LTC Paper

TRANSITION OF CHINA'S RURAL LAND SYSTEM

papers from

INTERNATIONAL SYMPOSIUM ON RURAL LAND ISSUES IN CHINA



LAND TENURE CENTER

An Institute for Research and Education
on Social Structure, Rural Institutions,
Resource Use and Development

Land Tenure Center
1300 University Avenue
University of Wisconsin–Madison
Madison, Wisconsin 53706

LTC Paper
U.S. ISSN 0084–0793

TRANSITION OF CHINA'S RURAL LAND SYSTEM

papers from

INTERNATIONAL SYMPOSIUM ON RURAL LAND ISSUES IN CHINA

sponsored by the Development Research Center of the State Council, People's Republic of China, and Land Tenure Center, University of Wisconsin-Madison, USA, 8-10 October 1992, in Beijing, China. Funded by the Ford Foundation.

All views, interpretations, recommendations, and conclusions expressed in this publication are those of the authors and not necessarily those of the supporting or cooperating organizations.

LTC Paper 151

Land Tenure Center
University of Wisconsin-Madison

May 1995

Copyright © 1995 by Land Tenure Center.
All rights reserved.

Readers may make verbatim copies of this document for noncommercial purposes by any means, provided that this copyright notice appears on all such copies.

TABLE OF CONTENTS

		Page
List of figures		vii
List of tables		vii
List of acronyms		ix
Introduction		1
I.	**Land policy in rural China in retrospect, and new problems,** *by Huang Qinghe*	3
	A. Introduction	3
	B. Household responsibility system (HRS): Changes in thinking and work style, and legalization by the Central Committee	3
	C. Household responsibility system in operation: Achievements and problems	8
	D. China's agrarian system as a research project: History and progress	13
	E. New problems under the new situation	16
	Commentary, *by Du Runsheng*	19
	Commentary, *by John Bruce*	23
II.	**Land tenure and agricultural performance: Reflection on global experience,** *by Michael Carter, Gershon Feder, and Michael Roth*	25
	A. Property rights definition and agricultural performance	25
	B. Linkages between agrarian structure and performance	33
	C. Policy aspects of land markets	37
	D. References	44
	Commentary, *by An Xiji*	51
	Commentary, *by Chen Xiwen*	53
III.	**New directions in land policies,** *by John Bruce, John Strasma, and Edward Friedman*	57
	A. Tenure and natural resource management	57
	B. Land taxation	60
	C. Farm reforms and socialist institutions	65
	D. References	66
	Commentary, *by Wang Jiafu*	67

IV. **Changes in the rural land tenure system at the village level,** *by He Daofeng* 69
A. Introduction 69
B. Household responsibility system: Emergence and development 69
C. Land management system and rules at village level 75
D. Land taxation and micro-adjustment policies at the village level 86
E. Some basic conclusions 94

Commentary, *by Liu Kan* 97

Commentary, *by Michael Carter* 105

V. **Land Taxation: Case Study in Four Villages,** *by Jiang Zhongyi and Pei Changhong* 109

Commentary, *by John Strasma* 115

Commentary, *by Qi Mingchen* 119

Commentary, *by Duan Yingbe* 123

VI. **Chinese Agrarian System: Case Study in Pingdu, Wuxi, and Yueqing,** *by Wang Xiyu* 125
A. Introduction 125
B. Present situation and features of institutional arrangements 125
C. Inducement of transformation 129
D. Transformation process and government behavior 134
E. Effects of the changes 139

Commentary, *by Guo Shutian* 145

Commentary, *by Edward Friedman* 149

Commentary, *by Zhou Cheng* 151

VII. **Changes in the property rights system in mountainous regions and farm households' responses: Case study in Huaihua Prefecture, Hunan Province,** *by Liu Shouying* 155
A. Introduction 155
B. Changes in property rights in mountainous regions and recontracting mountain-land use rights 157
C. Demand for institutional construction 162
D. Policymaking and government behavior 165
E. Some theory and policy implications 168

Commentary, *by John Bruce* 169

Commentary, *by Du Ying* 171

VIII. **Gender analysis in resource tenure research,** *by Susana Lastarria-Cornhiel* 175
A. Introduction 175
B. Does gender make a difference? 176
C. Impact of market development on women 177
D. Gender and rural development programs 179
E. Methodological considerations 180
F. Activities analysis 182
G. Access to and control of resources 183
H. Factors that influence activities and access to resources 184
I. Conclusions 185
J. References 185

Commentary, *by Li Xiaoyun* 187

Commentary, *by Li Zongmin* 189

IX. **Determinants and effects of farm size: Preliminary analysis of the 800-household data, outline for discussion,** *by Shi Zhengfu* 191
A. Introduction 191
B. Preliminary findings 191
C. Considerations for further research 193

Commentary, *by Michael Roth* 195

Commentary, *by Zhu Ling* 199

LIST OF FIGURES

Figure 2.1	Conceptual model linking title and tenure security with agricultural performance	31
Figure 4.1	HRS adoption rate in sample villages by income group	71
Figure 4.2	Correlation between agriculture-subsidizing policy adoption in sample villages and their income level	92
Figure 4.3	Ways to subsidize agriculture with industry in sample villages	93

LIST OF TABLES

Table 4.1	Adoption rate of HRS in sample villages in different regions by income group	70
Table 4.2	Land contract forms adopted in sample villages by income group	72
Table 4.3	Approaches applied to distributing land of different quality in sample villages by income group	73
Table 4.4	Population-related changes in contracted farmland in sample villages by income group	73
Table 4.5	Reasons for land adjustment in sample villages by income group	74
Table 4.6	Difference in frequency of land adjustment by income group	76
Table 4.7	Major reasons for land adjustment	77
Table 4.8	Primary reason for land adjustment by income group	77
Table 4.9	Regulations on land adjustment and frequency of adjustment	78
Table 4.10	Incidence of land-caused disputes in 1988 by income group	82
Table 4.11	Types of land-caused dispute in 1988 by income group	83
Table 4.12	Main causes of land-related disputes	84
Table 4.13	Difference of fixed purchase quotas and implicit tax by income group	88
Table 4.14	Importance of different ways of collecting the collective deductions by income group	89
Table 4.15	Different rates of collective deductions on farmers by income group	90
Table 4.16	Difference between covert subsidies by income group	94
Table 5.1	Economic development in four villages of North China, 1991	109
Table 5.2	Agricultural tax and implicit tax in the four villages	111
Table 5.3	Township apportionment in the four villages	111
Table 5.4	Deductions in the four villages	112
Table 5.5	Expenditures of deductions in the four villages	113
Table 6.1	Gross agricultural output value, by kind of economic activity	131
Table 6.2	Gross social production value in rural areas, by kind of economic activity	131
Table 6.3	Rural labors, by kind of economic activity	131
Table 6.4	Agricultural equipment in Pingdu	132
Table 6.5	Fixed assets owned by collectives	133
Table 6.6	Numbers and areas of households with land more than 10 mu, Yueqing County	139

Table 7.1	Mountain-land use-right transfers in Huaihua Prefecture	160
Table 7.2	Huaihua farmers' understanding of use rights over contracted mountain land	164
Table 7.3	Huaihua farmers' understanding of mountain-land ownership	164
Table 7.4	Disputes associated with mountain-land property rights in 11 townships, Huaihua Prefecture	165
Table 7.5	Huaihua farmers' understanding of the government experimental regulations	167
Table 7.6	Huaihua farmers' responses to the institutional innovations: Investment behavior	168
Table 9.1	Basic indicators classified by farm size	192

LIST OF ACRONYMS

BCDH	*bao-chan-dao-hu*, fixing farm output for each household
BGDH	*bao-gan-dao-hu*, fixing work assignments to the individual household
CPC	Chinese Communist Party
CPM	Common Property Management
DRC	Development Research Center
HRS	Household Responsibility System
PRC	People's Republic of China
RCRE	Research Center for Rural Economy
RDRC	Rural Development Research Center
RDRD	Research Department for Rural Development
RPRO	Rural Policy Research Office

INTRODUCTION

This proceedings is a collection of papers from the International Symposium on Rural Land Issues in China, sponsored by the Development Research Center of the State Council, People's Republic of China, and the Land Tenure Center, University of Wisconsin–Madison, USA, 8–10 October 1992, in Beijing, China, and funded by the Ford Foundation.

This compilation is a result of periodic study by the Center's land tenure task force. It records research on the rural land tenure system in China and reveals existing problems. The research is based on thorough case studies and standard sampling surveys. It theorizes on the birth of land tenure reform in China and describes, qualitatively and quantitatively, its mechanisms and growth. The problems exposed during the Chinese land tenure system's development—such as the vagueness of property rights' definition, the obstacles in transferring property rights, the hidden rents, and the complicated land taxes—are revealed by the research. Thus arises the basic policy implication derived from the symposium: the Chinese land tenure system needs further improvement.

The book has three aspects: papers from Chinese scholars, international papers, and commentaries from experts. Included are discussions of the process of Chinese rural land tenure reform, the reform of farmland and hilly areas, the utilization of natural resources, and an analysis of global experiences. Surveys were conducted and data were collected on land tenure reform in 300 Chinese villages and 800 farm households.

We thank the Ford Foundation for their cordial assistance. For their support and guidance on this project, we thank Mr. Rensheng Du, Mr. Yuzhao Wang, and Mr. Kan Liu, all leaders in Chinese agricultural economics circles, and Mr. Hong Ma, a well-known economist. We thank Professor Peigang Zhang, Professor Xiji An, Research Fellow Yinbi Duan, Associate Research Fellow Xiwen Chen, Mr. Shutian Guo, Professor Jiafu Wang, Mr. Mingchen Qi, Professor Cheng Zhou, and Associate Research Fellow Ying Du for their attention and support. We also thank the rural survey division of the National Statistics Bureau for data collection and processing. We extend further credit to Ziguang Chen, Yan Zhao, Tian Zen, and Yuemin Wang for their work on the 800–household survey; to Tian Zen and Min Huang for similar efforts on the 300–village survey; and Yan Zhao for the nonfarm-area survey in Huaihua Region. Yuemin Wang and Yan Zhao also provided data collection.

