.33	44.51	4.92	46.88	0.78	47.63	1.6	49.8	5.52
Agriculture	36.05	36.93	2.44	36.64	0.79	36.88	0.66	39.03	5.83
Non-agricultural enterprises	8.28	9.58	15.7	10.99	14.72	10.75	-2.18	11.23	4.47
Service industry	4.51	7.2	59.65	8.51	8.05	8.29	-2.47	8.22	-1.09

Source: *Economic Statistical Data of Poverty Counties in Shanxi Province*, Poverty Controlling Office of Shanxi Province, Agricultural Investigation Team of the Statistical Bureau of Shanxi Province.

Creation of a weak national market. The national market could not absorb the various agricultural products of the poverty regions. The agricultural product markets started to soften as early as the beginning of 1988. But, at that time, only citrus fruits encountered difficulty in sales. Gradually, some of the raw materials badly needed by industry, such as wool, rubber and grain, began to flood the market. The excess supply inevitably led to a fall in prices. In most areas, nobody wanted to purchase the goods despite the lower prices. Those farmers living in poverty had been encouraged to engage in plantation and cultivation activities; they received harsh punishment by the market instead of enjoying the happiness of a good harvest. From the farm household survey in Luliang District, the average income from sales of products by poor households had fallen to Y61.01 in 1989, a 46.9 per cent decrease from the Y114.87 in 1988. At the same time, the poverty gap (the proportionate difference between the average income of poor households and the poverty line) grew by 37.3 per cent.

Table 14
Correlation between income from product sale by poverty households and the rate of the poverty gap

	1983	1984	1985	1986	1987	1988	1989
Income from produce sale (yuan)	37.49	69.0	51.4	84.1	101.02	114.87	61.01
Rate of poverty gap (per cent)	10.37	10.23	8.21	6.16	6.01	7.4	10.16

Note: The correlation coefficient is -0.7315 after calculation.

An assessment of the State's anti-poverty policies

Brief history of anti-poverty policies in China and Luliang District

After the founding of the People's Republic of China in 1949, the transformation of capitalist industries and commerce, and the cooperative transformation of agriculture, were finally completed in 1957. China established a system of public ownership of production materials within a short seven-year period. The old distribution system in which the possession of production material determined the income of all social members was eliminated. This laid the economic foundation for the reduction and elimination of poverty. Before the recent economic structural reform, even though economic development had been stagnating under the dominance of the political movements, the number of people in poverty had been decreasing.

Before the economic reform, Luliang District had the same economic production system as the rest of the country. Production materials were owned collectively with the production brigade as the basic agent. Members of the brigade participated in uniform production activities and earned certain points for their work. During the harvest season, grain or other self-produced foodstuffs were distributed according to the grain consumption standards. At the end of the year, certain amounts of cash are distributed according to the points earned. Farmers with large families and those who were lazy usually earned very few points. Their cash earnings could be in deficit, but they could still obtain grain and other basic materials from the brigade. For single old people, the production brigade implemented a policy of 'five guarantees' (guarantees of food, clothing, pocket money, medicare and funeral expenses). Although such 'big pot' distribution systems seriously hurt the production initiatives of farmers, it was effective in alleviating poverty and preventing the further deterioration of living standards of those already in poverty. Under this system, the major anti-poverty policy of the government was merely to give support when farmers encountered sudden natural disasters or accidents and to grant a small subsidy to those poverty households which did not have sufficient sources of labour.

In the 1980s, during the economic reform in the rural areas, the traditional production and distribution system and the old social security

system were abandoned. Large gaps began to emerge between households, and between regions with different natural conditions and levels of social development. This has become a very sensitive issue for governments at various levels. The Central Party Committee and the State Council promulgated a document in 1984 entitled 'To rapidly eliminate the poverty in areas of old revolutionary bases, minority regions, border and poor areas'. A special fund totalling Y2.56 billion was appropriated as the development fund for these regions as well as for those with undeveloped economies. In 1986, the State Council set up a leading group to develop the poverty areas with additional funds of Y1.75 billion.

