

*SETP No. 16*

**The Food-for-Work Policy and Expansion of  
Rural Employment in Poor Areas in Western  
China**

**Zhu Ling, Jiang Zhongyi**



**Employment-Intensive Investment Branch**

**International Labour Office, Geneva**



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**INTERNATIONAL LABOUR OFFICE**

**GENEVA**

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First published (2004)

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ILO

Employment-Intensive Infrastructure Programmes: Socio-Economic Technical Paper (SETPno. 16) (*The Food-for-Work Policy and Expansion of Rural Employment in Poor Areas in Western China, Zhu Ling and Jiang Zhongyi*)

Geneva, International Labour Office, 2004

ISBN 92-2- 115755-5 (softcover)

ISBN 92-2- 92-2-115756-3 (web pdf)

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#### ILO Cataloguing in Publication Data

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Printed by International Labour Office, Geneva, Switzerland.

## Preface

This study examines China's public works programmes and their impact on job creation and poverty alleviation in rural Western China. The review of the food-for-work policy and programmes in Danfeng County of Shaanxi Province and Mabian County of Sichuan Province that they played an important role in employment generation and poverty alleviation in rural China. Moreover, it was also observed that more labour inputs were required in farming itself when agricultural restructuring accompanied infrastructure development. In other words, infrastructure development can result in more rural labourers being productively absorbed in farming.

The study also points out that unpaid labour was used on voluntary basis in these major works development projects. People agreed to work without payment because they felt that both the value of their farm land and yield per unit of land increased along with improved infrastructure. From the ILO point of view, the use of unpaid and voluntary labour in this case does not raise any problem with regard to international labour conventions, when unpaid work directly improves the land operated by the workers. For those workers who do not benefit in this way, the use of unpaid labour would not be in line with the provision of the International Labour Conventions No. 29 and No. 105, which prohibit the use of compulsory labour, including "as a method of mobilizing and using labour for purposes of economic development".

It may be argued that there are differences in culture, traditions and values between China and other parts of the world, which resulted in the use of unpaid labour on a large scale in China in its rural infrastructure development programme. However, the ILO appreciates the decision made by the Government of China in 2002 to abolish the use of rural unpaid labour, through rural fiscal and taxation reforms aimed at increasing the income of rural farmers. The new policy is being tested in ten provinces.

With a view to overcoming the issue of unpaid labour for major works including Food-for-Work programmes and projects, this study calls for collaboration between the ILO and Government of China in efforts to move from unpaid to well-planned and remunerated labour. In line of this recommendation and as follow-up action, the ILO's Employment-Intensive Investment Branch (EMP/INVEST) is developing proposals to work together with China mainly in areas of capacity building of local government officials from both labour and rural infrastructure agencies, as well as of private sector contractors, small and medium enterprises and community-based organizations.

This study was funded by EMP/INVEST and carried out by two prominent Chinese scholars - Ms. Zhu Ling, a senior economist from the China Academy of Social Sciences and Mr. Jiang Zhongyi, a Professor in the Ministry of Agriculture, under the technical guidance and supervision of Mr. Jinchang Liu of EMP/INVEST. I would like to take this opportunity to express my sincere thanks to all of them for their great efforts to produce this policy paper. I am also grateful to Mr. Tim de Meyer of ILO Sub-regional Office in Bangkok for his contributions to finalization of this report.

Jean Majeres  
Chief  
Employment-Intensive Investment Branch

Geneva, August 2004



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## **Note on Unpaid Labour**

International Labour Conventions No. 29 and No. 105 clearly state that forced or compulsory labour is not allowed to be used in any form, including “as a method of mobilizing and using labour for purposes of economic development”. International Labour Convention No. 29 says that an exception can be made, under certain conditions, to mobilize compulsory labour for minor village level works. These conditions may include, e.g. that the mobilization of labour has been agreed upon by the labour force and/or their representatives that this practice is limited to a transitional period and only as an exceptional case, and that the physical works are minor, etc. However, the ILO supervisory bodies consider that the transition period has ended. It is worth mentioning that the Government of China made decision in 2002 to stop the use of rural unpaid labour through rural fiscal and taxation reforms and the new policy is being tested in ten provinces.

The ILO/WFP agreement stipulates that total wage payment in food should be limited to emergency situation, e.g. famines, droughts etc. and that for minor village level development works, payment in food, i.e. a family food ration, should be supplemented by a cash payment amounting to 50 per cent of the on-going (or agricultural) wage applied in the area concerned for similar work.



## **1. Introduction**

### **1.1 Research Objectives and Methods**

The Chinese government has been implementing the Food-for-Work policy in poor areas of the country over a period of 17 years and this has played an important role in alleviating poverty. The main objective of the present study is to find out the impact on rural employment in poor areas of poor farmers engaging in labour-intensive infrastructure construction. The study also attempts specific evaluations on the alleviation of local poverty.

The research methodology is described in the Appendix. After consulting research documents relating to the food-for-work policy over the past decade, the authors decided upon the hypotheses and basic framework of the study. Then they collected data by interviewing households selected by random sampling in Danfeng County of Shaanxi Province and Mabian County of Sichuan Province. It may be noted that, by national standards, both counties are poverty-stricken. Then, based on investigations in the rural areas, they developed propositions and looked at correlations. Finally, they undertook statistical analysis of the relevant data and came up with the findings.

### **1.2 Structure of the Report**

The report comprises the following four sections:

- Evolution of poverty alleviation oriented development strategies over the last 10 years;
- Project for harnessing small watersheds in Danfeng County, Shaanxi Province;
- Project for improving the soil of farms in Mabian County, Sichuan Province;
- and
- Effects of the food-for-work policy on poverty alleviation.

It should be pointed out that Danfeng and Mabian implemented rather different labour-intensive projects with distinctive organizational patterns in line with their specific conditions. In order to identify regional differences in the patterns of expansion of rural employment, the two cases have been dealt with individually. However, for generalizing the effects of the food-for-work policy on poverty alleviation, relevant data of the two counties have been combined.

## **2. China's Poverty Alleviation Strategy and Food-for-Work Policy**

### **2.1 Evolution of the Poverty Alleviation Oriented Development Strategy over the last Decade**

From 1994 to 2000, China developed and implemented the "8·7" Poverty Alleviation Plan<sup>1</sup>, with the strategic goal of solving in seven years the food and clothing problem of the poorest 80 million people living in dire poverty. For this group living in absolute poverty, the Plan set forth the following standards for poverty alleviation: (1) ensure the vast majority of poor households have over 500 Yuan of annual net income per capita (at 1990 constant prices); and (2) assist poor households to create stable basic conditions for solving the food and clothing problem by: developing 0.5-1-mu farmland with high, stable yields per capita; by developing 1-mu land of fruit trees or other kinds of trees per household, or 1-mu land of cash crops; by transferring one labourer per household to township enterprises or developed regions, and, by developing one branch of fish breeding and poultry raising, or other domestic sidelines, per household.<sup>2</sup>

To fulfil the above objectives, the central government increased investment in poverty alleviating activities. At the same time, compared with 10 years ago investment in social development and rural infrastructure accelerated. The mid-1990s was a dividing line in the evolution of the Chinese government's strategy oriented toward poverty alleviation. Prior to the mid-1990s, the strategy mainly targeted poverty-stricken areas but after the mid-1990s, the strategy shifted to poor rural households. This is a fundamental shift and the central government's "8·7" Plan can be considered as the document marking that strategic shift. While implementing this strategic transition, poverty alleviating investments of the central government in rural infrastructure construction chiefly focused on the following four aspects: (1) solving difficulties in drinking water supply for people and animals among this group of absolutely poor people; (2) providing road access to the vast majority of poor villages and townships as well as localities with peddlers' markets and producers of major commodities; (3) building small irrigation works to ensure stable yields on 1-mu land and (4) ensuring that every county and the vast majority of poor townships have power supply (Regions Department of National Planning Commission, 2001).

The Outlines for Rural Antipoverty Development in China 2001-2010, which started implementation from 2001, stressed that 30 million rural people were still destitute with insufficient food and clothing. Moreover, the 50 million people relieved of poverty during the implementation of the "8·7" Plan were still in a very fragile situation and for a considerable length of time to come, an important task would be to consolidate the poverty alleviation achieved already and prevent a relapse into poverty. For this purpose, more poverty alleviation funds were required for social development activities such as education, culture and health care. It was decided that investment to improve rural infrastructure should be increased and the issue of poverty alleviation should be expanded from the economic aspect to also cover the social development of poor areas. Sticking to its development-oriented antipoverty

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<sup>1</sup> The "8·7" Poverty Alleviation Plan was developed in 1994 by the State Council. It aimed to relieve the poverty of the lowest 80 million of the population within seven years.

<sup>2</sup> The mu is a unit of land area; 15 mu equals one hectare.

policy, the central government increased fiscal transfer payments to poor areas and intensified the input of antipoverty funds by means of unit-to-unit assistance from government departments and developed areas.

By the end of 2001, the central government had put in funds amounting to 56.9 billion Yuan<sup>3</sup> through the food-for-work programme. Funds converted from inputs in kind before 1995 stood at 16.9 billion Yuan, the annual amount averaging at 1.7 billion Yuan. Funds put in after 1995 totalled 40 billion Yuan, the annual amount averaging at 6.7 billion Yuan. In the 16 years from 1985 to 2001, great achievements were recorded in the development of infrastructure in poor areas. A total of 207,200 km. of roads were built in poor rural areas across the country. The problem of drinking water supply was solved for 43.3 million poor people and 23.1 million heads of animals. Small water conservancy works were built to irrigate 60.31 million mu of farmlands; 83.34 million mu of slopes were transformed for terrace cultivation, and soil erosion on 41.46 million mu of land was brought under control. Small hydropower stations with 274,900-kw generating capacity were built (Regions Department of National Planning Commission, 2002).

The evolution of the central government's strategy for poverty alleviation over nearly 10 years has adhered to the following course regarding the guiding ideology. First, the initial focus on industrial and agricultural production in poor areas gradually shifted to the construction of rural infrastructure. Prior to the mid-1990s, the objectives set forth for poor areas were: (1) increase the output of grains and other farm and livestock products and produce enough grain to meet their own needs; (2) develop the processing of farm produce and livestock products as well as local mineral resources, and develop local industry based on these. In contrast, the "8·7" Plan launched in the late 1990s took infrastructure construction and market development in poor areas as the main fields of poverty alleviation and investment. The purpose was to inspire the enthusiasm of poor rural households in investment and labour input and to strengthen their capabilities in business operation. It was hoped that by doing so, the effects of poverty alleviation would last. The goal of the antipoverty strategy shifted from developing production to fostering the capabilities of poor households in business operation.

Secondly, the focus on economic development has shifted to simultaneous development of economy and society. The antipoverty development strategy in the Sixth Five-Year Plan (1981-85) mentioned nothing about social development. The Seventh Five-Year Plan (1986-90) and the Eighth Five-Year Plan (1991-95) began to mention issues relating to education and cultural development in poor areas. But there were no specific measures proposed due to an inadequate understanding of the interactive relations between economic growth and social development. In the mid-1990s (the end of the Eighth Five-Year Plan period and the beginning of the Ninth Five-Year Plan period), the "8·7" Plan explicitly stated that the development goals of poor areas were to change the backward conditions of education, culture and health care in these areas (Macroeconomics Institute of Regions Department of National Planning Commission, 2002). Specifically, elementary education was to be popularised and illiteracy eliminated among young people and people in their prime. Adult vocational-technical education and technical training were to be provided so

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<sup>3</sup> The unit of currency is the Yuan. 8.82 RMB Yuan equals one US dollar.

that most labourers in their youth and prime would have one or two practical skills. Medical and hygienic conditions would be improved, endemic diseases prevented, treated and reduced in incidence, and disability prevented. Birth control would be practiced strictly to keep the natural growth rate of population within the range prescribed by the State. The shift was attributed to two reasons. (1) Antipoverty practices over a decade led to a better understanding about the roots of poverty. (2) In the mid-1990s, the economic conditions of poor people had improved considerably. As the problem of food and clothing was basically solved for the vast majority of poor people, the government was able to increase investment in social development in poor areas.

Thirdly, in the new century, anti-poverty work faced a totally new macro-economic environment. Through nearly 20 years of economic restructuring, the market mechanism has risen to a predominant position. In the past, the government granted preferential treatment to poor areas through direct control of price and investment under the planned economy. Now such preferential treatment has diminished. In addition, due to China's entry into the World Trade Organization (WTO), poor areas have to squarely face market competition in all its economic aspects. Many protective policies have vanished and the disadvantages faced by poor areas in market competition are obvious (Liu Fuhe, 2001).

In view of these changes, enterprises, intermediaries and rural households in the eastern and central parts of the country have changed their business style and adapted to the environment of market competition. In contrast, enterprises and rural households, and even local governments, in poor areas have made little progress, unaware of competition and lacking the business capabilities necessary for the market economy. In the industrial set-up under the planned economy, some farm produce and mineral products in poor areas enjoyed certain advantages. But under the circumstances of fierce market competition, both industrial structure and production arrangements have undergone substantial adjustment from region to region. For several years running, there was a buyers' market in the country with excess supply of primary products. But in most of these products the poor areas have lost their advantage in the market, i.e. poor areas have lost many market opportunities to make money by selling their products. This is extremely unfortunate. In the new century, environmental protection and sustainable development have become the most important principles in decision making. Governments at all levels have to accord high priority to the protection of pastures, forests, water sources and certain mineral resources. This has left little room for the traditional development strategy to increase incomes by expanding utilization of resources in poor areas. Furthermore, historical experience indicates that economic development at the cost of environmental degradation will eventually lead to worse environmental disasters, making these areas pay heavier economic prices.

Fortunately, the central government has now recognized the difficulties faced by poor areas. Consequently, it has decided to implement the strategy of western region development. Large amounts of funds have been devoted to environmental treatment, infrastructure construction and development of productive resources in the western region. It is hoped that this would induce these regions' own enthusiasm for investment and development, and thus bring about an unprecedented opportunity for the development of poor areas. In the present context, the strategic and core issue poor rural areas need to resolve is no longer limited to the provision of adequate food and

clothing. The new strategic goal has to shift to the expansion of employment in poor rural areas and to providing more long-term and stable jobs to poor farmers.

## **2.2 Agricultural Restructuring and Rural Employment Expansion**

In central and western regions, where most of China's poor population lives, the level of urbanization is much lower than in the eastern regions. As there is very limited room to expand employment in secondary and tertiary industries (Su Guoxia, 2000), agriculture is the first option in attempts to increase employment among the rural poor. As is well known, the mode of employment in agriculture is quite different from that in non-agriculture. In agriculture, employment expansion is usually positively correlated with the increase in the area of cultivated land. But for a country like China with a large population and low land availability per capita (1.9 mu of arable land per head among the agricultural population), it is obviously impossible to increase farmers' employment significantly by the route of expanding the area of cultivated land. Therefore, the expansion of employment in agriculture must rely on an increase in labour inputs per unit of land. But agriculture is different from other sectors in this regard. In other sectors, the input of labour time is usually directly proportional to labour income, and the production process ends when the work is over. This makes it easy to establish a clear relationship between labour time and income. In agriculture, however, labour input and the production process (the production of crops and livestock) are not closely related. Even when the work of labourers stops, the growth processes of crops and livestock continue. To a large extent, the ultimate output is related to the life characteristics of organisms and external factors relating to the environment, but hence one cannot establish a close relationship with labour input.