We thank the following people at the Land Tenure Center for their help in translating and preparing this proceedings for English publication: Li Zongmin, Jiang Yumin, Steven G. Smith, Jane Dennis, and Kurt Brown.

Once more, we are very grateful to the many people who have strengthened this project and facilitated the presentation of these research findings.

I. LAND POLICY IN RURAL CHINA IN RETROSPECT, AND NEW PROBLEMS

by **Huang Qinghe**

Senior Research Fellow
Research Department for Rural Development
Development Research Center
The State Council, PRC

A. INTRODUCTION

China has more farmers than any other country in the world and land per capita is relatively scarce. A sound land policy suitable to the Chinese situation is therefore fundamental for other policies. Over the course of nearly three decades China adopted the household production-related contract responsibility system over 95 percent of its rural area to achieve the current level of productivity. This innovative institutional arrangement consists of collective ownership of land by the village or groups, and management by individual farm households through contracts with the collectives. Today, as China faces a new round of fundamental reforms of its economic structure, the rural land system is confronted with an unfamiliar market environment, and new choices are necessary.

In this paper I will briefly review post-1956 history, when agricultural collectivization was basically completed in China. Attention will be paid mainly to experience after the rural reforms of 1978, including the introduction of the responsibility system and the practices of the past decade. I will also present the work done by our research group and make a preliminary analysis of the issues raised by the new conditions concerning the agrarian system in China.

B. HOUSEHOLD RESPONSIBILITY SYSTEM (HRS): CHANGES IN THINKING AND WORK STYLE, AND LEGALIZATION BY THE CENTRAL COMMITTEE

Agricultural collectivization reached a high point in the mid-1950s. The number of farm households which joined advanced cooperatives rose dramatically from 0.033 percent in 1955 to 62.6 percent in 1956. The characteristic features of this type of cooperative were the unified management of fixed assets such as land, draft animals, and so forth. In 1958, the Movement of Popularization of the People's Communes swept across rural China. There was no ready international experience to be used for reference. Such a large-scale movement for collectivization was based on:

- the desire of hundreds of millions of poor farmers to escape poverty;
- the belief that the organizational force aroused from the unified collective management might contribute to faster agricultural growth under the technological conditions typical in traditional agriculture; and
- the perceived need, because the farmers would not choose this way spontaneously, to mobilize and popularize this system by a top-down approach.

The worth of the unified management system was not fully proved by the 20-year-long practice after 1956. Grain output increased to some extent between 1956 and 1979 at an annual average growth rate of 2.1 percent, but the per-capita availability of grain was only 340 kilograms in 1979, reflecting a stringent situation of food supply. The growth of farmers' income was much slower, and per-capita income was only 160.17 yuan in 1979. The poor efficiency caused by the overcentralized management system led to frequent attempts by farmers and rural cadres to diminish the importance of the management units, including the introduction of *bao-chan-dao-hu* (BCDH), that is, fixing farm-output quotas for each household. However, despite their apparent positive results, these initiatives were often thought to be unacceptable because of their incompatibility with the then-prevailing ideology.

In practice, disregard for management units occurred in some places as early as just after the first postcollectivization harvest. Li Yunhe, then deputy party secretary of Yongjia County Committee (Wenzhou Prefecture, Zhejiang Province) expounded on why BCDH was an effective way to deal with the internal contradictions of the collectives, and made this form popular there. Some 178,000 farm households (or 15 percent of total cooperative members) in Wenzhou Prefecture were involved in BCDH by the summer of 1957. But this reform was criticized and then discontinued in the second half of the year due to political circumstances.

The political situation in late 1957 resulted in the "Great Leap Forward" and communalization in 1958. The agricultural management units were further enlarged rather than reduced. The average size of an advanced cooperative in 1956 was 245.3 households, while a commune consisted of 5,443 households. Communes brought enormous damages to agricultural production. The land was left poorly cultivated, and productivity declined continually. Policy adjustments were made at the beginning of 1959, and overcentralization was reduced to some extent. Several provinces took advantage of the favorable setting and re-adopted BCDH, but this attempt was again stopped.

The successive decrease of agricultural production caused by the commune system has usually been referred to as "three years of hard times." The average production of grain, the main agricultural output in 1959–61, declined by 21.57 percent compared with that of the preceding three-year period. Farmers in many places were not able to feed themselves. Efforts were made to practice various forms of the responsibility system (including BCDH) under these conditions in Anhui, Sichuan, and other provinces, and the results were quite good. Obviously, there was some flexibility in the "Regulations on Work in the People's Commune" (the "60 Articles") issued in June 1961. For example, groups or individuals could take the responsibility to run those areas that were previously managed by production teams in a unified way; farmers could own private plots accounting for 5-7 percent of the total cultivated land and reclaim the same sized parcel of wasteland for their own use; the

collective could distribute hills, fruit trees, bamboo, or woods among farmers for private management; and farmers could plant fruit trees around their houses. Later, it was stipulated that farmers could own private plots for feed crops. Various innovative forms mushroomed into a fairly free and easy economic environment.

There was no impassible gulf between the responsibility system allowed in the Regulations and BCDH. In fact, farmers hated the troublesome work-point system while BCDH—simple but effective—was accepted almost everywhere. As a rule, the system could be changed in two or three weeks provided the local leaders permitted the change. More than 20 percent of production teams in the country adopted BCDH or similar management forms in 1961 and early 1962. Realistic points of view in favor of farmers' practice and choices became predominant in rural work. It was in this situation that Deng Xiaoping made his famous "cat" thesis:

> I wonder if only 20 percent of farmers have adopted various forms of *bao-chan-dao-hu*. This is an important issue. . . . What is the best kind of production relations? Perhaps we should take a practical attitude. That is to say, we should support any forms suitable to local conditions which would allow a quick recovery and development of agricultural production there and would be willingly accepted by the farmers. We should legalize them if these forms are illegal. Comrade Liu Bocheng likes a Sichuan proverb which says, "No matter if a cat is yellow or black, it is a good cat if it can catch mice."[1]

Many people used ambiguous terms such as "responsibility plots," "production contracts plus rewards," or "assigning the responsibility to individuals" to avoid the term BCDH, because the latter was not approved by Chairman Mao Zedong. The trend to decentralize became a threat to the system of the people's commune. BCDH was denounced at the Beidaihe Meeting in August 1962, which was followed by the Socialist Education Movement in rural areas (beginning in 1963) and the Cultural Revolution. Thus the embryo of rural reform was frozen for about 20 years.

Rural policies were again relaxed at the end of 1978, after the Third Plenary Session of the Eleventh Central Committee of the CPC. Land policy, however, only became more or less flexible three years later. The Regulations on Peoples' Communes, passed on 22 December 1978, stressed the responsibility system, but rejected BCDH. It was only nine months later (at the Fourth Plenary Session of the CPC Central Committee, convened in September 1979) that the restriction against BCDH was slackened slightly to allow BCDH for some specific items of production and for individual farm households in remote regions with no access to normal transport.

By this time, the farmers were quietly practicing BCDH on their own in areas where the collective economy was poorly managed. The most typical example was the case of Xiaogang production team, Fengyang County, Anhui Province. The team included 20 households with

---

1. Deng Xiaoping, "How to Recover Agricultural Production," 1962.

a population of 115 people working 517 mu[2] of land. They adopted BCDH covertly in 1979. In the same year, per-capita grain output increased to 575 kilograms which equaled the 5-year total from 1966 to 1970, and per-capita output of peanuts and sesame increased to 150 kilograms, equal to the sum for the preceding 20 years. The impressive experiment was met positively by local leaders: Wan Li, then the provincial governor, pointed out at a provincial agricultural session that it was impossible to have a negative attitude toward the emerging form of BCDH.

The incredible output-increasing potential of the successful experiment in Anhui and other provinces was widely recognized, and the new forms of management were quickly accepted even though there was no satisfactory explanation in ideological circles. In March 1980, the former State Agricultural Committee issued a circular which legalized the situation for "a very limited number of collectives which have long been poorly managed, their members living a very hard life and wanting to adopt *bao-chan-dao-hu.*"

Deng Xiaoping once again expressed enthusiastic support for farmers who adopted BCDH. In a talk with local leaders on 31 May 1980 after relaxation of rural policies, he said that the adoption of BCDH suitable to local conditions in specific regions showed very good results and rapid changes in the economy. It was of great importance, he said, to make decisions according to the actual conditions and the degree of farmers' voluntariness. Generally speaking, he claimed, the main problem in rural work was insufficient emancipation of the mind.[3] His talk laid a foundation for the legalization and popularization of BCDH.

BCDH was given further support four months later in the CPC Central Committee's Document No. 75, which permitted the practice of BCDH to continue in other "common" regions if it had already begun. By then, BCDH covered about 20 percent of the production teams, and respecting the farmers' choice had become the main principle in setting policy.

In 1980, there were many critical comments against BCDH in publications and among rural cadres. It was necessary to offer convincing theoretical explanations, especially about the proposition that BCDH was not detrimental to socialism but brought good results to society. In 1981, when political circumstances were relatively comfortable in China, consensus was reached on the following aspects:

(1) BCDH represents only one type of management responsibility system. Land is still owned by the collective. BCDH is a form of collective economy rather than the distribution of land for single, individual farms.

(2) Since China is a vast territory and the natural and economic conditions vary greatly from place to place, various forms of the responsibility system are needed. It is a Marxist principle that the management forms of a collective economy should evolve from elementary to advanced types. It is harmful to "cut everything with one knife."

---

2. For purposes of conversion, 15 mu=1 hectare, or about 6 mu=1 acre.

3. See Deng Xiaoping, *Selected Works, 1975–82*

(3) BCDH works not only at the household-management level but also at the level of the production teams of unified management. It includes a double-level management structure within the collective economy and is flexible enough to allow farmers to choose individual or unified forms of management according to convenience and efficiency.