Re-assessing certain anti-poverty policies

The guidelines of the State's Anti-poverty Group place emphasis on economic development. According to these guidelines, instead of providing poverty subsidies, assistance is to be targeted at factors which can change the economic situation of poverty households through production of resources and commodities. The guidelines are determined by the following conditions:

- In China, economic development is still at a rather low level and only limited financial revenue is available to the State. It simply cannot support a large population in poverty.
- Poverty districts are mostly areas with small populations but with large per capita natural resources. They therefore have important development potential.
- The long-term 'big pot' policy cultivated seeds of laziness among some of the poor. The distribution of pensions instilled a hand-out mentality based on the belief that 'the socialist system will not tolerate starvation'. Some of the poor would rather depend permanently on the government.

The last five years of poverty control in Luliang prove that, under the new guidelines, the State is able to reduce islands of poverty using fewer financial subsidies and certain refundable credit funds. The change in the poverty rate in Luliang is as shown in Table 15.

Table 15
Luliang: changes in the poverty rate, 1983 to 1989

Year	Poverty line (yuan)	Poverty rate (per cent)
1983	137.75	46.69
1984	155.42	44.78
1985	169.23	32.16
1986	175.81	28.86
1987	186.23	24.42
1988	231.00	28.68
1989	251.00	35.14

Although after 1988, the poverty rate picked up by a large margin, due to the macroeconomic adjustment, the poverty rate in 1989 compared with that in 1983 has decreased by almost 25 per cent.

According to the levels and changes of poverty rates, the thirteen counties in Luliang can be divided into four categories. The first covers the districts around the economic centre of Taiyuan. These counties have relatively good agricultural production conditions with developed industries which have output values taking up about 70 per cent of rural total social output value. The annual per capita net income reaches Y500. The poverty rate of these counties is below 5 per cent. (This 5 per cent incorporates those households with no members in work and which need the government's long-term pension.)

The second category incorporates the areas around the capital cities of each county with relatively convenient transport networks and a better supply of agricultural facilities and production materials. The industrial output value of these areas takes up 50 per cent or more in rural total social output. A rapid decline in poverty was witnessed between 1984 and 1988, with the rate falling from 47.5 per cent to 26 per cent.

The third category, made up of the three counties of Liulin, Xingxian and Shilou, is characterized by unstable poverty rates (Table 16). These counties are agricultural areas with relatively abundant agricultural resources but poor production conditions, completely dependent on the weather. The poverty rates in these counties varied a great deal over the five years.

Table 16
Poverty rate variation in Liulin, Xingxian and Shilou, 1984 to 1988

	1984	1985	1986	1987	1988
Liulin	53.4	47.7	19.5	50.6	51.6
Xingxian	76.6	51.3	46.7	80.9	40.5
Shilou	49.9	74.2	91.2	83.5	28.8

Source: *Economic Statistical Data of Poverty Counties in Shanxi*, 1988.

The fourth category is made up of three mountainous counties located at the periphery of the economic centres of Shanxi Province. Linxian, Fangshan and Lanxian are situated in the mountain area with inconvenient transportation, soil erosion problems and poor cultivated land and low levels of industry. In the five years of the government's efforts to eliminate poverty, the poverty populations of these three counties have increased instead of fallen. In 1984, the average poverty rate of the three counties reached 58 per cent and the rate climbed to 67 per cent in 1988.

We can conclude that the existing anti-poverty policies are more effective in areas with relatively better infrastructure facilities, as in the second category of counties in Luliang. The policies are much less effective in those areas with poor infrastructures (the third and fourth categories). Certain measures need to be taken to improve the poverty control policies if the seriousness of poverty in these latter categories is not to be worsened.

Material payment policy. In the implementation of this policy, the government uses slow selling stocks including grain, cotton, cloth and other basic daily living commodities as well as small machinery as payments to farmers for their work in projects like the construction of roads, reservoirs, bridges, water tunnels and telephone lines. This material payment project is a nationwide anti-poverty campaign which has been divided into three periods (Table 17).