In addition, during the production process of a particular crop or animal, the labour input needed is a relatively definite quantity (for instance, field experiments confirm that under current technical conditions, the cultivation of 1-mu rice needs a total of about 24 man-days). The characteristics in the growth of organisms determine that adequate labour must be put in at certain periods in the growth of an organism. At such points, there exists an obvious positive correlation between the duration of the labour input and the ultimate output (for example, sowing must be done in a timely manner in the season of sowing; animals must be fed at fixed times). If these production opportunities are missed, the efficiency of labour input will be greatly reduced. Because the labour input per unit of area or for a certain period of production is constant, labour input in excess of this level or outside the specified period may be ineffective or even negative. It may not increase production but may instead decrease labour income per unit of time. Therefore, owing to the characteristics of agricultural production, it is extremely difficult to expand employment in agriculture without expanding the area of cultivated land. Since there is a severe shortage of land resources, there is little scope in Chinese agriculture to expand employment.

Under such circumstances, agricultural policy-makers in China have proposed a strategy to alter the production structure of agriculture. This is known as agricultural restructuring and one of its aspects is to cultivate crops that demand more intensive labour inputs per unit of land (Wu Gobo, 2001). Also, such crops should be selected which have relatively good sale prospects. The alteration of the production structure must be based on accurate forecasts of changes in the market. Inaccurate market

forecasts would make it impossible to accomplish the goal of restructuring agricultural production, expanding employment and increasing incomes. In addition, to reduce market risks and increase labour incomes, crops selected under restructuring should have post-harvest follow-up characteristics, whereby farmers could do some preliminary processing. For example, in the cultivation of tea, farmers could process the raw material into tea products. In this way, farmers could put in more labour. Farm produce with follow-up processing could add value and more importantly, make it possible to store for longer periods or reduce transport costs. Besides, such products could widen choices relating to market sale. The policy of expanding employment through restructuring agricultural production faces many constraints, which makes it extremely difficult to succeed. Thanks to the bumper harvest of grains across the country for five years running, vast rural areas in the central and western parts of China had adequate supplies of grain for some time, which created room for restructuring agricultural production (Chen Xiwen, 2001). Generally, the aim of restructuring is to reduce the area under grain crops and increase the area under cash crops. For a more disaggregated or smaller region (e.g. in a county or a township), the selected crop varieties should also suit the local geographical and natural environment. Hence the restructuring of agricultural production would be more subject to the constraints of local conditions.

Poor areas tend to have high mountains and steep slopes, fragmented farmlands and infertile soil. They may have very limited water resources that can be utilized, or they may lack in sunshine and other climatic advantages and be prone to frequent natural calamities. Such areas have much less freedom of choice in decision-making than others. However, they have to make choices and take decisions under current market circumstances.

To expand employment in agriculture through agricultural restructuring and to reduce risks and losses involved in restructuring, the best way is to transform the natural and geographical environment of agriculture. Specifically, investment must be made in the construction of rural infrastructure. Water conservation works should be built, basic farmlands improved and rural roads built to create necessary conditions for agricultural restructuring. With improved rural infrastructure, risks in the restructuring of agricultural production would be reduced substantially, which would make it easier to select and cultivate crop varieties with high labour intensity. In this way, poor farmers are more likely to benefit from the employment expansion following agricultural restructuring and eventually increase their incomes. So for poor areas, investment in rural infrastructure is an indispensable inducing investment and it is only when this is done that efforts to restructure agricultural production aimed at expanding employment of farmers can be successful. From this strategic perspective, the first priority should be to devote more antipoverty funds to infrastructure and social development projects in poor areas and to improve the basic quality of life of poor farmers. This would result in boosting the confidence and ability of poor farmers to participate in market competition. This should be the long-term strategic goal in poverty alleviation under the new circumstances of the new century.

### 2.3 The Food-for-Work Policy

The food-for-work policy is the most important policy relating to investment by the central government in infrastructure construction in poor areas. Prior to the mid-1990s, the food-for-work policy was implemented in the form of payment in kind. At that time, the central government mainly provided commodities such as grains, cotton, clothing and low- and medium-grade industrial products as payment in kind for the building of roads and projects for drinking water supply for people and animals. Once a project was finalized, the local government provided funds to purchase construction materials, such as cement, explosives and reinforcing bars, and construction tools. Then it organized poor farmers to participate in the construction and paid them, as their wages, the commodities provided by the central government. At that time, the chief purpose was to provide relief to poor farmers and victims of natural adversities, and the food-for-work policy clearly had the purpose of relief, i.e. poor farmers could directly receive income from their labour input. By contrast, improvement of rural infrastructure was of secondary importance; i.e. the objective of local development was a secondary consideration of the central government (Zhu Ling, 1995).

However, the expenditures deviated from the original intent as implementation proceeded. Most local governments had no money for the projects. They sold the commodities provided by the central government in order to purchase construction materials and to rent construction machinery for project construction. This practice substantially reduced the commodities that should have been distributed among farmers as their wages. In some areas, nothing was given at all. The element of "relief" in the policy was thus greatly weakened. The primary purpose of providing relief to the poor gave way to that of investment in rural infrastructure.

But such a change in policy created a dispute between the policy-making department and the local policy-implementing governments. The State Council's Office on Poverty Alleviation and Development insisted that "relief" should be an objective of the policy: Poor farmers should be paid for their labour input so that poor households could benefit from participating in construction; in particular, farmers should be paid in construction projects that were obviously for public good, such as building roads at county and township levels (Yang Zhong, 2003). However, local governments, due to their financial pressures, always sought to reduce wage payments to farmers, and tended to depend more on unpaid labour services. The Regions Department of National Planning Commission, as the investment department of the central government, failed to prohibit such policy revisions. The practice of local governments of converting resources intended to pay for farmers' labour inputs into equivalent funds, does not appear to have been explicitly endorsed by the central government. A weakness in local governments is that they tend to focus on the objective of local development and consider the interests of farmers as a group rather than the benefits to individual farmers.

Under these circumstances, why did farmers continue to participate in construction activities for more than 10 years? Village autonomy prevails in rural China. Before applying to the county government for a construction project, the villagers' committee would hold meetings to discuss the village's contribution, either in money or in labour. This would be decided by a vote at a meeting of all villagers. According to the regulations on village autonomy, a villager must accept any decision passed at the villagers' meeting. If a villager refuses to provide labour for the construction, no

matter what the reason, he must pay an amount of money equivalent to the labour service as investment.

Then what kind of reward did these poor farmers get for their labour? The answer is closely related to the basic system operating in rural China. The household contract system is practised in rural areas of China, by which each person can contract a plot of land from the village for cultivation. The central government stipulated in a document issued in 1982 that the land-use right obtained by farmers should remain unchanged for the next 15 years. In 1996 when the first term of land contracts was over, the second term was given for 30 years. Moreover, it was explicitly stipulated that during the second term of contract, once the land was distributed, the determined ownership of land would not be altered for at least 30 years. Legally speaking, the land belongs to the village, but farmers have the powers of management, disposition and inheritance of land. As long as farmers pay the contracting fee and agricultural tax, the villages cannot interfere in the farmers' operations on any account, let alone adjust or take back the cultivated land. The two provisions actually made the farmers' right to contracted management a long-term one and as a result, contracted land became an asset of farmers (Xiang Zhaolun, 2001).

Capital construction on farms and water conservancy projects, implemented under the food-for-work policy, directly increases the asset value of cultivated land contracted by farmers. Again, the completion of roads and power grids in rural areas not only improves the living conditions of farmers, but also upgrades conditions of land management so that farmers can have more access to the market, which indirectly increases the value of contracted land. Although poor farmers get no direct payment from their labour in implementing the projects, their land asset are considerably enhanced in value and farmers can secure better returns from managing the improved land resource in the long run. In this sense, the food-for-work policy has actually evolved into a policy by which poor farmers provide labour which appreciates the value of their contracted land. The contracting of land, a practice unique in China, is closely related to the strong support of poor farmers for the food-for-work policy.

Thanks to the unique land system in rural China, farmers in poor areas have a stable source of basic food supply. They are not the objects of relief, except when they are stricken by major natural calamities. A Chinese farmer, so long as he is physically and intellectually capable, can manage to maintain the basic standards of living of his family by relying on a plot of contracted land. In addition, since the mid-1990s, food shortages have been brought to control across the country. Through more than 10 years of efforts in poverty alleviation, food and clothing shortages has been greatly reduced among the overwhelming majority of the poor (Yang Zhong, 1997). Under these new economic circumstances, the central government could modify the food-for-work policy for poverty alleviation by allowing expenditures provided for in kind to be converted into money. Although the policy is still known as food-for-work, it has actually become investment to improve infrastructure in poor rural areas. Apart from roads and drinking water supply for human beings and animals, water conservancy works and power grids are also listed in the range of investment. Therefore, the policy should be defined more accurately as investment for updating the rural infrastructure in poor areas.

The primary objective of the policy now is the improvement of rural infrastructure in poor areas rather than the direct targeting at farmers. Regarding the mode of

investment, government funds the designing of projects, provides technical support, hires engineering machinery and buys much of the construction materials, while poor farmers put in labour and townships and villages are responsible for organizing construction. The government only pays for the technical work involved and for the machinery used in the construction. The labour input of farmers is basically unpaid. Farmers participating in the construction get no pay for their labour, but they share, directly or indirectly, in the benefits generated from the completed projects. So, poor farmers do not get direct labour income from short-term employment in the construction of rural infrastructure; they can only increase their employment and incomes due to the development resulting from the improvement in the rural infrastructure. Improvement of rural infrastructure is only one basic inducing factor for rural industrial development and restructuring. Sound industrial development in rural areas also needs the cooperation of other related economic and social factors. In the building of water conservancy works, poor farmers directly benefit from participation, but there are differences in the quantum of benefits received by different groups of persons. But in other projects like the construction of rural roads and power grids, poor farmers differ greatly with respect to their ability to make use of the infrastructure; some farmers may not benefit at all, even though they participated in the construction. Obviously, government investment in rural infrastructure is at best a basic inducing factor and an improvement of farmer employment and income in poor areas can only occur when many relevant economic and social conditions work together.

### **3. The Project of Harnessing Small Watersheds in Danfeng County**

#### **3.1 Survey of Danfeng**

Danfeng is a typical poor county in the mountains. It does not lack rainfall, sunshine, temperature accumulation and vegetation, but it does lack in arable land, which constitutes the most fundamental reason for the poverty of local farmers. Ravines and gullies criss-cross the county, which has an area of 2,438 square km. Farmlands and villages are sprawled along dozens of ravines of different sizes. A whole tract of land is only a few dozens of mu at most, and one mu of farmland is usually divided into several plots. Farmers not only have very fragmented farmland, but also have very limited amounts of land. The county's landscape may be summed up as "90 percent mountains, 0.5 percent waters and 0.5 percent farmlands." With 280,000 rural people living on 230,000-mu farmlands, the cultivated land per capita is only 0.82 mu (Danfeng County Agricultural Bureau, 2002). Moreover, as the farmlands are formed near ravines and gullies with deposits of water from the mountains, the soil is not fertile and easily subject to adverse natural events. A heavy rain could wash away all the mellow soil and most of the farmlands can retain neither water nor fertility. Soil erosion is the biggest threat to farmlands in mountains. At the best time, per mu yield of corn is only 100-150 kg. Because of seasonal water shortage and lack in irrigation facilities, most of the farmlands are only suitable for growing potatoes and sweet potatoes. There are floods almost every year between spring and summer because of the concentrated rainfall. Farmers can hardly have enough food and clothing by solely relying on the productivity of land. Besides, farmers live scattered in the ravines. Owing to rugged mountain roads and poor traffic facilities, natural villages tend to be small, with the largest having just 100-odd households at most. Consequently, there

are few activities of commodity trading and little exchange of information in the county. Most villages lack the driving force of development because they are isolated.

As early as 1987, Danfeng County was listed in the state programme of poverty alleviation. At that time, it was one of the poorest counties in China, with a per capita income of 125 Yuan. The efforts of poverty alleviation over the past decade have been quite successful. More than 90 percent of poor farmers have been raised above the poverty line; 90 percent of the villages have road access; all villages have power supply, and 80 percent of the villages have clean drinking water supply. In 2001, the net income per capita in the rural areas of the county was 1,100 Yuan (compared with the national poverty line of 750 Yuan per capita), although it was only 44 percent of the net income per capita in rural China that year. Grain possessed per capita was 280 kg, which was slightly above the level of adequate food and clothing (Danfeng County Antipoverty Office, 2001). Beginning from 1996, Danfeng County could obtain an annual amount of 9 million Yuan in the name of the food-for-work policy. The central government loans with discount rates of interest for the purpose of poverty alleviation, issued by the Agricultural Bank, were 20 million Yuan. The allocations in the form of fiscal transfer payment were 18 million Yuan, and other special allocations for the purpose of poverty alleviation were 2.4 million Yuan. In relation to the rural population in the county, the annual funds for poverty alleviation were about 176 Yuan per capita (Danfeng County Antipoverty Office, 2001). The input of anti-poverty funds has been increasing annually, which greatly supports the implementation of various policies concerning poverty alleviation.

Danfeng was among the first counties in China that experimented with small credits to alleviate poverty. To date, small credits issued to assist poor farmers cover 145 villages. Since 1995, some 10,000 farmers have obtained anti-poverty loans, accounting for 20 percent of farmers in the county. The loan amount a rural household can get has increased from 1,000 Yuan to 2,000 Yuan. Such loans are mainly issued to support the county government's plan for restructuring agricultural production. With the money, farmers are able to purchase improved varieties and chemical fertilizers as well as mulch film. In agricultural production, the technique of nursing corn shoots in pots and the technique of cultivating non-toxic potatoes have been introduced to increase the yield of per unit area and ensure basic food safety of poor farmers. Furthermore, by taking advantage of the unique soil quality and local climate, medicinal herbs such as yellow ginger, membranous milk vetch and cornel are cultivated to increase cash incomes. Besides, to conserve the ecological environment of the mountains, poor farmers living in ecologically vulnerable areas are persuaded to relocate. So far more than 1,000 people have moved out of such areas, which help conserve the natural equilibrium in ecologically vulnerable areas. Thus it can be seen that the alleviation of rural poverty in Danfeng County is a result of joint functioning of multiple measures rather than the achievement of a single policy.

### **3.2 Harnessing of Small Watersheds and Mode of Labour Exchange and Mutual Aid**

Since 1996, Danfeng County has received amounts totalling 54 million Yuan in food-for-work programs. The expenditures are mainly on farmland capital construction and water conservancy works (43 percent), road building (25 percent), drinking water supply for human beings and animals (9 percent), and development of advantageous industries (22 percent) (Danfeng County Development Planning Commission, 2001). The farmland capital construction and water conservancy works are all designed within the larger picture of harnessing a small watershed. The gullies are treated one by one so that eventually poor people in the county would have one mu of land with stable yield. In the projects of developing advantageous industries, cash crops, such as medicinal herbs and fruit trees, are grown on treated land, and livestock breeding is developed. Meanwhile, some small enterprises are established for the preliminary processing of farm produce to support changes in agricultural production and expand employment within agriculture. Investment expenditure on the two categories accounts for 65 percent of the total inputs. Thus it can be seen that over the past six years, food-for-work funds in Danfeng County have been chiefly put into labour-intensive projects in agriculture.