(4) Practice is the only criterion to test truth, and the main objective is the development of production. Farmers' innovation has proved favorable to the development of agricultural production and the improvement of living standards. It is in accordance with Marxist philosophy to respect farmers' initiatives. It would be unjustifiable to oppose what the farmers want.

The situation developed dramatically after 1980. The legality of BCDH as a form of economic responsibility system was confirmed officially by the CPC Central Committee Document No. 1 on 1 January 1982, 26 years after the implementation of the unified collective management and accounting system. *Bao-gan-dao-hu* (BGDH), that is, fixing work assignments to the individual household, was the simplest and clearest version of the responsibility system and enjoyed wide popularity among farmers. BGDH works as follows: a fixed amount of agricultural products is sold to the state and collective deductions are paid by the farmer; the remainder of the farm output and income are at the household's disposal. Thus, a series of troublesome procedures (such as setting production quotas, recording work points, calculating payment and reward) became unnecessary, and the problem of a household's not knowing its expected labor earnings was solved. BGDH can be considered as the dominant form of BCDH.

The production teams that adopted BCDH and BGDH amounted to about 20 percent of the total in 1980, with the number doubling in 1981 (to around 45 percent), doubling again in 1982 (to 89.7 percent), reaching 99.5 percent in 1983 and remaining unchanged until now.

Chinese peasants have been closely attached to cultivated land because it is the most important means of production and a subsistence guarantee for them. Document No. 1 stressed that land plots should be allocated according to the number of workers or to achieve a certain population-to-worker ratio. Our surveys, however, showed quite a different picture. About 70 percent of villages distributed equal plots to everybody, while less than 5 percent were based on worker numbers. The "equality" was reflected in both plot size and quality of land, that is, every household would take equal acreage of good and poor farmland. The consequence has been the tiny scale of contracted land plots, which are scattered here and there. A survey of 280 villages conducted by the former Rural Development Research Center (RDRC) under the State Council in 1986 indicated that the average amount of land per farm household was 9.2 mu (0.61 ha) divided into 8.99 patches; among them, 68.82 percent had land less than 10 mu (0.66 ha). Despite these shortcomings, the new type of responsibility system displayed immense potential in increasing productivity and income in labor-abundant rural China.

C. HOUSEHOLD RESPONSIBILITY SYSTEM IN OPERATION: ACHIEVEMENTS AND PROBLEMS

What are the results of the system? What do farmers, rural cadres, and government officials think of it? Since 1980, the household responsibility system has experienced 12 years of testing economically—increase and decrease of grain production as well as farmers' income—and politically. The system was easily approved by the majority of farmers and is suitable to Chinese conditions: thus it will be stable as a whole. The defects caused by lack of legislation and careful guidance during its early stages should be corrected in further implementation.

1. FIRST PERIOD: 1980–1984

This was a flourishing and satisfactory period for both farmers and the government. The annual growth rate of agricultural output was 7.3 percent; grain production and farmers' income increased by 6.17 percent and 13.4 percent, respectively. The urban-to-rural income ratio narrowed from 2.1 to 1.7, and the urban-to-rural consumption ratio fell from 2.8 to 2.3. Rural retail sales rose from 55.5 percent to 59.2 percent of total market turnover in the country. The expansion of demand in rural communities, in turn, strongly stimulated an expansion of output from urban industries. Rural cadres in some developed areas gradually shifted their focus to industrial enterprises and began a golden period in their development.

The responsibility system was challenged at this stage mainly by those families whose size had changed. The newcomers requested plots of their own. In 1984, the central government stipulated that the contract term for land could be prolonged to 15 years, and minor adjustments could be made before the term expired. According to our survey, 32.73 percent of national land adjustments took place for the first time in 1984.

2. SECOND PERIOD: 1985–1988

An accelerated growth of grain production in the first period exceeded grain consumption, and there was a glut of grain in 1984. Therefore, grain and cotton producers transferred part of their resources (land, labor, funds, fertilizer, etc.) to livestock, fishery, horticulture, and other more profitable enterprises since they were relatively free to choose production items; their comparative advantage of production in grain and cotton declined. Grain output dropped by 6.9 percent in 1985 and did not surpass the 1984 level in 1988. The balance of supply and demand was, nevertheless, basically retained. Grain consumption on a per-capita basis in both urban and rural areas began to decrease slowly in 1987 after a short period of increase because of larger supplies of meat and other nonstaple foods. This trend continues to the present. The total output value of agriculture grew by 4.1 percent per year, and farmers' income by 2.3 percent, reflecting a negligible influence of the reduced grain output. Successive increases in farmers' income for eight years were a great contribution to the national economy. China's development target—to double its GNP by 1990—was realized in 1988. This success is to be attributed first and foremost to rural economic growth.

Two issues prompted doubts about prospects of the household responsibility system in 1985.

First, the comparative advantage of agriculture of the previous five or six years disappeared and shifted to favor the urban industrial sector. The prices for fertilizer and other manufactured goods rose while the average price for grains declined. Occasionally, the state set a below-cost purchase price for grain. This made it very difficult for the government to buy from the farmers. Some producers resisted or refused to sell their contracted quotas of grain. Meanwhile, farmers and grassroots officials reported their output as low as possible to conceal the real level. Consecutive years of stagnation in grain production and troubles in grain purchases supported the arguments of those who disagreed with the household responsibility system; another group which had been neutral to the system became suspicious of its prospects.

Second, the farmers were not sufficiently confident of the stability of the system to make long-term investments, including soil improvement, water conservation, and land leveling. Their doubts were not dispelled even after Document No. 1 of 1984 established a 15-year term for land contracts. It was necessary to answer the question of whether technological progress and modernization could be realized in small-scale farming.

Briefly, three contradictions had to be settled: first, the divergence of the government's goal (more grain output) from farmers' needs (higher payments); second, the discrepancy between a desired stability of market supplies and a poorly developed market system with extremely decentralized decision-making by farmers; and third, the unlikely compatibility of small-scale production with advanced technologies. Relative to rural land policy, economists and practical specialists began to seek solutions to these problems from two different directions: one approach was to expand the amount of collective assets and enlarge the scale of management and the other to concentrate land in skilled farmers' hands by gradual introduction of market mechanisms. The amendment to Article 14 of the Constitution adopted on 12 April 1988 says, "The usage right of land may be transferred pursuant to law." Some progress could be discerned in both directions, but these trends did not become mainstream enough to affect China's rural agrarian system. Up to 1990, less than 1 percent of farm households in China experienced recontracts and transfers of land, involving 0.44 percent of the land.

The experiment to promote enlargement of scale through administrative channels has been applied mainly in coastal regions and suburbs of large cities where rural industrial enterprises are developing rapidly. Symptoms of a shrinking agricultural sector emerged in these locations, including sizable gaps between nonfarming and farming earnings. An enlarged scale of management, organized by local authorities and supported by rural enterprises, has been associated with improved mechanized equipment. The initial investment is estimated to have been about 1,000 yuan per mu. Labor productivity was found to increase significantly when the acreage of land per worker expanded. Although the objective of enlargement of management scale was to stabilize grain production, it was found that the decline of land productivity could not be stopped nor the increase of cost per unit of output avoided unless the crop mix was altered. So this pattern could hardly be popularized in other regions. A

survey made by the Ministry of Agriculture indicated that there were about 7,000 specialized teams or groups (which worked as unified contracting management units) in the country, covering only 0.23 percent of the land area; 72 percent of these teams, however, were located in the eastern part of China.

The case of Pingdu City, situated in the developed region of Shandong Province, demonstrated how to introduce competition to re-adjust contracted land plots. The plots were divided into two parts (this can be referred to as the "two-field system"): "food grain fields" (which amounted to about one-third of the total) were given on an equal-plot-to-everybody basis; and "responsibility fields" (which were allocated after competitive bidding) were shifted to the most skilled farmers without further segmentation. Thirty-two percent of farm households reduced the size of their contracted plots in four years, while 47 percent enlarged their contracted land. Land per unit of labor expanded from 7.2 mu (0.48 ha) to 10.3 mu (0.69 ha). Although this pattern has been widely accepted in the experimental counties, it accounts for a very small percentage of land in the entire country.

Whether a farmer will give up contracted land is closely associated with nonfarm employment opportunities. This explains why there are few cases of transfers of land use rights in regions which lack many nonagricultural jobs. According to the survey of the Ministry of Agriculture, 36.7 million hectares of land (38 percent of the total) were under the "two-field system" in 1990. Of 24.3 million hectares of responsibility fields, 64 percent were determined on the equal-plot-to-everybody basis, 30 percent by the number of laborers, and only 6 percent by competitive bidding. The latter made up only 1.56 percent of the cultivated land in the country.

3. THIRD PERIOD: 1989–1991

In this period, the government took measures to increase grain and cotton production and the farmers made efforts to produce more high-valued commodities. Nonfarming employment opportunities were affected by the macroeconomic austerity policy. More labor and other factors were transferred to agriculture to compensate for the losses. As a result, agricultural production—virtually all major products—climbed to a record level, and for the first time China experienced an increasing agricultural surplus, though of a regional nature. There was glut of cotton by the end of 1991. Average prices for farm products tended to fall due to overproduction and obstructed marketing channels; meanwhile, costs of production and after-tax payments and deductions imposed on farmers were rising continually. Thus agricultural growth did not bring the expected benefits to farmers, whose annual per-capita income increased only 1.2 percent during these years. The income gap between urban and rural residents widened again to 2.2 to 1; and goods consumed by these groups, to 2.8 to 1. Increased output without appropriate income growth became the most prominent issue of this period, especially in the central and western parts of the country where fewer nonfarming job opportunities were available. Leading grain-producing provinces suffered the most. Some farmers began to reduce their agricultural input because of uncertainty about the market situation and occasionally left fields uncultivated under the pretext of poor weather.