Table 17
The periods of operation of the material payment policy

	1985-87	1989-91	1991-95
Materials	Grain, cotton and cloth	Middle and basic industry consumption goods	Middle and basic industry consumption goods
Value	Y2.7 billion	Y0.6 billion	Y1.5 billion

The aims of this policy are to:

- increase employment opportunities for workers living in poverty, rewarding them with the materials necessary for survival and productive work;
- improve the infrastructure of poor areas, thereby enhancing productivity; and
- to solve the problems facing poor areas.

The first period of this policy proved to be successful (Table 18).

Table 18
Results and investments of the first period of the 'material payment' project

	1984	1985	1986	1987	1988	Per cent of villages having problems solved
Value of materials (Y10,000)	..	1586.1	1439.4	603.6	..	n.a
Number of villages which cannot be reached by traffic	951	656	631	517	509	46.48
Population without electricity	1151	1041	906	779	637	44.66
Population without running water ('000s)	28.19	..	..	..	15.42	45.3
Per cent of above in total population	10.3	..	..	..	5.48	..

Source: *Statistical Data of Poverty Counties in Shanxi Province*, 1988, Development Office of Shanzi, Agriculture Investigation Team of Shanxi.

The number of problems which previously had had devastating consequences for many villages has been cut by nearly half. Nevertheless, during the implementation of this project, a further problem emerged

relating to the misappropriation of anti-poverty funds by some of the less severely affected poor areas. This has involved the construction or repair of main roads or other large public infrastructural projects.

Tax reduction package. The tax reduction package essentially consists of two parts. The first covers State tax of agriculture; the second involves the various retainers levied by the local government according to the social and economic development plan or according to their contracts with farmers.

The agricultural tax rates in China are relatively low. At the national level, the tax collected from agriculture in 1988 was only Y5.25 billion, just 2 per cent of the State's total financial revenue and 0.9 per cent of the total agricultural output value. But, in the case of the areas under poverty, especially those with high percentages of agricultural dependence and backward economies, the percentage of agricultural taxes is relatively higher. Agricultural taxation in Luliang District raised Y204.55 million, which represents 10 per cent of the total financial revenue and 1.4 per cent of the District's total agricultural output value. For those farmers living in poverty with few employment opportunities in non-agricultural sectors and meagre per capita cultivated land, this level of taxation on agricultural production is a heavy burden. In 1985, the State Council decided to reduce the agricultural tax in poverty areas as a response to the need to alleviate poverty. But the results of this policy have been disappointing. Since the economic reform, local governments have been responsible for most of their expenditure. The government of Luliang District has been unable to carry out the tax reduction and exemption policy due to its financial deficit. Moreover, it is a complicated job to identify households in poverty and select those that should enjoy some degree of tax reduction. According to a special sample survey undertaken in 1984, every member of a poor household paid Y3.64 in tax for the year. The percentage of poor households who paid taxes was 65 per cent. By 1988, each member of the poor households was paying Y4.75 in taxes and the percentage of tax-paying poor households had increased to 75 per cent. However, the number of people paying tax had declined remarkably, by 26.6 per cent compared with the 1984 figure.

The biggest burden for poverty households is the various appropriations which are fixed according to the number of people in a family and the size of their cultivated land. In 1984, a poor household

passed an average of Y3.59 to the collective; by 1988, it was paying Y9.65. The percentage of poverty households paying the appropriations had increased from 53 per cent in 1984 to 78 per cent in 1988. But the number of people living in poverty who paid the appropriations was basically unchanged (Table 19).

Table 19
Comparison between poverty and non-poverty households paying taxes

	Poverty households			Non-poverty households		
	1984	1985	Per cent increase	1984	1985	Per cent increase
Per capita taxes paid	3.64	4.75	30.5	3.79	6.53	72.3
Per capita appropriations paid	3.59	9.65	168.8	8.36	17.70	111.72
Total payment	7.23	14.40	99.2	12.15	24.23	99.4

Although non-poverty households paid nearly twice as much tax and turnover to the local governments, the average total payment of poverty households reached Y14.4 which took up about 5 per cent of their per capita total annual income. According to the relevant statistics, if tax reduction policies were implemented properly, half of the existing poverty households would have been pulled above the poverty line in terms of per capita annual income.