In the six years, farmers in Danfeng County contributed altogether 16.2 million man-days to food-for-work projects, the annual man-days averaging 2.7 million. Assuming that one rural labourer supplied 60 man-days, a total of 45,000 rural labourers (or 40 per cent of the county's rural labour force) must have been mobilized in a year. Calculated at 15 Yuan per working day, the annual labour input by farmers amounted to 40.5 million Yuan. The construction volume completed in the six years reached 41.75 million cubic meters of earth and stone. The annual labour inputs in farmland capital construction and small water conservancy works were 1.3 million man-days, or 22,000 mobilized labourers, which accounted for 19 percent of the county's rural labour force. Investments in farmland capital construction and water conservancy projects covered 85 percent of the villages with the construction volume totalling 28.6 million cubic meters of earth and stone.

Projects completed so far include:

- Harnessing of 110 small watersheds, covering an area of 80 square km;
- Addition of 48,200-mu farmlands;
- Addition of 28,600-mu effective irrigation, restoration and improvement of 18,000-mu irrigation;
- Building of 130-km irrigation channels and renovation of 32-km existing channels; and
- Building of 960-km roads for field production

(Danfeng County Development Planning Commission, 2002).

Dramatic changes have taken place in agricultural production conditions, as well as in the living environment, by harnessing small watersheds. The projects of farmland capital construction and small water conservancy works are implemented through labour exchange and mutual aid. Farmland capital construction and small water conservancy works directly benefit the rural communities and households where the project is located. In terms of benefit, they are very different from construction projects like the building of county or township-level roads, which benefit a wider public. Identification with the common interest provides the foundation for organizing local farmers to provide labour, and this is also attributed to the long tradition of mutual aid in rural society. The County Food-for-Work Office lists a small watershed needing to be harnessed under the investment plan and designs the construction. Then the township government and the villagers' committee jointly organize labour input and construction. Then, labourers in all villages in the small watershed participate in the construction. In case of shortages in funds, all households in these villages would contribute to make it up. Neighbouring villages also organize labourers to participate in the construction according to the labour quota assigned by the township government.

A big project may involve labour inputs from the whole township or even from neighbouring townships. The township government concerned records labour inputs that helped other villages in construction and when construction takes place in another village in the next year, the same labour inputs will be assigned to the village. The township government must guarantee the continuity of this labour exchange scheme with its own credit. To ensure the continuity of the labour exchange scheme the township government must get food-for-work resources or investments from upper levels every year. If the investment chain breaks, the chain of labour exchange will break too. To keep the investment chain unbroken, the township government must build up a record of completing annual construction in time and of requisite quality. Otherwise, it would lose out when applying for investment funds in the next year. Therefore, competition for investments between townships is fierce.

To a large extent, such competition is manifested in trying to be effective organizers of labour exchange and mutual aid. The organization of construction is an extremely difficult. Scattered farmers, with their greatly different economic status and value orientation, must be organized like an army in two or more months. Given the extremely difficult conditions in terms of logistics, township and village cadres need to have a high sense of responsibility and unselfish devotion. So, township governments must manage the construction well. This competition mechanism plays a decisive role in guaranteeing the effectiveness of project investments. Township governments with greater ability in organization and management stand a better chance of being selected for the implementation of food-for-work investments.

The scheme of labour exchange and mutual aid predates the implementation of the food-for-work policy. In fact, during the period of the People's Commune, a system of unpaid labour and accumulated labour was formulated in rural infrastructure construction and public undertakings. Under the planned economy of that time, the government controlled the prices of agricultural products at a low level. Naturally, farmers had very low cash income. Therefore, the government divided the agricultural tax into two parts, both of which were paid in kind. One part was paid with grain to the central government, which only accounted for 3 percent of the farmer's grain production that year. The other part was paid in the form of labour. Each year, farmers

contributed a certain amount of unpaid labour which was actually a local tax placed at the disposal of governments at the county and township levels. The labour service system continued after the introduction of the household contract system. The State Council stipulated in 1991:

Rural labour shall provide five to 10 workdays of voluntary labour service and 10-20 workdays of accumulated labour annually for rural infrastructure construction and rural public facilities.

(Regulations on Farmer-Borne Expenses and Labour Service (1991))

It is also stipulated in the same document: "The labour service shall choose slack seasons and shall not exceed the prescribed amount of labour." Therefore, the input of unpaid and accumulated labour may be considered as another form of financial input by local governments.

In the chain of organizing labour exchange and mutual aid, the township government plays a crucial role. A township government that is weak in organization is unable to handle such a major responsibility. Similarly, competition produces motivation. Townships (towns) that remain slack in organization lose out in the competition.

Case 3.1 Yaogou Village of Yuling Town had a small watershed of 16.6 square km. But with 42 percent of the land affected by soil erosion, the soil was of poor quality. In the watershed there lived 480 households, with 893 labourers. Harnessing began in 1999. Concentrated construction was carried out three times in one year, involving a labour input of 136,300 man-days and removal of 216,000-cubic-metres earth and stone. Each labourer in the village contributed an average of 90 man-days, while farmers from other villages helped finish the rest of work. The project involved a total investment of 1 million Yuan. It brought 80 percent of soil erosion under control, closed 5,800 mu of hillsides to facilitate forestation, planted 1,150 mu of economic forests, terraced 580 mu of slopes, and built 6 km of rural roads, 7.5 km of anti-flood embankments, five cisterns and 2.4 km of diversion canals. The area of effective irrigation increased 243 mu. With the completion of the project, the modulus of soil erosion decreased 70 percent. The area of effective irrigation per capita in Yaogou Village increased from 0.4 mu to 1.03 mu. The village became a demonstration unit on harnessing small watersheds in Danfeng County.

In the following two years, the farmers altered the production structure. First, they introduced and grew 410 mu of high-yield non-toxic potatoes and grain possessed per capita increased from 337 kg to 452 kg. As grain supply became stable with surplus, farmers had feed for raising pigs. The amount of pigs in the village increased from 300 heads to 700 heads. Raising pigs alone increased the villagers' incomes by 70 Yuan per capita. Also, the increase of per unit area yield of grain made it possible to put aside some land for growing more cash crops. The villagers grew an additional 100 mu of medicinal herbs in cultivated land and 100 mu of cornel and 90 mu of walnut trees in terraced fields. This improved employment opportunities in agricultural production. The ratio of grains to cash crops was altered from 9:1 to 7:3, which was expected to increase the village's income by 270,000 Yuan. Improved irrigation facilities and enhanced anti-flood capacities have made the output of

cultivated land stable. In the past, farmers working outside were always concerned about the land at home and rushed home when it rained, because the land meant basic food supply to the farmers. Besides, the farmers did not dare to work far away or in big cities because they did not have much money at hand. But now with all the favourable changes, they can afford to take up jobs in large and medium-size cities like Xi'an, where they have more opportunities to make money. It is expected that farmers of the village working outside can increase incomes by 200,000 Yuan in 2003. In two years, the per capita net income of the villagers has increased from 750 Yuan to 1,200 Yuan. Villagers enjoy much better living conditions.

### **3.3 Research Objectives**

After 22 years of reforms, the market system has been established in rural China. This constitutes the biggest challenge to poor areas. The past preferential policies granted by the central government have vanished. Like farmers in developed areas, farmers in poor areas have to compete under similar market conditions in many economic fields. For a considerable period of time in the past, the production of farmers in poor areas was mainly to solve their problems of food and clothing, and market competition was something remote from their life. Now that the majority of poor population has solved the problems of food and clothing, poor farmers need to consolidate the achievements of poverty alleviation by increasing their incomes. And that requires them to face competition in the labour market. Danfeng County is no exception. The measures taken here to consolidate the achievements of poverty alleviation by increasing their incomes consist of three parts:

- Through the intensive labour of farmers and more input of antipoverty funds, improve irrigation and other infrastructure in poor areas, raise the per unit area yield of grain crops, and stabilize and guarantee the security of food supply to poor people;
- Alter the structure of agricultural production, expand the cultivation of cash crops with relatively high value, develop preliminary processing of farm produce, and increase employment within agriculture; and
- Promote the flow of rural labour and let more farmers work outside to earn more labour income.

The present study seeks to evaluate the fulfilment of the three policy objectives in Danfeng County through empirical analysis.

### 3.4 Development Survey of Sample Villages

A pilot investigation was conducted in the rural areas of Danfeng County with the assistance of the County Development Planning Commission, to obtain data and material for empirical analysis. This enabled the researchers to have a full understanding of how the food-for-work policy was implemented in the county. Three villages that had implemented project construction were selected as sample villages. All of them were poor and had carried out farmland capital construction. The projects had been completed for two years with fine quality and been utilized at a satisfactory degree. Villagers' committees in all the three villages had strong organizational abilities and were able to complete the questionnaire survey and mobilize farmers. A village which never had a project was selected as the control village. To ensure the objectivity of the results of comparison, the non-project village selected was economically fairly developed. After the sample villages were determined, simple random sampling was carried out among households in the villages, which led to the determination of sample households in each village. The local township government rendered great support to interviews with rural households. The questionnaires were in two categories: village questionnaires and household questionnaires. Most cadres in the township took part in the training relating to indicators in the questionnaires and then visited the rural households and interviewed farmers concerning the questionnaires. Table 3.1 is the general distribution of sample households.

Table 3.1 Distribution of sample households

Sample villages	Total households	Sample households
Longwangmiao*	333	60
Yaogou*	266	60
Xugou*	80	59
Da'an	253	61

Note: Villages marked with asterisks have implemented construction projects and village without an asterisk is the control village. This is so in other tables as well.

The total number of sample households was 240. Of them, 179 had participated in project construction and 61 were control households that had participated in no project construction.

To clearly display the difference between project and the non-project villages in later analysis, the basic conditions of the sample villages are prescribed in Table 3.2.

Table 3.2 Basic conditions of sample villages

	Distance from township government (km)	Distance from the nearest road	Population	Total households	Labourers	Percentage of labourers in population (%)	Farm land per head (mu)
Longwangmiao*	8.00	.00	1330	333	760	57	1.3
Yaogou*	4.00	.00	997	266	530	53	0.93
Xugou*	4.00	1.00	290	80	150	52	0.99
Da'an	11.00	8.00	1013	253	690	58	0.91

As Table 3.2 indicates, all the four sample villages have a scarcity of farmland though Longwangmiao Village is better endowed in this regard. Besides, all the land is in the high mountains with poor fertility. It would be extremely difficult to get rid of poverty by relying on such limited farmland. But all the four villages have abundant labour resources, and exploring more employment opportunities is the right way to shake off poverty and improve living standards. In addition, the three project villages are close to roads with convenient transport, while the non-project village is far away from any road (even though, it has a village path that motor vehicles can use). The geographical distribution reflects, to a large extent, the way food-for-work sites were selected, i.e. convenient transportation is an important factor that determines the choice.

Table 3.3 Status of social development in sample villages

	Tap water	Telephone	Medical service	Credit service
Longwangmiao*	Yes	Yes	Village clinic	No
Yaogou*	Yes	Yes	Village clinic	No
Xugou*	Yes	No	Village clinic	Credit station
Da'an	Yes	Yes	Private clinic	No

A comparison of social development indicators shows no significant difference between project and non-project villages. Although Da'an Village, remote as it is, has received no investments from the food-for-work policy, it has tap water and access to telephone. With the backing of other antipoverty policies, the village's public utilities have been updated considerably. Thanks to the county efforts in popularising agricultural techniques over the years, application of good agricultural techniques has

been relatively good. The network for popularising agricultural techniques covers all rural areas of the county and each village is stationed with trained farmer-technicians. This is the technical foundation for the agricultural restructuring promoted by the government of Danfeng County.

Table 3.4 Popularity of agricultural techniques in sample villages

	Use of mulch film (%)	Inter-planting (%)	Improved varieties (%)
Longwangmiao*	23.3	60	83.3
Yaogou*	100	100	98.3
Xugou*	38.3	98.3	95
Da'an	19.7	93.4	98.4

Table 3.4 demonstrates the application rates of new techniques by farmers in Danfeng County. It indicates that technical progress has played an important role in the work of poverty alleviation. It can also be seen that Da'an Village is roughly at the same level with the three project villages regarding general technical progress although it has an unfavourable location and poor access to roads. This is also a major reason for selecting Da'an as the control village. Except for investment expenditures from the food-for-work policy, it is similar to the project villages in other respects. This makes the comparison between project and non-project villages more valid.

### 3.5 Infrastructure Construction in Sample Villages

It can be seen from Table 3.5 below that food-for-work investments in the sample villages are mainly in soil improvement and small water conservancy works construction. The sample project villages were selected to meet the research objective of evaluating the impact of completed projects upon rural employment. It should be noted that not all projects of infrastructure construction in project villages are completed within one year. Projects in some villages take two or three years of continuous construction. Also, there might be quite a number of projects completed.

Table 3.5 Construction projects in sample villages

	Road building	Drinking water supply for people and animals	Small water conservancy works	Building farms by improving the soil	Terra-cing of slopes	Soil improvement of farmland with medium or low yields	Returning of grain plots to forestry	Others
Longwangmiao*			Yes			Yes		
Yaogou*	Yes		Yes	Yes	Yes	Yes		Soil and water conservation
Xugou*	Yes	Yes	Yes					Soil and water conservation
Da'an	No	No	No	No	No	No	No	No

Table 3.6 Investments in sample villages

	Investment by county government (Yuan)	Investment at township and village levels (Yuan)	Funds raised by farmers and that converted from labour inputs (Yuan)	Percentage raised by farmers and that converted from labour inputs (%)
Longwangmiao*	467,000	.	1,217,000	72
Yaogou*	500,000	500,000	680,000	41
Xugou*	82,000	10,000	550,000	87
Da'an	0	0	0	0

As shown in Table 3.6, funds raised by farmers and labour inputs make up a large proportion of total project investment. It is somewhat exceptional that both Yaogou Village and Yuling Town, where Yaogou is located, invested 500,000 Yuan. Local investigations reveal that villages and townships in Danfeng County face financial difficulties. Usually a township (town) can invest several 10,000 Yuan at best. The investment pattern in Longwangmiao and Xugou is more typical, where funds raised by farmers and converted from labour inputs make up over 70 percent of the total funds, most of it being the amount converted from labour inputs. Infrastructure

projects funded by investments from the food-for-work policy are therefore labour-intensive projects in the true sense of the term.

### 3.6 Labour Inputs and Returns on Land Asset

After the design and planning of the construction are determined, the boundaries of contracted land in the village cease to exist. Farmers in other villages as well as the project village form construction teams. The construction teams contract the construction by sections. Then the contracted sections are further divided according to the time taken for construction. Workloads per unit time are thus determined at different levels and finally assigned to each construction team or even each labourer. The township construction headquarters make regular checks on the progress and quality of the project. Table 3.7 presents the average labour input and amount of contribution per household in project and non-project villages.