Almost all of the dramatic changes in these periods exceeded anyone's expectations. The household responsibility system radically altered the previous managerial rules of the rural economy. Farm households, community organizations, and the government had to readjust to the new circumstances. This need was not understood, however, at the beginning. Farmers made every effort to augment their incomes after they had gained some decision-making autonomy. But with artificially fixed, low purchase prices for bulk commodities such as grain and cotton, one cannot expect a constant accord between the farmers' behavior (in both production and marketing) and the government's intention. Farmers residing in the developed areas with more off-farm employment opportunities would belittle land cultivation and reduce their inputs to the less-profitable grain production, whereas growers working in the regions which lacked other jobs were eager to find lobbyists to diminish their state quotas and shift their resources to more lucrative crops than grain and cotton (which was in divergence with the government goal). It was necessary to stabilize the production and purchase of the main agricultural products since the government was not willing to abolish the retail "parity prices" of food grains for urban residents. On the one hand, government agencies and communities at all levels increased their direct and indirect financial and technical inputs for farm products included in the plan; on the other hand, they tried to control their production and planned purchases by making certain adjustments in the responsibility system so as to formulate a new balance of interests among the government, the communities, and the farm households.

As mentioned above, imperfections in the responsibility system were discovered by economists and administrators from various viewpoints, and suggestions were made to eliminate these faults. The following issues were put forward and discussed.

(1) Whether land productivity tended to decline, especially after the decrease in grain output in the 1985–88 period, including:

(a) distribution of land on an equal-plot-to-everybody basis led to dispersion and scattering, which is an impediment to technological changes;

(b) periodic readjustments of land plots were unavoidable because of ever-changing family size; this is a disincentive to farmers as they were uncertain about stability in agricultural production due to their reluctance to make long-term investment in land cultivation; and

(c) lack of social insurance and mechanisms for nongratuitous transfers of land use rights, which hindered land availability for skilled farmers (an undesirable but common phenomenon is that farmers who refuse to relinquish their plots are careless with crop production because of accessible nonagricultural job opportunities—it is a serious problem that land cultivation has become a part-time or sideline occupation in some developed areas).

(2) New problems associated with government and community administration, especially after the 1985 change in market price, which adversely affected grain production, such as:

(a) small-farmer flexibility in consumption, sale, and storage of grain, as well as use of grain as animal feed. This flexibility, however, tended to cause large market fluctuations, which authorities found difficult to stabilize. The troubles with grain

purchases in 1985–1988, followed by large overstocks of grain since 1989, are still fresh in people's minds; and

(b) more frequent disputes concerning homestead and orchard plots. The use rights for orchard and other side-production land were not distributed among villagers in the early years of the responsibility system, and the base payment determined in contracts was comparatively low. Land disputes associated with these products (including looting in some places) occurred more and more frequently as their market prices increased after government control was lifted.

(3) Given a consensus that there will be no essential changes in the exploitation pattern and contract system for 90 percent of the cultivated land, new locations will have to be found in most areas for surplus labor and investment funds. Two new land-management forms have been devised to meet investment needs for surplus resources:

(a) Courtyard economy. Farmers have been confident in the stability of their homestead and private plots despite their reluctance to make long-term investments in contracted plots. It has been found that they do excellent intensive, commercialized production in the limited space of their courtyards (usually 7 to 10 percent of their contracted land). According to some case studies, proceeds from courtyard production account for 30 to 80 percent of the farmers' total income. Frequent disputes over homestead plots could, therefore, be partly explained by the value of this production. This phenomenon is worthy of further investigation, since it has been argued that land segmentation is an inescapable consequence of declining land productivity, though it is uncertain whether such small-scale land management is promising in China.

(b) Exploitation of nonarable land. Cultivated land makes up only about 10 percent of China's land resources, while three or four times that amount of land potentially could be either reclaimed for agriculture or used more intensively. Although part of that land would be unsuitable for grain production, other portions might prove very productive for certain highly valued regional crops. The food-consumption structure of the Chinese people has changed remarkably since the mid-1980s. Demand for fruits and vegetables, livestock, aquatic products, and local specialties is growing continually, and there are many ways that currently nonagricultural land could be used to meet that demand. There was no strict institutional control on the noncultivated land when the contract system was introduced. Various forms of competitive bidding were tried for nonarable land instead of applying the "equal-plot-to-everybody" principle, so contracted land has been more scale-efficient. Whether we can find any hints from this fact to improve the existing responsibility system on an egalitarian principle is a problem to be studied carefully.

Various issues and clues appearing in the practice of the responsibility system require systematic explanation. To speed implementation of a series of laws and policy regulations adopted in China in the 1980s and to formulate more efficient land policies and administrative rules in the future, we need background information. We need to undertake case studies, surveys, and analyses of the current system, including comparisons with international

experiences, in order to draw scientifically based conclusions and generate policy implications.

D. CHINA'S AGRARIAN SYSTEM AS A RESEARCH PROJECT: HISTORY AND PROGRESS

The research project was approved jointly by the former Rural Policy Research Office (RPRO) under the Central Committee of the Chinese Communist Party and the former RDRC under the State Council in 1988 to improve rural land policy. A research group for this purpose was set up, the members of which had different disciplinary backgrounds and research interests; in addition, some well-known scholars and experts were invited as consultants. At the end of 1988, the RDRC asked the World Bank to assist in the research work and held several helpful discussions with specialists from the World Bank, the Land Tenure Center of the University of Wisconsin-Madison, the National Land Administration, the Chinese Academy of Social Sciences, and other institutes. A proper research program was formulated on the basis of the preparatory work.

This international cooperation on China's agrarian problems was interrupted for a while in 1990 due to organizational changes within the former RPRO and RDRC. With most members of the original research group now working for the Research Department for Rural Development (RDRD), Development Research Center (DRC) under the State Council, or the Research Center for Rural Economy (RCRE) under the Ministry of Agriculture, the project was resumed and continues. RDRD is responsible for management of the research work, and the Foreign Affairs Department of DRC is in charge of international liaison. The composition of the research group and consultants has been kept unchanged on the whole. The Ford Foundation has offered its active support and assistance.

The research program consists of the following four aspects:

(1) domestic surveys on six subtopics (village cadres, farm household behavior, farm output and efficiency, etc.) to give clear baseline descriptions of the situation of landownership and transfer of land use rights;
(2) analysis and study of six basic agrarian problems that will arise in the next stage of the reform (public funds associated with land and resource use, legislation and laws on landownership and land transfer, etc.) to lay the foundations for a new institution and policy formulation;
(3) comparison of China's situation with similar agrarian systems and/or resource endowments of selected countries to draw useful international lessons; and
(4) institutional innovation and policy suggestions to improve the agrarian systems, given the responsibility system as its nucleus.

Five parts of the domestic surveys have been completed in the period since the resumption of research (the first two parts were already done). First, surveys of rural cadres in 280 villages were finished in 1990. The questionnaires for this purpose were designed with the assistance of experts from the World Bank, the Ford Foundation, and the Land Tenure

Center. The surveys were very productive, and we now make the following preliminary conclusions:

(a) The ramifications from the lack of systematic lawmaking are manifest. It is urgent to update legislation with respect to the property rights system, land transference, land taxation, and arbitration. The current void has been filled to some extent at the village level by local regulations, which are typically poorly standardized and certainly insufficient in the long run.

(b) A regional discrepancy apparently exists between the allowance of land use rights transfers and the economic need for such transfers. Local regulations tend to preclude land transfers in high-income villages where the objective needs are strongest, and vice versa.

(c) The case of noncultivated land is very complicated, varying according to product and land type. Most orchards and lake beaches or ponds, for instance, were contracted with competitive bidding, while woods and wasteland hills were managed both ways—collectively and individually by contracts—and their ratios differed.

(d) Land disputes occurred frequently, averaging 12.5 incidents per village in 1988; the record was 52 cases in one village in one year.

(e) Great inequality was observed between implicit land taxes imposed on individual farmers in the form of fixed grain-purchase quotas and collective deductions. The difference between the heaviest and the lightest surcharge was as large as 20 or 30 times.

Second, an investigation of farm household behavior and production performance was concluded, for which data collection and preliminary analysis were recently conducted. In areas with different land systems and producing various crops, 800 households from 80 villages were chosen for random, 365-day accounting surveys. The questionnaires and tables were designed with the assistance of Dr. Gershon Feder of the World Bank, and Professors John Bruce and Michael Carter of the University of Wisconsin. The investigative work was entrusted to the General Rural Survey Team of the State Statistics Bureau; its staff members were trained in Beijing by our research group before going to the field, and a debriefing was held in Kunming subsequent to data collection. The goal of this survey was to analyze the impact of the agrarian systems on farmers' economic behavior (hence, on their land productivity and efficiency of management) and on the agricultural market. We formulated several hypotheses to be investigated; for example:

(a) The labor input of smaller-scale households is greater than that of larger-scale ones; consequently, the land productivity of the former is also greater than that of the latter.

(b) The labor input of part-time farmers is less than that of full-time farmers, but the opposite is true of capital input, so resource allocation is associated with microeconomic rather than macroeconomic efficiency.

(c) Farmers' long-term input is oriented mainly to their homestead and private plots rather than to their contracted fields; a longer contract term is, therefore, more attractive for farmers to increase their productive input.

(d) The elasticity of consumption of agricultural products of small-scale and part-time farmers is greater than that of large-scale and full-time farmers, but this is not so with respect to the elasticity of supply.

Third, case studies on changes in the agrarian system were carried out at the village level. There have been three kinds of change in agrarian contract relations since the responsibility system was adopted: the transfer of land use rights among farm households, the initiation of the "two-field system," and the appropriate concentration of land for family or collective farms with higher levels of mechanization. Intervention by authorities and communities in these changes varied, and management performance likewise differed. The research group selected three counties for preliminary analysis of conditions and results of the changes in the agrarian systems: Yueqing County (Zhejiang Province), Pingdu City (Shandong Province), and Wuxi County (Jiangsu Province). The completed surveys were considered preparatory to designing a formal scheme for case studies at the village level. Anticipated indications produced from the surveys included the positive or negative role of the community as landowner in the microadjustment of the agrarian system and the proper definition of landownership and rational land use.