Increased prices of agricultural and side-line products. Hundreds of millions of farmers have reaped great benefits through the price increase of agricultural and side-line products. Over the ten years of economic reform in China's rural areas, prices of many agricultural and side-line products have risen (Table 20).

The study of the sample data reveals that 53 per cent of the total income of poverty households comes from agriculture (by contrast, industry or side-line production contributes 45 per cent). The income from agriculture mainly consists of grain and oil crops. In general, we can say that the increased prices of agricultural and side-line products has increased the income of poverty households. However, in order to gauge the impact of price increases on poverty rates, the percentage of commercial activity in agricultural and side-line products by poverty households should be examined. Due to the difficulty in obtaining the necessary data, we here concentrate only on grain.

Table 20
Agricultural and side-line product price rises, 1979-88 (per cent)

	1979	1984	1985	1986	1987	1988
Total increase	22.5	4.0	8.6	6.4	12.0	23.0
Grain	20.0	12.0	1.8	9.17	8.0	11.4
Oil crops	25.8	1.2	4.3	4.6	6.0	19.7
Cotton	20.2	1.1	-3.0	-0.5	4.7	8.6
Live pigs	30.5	2.1	21.1	4.4	18.6	50.6

Source: *Statistical Almanac of China*, State Statistical Bureau, 1988.

In the four year period, each member of the poverty household sold an average of 49.4 kg of grain and purchased 20.52 kg. Net sales were 29 kg. Over the four years, the extra income a poverty household received due to grain price increases was: [29*(0.56 – 0.416)] = Y4.18. However, not all poverty households have spare grain for sale. In Luliang District, 79 per cent of the poverty households can sell grain but some 15 per cent do not have any spare grain and have to buy 'sell-back' grain from the State. Due to increases in the State's buy-in grain prices, the prices of the State's 'sell-back' grain also increase. In 1988, the State no longer subsidized 'sell-back' grain which meant that, for those poverty households who purchased more grain than they sold, or who did not have grain to sell, extra costs were incurred in grain consumption. In 1988, 47 per cent of the poverty households bought more grain than they sold. When those with no grain to sell are included, this percentage increases to 53 per cent. This means that if the State increases the price of grain, the situation of about half of the poverty households will be improved while that of the other half will deteriorate. Sample surveys show that the average per capita consumption expenditure for the poverty households whose grain sale exceeds grain purchase is Y178.60. The average per capita consumption expenditure for the poverty households whose grain sale is less than grain purchase is only Y161.31.

Conclusion

The most obvious feature of poverty in China is the severe underdevelopment of certain areas, mainly due to a combination of unfavourable natural conditions and the State's long-term macroeconomic policies. Under the socialist public ownership system, income distribution was equalized within a district. Therefore, in a district with an underdeveloped economy, incomes are uniformly low and poverty is a widespread phenomenon. In a bid to overcome this, the Chinese government has employed a number of poverty control policies, such as the use of credit funds to explore resource exploitation in poor areas, and various policy mechanisms to speed regional economic development, in a bid to reduce rural poverty and reduce the national poverty rate.

These policy mechanisms favour those areas and those households which already benefit from some degree of economic advantage. However, those areas/households trapped in a vicious cycle of poverty only continue to find their conditions worsening. For these reasons, it is recommended that the government should draw up special policies to protect the economic development of poverty areas from any further harmful readjustments within the national macroeconomy. One final aspect is the need to encourage the government to carefully monitor its implementation of ant-poverty policies in such a way that those in most need reap the most benefit. If such monitoring is lacking and resources are diverted away from the most needy, the whole process will prove to be a massive never-ending financial burden for the government.

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