Table 3.7 Labour input and amount of contribution per household in sample villages

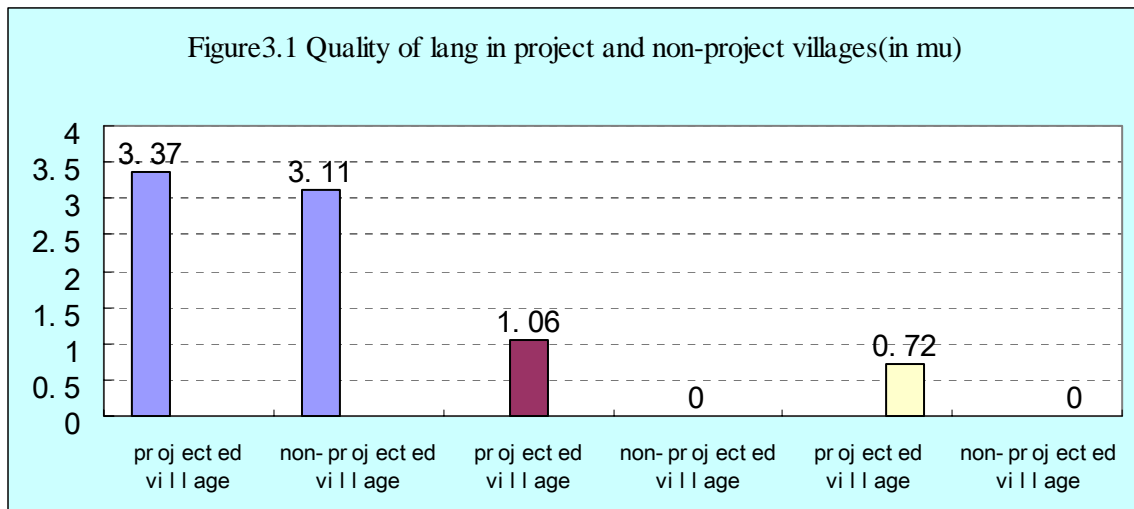
	Labour input		Contribution in place of labour	
	Households	Man-days	Households	Yuan
Project villages	169	62	35	224
Non-project village	60	38	5	123

It should be pointed out that the quantity of labour input reported in project villages is not necessarily the quantity of labour input for construction in their own villages in that year, because two villages had completed their construction in 2000. Labour inputs of these two villages and of the non-project village are to fulfil the labour quota assigned by the township. So the quality of their labour input is lower than that they provide for construction in their own villages. Some households are unable to put in labour or can put in only part of the labour for their own reasons. According to an agreement in the village, they pay some money as compensation for their absence (10-20 Yuan/man-day). There are 35 such households in project villages and 5 in the non-project village.

Upon completion of the project, the farmlands are divided into plots according to the principle of equal distribution and contracted to households in the village. As a result of the re-distribution, the previous fragmented plots are consolidated into larger plots. Without improving the soil of basic farmlands, it would be impossible to undertake consolidation of the land plots and overall adjustments. This is because the work would call for huge efforts on the part of the farmers and more importantly, many farmers would object to such adjustments due to their selfish “petty peasant” mentality. Project construction makes land adjustments a logical result. For households in project villages, they also obtain an external benefit, which facilitates

the cultivation of rural households and the utilization of irrigation facilities, thus increasing the productivity of land. Following farmland capital construction and the building of small water conservancy works, significant changes take place in the quality of the contracted land of sample households.

Figure 3.1 Quality of land in project and non-project villages (in mu)



As shown in Figure 3.1, the area of cultivated land per household in project villages is 3.37 mu, while that in the non-project village is 3.11 mu. Compared with the non-project village, the area of irrigated land per household in project villages has increased by 1.06 mu and the area of terraced slopes has increased from 0 to 0.72 mu. Land is the most important operating asset of farmers. It is stipulated in the Land Contracting Law, promulgated in 2002, that for land farmers have contracted from villages, no changes will be made to the contracting rights as well as to the quantum of contracted land in 30 years beginning from the second round of contracting. As long as a farmer pays tax according to law, the villagers' committee has no right to interfere in the farmer's contracting right. Farmers have the right to decide a paid transfer of their contracted land. This law has actually made permanent the managerial power of farmers for the contracted land, and farmers can regard the contracted land as the operating asset of their families. Therefore, although farmers are not directly remunerated for labour in project construction, they have asset appreciation on their contracted land with the consolidation of contracted land and the increase in the area of irrigated and terraced fields.

As a land market is virtually non-existent in rural China at the moment, it is impossible to accurately estimate the value difference per unit area between a stretch of irrigated farmland and fragmented non-irrigated farmland. Hence it is difficult to

assess the value addition on the contracted land. But some idea can be formed of two important benefits derived on the contracted land due to the project. First, for farmers in poor mountain areas, a small plot of contracted land is the family's most reliable means of social security. In the past, due to the low productivity and vulnerability to natural calamities, rural households were constantly in the state of insecurity. Now, as the projects are designed up to the standard required to withstand major floods which may occur once in every 30 years, their completion has greatly enhanced the local anti-flood capacities and thereby strengthening social security for poor farmers. Secondly, the realignment of contracted land will increase the output of land in the long run. It also boosts the enthusiasm of farmers for follow-up investments in improving the fertility of farmland, which, from a long-term perspective, will increase the incomes of farmers from managing the land. Clearly, in view of these two aspects, farmers do get generous reward for their labour inputs. This is the fundamental reason why the food-for-work policy has always appealed to farmers.

### **3.7 Agricultural Restructuring**

According to the plan for poverty alleviation mapped out in Danfeng County in 2001, development-oriented anti-poverty efforts in the last 13 years of the 20<sup>th</sup> century have resolved the food and clothing problems of over 85 percent of poor farmers. At the beginning of the new century, the primary goal of anti-poverty development in the county is to consolidate achievements already made. With the problems of food and clothing resolved, the incomes of poor farmers should be increased further to prevent against the recurrence of poverty. It is also stated that the net income per capita of Danfeng farmers should stabilize at 80 percent of the national average. To attain this goal, the chief means is to restructure agricultural production. Specifically, employment should be expanded within agriculture and surplus labour should be encouraged to find jobs elsewhere.

Currently, per capita possession of grain in the county's rural areas is 330 kg. Although about 10 percent of poor people still suffer from grain shortage, two-thirds of the villages have surplus grains and have the conditions required for restructuring. Most of the county's poor people live in the mountain areas in the northern and southern parts. According to the county government's anti-poverty development strategy, with the realignment of farmlands, high-yield hybrid corn and non-toxic potatoes should be cultivated. The cultivation area of grain crops should be proportionately reduced to increase the per unit area yield. Medicinal herbs adaptable to mountain climate and soil quality, mainly yellow ginger, membranous milk vetch, Tianma (gastrodia) and cornel, should be grown over a larger area.

Over the past two years, cornel cultivation in northern mountains has developed particularly fast. A large enterprise for cornel processing has been established in the neighbouring Shanyang County, which has greatly promoted agricultural restructuring in neighbouring areas. The Agricultural Production Management Station of Danfeng County has estimated from statistics of farm production costs that the cultivation of 1-mu potatoes or 1-mu corn needs 15 man-days, while the cultivation of 1-mu cornel needs 32 man-days (Annals of Danfeng County, 1993). The cultivation of cornel almost doubles the amount of labour used in grain production.

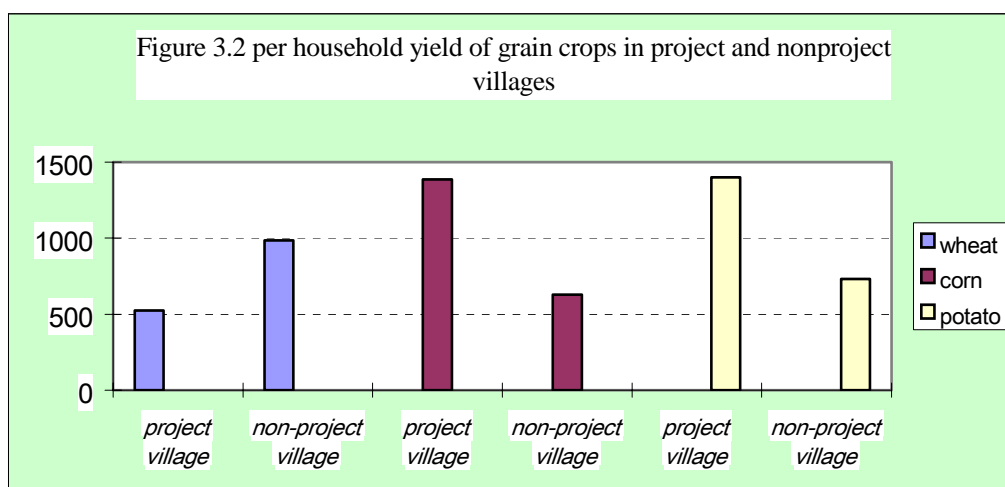
Case 3.2 Hu Lianfang, a 50-year farmer in Huayuan Village, Yuling Town, has five people in her family. Hu, her husband and daughter-in-law work on farm at home. Her son works outside most of the year and her grandson goes to the village primary school. The family has contracted 5.3 mu of farmlands. Originally, they grew corn and potatoes except for 0.4 mu of yellow ginger. However, the family suffered from food shortage almost every two years mainly because of the drought in spring or the heavy rains in early summer. In case there was a major calamity, they could only have 20-30 percent of the yield. When a calamity happened, the son had to come back to build weirs and restore the field, which took one or two months, then they re-sowed some autumn grain crops. Otherwise, there would have been a food shortage in the coming year. In the summer of 1996, heavy rains destroyed the land and it cost more than 400 Yuan to hire a vehicle to transport earth and stones in order to fix the land. Considering that the son earned some 2,000 Yuan a year outside, the family had led an austere life. In good years, the family could save a few hundred Yuan but when stricken by calamities, they had to live in debt.

In the winter of 1999, under the leadership of the township government, the family worked hard for about two months on soil preparation and channel and weir building. Since then, things have greatly improved. In the past, per mu yield of corn was at most 200 kg and potatoes, 900 kg. Now the yield of corn can usually reach 350 kg and potatoes, 1,700 kg. The family need no longer worry about their food supplies. Grain yield on 3 mu of land is enough for the family. Besides, they can exchange potatoes for flour. They also raise two pigs and as a result, they have meat to eat and additional money to earn at the end of year. In 2000, the family obtained a loan of 2,000 Yuan for poverty alleviation, with which they bought seedlings of medicinal herbs and compound fertilizer. By applying the inter-planting technique, they grew more than 4 mu of yellow ginger and cornel on irrigated land, which can sell for 3,500 Yuan at the end of year. So the family income has more than doubled.

Now the family has saved some money and can better resist natural calamities. The son need not rush home when there are heavy rains. Moreover, he has got a job as milkman in Xi'an and earns more money from the stable job. Having emerged from poverty, the family is making preparations to build a new house. This is the true story of a poor rural household which has benefited from project construction.

It is clear from looking at typical cases that changes in the production structure have indeed directly increased the employment of farmers in agriculture. They have also promoted farmers to work outside. The policy design for poverty alleviation of Danfeng County has achieved expected results. The following are results of statistical analysis regarding the adjustment of production structure and farmer employment in project and non-project villages.

Figure 3.2. Per household yield of grain crops in project and non-project villages



As shown in Figure 3.2, the per household yield<sup>4</sup> of corn and potatoes in project villages is almost twice that in the non-project village, but the yield of wheat is only about half that of the non-project village. Corn and potatoes are primary grain crops in Danfeng County since the local climate and soil are suitable for their cultivation. Nearly all rural households in the county have grown the both crops, so comparison of the results of the two crops is the most representative. The case of wheat is somewhat different. The northern mountain area is not suitable for growing wheat and consequently, very few households grow wheat there. Wheat cultivation is mainly in central and southern parts of the county. Two of the project villages are located in the north and only a small number of sample farmers grow wheat. However, as the control village is in the south, almost all households grow wheat. Besides, for the two project villages in the south, cultivation of corn and potatoes means reduction of the area under wheat. As most local farmers are accustomed to exchanging corn and potatoes for flour consumption (they think this is more economic), they tend to grow more corn and potatoes. This accounts for the statistical result of higher wheat yield in the non-project village than in project villages, which conforms to the cultivation realities in the county. But after correction the gross yield per household in project

<sup>4</sup> Because the farmlands used to be highly fragmented with few large plots, local farmers are not accustomed to use the concept of per mu yield to calculate the yield. Also, because of the fragmented farmlands, villages vary a lot regarding the size of 1-mu farmland (known as the habitual mu). Due to these reasons, the concept of per household yield is used to collect data. The use of this concept is not strictly correct for the purpose of this research paper, but it is more acceptable for farmers. Fortunately, as there is no big difference in the quantity of contracted land among local households, analysis of output based on per household yield creates little error.

villages turned out to be about 37 percent higher, which roughly reflects the effects of farmland capital construction and small water conservancy works building on the increase in grain yield in 2001.

Figure 3.3 Incomes of sample households from medicinal herbs

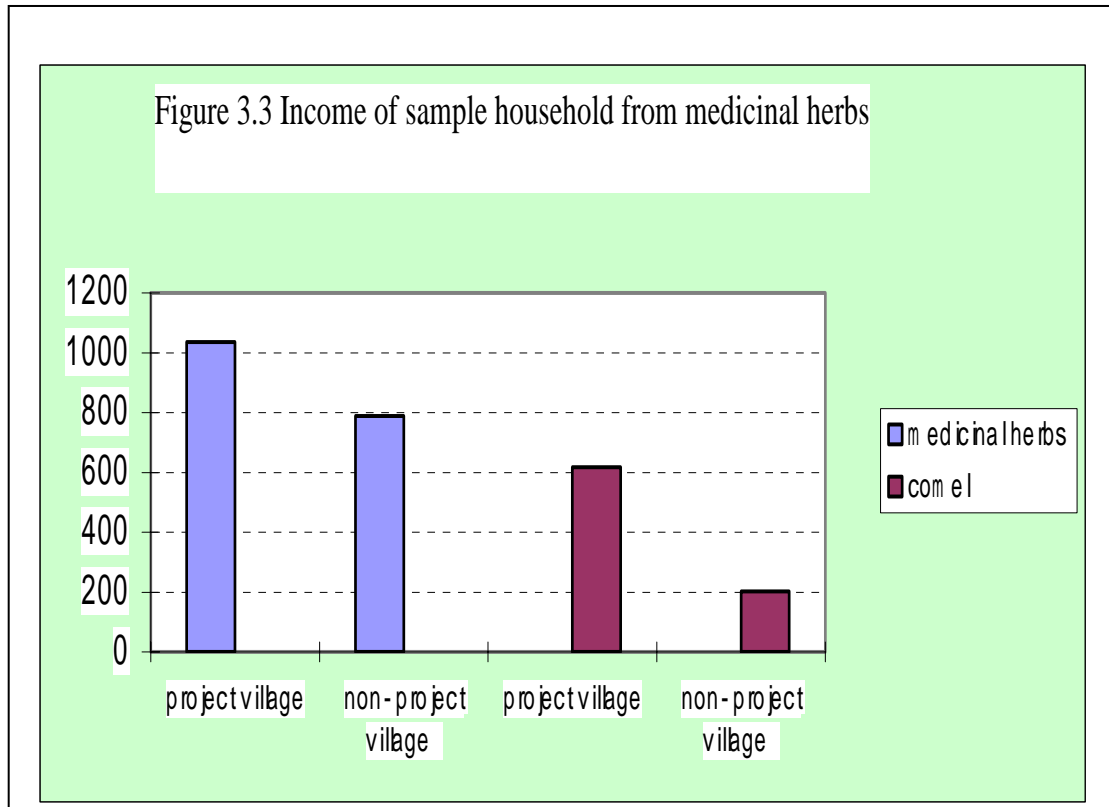


Figure 3.3 presents a comparison of incomes that sample households in project and non-project villages earn through the cultivation of cornel and other medicinal herbs. The incomes of project villages are higher than of the non-project village. Of the two items, cornel cultivation makes a bigger difference in terms of income. Rural investigation reveals that the shift in production structure among farmers in the northern mountains is mainly towards the cultivation of cornel, while the cultivation of other medicinal herbs accounts for a smaller area. Some farmers even grow cornel on 70 percent of their contracted land. So farmers growing mainly cornel tend to have higher incomes than those mainly dependent on medicinal herbs. Thanks to more favourable climate, farmers in the south have more choices in cultivating other medicinal herbs, mainly gastrodia, membranous milk vetch and yellow ginger. Farmers of the county have been adjusting the production structure for several years.