Fourth, surveys were carried out on land taxes. The complicated yet undefined land-tax system formulated under the state monopoly of purchasing and marketing and under the commune regimes has yet to be reformed. The outdated land-tax rules, which can be likened to sporadic noise in a symphony of ongoing rural reform, are in confrontation with the responsibility system. Some villages or village organizations attempted to settle this problem by means of such microadjustments as "subsidizing farming with industrial profits," "two-land system," and the like. The land-tax problem remains unresolved. Our research group undertook case studies in four typical villages and disclosed the land taxes (invisible taxes, in particular) imposed by the state, township, and villages and the outlay of money collected. This finding is very important for constructing a new land taxation and agrarian system. The State Council consulted our center as to whether agricultural tax could be substituted for tax in-kind. We gave a negative answer, and our position has been accepted by the government.

Fifth, surveys on the development potential of nonarable hillside land and relevant institutional regulations are being completed. Studies have been carried out in collaboration with the mountain Development Experimental Area of Huaihua Prefecture, Hunan Province. About one thousand questionnaires were sent to farm households in an effort to obtain an exploratory judgment on the potential value of hilly regions, suitable managerial and contract forms, land transfer regulations, land taxation, shift of surplus labor, use of funds, etc.

Other kinds of surveys were also arranged, including juridical procedures associated with land disputes, data necessary for national land legislation, and so on. These surveys are ongoing. We hope soon to complete a more extensive investigation of 20,000 farm households.

E. NEW PROBLEMS UNDER THE NEW SITUATION

Chinese reforms acquired momentum in 1992. The national economy neared the completion of a socialist market system at an accelerated pace. The reform of the rural land system faces problems, but we can expect quicker progress under the new agrarian system. In the next ten years or so, we should achieve the following two goals by means of developing the factor markets (including land) and improving the legislative and administrative environment:

(1) full use of human resources—it is necessary to speed up the transfer of rural surplus labor to nonfarming sectors of the economy and the transfer of farmland to skilled farmers within the framework of the current landownership structure in order to optimize the scale of management; and

(2) rational utilization of land—it is important to strengthen the protection of agriculture at the macro level but to relax farm policies at the micro level in the course of redefining the government's functions in order to enhance land productivity and farmers' incomes to a satisfactory degree.

Foreseeable problems are discussed below.

(1) Adjustment of contract. Marketing of grain and other staple farm products is shifting to commercial principles, which will lead to a gradual abolition of such items in the contract as increment of grain output and fixed quota of sales to the state. On the other hand, the party awarding the contract should provide services so the farmers have access to the market. If content of the contract alters, it is reasonable to change the terms of the *jiating lian-chan chengbao zerenzhi* (household contracted responsibility system with remuneration linked to output).

(2) Fundamental work concerning the agrarian system. The reform developed in its early stages from the grassroots to the top. It was impossible to carry out a nationwide and unified assessment of rural land and to establish a cadastre and an operative administration. Agricultural tax has long been associated with small amounts of grain in-kind, while various kinds of implicit taxes imposed on farmers are irrational. It is imperative to build up an effective cadastral administration system and to reconstruct rational land taxation on the basis of scientific land evaluation.

(3) Rules on nongratuitous transfer of land use rights and developing a land market. The crux of the matter is how to compensate the farmer's long-term investment before the transfer of land. If the responsibility system lacks this mechanism, farmers will not make any investment in the land to increase its fertility and overall productivity. They do not hesitate

to invest large amounts in their courtyard economies, which serves as proof that they will do so in their contracted fields only when the compensation issue is solved.

(4) Regulations on nonarable land. Changes in the Chinese food-consumption structure have already taken place and dietary standards will be upgraded in the future. The value of the land that was overlooked in the past has been recognized and is increasing, especially the noncultivated land suitable for intensive production of high-priced farm produce. This is only a signal that the majority of land disputes in rural areas are related to homesteads and orchards. The fault inherent in the "equal-plot-to-everybody" system can be eradicated and a more effective and comparatively equitable system should be set up.

(5) Nonagricultural uses of farmland and its administration. Urbanization in China has entered a stage of high tide. It is a general trend of the times that some farmland turns to nonagricultural uses. Reduction of already scarce farmland should be replenished by development of new land resources. The practice in some regions in recent years showed that an overall balance of outflow and inflow of arable land could be realized. Changed uses of farmland result in its augmented valuation, which becomes an important source of funds to be invested in township enterprises or other development projects (especially on the outskirts of cities). However, incidents were reported from time to time that current or long-term interests of the agricultural sector were adversely affected due to unclear property rights and lagging legislation. The situation calls for a rational-interests distribution pattern and an operational administration regime.

(6) Working out a policy for interregional coordination of the agrarian system. Three types of rural labor mobility could be observed due to imbalanced economic development between regions: first, massive influx of labor into economically developed regions, mainly to nonfarm sectors; second, movement of rural labor from less-developed regions to developed areas, with migrant farmers reluctant to give up their contracted fields because of the household registration regime and a lack of security; and, third, the farmers in the intermediate zone tending to engage in part-time farming or "leaving the field but not the village." It is most troublesome that farmers of virtually all regions do not give up their contracted land. So, a policy which promotes the circulation of land use rights according to characteristic features of different regions is necessary.

(7) Legislation on land problems. All of the above issues should be standardized by a series of legislative procedures and put into a framework of laws and regulations. Relevant government agencies and intermediate organizations should be responsible for this process. Various methods occurring at grassroots levels for local microadjustment purposes could be used for reference in the course of legislation if the methods have proved effective in practice. The laws could be amended gradually, though initially they might not be as detailed or as complete as desirable.

COMMENTARY

by **Du Runsheng**

Director of the former Rural Policy Research Office
under the Central Committee of the Chinese Communist Party,
Member of the Central Advisory Commission of the Chinese Communist Party,
Senior Advisor of the Land Issue Study Group

As one of the sponsors of this research project, I am delighted to see the valuable work done by all members of the group. In addition, the researchers from the University of Wisconsin have had a fruitful collaboration with their Chinese colleagues. We have learned a lot from the design and research methods applied in this project and have been given a good deal of enlightenment for our forthcoming efforts. While some conclusions in the preceding paper support our original assumptions, others reject our hypotheses, prevailing opinions, or traditional points of view. The remarks on stagnation of grain output three years ago, for instance, dispute common criticism. The data and conclusions presented were drawn from reliable facts, many of which were not available before. Since the work of the study group was, on the whole, carried out in a scientific and down-to-earth manner, the conclusions which emerge are quite believable, though it is natural that some pending problems will require future in-depth study. The study group performed quite satisfactorily, though it took a long time. This is not their fault; it was caused by outside factors, including a change of institutions. I would like to express thanks to the Ford Foundation for its financial support and to the World Bank for its assistance in many aspects of our research.

In my following remarks, I express my hopes rather than give specific comments on the paper, though these hopes may digress from the main subject.

First, as the data obtained by the study group show, farmers in China are not confident enough about the stability of the economy because of continual adjustments over the past ten-odd years, even if not significant, in both the land plots and the overall system. The farmers are now, however, less anxious about returning to the old "collectivization" or "pool-everything-together" mode after a decade-long implementation of the household responsibility system. They feel stability and instability at the same time. That duality indicates to us that determining property rights and improving institutional arrangements are of great importance and are indispensable to our agricultural and national development.

Second, it seems to me that we should prolong the length of land contracts to 50 years or more, as well as institutionalize and legalize the responsibility system. Farmers' demands for changes in land tenure should be met through a land market or land use rights exchange market. That is to say, the land system should be stable, but at the same time land should be allowed to circulate among users. A land circulation market ensures high economic results,

and stability in the process of farmer decision-making facilitates land circulation. If the farmer's decision-making is unstable, the exchange cost will be high.

Third, the market in land use rights did not develop at the pace that we expected a few years ago. As our reports show, the recontracted land accounted for only about 1 percent, but the share will continue to increase this year and expand more quickly in the coming decade. Changes in the coastal provinces during these past two years support my assumption. Coastal real estate business, as a matter of fact, has recently advanced by leaps and bounds. Another positive indication is that obligatory purchase quotas have been abolished in one province after another this year. Because of these two factors, for example, farmers in Fujian and Guangdong now do not want to relinquish their land, although originally they did not want to continue crop cultivation and were even ready to give up their land contracts altogether. Besides, there were many disputes related to the distribution of land rent and added value. Petitions from farmers and conflicts between farmers and the government reflected a new understanding of land values. The upsurge in land prices that was seen in Japan and other countries is now occurring in China's coastal regions. This trend will spread inland and eventually to the whole country. As our nation shifts to a market-oriented economy, our open policy will extend from the coast to the inland regions and to the remote border areas, and the speed of change will probably exceed our expectations. It is necessary to confirm the prime importance of the policy that the transfer of land use rights should be accompanied by payment; gratuitous transfers are no longer feasible. A case study of land recontracting in Nanhai County (Guangdong Province) supports this point of view. Land given to farmers through recontracting in the past is once more being recontracted (that is, experiencing a "converse contract").

Fourth, land prices are to be set as the market in land use rights develops. Land is not necessarily priced after land assessment. Circulation of land use rights also leads to the formation of a schedule of rents, which is a variant of price. What happens when land prices appear? That is an open problem. Some farmers give up land; other farmers take in land. The production costs for the land receivers as managers should include the rent paid for land. Land rent consists mainly of the land tax (which is negligible) and the contract fees under the land contract system. The contractors' cost will now contain an additional factor, for it is necessary to capitalize land to avoid any undesirable influence of the land price on production. The land will need new investment such as purchasing mechanical equipment, for example, as the economy develops and population grows. However, we must study the situation carefully to calculate the possible results of land capitalization in China. We could start from the current experiments in rural areas and infer answers. Otherwise, we might conclude that mechanization in all cases is better than nonmechanization. I hope that monitoring and analyzing the situation can be done region by region and step by step so we can then make the necessary decisions.