Da'an, the control village located in southern mountains with relatively favourable natural conditions, is no exception. But with upgraded infrastructure, project villages enjoy an obvious advantage in the magnitude of production restructuring. The results of statistical analysis confirm that infrastructure construction can significantly promote the restructuring of rural production.

### 3.8 Increase in Rural Employment

Whether the improved infrastructure helps expand rural employment is one of the key issues in judging the effectiveness of the anti-poverty strategy initiated in the new century. Meanwhile, it can also display the ability of poverty-stricken farmers to utilize public facilities.

Table 3.8 Comparison of the employment situation between project and non-project villages

	Total people	Farming			Working outside			Annual average income (Yuan)
		Number	Percentage in total (%)	Average days	Number	Percentage in total (%)	Average days	
Project villages	702	408	58	179	184	26.2	137	1,977
Non-project village	208	126	61	170	53	25.5	132	1,874

The table compares employment in farming and working outside between the project and non-project villages. Regarding employment in farming, project villages have nine more days than the control village. However, the recorded days of employment in farming are not an accurate measure. It indicates the days a farmer worked in the field rather than the labour time required by a certain crop during the production period. Consequently, we cannot conclude that through restructuring, employment in farming has increased nine working days per labourer on average. It may be said, however, that following the restructuring of agricultural production, farmers spend more time in working in field. The improvement of infrastructure has indeed expanded employment in farming. This indicates that with the progressing of restructuring of production and the enhancement of stability, farming itself will provide more jobs. This conclusion represents a new tendency in the rural economic life of Danfeng County.

Regarding the time of working outside, project villages report five more days than the control village. This is not a large difference. There is not a direct relationship

between improved rural infrastructure and farmers' working outside. Rural research reveals that many factors account for a farmer's decision to work outside. The main factors relate to a farmer's family situation and include: (1) whether there is surplus labour; (2) whether there is any pull towards finding a job elsewhere; (3) what education or skills the labourer has; (4) how much money the family can afford for securing the work, that is, the personal costs to the labourer of finding a job elsewhere; and (5) preference for potential jobs and estimates of expected income. In addition, there are some non-family related factors, for instance, whether the village where the labourer lives has the tradition of working outside, or culturally speaking, whether people in the region have the spirit of adventure, and so on.

A correlation analysis shows that a direct correlation exists between the five factors mentioned above and a farmer's working outside, while only an indirect correlation exists between an improved rural infrastructure and working outside. It can only be said that with the completion of infrastructure improvement, the time farmers spend on working in the field will decrease and surplus labour will further increase. On the other hand, as farmers make more money from working in the field, they may be more capable of meeting the expenses necessary for finding a job elsewhere. So it is easy to observe that instead of a direct causal relationship, only an indirect link exists between updated infrastructure and farmers' working outside.

Farmers in Danfeng County have the tradition of working outside. In the early 1990s, 37,000 labourers in the country went out to work, mainly reaping wheat in areas ranging from Shaanxi to Gansu between spring and autumn, quarrying in the Qinling Mountains, and mining or labouring in construction teams (Annals of Danfeng County, 1994). All the jobs were hard, low-paid and dangerous to some extent. Most farmer workers did not go to big or medium cities because they could not afford higher travel expenses. But now things have changed greatly. More than 50 percent of farmer workers have gained footholds in cities, where they can find jobs lasting for more than two months. An important reason is the fact that farmers are now financially stronger to choose jobs in cities. As a result, the incomes of farmers who work outside have increased considerably (County Antipoverty Office, 2001). The average income of farmer workers from project villages is 103 Yuan higher than that in the non-project village.

Thus it can be seen that farmers' going out and finding jobs elsewhere is actually the result of interaction of multiple factors. In the case of Danfeng County, improved rural infrastructure indirectly promotes farmers to work outside. Such promotion is particularly necessary for farmers' entry into big and medium cities.

#### **4. Building Farms by Improving the Soil in Mabian County**

##### **4.1 Development Survey of Mabian County**

Mabian Yi Autonomous County is located in the Xiaoliangshan Mountains at the west fringe of the Sichuan Basin. Covering an area of 2,383 square km, it has a population of 173,600, of which 93 percent live in the country and 38 percent are ethnic minorities. The per capita area of farmland is 1.3 mu in the county and the area of effective irrigation accounts for only 8.3 percent of the farmlands. About 86 percent

of the farmlands are slopes over 25 degrees. Mabian is known as an agricultural county with a large population, limited farmlands and poor infrastructure. In 2001, the net income per capita in its rural areas was 1,238 Yuan, only 50 percent of the average in rural China in that year (Mabian County Planning Development Commission, 2001). Owing to the high altitude and backward irrigation facilities, the farmlands have a very limited capacity to store water although the annual rainfall in the region surpasses 1,000 mm. Most of the farmlands on the slopes lack in water all year round. The low temperature in the mountains, together with the serious fragmentation of land, results in low land productivity. In addition, because of the complex mountain climate, the farmlands are often subject to the damaging impact of torrential floods, early frost and low temperature, which decrease output. Clearly, regarding population and land resources, Mabian County shares the common characteristics of all poor counties in China's western regions, namely, surplus labour and impoverished soil, which constitute the most fundamental reason for the poverty of local rural residents.

Mabian County is also a region where people of the Yi ethnic group live in compact communities. Its economic and social development lags far behind hilly areas or valleys. Some 32 percent of the county's rural population is below the poverty line and 7 percent lives in destitution. In the county, 36,400 poor people have difficulties in the supply of drinking water, and 83 of 116 poor villages have no access to roads. There is no medical centre in 160 villages and illiterates and semi-illiterates make up 37 percent of the population (Mabian County Development Planning Commission, 2001). Regarding compulsory education and health care, it is lowest among all the counties in Leshan City.

Mabian is not only a major target of poverty alleviation in Leshan City, but also one of China's poor counties encountering most difficulties in poverty alleviation. It has received support from many sides for poverty alleviation—not only policy and funding support from the central government, but also key support from governments at the provincial and city levels. Each year, it receives funds in fiscal transfer payments up to 20 million Yuan for the normal operation of county and township governments. Annual loans at discounted interest rates for the purpose of poverty alleviation average at 10 million Yuan and food-for-work investments amount to 4.5 million Yuan. In addition, Mabian has also received financial assistance for poverty alleviation from international organizations and bilateral donors. With the inputs of overseas funds, Mabian has accepted some more developed concepts and taken into account some lessons of the international experience, which has broadened the vision of local people. As a result, Mabian is quite innovative while mapping out its anti-poverty policies and measures and has accorded great importance to the restoration of the natural and ecological environment

As a result of development with poverty alleviation for nearly 20 years, rural poverty has been alleviated substantially in Mabian. In 2001, per capita possession of grains in rural areas reached 404 kg. Now that basic food supply is no longer a problem among poor people, the key point of future anti-poverty development should be to increase the cash incomes of farmers and generate more employment for them.

#### **4.2 Development Mode Featuring Combination of Various Investments**

The current strategy of Mabian County for poverty alleviation originated from the protection of local ecosystem. After analysing the reasons of poverty, it was realized

that excessive exploitation of mountain land resources had resulted in severe damage to the ecological system and the environment. The pressure of over-population had forced the farmers to bring slopes under cultivation. With vegetation damaged in the mountains, soil erosion was aggravated, making the land less and less fertile. A fundamental solution to poverty in mountain areas required a change of the traditional production mode. However, awareness is one thing; changing reality is quite another thing. Still, influenced by advanced ideas from the outside world and backed by international assistance, Mabian has been moving in the right direction.

At the beginning of this century, the central government launched the strategy of developing the western regions. As an important part of this strategy, the western regions have steadily carried out the programme of restoring the ecosystem by "returning grain plots to forestry (pastures)." This has provided an excellent opportunity for Mabian to undertake efforts to alleviate poverty.

To implement the program, the central government adopted a direct subsidy policy. Specifically, farmers in mountain areas who returned 1 mu of grain plots on slopes were to be provided with 125 kg of grains and 50 Yuan for buying seeds of trees and grasses (Regions Department of National Planning Commission, 2000). Meanwhile, local forestry authorities would provide free technical services to help restore the ecosystem of mountain land. Moreover, it was stipulated that the policy would remain unchanged for at least five years, together with a pledge of no change for a further five years. Through subsidies the central government tried to compensate farmers for the losses they may have incurred in returning grain plots to forestry and pasture.

The problem is that the western mountain areas are still agricultural societies based on subsistence farming. For farmers, cultivation on farmlands is not only a production activity but also a means of livelihood and a basis for maintaining local social activities. Even with subsidies guaranteeing the basic standards of living, the return of grain plots means substantial shrinkage in social activities in the mountain areas. With changes in the established pattern of social life and the values of mountain villagers, those who return grain plots would not only face worse unemployment but would also have a tremendous psychological sense of loss. Although some people in their youth or prime with more education might find ways to go outside and seek new opportunities of employment, the majority of farmers would not venture outside with their families. Since many of those returning grain plots are poor households, some of them being in the poorest group in rural China, unemployment aggravated by the return of grain plots would hinder the progress of poverty alleviation and threaten the stability of grassroots communities and social life in the western region. Eventually, it could undermine the sustainability of the programme of returning grain plots to forestry and pastures.

Given this, many local governments in the western provinces (autonomous regions), while implementing the programme of returning grain plots to forestry and pastures, have tried to help farmers change the production structure after they have returned grain plots so as to generate more employment and incomes. In this respect, the government of Mabian County has combined food-for-work projects with the programme of returning grain plots to forestry and pastures and the restructuring of rural production. Thanks to the creative combination, the county government has made noticeable progress in the pursuit of multiple policy objectives, including environmental protection, job creation and rural economic growth. To date, 90,000

mu of farmlands, about 37 percent of current cultivated land, have been returned to forestry and pastures. Instead of having reduced incomes, villages that have implemented the programme have become more dynamic in economic terms. This is closely related to the county government's readjustments of the anti-poverty policy in line with the new conditions.

Since the late 1980s, the county government has stuck to the principle of utilizing the investments of various anti-poverty projects in a flexible manner, in the hope of guiding farmers to restructure production through these investments. In 10 years, the cultivation area of rice and corn has fallen on a yearly basis, while the cultivation of tea and bamboo has become the primary source of income for farmers who took the lead to restructure production. In the meantime, as the price of corn in the local market has risen sharply by about 30 percent over the past five years, pig breeding that has corn as the main feed has witnessed a decline of earnings. Yet pig breeding is a main business of local farmers. Given this, the county government has been encouraging farmers to keep their grain consumption at a relatively low level to save some concentrated feed, while enlarging the cultivation of lotus rhizome as a new source of feed in support of pig breeding.

Soil and water conservation had been part of Mabian's restructuring of agricultural production for 10 years. It has helped farmers to reach a wide consensus on implementing the programme of returning farmlands to forestry and pastures in the recent two years. During the implementation of the programme, the concept of environmental protection has taken deeper roots in the mind of rural residents. Farmers have realized that they must restore and protect the natural and ecological environment in their surroundings if they want to stay away from poverty in the long run. From the very beginning, the programme of returning grain plots to forestry and pastures has been combined with the restructuring of agricultural production characterized by the intensive use of labour. So far, farmers' incomes have not decreased; instead, they have increased as a result of production restructuring.

In Mabian, there are more than 520,000 mu of barren mountains suitable for forestation and pastures suitable for grazing. Seizing the opportunity presented by the programme of returning grain plots to forestry and pastures, the county government has encouraged farmers to plant trees, grasses and bamboos on barren mountains and hills in conjunction with government investments in the form of a shareholding system. On the other hand, the county government has continued to urge farmers to participate in the building of small water conservancy works, the improvement of soil and the transformation of farmlands (transforming slopes into terraced fields) through food-for-work investments. Meanwhile, by using the seed and seedling fees as compensation for the return of grain plots, the county government has helped farmers to plant tea bushes, bamboos and lotus rhizome to restructure the production.

According to the thinking of the county government on poverty alleviation, the development of tea production makes full use of the soil and micro-climate resources in mountain areas and facilitates household preliminary processing. By developing bamboo plantations, farmers can sell bamboo shoots while grown bamboos can be used as raw material for making bamboo articles and paper. By growing grasses, farmers can raise rabbits and goats. The cultivation of lotus rhizome can add feed to pig breeding. Compared with the cultivation of corn and rice, forestry, orchards and breeding require higher intensity of labour and farmers can earn more income per unit

labour. According to the calculation of local officials, in the cultivation of corn and rice, the average labour input per mu is 12 and 18 man-days, respectively. But each mu of tea bush needs more than 80 man-days annually. Based on the current market price, a tea plantation can generate a net income of 1,000-1,300 Yuan per mu, while the net income of rice cultivation per mu is 290 Yuan and corn, 125 Yuan. Thus both the employment and income of farmers would increase significantly.

Bailin Village in Laodong Township is a good example in tea and orchard development. Households that started to plant tea bushes and fruit trees in the early 1990s have long rid themselves of poverty. Most families in the village have built tile-roofed houses. Two families with large tea plantations have bought mobile phones to facilitate their business. Success stories have a great demonstration effect and the concept of market competition has changed the traditional values of local farmers. The government of Mabian County appears to have been successful, in the context of the market economy, in promoting the restructuring of agricultural production with a view to eliminate rural poverty. To this end it has combined food-for-work projects with the programme of returning grain plots to forestry and pastures, so as to expand employment of farmers in agriculture.

### **4.3 The Food-for-work Policy in Support of the Programme of Returning Grain Plots**

The department of the Mabian county government which is in charge of poverty alleviation has unique organizational features. The Food-for-Work Office and the County Antipoverty Office had actually "the same set of staff working under two names." The Food-for-Work Office took charge of the implementation of the programme of returning grain plots to forestry and pastures through its organizational set-up and operational system. Integration of these organs has not only saved on the organizational costs of implementing anti-poverty projects, but has also enabled the combined utilization of three categories of poverty alleviation funds—investments in rural infrastructure, loans with discount interest for poverty alleviation and subsidies for returning grain plots to forestry and pastures. This organizational pattern adopted by Mabian County is obviously superior to that in other counties where anti-poverty funds are managed separately by different departments.