Fifth, data show that small-scale farm management in China has produced high yields when compared to large-scale management. This is a new finding from our study group and differs significantly from prevailing opinion. What are the conditions and the causes of this phenomenon? Why is such a pattern of resource allocation efficient? How can these tiny farm units produce such a large quantity of output? It will be interesting to clarify and investigate

this curious phenomenon. The household responsibility system is, of course, a necessary condition, but this is not sufficient cause. It is important to find other reasons. We suggest that China, both mainland and Taiwan, as well as Japan, South Korea, and Southeast Asia all have this type of agriculture. Although this type of farming is largely the result of natural and geographical conditions, we can find ways to lessen the dependence. Small-scale farm management can be changed and replicated on a larger scale; however, we will never reach as large a scale as in the United States and Canada. We should therefore continue our study of the merits and shortcomings of small-scale farm production, because it could suggest directions for future change.

Sixth, what changes will take place in Chinese agriculture as our secondary and tertiary industries develop and our national economy becomes more market oriented (our "socialist market economy")? I think agriculture is often found in a difficult competitive position in the marketplace. It has been so situated under the centrally planned system. Will that vary under the market system? That is unlikely. We must not be misguided by the recent occurrence of consecutive good harvests and believe that our agricultural economy is free from troubles. Agriculture depends greatly upon natural conditions, and the incidence of natural disasters in China is frequent, about once every four years. Meanwhile, consistent with Engel's law, agricultural output is very inflexible. Underproduction makes the situation constrained, but overproduction gluts the market. Food differs from other consumer goods, and agriculture is generally a risky industry. The opportunity cost of agriculture today is very high. Few investors would put money into agriculture since it is the least attractive alternative. A real stagnation of agriculture in our industrialization period is a substantial threat. We must study how to devise an agriculture-protection policy, including how to adapt land institutions with the new market environment. It is important, for instance, to have a series of agencies to finance agriculture, while government loans and financial support should play a larger role through the banks. If the government permits the banks to offer preferential loans to farmers, agricultural investment troubles could be reduced considerably; we could run cooperative banks and mortgage credit, with the bank deficits compensated by the government. The government regulates price according to market law. It is irrational to demand that township enterprises subsidize agriculture (or "develop agriculture with industrial returns") by themselves, because it slows down their own local development. But that will be practiced in the future in the Chinese environment, and we don't know how long that will last. We should create conditions for farmers to enter the market; for example, set up small towns where they can develop a tertiary industry, provide socialized services for rural industrial enterprises to cut down exchange cost and risk, and so on. We should be serious about our good agricultural situation and work to upgrade and develop it.

Rural reform once happened before urban reform, and I think it should again precede reform in the other sectors. Many relevant issues involved in rural reform were examined in Mr. Huang's article.

COMMENTARY

by **John Bruce**

Research Fellow, Land Tenure Center,
and Adjunct Assistant Professor,
Department of Forestry,
University of Wisconsin–Madison, USA

I learned a great deal from the preceding paper. I had not realized, for example, that the household responsibility system had historical antecedents that went back so many years. It is a bit intimidating commenting on the paper after Mr. Du Runsheng, who initially conceived of this research project, and I am going to try to confine myself to one particular area. I've worked on land policy for so many years that the fact is sometimes obscured that I am a lawyer by training. I want to reflect on an issue that both Mr. Huang Qinghe and Mr. Du Runsheng have raised—the need to provide an adequate legal basis for the reforms that have taken place.

One of the things that has fascinated me as I have watched the process over the last four or five years has been the importance of local experimentation in the design of new institutional arrangements. A great deal of creativity has been generated at the local level, and it seems that when policymakers have needed to look for models for institutional innovation and change, they very often have been able to look to local and historical precedents in China, experiments that provided them with some concrete evidence of the acceptability of particular innovations to local communities in China.

That is very interesting to me as a lawyer, in that law in the West involves a rather different approach to the relationship between law and institutional change. In Western philosophies of law, we tend to think of law as an instrument for creating social change, that is, the state legislates to initiate change. Very often in China the pattern of land policy changes seems to have begun with experimentation at the local level, which the state then examines to determine its success and durability, and then later legislates to signal approval and provide stability.

What interests me here is the relationship between this creativity at the local level and national legislation. When we talk about providing a sound legal basis for the reforms that have gone forward so far—when we talk about enhancing, increasing those reforms, and consolidating in a way that avoids some of the uncertainties that the speakers have referred to—what kind of legal consolidation are we talking about? Let me suggest some possibilities.

It seems to me that, on one hand, there is a need for the state to provide basic guarantees with respect to property rights—with respect to rights which people have over their land—and

to provide fundamental protection for those types of rights that Chinese law permits. It is going to be very interesting in the coming years to think about the guarantees provided for rights and property. The household is now the focus of most production efforts. But households are composed of individuals, and very interesting issues will arise—are arising, I think—in relation to the rights of particular members of households. One of the factors that is very apparent in the industrializing rural areas of China is the increasing role of women in agricultural production. And there are going to be some very interesting questions about inheritance law, and divorce law, and the kinds of rights that are provided for women with respect to their access to resources. I think there is plenty of room for creative thinking here in the next few years.

But given that those basic guarantees will need to be provided, I think it is also important that the capacity for local experimentation not be lost entirely. It seems to me as though the legal framework which needs to be provided for China's land system needs also to allow a degree of flexibility for local communities to make decisions about how their land will be managed.

I have been impressed by the creativity that has existed at the local level, and while different communities in China are faced with some basically similar phenomena—the increase in market activities, for instance—these are felt in different degrees in different parts of the country, and different communities are working from very different resource bases. Although inclined to react in some common ways to those forces, there are also going to be differences. And the point that I am urging is that the legal stabilization of the system which needs to take place at some point in the near future should not foreclose the ability of those local communities to frame somewhat different land systems in response to their own particular situations.

In discussions with the researchers, the issue of part-time labor has already arisen. How local communities adjust their land systems to take account of the fact that much of the labor on the farms is now part-time, with much household labor working in rural industries, is an issue that confronts different communities in very different degrees. On a field trip through a number of villages, we saw that villages were reacting in somewhat different ways in their planning. That flexibility, I think, deserves to be preserved to some degree. And so I suggest that the legal stabilization, while it needs to provide a clear framework and increase the options for local communities (increase the freedom they have to decide what their members should be able to do with the land) should not necessarily try to suggest that every community needs to frame its regulations for land use in exactly the same way.

II. LAND TENURE AND AGRICULTURAL PERFORMANCE: REFLECTION ON GLOBAL EXPERIENCE

by Michael Carter, Gershon Feder, and Michael Roth

Professor of Agricultural Economics,
University of Wisconsin-Madison;
Chief, Agricultural Policy Division,
The World Bank;
and Senior Research Fellow, Land Tenure Center,
University of Wisconsin-Madison, USA

The relationships between land tenure and agricultural performance are complex, multidimensional, and important. This paper offers a framework for thinking about the many dimensions of these relationships, uses it to assemble and review selected literature on tenure impacts, and examines key issues surrounding land tenure and land reform policies.[1] Agricultural performance can be conceptualized in two important dimensions: (1) productivity and investment impacts; and (2) labor absorption, income distribution, and stability. The former emphasizes efficiency objectives, although not entirely. The latter emphasizes the importance of equity objectives, although labor absorption and stability may constitute efficient outcomes. Tenure systems also have two key dimensions: (1) property rights definition (that is, land rights associated with tenure possession); and (2) property rights distribution (that is, to whom these land rights are distributed). Section A examines how the definition of property rights affects agricultural performance in theory and practice. Section B reviews the performance impacts of property rights distributions. Finally, section C analyzes land policy options.

A. PROPERTY RIGHTS DEFINITION AND AGRICULTURAL PERFORMANCE

Considerable literature has been devoted to assessing the relative merits of individual versus common property systems, much of it inspired by Hardin's (1968) discussion of the "tragedy of the commons." A pond is overfished or a forest is overcut (thus the tragedy) because no one individual has the rights or incentives to manage the resource optimally, while the population at large has incentive to overexploit its use. Hardin's failure to distinguish between "open access" and true common property resources (in which use and management is shared by a group of users) has supported the widespread belief that private property is necessary for efficient resource use (Larson and Bromley 1990). Indigenous communities the world over have demonstrated a capacity to define and enforce rules of access in certain common

1. Land tenure reform refers to changes in the number, duration, and/or assurance of land rights associated with a given plot of land. Land reform involves the physical redistribution of land among members of society.

property settings, yet the literature is also replete with examples of open access problems, where property rules have broken down, or where high transactions costs (costs of developing, monitoring, and enforcing rules and contracts) prevent effective common property management. This debate over the merits of individual and common property systems highlights what is arguably the most important factor linking land tenure with agricultural performance: security of property rights in land.

There is widespread consensus among land tenure specialists that security of tenure is necessary for agricultural investment and resource conservation (Feder 1985). Improvements in weak or insufficient tenure security based on economic theory are hypothesized to: (1) increase credit use through greater incentives for investment, improved creditworthiness of projects, and enhanced collateral value of land; (2) increase land transactions, facilitating transfers of land from less efficient to more efficient uses and users by increasing the certainty of contracts and lowering enforcement costs; (3) reduce the incidence of land disputes through clearer definition and enforcement of rights; and (4) raise productivity through increased agricultural investment (Barrows and Roth 1990). Whether greater security of land rights, under indigenous or state tenures, has a positive payoff through linkages (1) to (4) is a crucial empirical issue in the economics of tenure policy and conversion.

Opinions vary on the degree to which indigenous tenure systems provide secure tenure. African indigenous tenure systems are sometimes said to induce inefficient allocation of resources because property rights are not clearly defined, costs and rewards are not internalized, and contracts are not legal or enforceable (Johnson 1972). There are examples in South Africa's homelands of land-surplus households leaving land idle instead of renting to land-poor households for fear of losing their land permanently, despite acute land shortage (Lenta 1982; Lyne and Nieuwoudt 1991). There is a long colonial history of land registration in Africa aimed at correcting perceived problems of inefficient resource allocation, soil erosion, declining productivity and consequences of the "tragedy of the commons." Other researchers (Boserup 1981; Noronha 1985) emphasize the dynamic nature of indigenous tenure systems, and Bruce (1993) cites a number of examples where indigenous tenure systems provide ample tenure security for innovation and efficient land use.

Even if indigenous systems are weakening and exhibiting characteristics of declining tenure security, this in itself is not sufficient justification for state intervention. Programs aimed at improving the capacity of the community to efficiently and equitably allocate and regulate land use, while effective in some cases, are ineffective in others. Attempts to individualize and strengthen land rights by land adjudication and registration have sometimes had marginal or negative effects on tenure security (Atwood 1990; Shipton 1989; Barrows and Roth 1990). Costs of land registration are substantial, and have important budgetary impacts if they are to be met by scarce public resources.

1. TENURE SECURITY[2]

Land tenure security is the individual's perception of his/her rights to a piece of land on a continuous basis, free from imposition or interference from outside sources, as well as the ability to reap the benefits of labor and capital invested in land, either in use or upon alienation. This definition contains three components—breadth, duration, and assurance—with legal and economic dimensions.

The legal dimension defines the composition (breadth) and duration of rights in the bundle and implies that one holds with complete assurance the rights embodied in tenure, even if that tenure is of short duration and confers meager rights. As it emphasizes complete possession, it so emphasizes with assurance the right to forbid others from exercising the land right in question. The economic dimension defines the value and certainty of economic benefits derived from de facto tenure in the land resource. Economic actions may diverge from legal allowances due to price incentives, high legal costs, or weak legal enforcement.

Robustness, or breadth of rights, is the legal quantity or bundle of rights held, or possession of key rights if certain ones are more important than others. Duration is the length of time (or season) that a given right is legally valid. The economic dimension requires, in addition, that the time horizon be sufficiently long to enable the holder to recoup with confidence the full income stream generated by the investment. As land rights are generally secure for the season, tenure insecurity is less an issue for short-term inputs (fertilizer) or innovations (new seed varieties) than for capital long-term improvements with benefit streams stretching far into the future (trees, irrigation). Assurance implies that right(s) and duration are neither absolutely present nor absent, but are held with varying degrees of certainty. An outsider having registration, for example, may have a strict legal right to the property, but due to limited resources and weak legal enforcement, may be unable to prevent squatting or loss of harvest. Tenure insecurity from an economic perspective is thus some function of three elements: (1) inadequate number of rights, (2) inadequate duration, and/or (3) weak assurance in exerting rights due to high enforcement costs.

Issues of tenure security must be framed in two dimensions: with respect to what piece of land, and for whom. One cannot assume that an individual with multiple parcels will hold uniform land rights on each (for example, purchased versus rented parcel). It also cannot be assumed that land use decisions can be traced solely to the tenure security of one individual (household head), ignoring the rights of other family members. In many customary or indigenous systems, family members other than the household head are allocated use rights to plots of land for their personal use, while the household head maintains suprafamilial authority over land allocation and transfer.

Colonial governments around the world have recommended programs of land registration to promote individualized tenure based on the perception that tenure systems are communal

---

2. Subsections 1–3 draw heavily on Place and Roth (1992).

and on the need to correct problems of severe land fragmentation, erosion, and land disputes resulting from population growth and land scarcity (see, for example, Swynnerton 1954 on East Africa). It has further been perceived that prevailing tenure systems restrict the ability of entrepreneurs to acquire or expand their landholdings and confer inadequate incentives for either individuals or groups to conserve and invest in the land resource.

Individualized tenure, typically defined as demarcation and registration of freehold, is generally assumed to be highly correlated with all dimensions of tenure security. However, land registration systems are not homogenous.

First, two general systems of land registration are distinguishable: (1) involuntary, compulsory, and systematic registration where registration is exogenously imposed by the state; and (2) purposeful or sporadic registration where the choice to acquire title is left to the landholder.

Second, registration systems do not confer equivalent rules and land rights from country to country, that is, systems are not equally robust. The land law in Uganda (prior to 1975) permitted alienation of land through the land market. However, the 1975 Land Law of Somalia and the 1964 Law of National Domain in Senegal grant landholders certain use rights, but prohibit land transfers except with the approval of the state (Somalia) or rural council (Senegal). The Somalia law allows only one parcel per household and imposes variable limits on size of parcels depending on soil quality and land use.

Third, land registration systems do not confer rights for periods of equal duration. Freehold tenure implies that rights are granted to the landholder in perpetuity. Leasehold tenure confers certain land rights for periods of finite duration and is often subject to land use conditions. Registration in Uganda prior to 1968 was based on freehold, but after 1975 freehold tenure was abolished in favor of 199- or 99-year leaseholds. Registrations in Somalia are renewable leaseholds that provide landholders with access rights for 50 years.

The way in which registration programs are implemented and legal statutes are written fundamentally affects tenure security. Some level of insecurity will prevail as long as the land code confers an inadequate bundle of rights, the duration of one or more rights is insufficient, or rights are ambiguously defined and enforced.

2. MEASUREMENT OF TENURE SECURITY

Devising an objective scale or index of tenure security is difficult because "security" is unobservable. A number of alternative approaches or proxies have been tried:

1. Strata distinguishing different land tenure systems (village or ethnic stratification). Tenure security is not measured directly; rather attributes of tenure security are inferred from differences among performance indicators (for example, land markets, income, investment, or productivity).

2. The number (bundle) of land rights held, as perceived by the household head or by individual plot holders. The greater the number of individual rights in the bundle of rights conferred by the tenure arrangement, the greater the real or potential value of the land resource to the holder. In recent studies in Ghana, Rwanda, and Kenya, the World Bank used perceptions of land rights as a proxy for tenure security. Binary responses (one if the respondent affirms that a particular right is held, zero if not) were obtained for each of a well-defined set of rights: (1) use rights—right to grow perennial crops, grow annual crops, make permanent improvements, bury the dead, collect firewood, collect wild fruit, and cut trees; (2) exclusion rights—right to exclude others from collecting wild fruits or firewood, grazing animals, using footpaths, cutting trees, and so on; and (3) transfer rights—right to sell, give, mortgage, lease, rent, bequeath, and register. These rights are often grouped into three land-rights categories ranked sequentially from highest to lowest tenure security.[3] Complete transfer rights are those that can be sold by the current operator. Parcels that cannot be sold but may be given or bequeathed are classified as having preferential transfer rights because gifts or bequests are normally directed to family or kin. The remaining parcels, those not permanently transferable, are placed into the limited transfer rights category. In the course of data analysis, the World Bank found greater breadth of land rights on those parcels with "complete transfer rights," followed by those with "preferential transfer rights," and finally those with "limited transfer rights."

3. Mode of acquisition, which is correlated with the nature of land rights acquired in the land transaction. Land acquisitions through borrowing or renting typically imply the transfer of certain use rights but not transfer rights. Inheritance normally permits heirs rights of exclusion and temporary transfer (renting) in addition to use rights, while land purchase usually implies the ability to transfer all rights. Parcels acquired on non-lineage land are generally less secure because they face greater risk of being reclaimed by members of the lineage group.

4. The presence or absence of land registration, distinguishing differences between state tenure and indigenous tenure systems. A variant of this is an index based on different types of documents certifying land rights, ranked from low to high tenure security.

5. The presence or absence of the land title or registration certificate. Lenders' requirement of the title certificate as proof of ownership in evaluating collateral confers to the certificate an economic rent not provided by registration alone.

---

3. A number of assumptions were made to determine this security ranking: (1) transfer rights were assumed to imply greater tenure security than use rights; (2) among transfer rights, rights of permanent transfer were assumed to be superior to rights of temporary transfer; and (3) among permanent transfer rights, the right to sell was assumed to be superior to the right to give, which in turn dominates the right to bequeath. These assumptions were justified as follows. If a parcel can be transferred, the landholder ought to be able to use the land as s/he wishes, but the converse is not true. A permanent transfer implies the ability to make a temporary transfer but not vice versa. Transfers through gift or bequest are more restrictive than those by sale since the latter can be made to a wider range of individuals.

6. Tenure security indices: for example, an index derived from the breadth of land rights held by individual plot managers in Senegal (Golan 1990); and an index derived from landholders' perceptions of the risk of losing land in Somalia (Roth, Unruh, and Barrows 1992).