Once the county government has determined where to return grain plots to forestry and pastures, the Forestry Bureau takes charge of making forestation plans and providing saplings and technical guidance. The water conservancy department is responsible for the planning and construction of irrigation channels. The agricultural department provides technical services concerning soil improvement and cultivation restructuring. The division of labour is clear and the three units work well together. Project designs of the units are included in the project application of the villagers' committee in the area under planning. Eventually the Food-for-Work Office gives approval to the project, allocates funds and supervises construction (Wang Guangsi, 2002).

While designing the strategy for poverty alleviation, the government of Mabian County combines food-for-work projects with the projects of returning grain plots to forestry and pastures. In production restructuring involving either the planting of

bamboos and fruit trees or the growing of tea bushes, grasses and lotus rhizomes, farmland capital the lead is invariably taken by construction and small water conservancy works under food-for-work projects. The investments are used to buy explosives, cement and construction tools like drill rods. Farmers who are the prospective beneficiaries participate in the construction, which is divided into many sections and contracted to households. Subsidies granted for returning grain plots are used to nurse or buy the grass seeds and saplings. The loans with discount rates of interest for poverty alleviation are used to buy seeds and seedlings as well as other goods needed in production restructuring. After the water conservancy works are completed, forestry or agricultural technicians provide farmers with guidance concerning work in the field. This mode of project implementation makes full use of funds, manpower and materials, which helps raise the quality of the programme of returning grain plots.

The food-for-work projects not only provide short-term employment to farmers who have returned grain plots during the construction, but also enable participants to create long-term labour-intensive job opportunities after the completion of the projects. In recent years, food-for-work investments have covered all poor villages in the county, and included road building, bridge construction, water diversion and forestation. Each household in these villages voluntarily puts in over 30 man-days annually. By 2001, Mabian County, with its lofty mountains and high ranges, had made every township accessible by road and telephone, creating favourable conditions for the distribution of farm produce and the flow of rural labour. Currently, farmers working outside account for about 24.8 percent of the county's rural labour force.<sup>5</sup>

Of all the food-for-work projects, the building of tea plantations and orchards works very well with the programme of returning grain plots to forestry and pastures. However, since such projects have been under operation for only three years, their long-term impact upon rural employment is not yet visible. But based on the labour intensity of tea plantations or orchards developed three years ago, future labour use of farmers who have participated in the development of tea and bamboo plantations may be roughly inferred. In Bailin Village of Laodong Township, each farmer works in the field for some 280 days a year on average. In farming activities, production of rice and corn lasts for about four months. Hogs and pigs are mostly raised in their spare time, before and after meals. In contrast, activities relating to the production of tea and fruits last for almost the whole year (see Table 4.1).

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<sup>5</sup> The Leading Group of Mabian Yi Autonomous County for Antipoverty Development (2001), & Rural Antipoverty Development Planning of Mabian Yi Autonomous County, Leshan City (2001-2010).

Table 4.1 Activities by month in tea plantations and pear orchards in Bailin Village

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Tea-leaves		Busy time for picking and selling <i>mingqiancha</i>			Continuous picking of tea leaves				Pruning and maintaining of tea bushes			
	Pruning	Attending saplings		Pest control, pear trees begin to bear fruit			Busy time for picking and selling pears		Buying and planting saplings			
Fruit trees												

Note: The table is based on results obtained from the participating survey conducted in Bailin Village, Laodong Township, Mabian County.

Case 4.1 Yang Zuochuan is a tea farmer in Bailin Village, Laodong Township. The family, four people in all, picked and processed tea leaves from February to September 2001. Yang said that owners of 10-mu tea plantations in the village need extra workers in the season of tea leaf picking, and each year they need to hire workers for at least 50-60 days. During the period, the main labourers in the family work for about 16 hours per day (see Table 4.2). In 2001, he paid more than 3,000 Yuan to tea leaf pickers. In 2002, the Yangs hired three women to pick tea leaves, all from rural households in neighbouring villages who had returned their grain plots. In 2003, he may have to prolong the period of hiring because another 2 mu of the tea plantation will go to production.

Table 4.2 Daily activities of tea farmers in Bailin Village (w: female labourer; m: male labourer)

Activities	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	12 a.m.-1 p.m.	2 p.m.-6 p.m.	7 p.m.	8 p.m.	9 p.m.	10-12 p.m.
Getting up	wm										
Preparing meal		wm					wm			wm	
Having meal		wm					wm			wm	
Work in the fields			w	w	w	wm					
Noon break											
Doing house-work								w			w
Rest								m			
Feeding pigs									w		
Processing of tea leaves									m		wm
Selling tea leaves		m	m	m	m	m	m	m	m		

Notes:

a. This table describes tea production before Qingming, the traditional Chinese festival falling on April 5. a.m.: 0:00-12:00; p.m.: 13:00-24:00.

b. Here "work in the fields" mainly refers to the picking of tea leaves. All households need to hire seasonal labourers before Qingming. The piece-rate system is adopted: 5 Yuan/jin for *mingcha* (shoots) and 1 Yuan/jin for *caoqing* (leaves), and the employer provides three meals a day and lodging.

c. Fresh leaves would go bad if not processed on the day of picking.

d. Tea leaves are sold at higher price before Qingming, known as *mingqiancha* (tea before Qingming). Before Qingming, local farmers process tea leaves on the day of picking and sell them on the market the next day. After Qingming, the tea leaves are also processed on the day of picking, but sold once a week, which takes a whole day. Both male and female labourers begin picking tea leaves at nine o'clock in the morning.

e. Women usually do housework at 10:00-12:00 p.m., and then go to bed. Men process tea leaves late into the night or for the whole night.

This case provides an indication of the likely effect on the expansion of rural employment of the development of tea plantations and orchards in the food-for-work projects. However, not all the returned farmlands can be transformed into tea and bamboo plantations. Some steep slopes with serious soil erosion can only be closed for forestation. Where tea and bamboo production have expanded as a result of agricultural restructuring, they can absorb part of the idle labour. Undoubtedly, this will help stabilize the economic and social conditions of farmers who have returned their grain plots and consolidate achievements made in the programme of returning grain plots to forestry and pastures.

#### **4.4 Research Hypotheses**

To eliminate poverty in the long run, Mabian must do a good job in restoring and protecting the local ecosystem and implementing the programme of returning grain plots to forestry (pastures). To ensure that slopes steeper than 25 degrees are "returned" and that farmers no longer reclaim the land on slopes, there must be measures to continuously increase the incomes of farmers who have returned grain plots. For this purpose, employment of local farmers must be expanded. Investments from the food-for-work policy should be used to construct rural infrastructure, improve the soil of farmlands and build small water conservancy works. Subsequently, farmers should be guided to restructure agricultural production and implement the programme of "building farms by improving the soil," mainly through the development of tea and bamboo plantations. By doing so, farmers would put in more labour on land, thus maintain continuous growth of incomes and attain the long-term goal of poverty alleviation. The objective here is to evaluate whether the combined implementation of several anti-poverty measures in Mabian County has produced the expected effects on expanding rural employment and alleviating poverty.

#### **4.5 Basic Facts about Sample Villages**

As a result of more than 10 years of development to alleviate poverty, most rural households in Mabian County have emerged above the poverty line. However, research in villages that experiment with the programme of returning grain plots to forestry and pastures shows that the biggest worry of farmers is a relapse into poverty. This is clear from Table 4.3, which rates the difficulties listed by farmers in Bailin Village, Laodong Township. Though male and female respondents may be concerned about somewhat different matters, their concerns directly relate to the question of subsistence.

Bailin, a sample village faces a road across a river and villagers cross the river by a chain bridge hanging high above the river. There is no road suitable for motor vehicles in the village and goods are carried either on human back or by horses. Villagers usually pay more money for transporting goods than the goods themselves. For instance, they buy bricks from a brick-kiln in the township for 0.13 Yuan per piece, but they have to pay an additional 0.17 Yuan per piece for getting them home. Even then, Bailin has more convenient transportation than some other villages in the county. Some villages are 20 km or further away from the nearest road. Problems in transportation not only raise the costs of farm produce to enter the market, but also lead to increases in the labour devoted by local farmers to transportation. For example, it often takes a whole day for tea farmers to sell tea leaves at the county seat (see Table 4.2). Water supply is another major constraint on the economic development in the mountain area. All water flows away along the gullies and the locals are thrifty even with the drinking water. To change the production structure, the problem of irrigation water must be resolved in the first place.

Table 4.3 Rating of difficulties listed by farmers interviewed in Bailin Village

Rating	Females (6)	Rating	Males (7)
1	Unstable grain price	1	Inconvenient transportation, high costs for transportation and sale
2	Uncertain price of medicines, high charges on medical services	2	Lack in drinking water and irrigation water
3	Lack of water sources in the mountains, difficulties in getting drinking water and irrigation water	3	Fund shortage, no loans to develop processing industries
4	Inconvenient transportation	4	Big price fluctuations, tea and bamboo are sold at low prices

Another problem, not listed in the table, has long existed. Farmers face increasing difficulties in obtaining fuel. Each family has to spend a lot of time collecting firewood, which not only affects the normal life of farmers but also restricts the development of production.

Table 4.4 Timetable of farmers for collecting firewood in Bailin Village (w: female labourers; m: male labourers)

Activities	7 a.m.	8 a.m.	9 a.m.-5 p.m.	6 p.m.	7 p.m.	8 p.m.	9 p.m.	10-12 p.m.
Getting up	wm							
Preparing meal		wm					wm	
Having meal		wm					wm	
Collecting firewood*			wm					
Noon break								
Doing housework						wm		w
Rest				m	m			m
Feeding pigs				w	w			

\* Farmers in Bailin Village usually have to walk 4-5 km of mountain trail for one collection of firewood, which may last 4-5 days. Men can carry 70-80 kg each time while women can carry 45-50 kg each time.

Case 4.2 All the firewood in the house of Yang Zuochuan comes from twigs and leaves obtained by pruning pine trees. According to him such firewood is often used to heat the pot in which he and his brother "stir-fry" the tea leaves. It has become increasingly difficult to collect firewood and more and more time is spent on gathering firewood. Yang and his wife have to spend a whole day collecting and carrying home firewood once every 4-5 days (see Table 4.4). It has also become increasingly difficult to find firewood. The family will probably have to buy coal in the coming year, which will increase their cost of living and the cost of producing tea leaves. Yang's family income is above average in the village. How will low-income families deal with their daily life if they have no money to buy coal? The condition of the Yangs not only reflects the magnitude of damage done to the mountain forests but also indicates the urgency of, and difficulty in, restoring ecological equilibrium.

This is the current situation regarding roads, water sources, energy supply and other infrastructure in the mountain areas of Mabian County. Though the infrastructure can be further improved through food-for-work investments, price fluctuations in grains, tea leaves and bamboo products and other problems such as expensive medical

services, as listed in Table 4.3, reflect the pressure of market risks and health risks on farmers. The demand for loans reflects the desire of farmers to develop non-agricultural businesses with the assistance of rural financial services. These difficulties faced by farmers in Bailin Village indicate the vulnerable position of farmers in the country's western mountain areas even before they enter the global market. Farmers who have returned grain plots need a comprehensive anti-poverty policy.

Despite all the difficulties faced by poor farmers in the mountain areas of Mabian County, the basic situation of these areas has actually improved substantially over the past decade. A per capita possession of grain up to 400 kg indicates that the problems with food and clothing have been solved.

Three principles were applied in selecting sample villages. First, projects of building water conservancy works and building farms by improving the soil should have been complete for at least one year, which have benefited poor families in the village. Second, a sample village must be a poor one that receives investments in several measures for poverty alleviation. Third, the villagers' committee is competent in organization and mobilization so that they can ensure that the study can be carried out smoothly. With the assistance of the County Development Planning Commission, four villages were selected from more than 30 villages up to the requirements.

Project organization in Mabian County is different from that in Danfeng County. The villagers' committee first identifies a particular plot of land as suitable for building farms with soil improvement and then works out a project proposal, which is submitted to the County Food-for-Work Office. If the proposal is approved, farmers who have contracted land in this plot must put in labour by participating in the construction. Farmers with contracted land outside the project site may be exempted from the construction, but they may be required to participate in construction for the common good of all, such as building roads and protecting water sources. Therefore, there are two kinds of rural households in one village: project households and non-project households. Sample households were selected randomly from the two groups and non-project households were regarded as control samples. The following is distribution of the two kinds of sample households and basic facts about the sample villages:

Table 4.5 Distribution of sample households

Project villages	Project households	Non-project households
Total	209	60
Bailin	50	15
Jingchi	49	17
Jianxin	55	15
Xinglong	55	13

Although the two kinds of sample households belong to the same administrative village, actually they reside in different parts of the administrative village, or more accurately, they reside in different natural villages. Especially in mountain areas, natural villages may be far apart from one another. Given this, although a project with the investment of the food-for-work policy is located in one administrative village, some natural villages may benefit from the project while others may not.

Table 4.6 Basic facts about sample villages

	Households	Population	Net income per capita (Yuan)	Farmland per capita (mu)	Distance from township government (km)	Distance from road (km)
Bailin	102	445	1,600	1.49	10.0	3.20
Jingchi	149	634	800	1.58	15.0	1.50
Jianxin	439	1,560	650	1.74	0.5	2.50
Xinglong	296	1,270	900	1.45	3.0	0

The four sample villages are similar in term of cultivated land per capita. Of them, Bailin, though a small village, is the richest. Yet, the net income per capita in Bailin is only 73 percent of the average for rural China. In terms of the level of income, the other three villages are extremely poor. As shown in Table 4.7, the overall level of social development in the four villages is low, lower than that of the sample villages in Danfeng County, reflecting the characteristics of mountain areas with ethnic minorities living in compact communities.

Table 4.7 Social development in sample villages

	Tap water	Telephone	Medical service	Credit services
Bailin	No	No	Private clinic	Credit team
Jingchi	No	No	Private clinic	No
Jianxin	Yes	Yes	Village clinic	No
Xinglong	Yes	Yes	Private clinic	No

Of the four villages, only Bailin has activities relating to providing small credits for poverty alleviation since poor households in the village have set up a credit team for

poverty alleviation. This also indicates that Bailin is probably the best in terms of organization among all the sample villages. Through poverty alleviation and development efforts for more than 10 years, rural health care networks have a high coverage now and farmers no longer have difficulties seeing a doctor nearby. Two of the four villages have access to telephone and tap water supply, which have greatly improved the social and economic condition in these villages. The popularisation of advanced agricultural technologies has been quite widespread in the villages.

Table 4.8 Popularisation of agricultural techniques among sample households (%)

	Mulch film	Inter-planting	Improved varieties
Project households	89.2	96.2	98.1
Non-project households	90.3	98.4	97.0

Table 4.8 displays the acceptance rates of regular advanced techniques, namely how the sample households have accepted them in agricultural production. The popularisation of advanced techniques is high in both types of sample households and there is little difference between the two groups in this regard. Such high rates of technical popularisation are due to the significant role of the county station in popularising agricultural techniques among poor households. This is also one of the prerequisites for the effective alteration or adjustment of the production structure among poor households.

#### 4.6 Project Implementation and Returns on Investment

Since Mabian County adopted the mode of development that combines multiple anti-poverty investments, some poor villages have more projects than others. Table 4.9 depicts the construction of projects in sample villages.

Table 4.9 Projects in sample villages

	Road building	Drinking water supply for people and animals	Small water conservancy works	Building farms by improving the soil	Ter-racing of slopes	Soil improvement of farm-lands with medium or low yields	Retur-ning of grain plots to fores-try (pas-tures)	Others

Bailin	Yes			Yes	Yes	Yes	Yes	
Jingchi	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Jianxin	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Xinglong	Yes	Yes	Yes	Yes	Yes	Yes	Yes	

Table 4.9 shows that three of four sample villages had all the different types of projects in rural infrastructure construction. Bailin Village receives no food-for-work investments in projects for providing drinking water supply for people and animals and small water conservancy works because the relevant construction was completed earlier. It appears that the four villages have constructed most of the required infrastructure. However, due to the vastness of the mountain areas, some natural villages, although they are in the same administrative village, still have no access to the infrastructure.

In Mabian County, construction of water conservancy works and building farms by improving the soil are organized on the basis of the natural village. Households on the project site under planning must put in labour and money, while the villagers' committee organizes the beneficiaries to carry out the construction. Given this, project scales in Mabian County are smaller than in Danfeng County. Table 4.10 depicts the financial and labour inputs of Mabian farmers in projects for building farms by improving the soil. For non-project households, financial and labour inputs refer to their inputs in other public facility projects, such as building roads, terracing slopes and forestation.

Table 4.10 Labour inputs of sample households

	Labour input (days)		Investment (yuan)	
	Project households	Non-project households	Project households	Non-project households
Bailin	24	14	332	100
Jingchi	62	29	57	3
Jianxin	23	0	0	0
Xinglong	22	13	19	2

In addition to the financial and labour inputs of farmers, administrative units at the county, township and village levels also put in some funds. Though small, these funds represent the leading role of government, which has greatly enhanced the confidence of farmers in their financial and labour inputs.

Table 4.11 Investments by government and farmers (in Yuan)

	Investment by county government	Investment by townships and villages	Funds raised by farmers	Investment in the form of the labour input of farmers
Bailin	0	0	6,100.	85,000
Jingchi	1,200	900	0	130,000
Jianxin	1,400	1,100	3,000.	124,000
Xinglong	5,000.	0	500	127,000

Table 4.11 displays investments by government, villages and farmers. As Bailin has better economic conditions, the amount of funds raised among farmers is larger than that in other villages. They rely more on their own financial strength. The other three villages, being poorer, receive investment from the county government (investment listed in the table exclude food-for-work investment, which is mainly in the form of construction machinery in project villages). Investment by the county government, coming from other funds for poverty alleviation, induces some investment from project townships or villages. Regarding the investment structure of projects, the largest portion is from the labour inputs of farmers.

Case 4.3 Xinglong Village of Shuonianba Township comprises seven villagers' teams with 318 households totalling 1,270 people, of which 23 percent are the Yi people. The village has 1,543 mu of cultivated land, 414 mu being paddy fields. With grain possessed reaching 512 kg per capita, the village is no longer troubled by problems of food and clothing. Originally the village had 276 mu of tea plantations, which, however, could make little money because of the poor quality of tea. In 1998, the village obtained a food-for-work investment from the county government for the expansion and upgrading of the tea plantations. Five villagers' teams took part in the project. The construction lasted for three years, which upgraded a total of 1,064 mu organic tea farms. Since the upgrading of a 1-mu tea farm needs an average of 32 man-days, the project of "building farms by improving the soil" in the three years involved an input of 29,000 man-days, each labourer contributing 29 man-days a year. In 2002, the village's tea production reached 32.4 tons. As the tea bushes in Xinglong grow in the mist and clouds on lofty mountains, the tea leaves are superb in quality. In the city of Leshan there is a large plant for tea processing, whose green tea with the brand of Zhu Ye Qing is known throughout the country. So long as the tea leaves from Xinglong are up to the standard, the plant purchases them all. Hence, restructuring of agricultural production in Xinglong is quite successful, and incomes from selling tea leaves have become the prevailing source of cash income for the villagers.

Similarly, poor farmers get no pay from participation in project construction. But the completed projects greatly improve the quality of their contracted land and farmers can obtain long-term returns from managing the improved contracted land.

Table 4.12 Cultivated lands of project and non-project households

	Sample households	Land per household (mu)	Irrigated land		Tea plantations		Bamboo gardens	
			Households	Area per household (mu)	Households	Area per household (mu)	Households	Area per household (mu)
Project households	209	8	195	2.24	127	4.61	96	2.29
Non-project households	60	7.7	50	1.65	37	2.24	18	1.6

Table 4.12 indicates the extent of improvement in the farmlands contracted by project households. It can be seen that compared with non-project households, a project household has 0.59 mu more irrigated land, 2.37 mu more tea plantation area and 0.69 mu more bamboo garden. For poor farmers living in the mountains of Mabian, their heavy labour inputs have been doubly repaid. Firstly, they have obtained a generous land asset: the improved quality of farmland increases the value of their operating asset, which is the basic guarantee for increasing agricultural incomes in the long run. Secondly, employment of farmers in agriculture is more stable. In the past, due to the poor quality of farmland and its vulnerability to natural adversities, farmers got low and unstable reward for their cultivation, or even reaped nothing at harvest time. The improvement of soil quality and production conditions has stabilized the employment and incomes of farmers in agriculture as well as the output of land.

#### **4.7 Restructuring of Agricultural Production and Increase in Rural Employment**

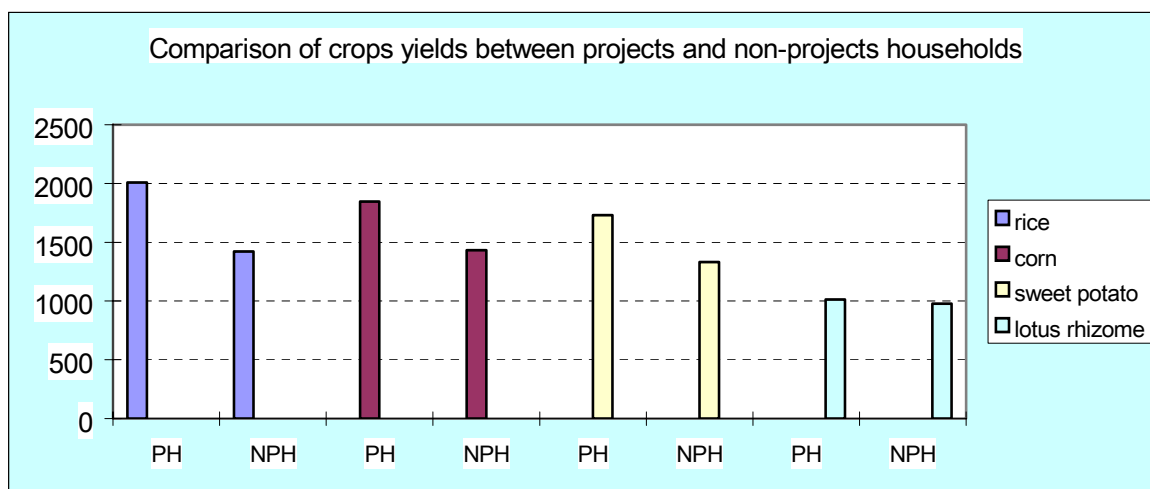
The government of Mabian County designed a comprehensive plan for the anti-poverty investments in poor mountain areas. Following the implementation of projects to return grain plots to forestry (pastures) and build farms by improving the soil, the county government has guided the farmers to restructure agricultural production. The main direction of restructuring is to enlarge the cultivation area of tea bushes, bamboos and lotus rhizomes. The sale of tea leaves and bamboo products can directly increase incomes, while lotus rhizomes are grown as pig feed because an increased

scale of pig breeding will certainly increase employment in rural households. This comprehensive anti-poverty policy has proved effective in the mountain areas.

Table 4.13 Comparison of grain yields between project and non-project households

	Rice		Corn		Sweet potato		Lotus rhizome	
	Num-ber	Yield (jin)	Num-ber	Yield (jin)	Num-ber	Yield (jin)	Num-ber	Yield (jin)
Project house-holds	206	2,007	208	1,847	198	1,729	114	1,012
Non-project house-holds	57	1,422	60	1,432	56	1,332	31	978

Figure 4.1

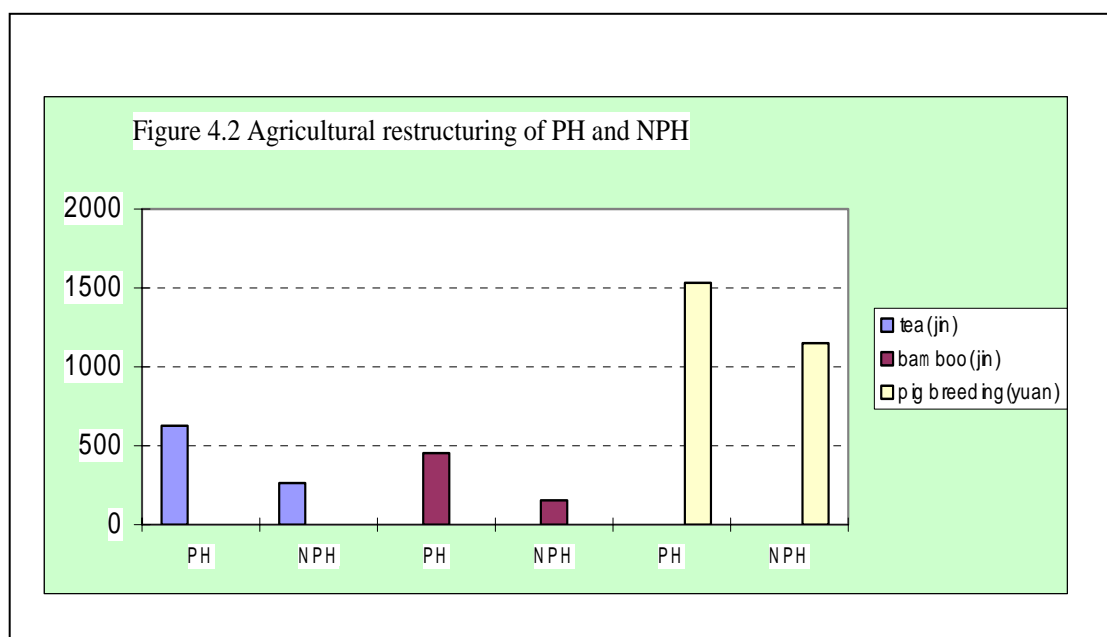


- As Table 4.13 shows, project households have higher yield of grain crops than non-project households. The improved soil quality boosts the grain production of poor households. While promoting the restructuring of agricultural production, this also meets the county government's requirement of stabilizing grain production.

Table 4.14 Comparison of agricultural restructuring between project and non-project households

	Tea production			Bamboo production			Pig breeding	
	Number	Area (mu)	Yield (jin)	Number	Area (mu)	Yield (jin)	Number	Income (Yuan)
Project households	127	4.61	626	96	2.29	453	160	1,533
Non-Project households	37	2.24	264	18	1.6	154	47	1,150

Figure 4.2 Agricultural restructuring of project and non-project households



As shown in Table 4.14, the anti-poverty policy of Mabian County combines projects to build farms by improving the soil alongside the restructuring of agricultural production. This has produced impressive outcomes. In tea production, bamboo production and pig breeding, project households enjoy obvious advantages over non-project households in terms of output per household. The county government's

restructuring efforts have attained the policy objective of increasing the operating incomes of poor rural households.

The investigation of rural households shows that development of tea and bamboo plantations can increase employment of farmers in farm production. Households with relatively large tea plantations not only provide adequate employment to their family members but also hire some people to help with the farm work. In bamboo production, the gathering of bamboo shoots and the cutting, transporting and processing of bamboos demand more labour input. The projects of building farms by improving the soil have increased rural employment in the mountain areas of Mabian County.

Table 4.15 Comparison of employment between project and non-project households

	Total labourers	Farming			Working outside			Annual average income (Yuan)
		Num. of labourers	Percentage in total	Average days	Num. of labourers	Percentage in total	Average days	
Project households	885	514	58	261	115	13.0	212	2,600
Non-project households	233	144	62	242	22	9.4	226	2,341

Table 4.15 demonstrates the effects on rural employment of the restructuring of agricultural production. Three changes are noticeable. First, the annual average farming days per labourer in project households has increased about 8 percent. Analysis in the case of Danfeng County has revealed a positive relationship between the restructuring of production and employment growth in agriculture. The impressive eight percent increase in agricultural employment can be attributed to the correct decision of the government of Mabian County to take up tea and bamboo as the major crops for expanded cultivation. Since family-run operations adopt the mode of self-employment, employment increases in agriculture tend to be more sustainable and stable than in other sectors.

Secondly, the proportion of farmers working outside is 4.4 percent higher in project households than in non-project households. The study of Danfeng County has confirmed that farmers go out to work for many reasons and there is no direct causal relationship between the restructuring of agricultural production and the increase in the incidence of farmers working outside. But results in Table 4.15 suggest that the restructuring of production may also be an important factor urging farmers to find jobs outside. And finally, people from project households work shorter outside than

people from non-project households, but the annual average income of project households is 259 Yuan higher than that of non-project households. The main reason is that some people from project households go out to sell tea-leaves and bamboo products, and the income from marketing one's own products is usually several times higher than incomes from providing labour services. Besides, the source of such incomes is much more stable. This also confirms the effectiveness of the approach of the government of Mabian County that combines multiple anti-poverty investments.

## **5. Conclusions: Effects of the Food-for-work Policy on Poverty Alleviation**

### **5.1 The anti-poverty programmes of the county governments are practical and inclusive**

In both Danfeng and Mabian counties comprehensive plans for poverty alleviation has been developed, which include restoring the ecosystem in mountain areas, building farms and small water conservancy works, restructuring agricultural production and generating employment for farmers. At the core of each county's plan is the generation of employment for farmers. Implementation is extremely difficult. And needs years of unremitting efforts before the effects begin to show. While implementing the plan, investments of the food-for-work policy in rural infrastructure construction serve as a connecting link. Only with the completion of infrastructure construction, is it possible to restructure agricultural production and expand rural employment. Only when the incomes of poor farmers keep rising in the long run, can the local natural environment be fully restored. The latter is the best way of relieving poor mountain areas of poverty and securing prosperity.

After 17 years of hard experimentation with poverty alleviation programmes, a comprehensive and mature strategic plan for poverty alleviation has taken shape. It is a practical plan for poverty alleviation being implemented by the governments of poor counties, together with a well developed mode of organization. This leads to our conclusion that the anti-poverty programmes being implemented in many poor areas of China are based on sound principles and the achievements may be attributed to the simultaneous operation of several anti-poverty measures.

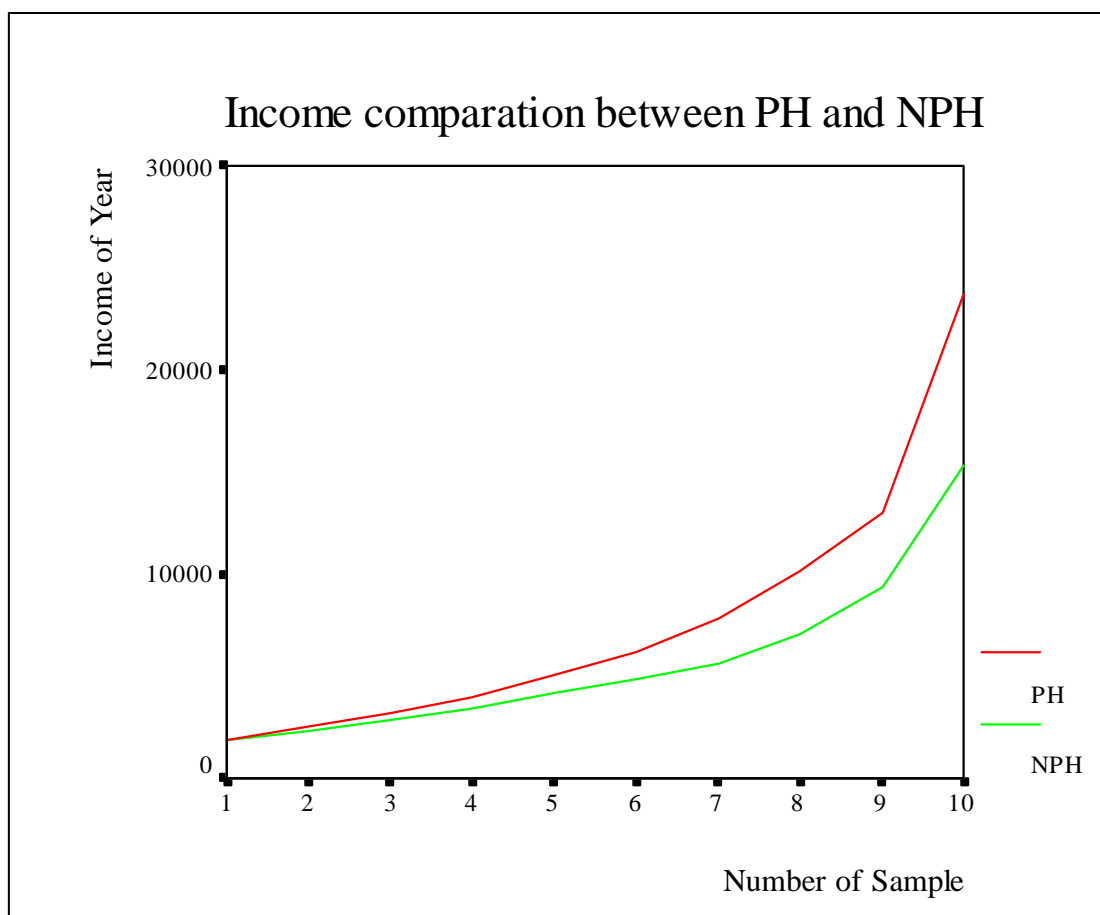
### **5.2 Rural households which benefited from the projects have basically shaken off poverty**

To establish the effects of the food-for-work policy on poverty alleviation, sample households in the two counties may be consolidated for statistical analysis. When consolidated, there are 388 sample project households and 121 sample non-project households. The following are conclusions based on the analysis of the two sample groups taken together:

First, a comparison of the annual average gross incomes between the two categories of rural households in 2001 shows that 95 percent of project households had higher annual incomes than non-project households (see Figure 5.1). The gross income here refers to the sum of six incomes, namely that from grain crops, cash crops,

tea/bamboo production, livestock breeding, family-run operations other than farming, and working outside.

Figure 5.1 Comparison of annual average gross incomes of project and non-project households



As shown in Figure 5.1, the average annual gross income of project households in 2001 was 7,400 Yuan, 1,250 Yuan higher than that of non-project households. If the income of non-project households is regarded as representing the initial state of poverty, the additional income of 1,250 Yuan may be taken as the effect of the anti-poverty policy. But the result from comparing the operating incomes of farmers in a single year is not sufficiently reliable since other transitory factors may have had an effect.

Secondly, in Table 5.1 a comparison is made of family expenditures between the two categories of rural households in 2001. Farmers' consumption is usually more stable than their annual income, and hence the comparison of farmers' regular family expenditures may be better than the comparison of their annual incomes, for reflecting the gap between the two categories of rural households with respect to family financial status.

Table 5.1 Comparison of average common expenditures between project and non-project households (in Yuan)

	Food	Daily consumption	Durable goods	Education	Social interactions	Building materials	Total
Project households	787	2,140	1,122	660	408	3,229	8,346
Non-project households	433	1,814	1,023	641	325	664	4,900

Notes:

1. Food refers to staple food and non-staple food bought with cash, excluding food products produced by the family.
2. Daily consumption refers to the sum of expenses in six categories, namely clothes, cigarettes and liquors, transport, health care, power and water supply.
3. Durable goods refer to electric household appliances, bicycles, furniture, etc.

Table 5.1 shows that the total daily expenditures of project households are about 70 percent higher than non-project households. Regarding the growth of individual items of expenditure, expenses on building materials ranks first, followed by the expenses on food. This reflects the preference of farmers in consumption in response to an increase in incomes. Comparison of the consumption structures of the two categories of rural households shows that project households are obviously financially better off than non-project households.

Thirdly, since family property is an accumulation over years, it is the perhaps the most stable indicator for judging the financial status of a rural household. Table 5.2 presents the main findings on family property of the two categories of rural households.

Table 5.2 Comparison of major family property of project and non-project households

	Savings in cash (Yuan)	Trucks (%)	Motorcycles (%)	Tractors (%)	House value (Yuan)
Project households	880	3.9	19.5	2.2	14,000
Non-project households	1,225	0	2.5	0	8,560

In Table 5.2, "savings in cash" include cash available in the house and bank deposits. Trucks, motorcycles and tractors are important assets in rural households. They are represented as percentages in the total samples having that asset because it is difficult to convert their value with a uniform standard. As farmers in both counties have small plots of land unsuitable for mechanization, few farmers have tractors and farm work is mainly manual. Bicycles and motorcycles are the primary means of transport. As shown in Table 5.2, except for "savings in cash," the other four indicators of property of project households are higher than those of non-project households. In particular, the house value of project households is 64 percent higher. Also, Table 5.1 reveals that the amount of money used by project households to buy building materials is approximately 5 times that of non-project households. Experience suggests that, if a rural household is keen on building its house, it has emerged out of poverty. The above results indicate that project households have much more family property than non-project households.

Thus comparisons of gross income, daily expenditures and main family property confirm the remarkable effects of the anti-poverty policy in Danfeng and Mabian counties. According to the initial design of the research, the conditions of non-project households are taken to represent the initial state of local poverty and the difference may be regarded as the effects produced by the anti-poverty policy. It may therefore be safely concluded that project households are generally better off than non-project households in terms of financial status and most of them have crossed the poverty line.

### **5.3. The food-for-work policy has expanded rural employment**

The food-for-work policy forms a connecting link in the strategy of the two counties for poverty alleviation. The upgrading of rural infrastructure is the prerequisite for restructuring agricultural production in poor mountain areas, and investments under the food-for-work policy play a role in three distinct ways during the implementation of the anti-poverty strategy. (1) Such investments have added value to the land assets of poor farmers and stabilized the employment of farmers in agriculture. (2) Because of the alterations or adjustments in the planting structure, the two sample counties have expanded employment in agriculture by 6 percent on average. (3) The improvement of rural infrastructure has not only increased farmers' incomes from land, but also ensured the stability of their incomes from land. The enhanced financial strength has made farmers more capable of covering travel expenses outside. After completion of the projects, the number of farmers going out to work has increased an average of 4 percent.

"Employment is the basis of people's livelihood," noted President Jiang Zemin. "To generate more job opportunities is an arduous but vitally important task in China for the time being and for a long period of time to come. Party committees and governments at all levels are obliged to improve the business environment and increase job opportunities." This study has confirmed that the anti-poverty strategy of the central government centring on job generation for poor farmers has made significant progress. Governments of poor counties have been practical and innovative while implementing specific anti-poverty programs.

#### **5.4 On the extra use of rural unpaid labour and a policy proposal on rural labour administration**

According to the stipulations of the central government and the arrangements relating to taxation in rural areas, during the process of implementing the food-for-work programme, the unpaid labour and accumulated labour put in by a rural labourer per year should not exceed 30 man-days. Such labour input is actually a tax in kind paid by farmers to local governments. So, farmers' labour inputs can be viewed as another form of financial input by rural governments in project construction.

In both counties, the annual average amount of labour put in by each farmer has exceeded the limit of 30 man-days, reaching 60 man-days in Danfeng County. According to village and township cadres they are reluctant to break the limit in using unpaid labour, because it would not only reduce the annual income of farmers, but also increase their own difficulties in organization and administration. Their own families, relatives and friends live in neighbouring villages, and the pressure of extra labour is felt by their own family members, relatives and friends. The fact that village and township cadres live in the same community as the farmers makes them seriously consider how much provision of labour farmers would tolerate. Therefore, village and township officials try their best to spread out the construction over several years so as to make it more acceptable. However, while road building and farmland capital construction can be carried out in over several years, projects, like those for ecological conservation and water conservancy works, must be completed at one time. Otherwise the project quality cannot be guaranteed; also, there is the danger that the work already done might be completely destroyed by a major flood in the coming year. So, extra labour inputs for these projects cannot be phased over more than a year.

A reasonable practice, from the perspective of the cadres, is that farmers should get paid for their extra labour input. But funding shortages make it impossible for local governments to pay farmers. So, in urging farmers to put in extra labour, they either promise that the farmers would be exempt from unpaid labour in the next year or next two, or justify the requirement by saying that there has been no utilization of such labour inputs in the recent past as there were no projects. Undoubtedly, this practice does not conform to the rules of the State Council and should not be encouraged. But in poor areas with severe fund shortages, village and township cadres have no other option if infrastructure construction has to be undertaken.

While the scheme of using unpaid labour is part of the tax-in-kind system stipulated by the central government, it also has the nature of mutual aid within community. With the transition to the market economy in rural China, the rationale of the scheme has been challenged. According to standards set by the International Labour Organization (ILO), public infrastructure and community infrastructure must be distinguished in policy. Infrastructure involving the food-for-work investment and construction primarily includes four categories: rural roads and transport; drinking water for humans and domestic animals; farmland capital construction and small water conservancy projects. Each of the four categories includes both projects of public infrastructure and community infrastructure. For example, among the rural roads built, some are for the community, while some are country roads stretching to farther areas. The food-for-work policy has been in practice in rural China for 17 years, and tens of thousands of infrastructure construction projects have been completed. It may be appropriate to classify separately public and community

infrastructure. Moreover, China will continue to implement the food-for-work policy in poor areas in many years to come, making it the country with most infrastructure construction projects using rural labour in the world. This is a good opportunity for the ILO to assist in the development of rural labour use systems and regulations in China.

The labour administration department of the Chinese government had paid little attention to rural employment under the planned economy. After the country started its reform drive in the late 1970s, it began to exercise administration over farmers who left their villages and worked elsewhere, usually in cities. But still, the use of unpaid labour and accumulated labour is not within its scope. As the current administration of unpaid labour is subject to many ambiguities, the ILO may be requested to help the Chinese government's labour administration to ensure that rural workers' basic rights and interests are protected and that there is adequate supervision of construction activities.

In 2002, to increase the farmers' incomes, the central government launched an all-round reform of the rural financial and taxation systems. With the agricultural tax and unpaid/accumulated labour being abolished, the gaps in the financial expenditures of county and township governments would be filled by the central transfer payments. Some provincial governments (e.g. Anhui and Shandong provinces) have taken the lead to implement the reform. However, it must be realized that the reform is driven by the need to alleviate farmers' burdens, rather than an understanding that the use of voluntary labour service in rural areas is illegal. Therefore, it is necessary to introduce the rules of international conventions to help government officials and scholars to make changes in the system, so that in future when local governments mobilize rural labour to take part in infrastructure construction, workers are paid. This will, however, pose a big challenge to rural local governments, especially in poor areas.

First, officials at county, township and village levels must change their traditional ideas and add wage budgets and rural worker's daily wage standards to the project budget. Secondly, rural infrastructure projects should be divided into two major categories based on who is the beneficiary of the project. (1) If the major beneficiaries are the village and its residents, making it a community project, such as projects relating to providing drinking water for humans and domestic animals in a village, a certain amount of unpaid labour from the beneficiary village can be allowed for the construction (2) If the beneficiaries extend beyond the village, making the project a public undertaking, such as the building of country roads and ecological conservation, rural workers engaged in the projects should be paid.

In future food-for-work projects, the Development and Planning Commission and the Office on Poverty Alleviation should not be the exclusive decision-makers and supervisors. The government's labour administration department must also participate in the project planning and manage rural workers in accordance with the Labour Law. It should prohibit the use of unpaid labour and strive towards attaining internationally accepted labour standards. It should also be responsible for the formulation and supervision of labour policy, so as to protect the rights and interests of poor farmers participating in the construction and ensure that they receive their wage income.

## Appendix

As the main members of the research team had done research on this subject 10 years ago, this research study started with a review of major policies and documents of the central government in relation to poverty alleviation over the last decade so as to understand the evolution of government strategies in this regard. At the same time, research papers published over the past decade were also consulted. These led to the formulation of preliminary hypotheses for the study. With the assistance of the Regional Department of the State Development Planning Commission (Regions Department of National Planning Commission), the researchers selected Danfeng County in the Qinba Mountains in Shaanxi Province and Mabian County in the Xiaoliangshan Mountains in Sichuan Province as the study sites. The two counties, among the poorest areas in rural China, have made significant achievements in poverty alleviation following 16 years of poverty-alleviating efforts and agricultural restructuring over the past few years. On their arrival in each county, the food-for-work office of the county development planning commission explained in detail the implementation of the food-for-work policy in their county, and provided some relevant data. Then the researchers were divided into small groups to inspect the programmes and interview cadres at the township and village levels, as well as poor households. On the basis of first-hand data obtained from the interviews, the researchers modified their preliminary hypotheses.

Then the researchers consulted with cadres of the county development planning commission to determine the sample frame and selected sample townships and sample villages. Non-project villages were also selected as controls. With the assistance of the sample township governments, the researchers trained cadres of the township governments to collect data in rural households. Forty to fifty cadres of the two townships went to the sample villages in small groups. Using the method of random sampling, the cadres selected sample households and completed the work of data collection.

While doing research in Danfeng County and Mabian County, the researchers visited other government departments dealing with poverty alleviation. Such government departments included the Policy Research Office of County Party Committee, the Statistical Bureau, the Agricultural Bureau, the Water Conservancy Bureau, the Poverty Alleviation Office, the County Annals Office, the Civil Affairs Bureau, the Agricultural Bank and the Rural Credit Cooperative. After listening to their opinions and getting data from them, the researchers gained an all-round understanding about the economic development, social reforms and anti-poverty impacts in the two counties.

Back in Beijing, the researchers discussed with some experts who had conducted similar research in the field of poverty alleviation and formed the framework of the whole research. Then the researchers conducted extensive statistical analyses on the sample data, verified and modified the research hypotheses, and arrived at the major conclusions.

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