3. General Theoretical Model

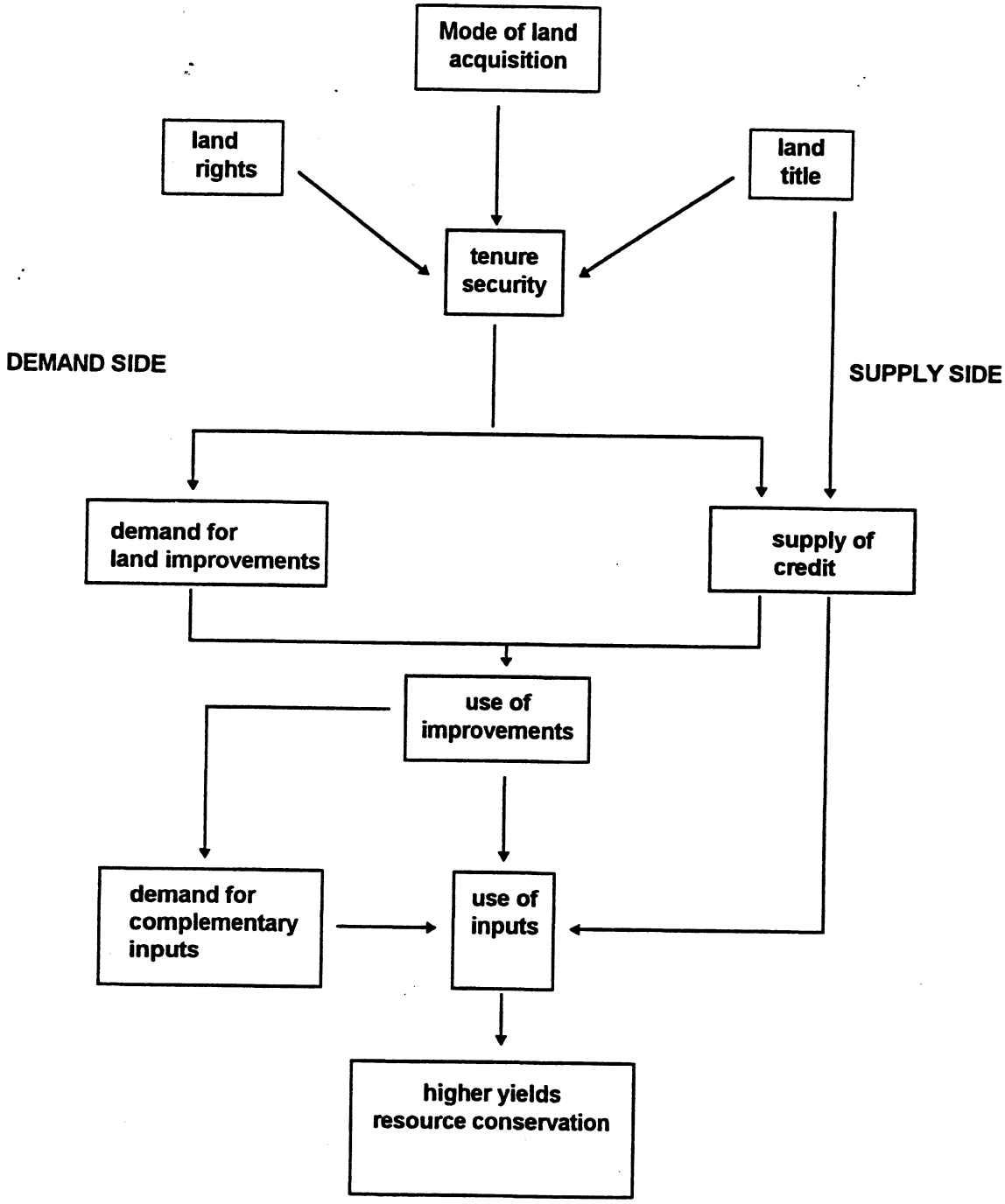
A conceptual model relating tenure security to agricultural investment is illustrated in figure 2.1. Tenure security is hypothesized to be influenced separately and jointly by three types of tenure status: perception of land rights held, mode of land acquisition, and land registration/title. Tenure security in theory includes both demand-side (incentives to farmers) and supply-side (incentives to lenders) effects. On the demand side, an enhancement in tenure security would increase farmer demand for medium- to long-term land improvements, and to a lesser extent, for mobile farm equipment. This increase in demand would be derived from two sources. First, greater tenure security would increase the likelihood that the returns from investments will be captured by the operator. Second, increased tenure security would reduce the incidence of disputes, freeing up resources which would otherwise have been used for litigation. Demand for complementary short-term inputs or improvements (for example, fertilizer and labor) would be expected to increase as well, from enhanced tenure security and/or from land improvements (for example, higher water retention from construction of ridges increases fertilizer profitability). Given these hypotheses, additional investment would lead to higher yields as long as the farmer has adequate access to viable technologies, inputs, extension advice, household labor, and financial resources. Because of potential supply-side effects, higher yields are possible even if households lack sufficient financial resources of their own. Individualized tenure accompanied by transferable title may improve the creditworthiness of the landholder, especially for long-term credit, and may enhance the land's collateral value, thereby raising lenders' expected returns.

4. Empirical Evidence

The path-breaking work of Feder and Onchan (1987) in Thailand established the importance of transferable land title in increasing the collateral value of the land asset, in increasing titleholders' access to formal credit, in increasing the adoption of land improving investments (bunding, destumping), in increasing the use of variable inputs, and in increasing output. This work pioneered a series of research activities mainly in Africa in recent years examining the effect of tenure security on land improvements, productivity, and credit use.

In three prefectures of Rwanda characterized by acute population pressures and land fragmentation, Blarel (1990) found that lands with complete or preferential rights were more likely to be improved than those with limited rights. Plots with short-term use rights were found to be somewhat more productive than those with more extensive rights, as land-poor

Figure 2.1 Conceptual model linking title and tenure security with agricultural performance



households rent in land and farm plots very intensively to meet food security needs. Credit use was extremely low, and unrelated with land rights perceptions.[4]

A second World Bank study in three research zones in Ghana (Migot-Adholla et al. 1990) also found a very weak relationship between land and credit.[5] Possession of complete transfer rights was found to have a positive relationship with investments in drainage, excavation, and tree crops in two research sites. No significant relationship was found between land rights and investments in tree crops and destumping in the third site.

Recent work by the Land Tenure Center in Uganda (Roth, Cochrane, and Kisamba--Mugerwa 1993) found a positive and statistically significant relationship between possession of purposeful registration and investment in continuous manuring, mulching, fencing, and tree crops. However, credit use in the research area was found to be very low, mostly acquired from informal sources, and mostly applied to non-farm uses.[6] Given the limited use of formal credit, the investment effects that are occurring are attributed to improvements in tenure security derived from either higher expected investment returns or lower investment costs.

Research by Roth, Unruh, and Barrows (1992) in an irrigated scheme in Somalia failed to find a significant relationship between possession of land registration and investments in leveling, bunding, and canal maintenance. Yet possession of registration was found to have a strong positive effect on land value perceptions, and on an index of tenure security. Credit use was again found to be very low, particularly among smallholders.[7]

While property institutions may in some instances represent a constraint to agricultural investment and productivity, empirical research from the above Uganda and Somalia studies, and work by Carter, Wiebe, and Blarel (1991) in Kenya, indicate that parcel and farm size are far more important indicators of yield and investment. While smallholders are often more technically efficient in production, larger farms in Africa often have sizable economies of size in gaining access to credit and inputs.

In addition to property rights, investments and higher productivity require the ability to transfer land at low transactions costs (to be considered suitable collateral for mortgage), the availability of profitable technological options, access to information about technology use, and the availability of labor and capital inputs at "reasonable" prices. Rather than

---

4. Only 7 of 1,654 blocks sampled had ever been pledged or mortgaged.

5. Only 8 of 35 commercial bank loans in Anloga (115 households) were secured by credit, 5 of 18 in Wassa (150 households), and 0 of 7 in Ejura (158 households).

6. Of 228 households in the survey, only 15 had acquired loans in the previous 5 years; 4 were purposefully registered households (5.6% of sample), and 11 were unregistered (9.6%). Of these loans, 46% were obtained from moneylenders, 20% from commercial banks, 20% from neighbors, 7% from relatives, and 7% from cooperatives. At the time of the field research in 1987, the nearest agricultural bank was in Kabale, 3 hours away by road.

7. Formal credit had been acquired by 0% of nonregistered smallholders, 2.9% of registered smallholders, and 11.8% of registered commercial landholders.

undermining the importance of tenure security, the above findings suggest that secure tenure is necessary but not sufficient for agricultural development, and that the expected benefits would be strongest in situations of dynamic technology and well-functioning markets.

B. LINKAGES BETWEEN AGRARIAN STRUCTURE AND PERFORMANCE

"Agrarian structure" denotes the distribution of land and other resources among the classes of agents who comprise the agrarian economy, and refers to who owns and operates agricultural land. The question of how agrarian structure evolves with agricultural capitalization and growth spawned the classic contributions of Lenin, Chayanov, Kautsky, and others who analyzed the development of European agriculture.

1. INVERSE FARM SIZE-PRODUCTIVITY RELATIONSHIP

The notion that certain agrarian structures might block or distort agricultural growth and economic transformation became central to the promotion and design of land reform efforts in post-World War II Asia and Latin America. A key intellectual component of the case for land reform in many of these instances has been the inverse relationship between farm size and farm productivity—meaning that output per hectare declines as farm size increases. The literature on the inverse relationship is voluminous. *Agrarian Structure and Productivity in Developing Countries* (Berry and Cline 1979) remains one of the best reviews of this literature, offering an impressive assemblage of evidence confirming the relationship.

The inverse relationship implies an unambiguous linkage between agrarian structure and the two dimensions of agricultural performance outlined in the introduction—productivity and investment impacts—as well as labor absorption, income distribution, and stability. In a world characterized by the inverse relationship, an agrarian structure centered on small farms is likely to be relatively labor absorbing (for reasons to be discussed below), as well as offering a share of rents to laboring classes. These outcomes can be obtained according to the inverse relationship, with no sacrifice in production.

The double attractiveness of small farm structure can be seen most clearly in the conventional case for distributionist land reform (see Dorner and Kanel 1971). Under the inverse relationship, land reform and the goal of social equity can be pursued without economic constraint and in harmony with agricultural productivity goals. Indeed, the greater the scope of land reform, and the greater the number of people among whom the land is divided, the greater would seem to be the beneficial productivity effects.[8]

---

8. In the absence of a productivity tradeoff or constraint, land reform should be politically nonproblematic for two reasons. First, as Cline (1975) argues, land reform can be self-financing under this circumstance. The added dose of farm production achieved by smallholders should suffice to buy off the acquiescence of large landowners to reform (without recourse to taxpayers) while still leaving a margin of improved living standard for the new smallholders. Second, a relatively low-productivity large-farm sector should present itself as an unnecessary brake on other sectors of the economy. Mobilization of a coalition between urban-industrial interests and peasants would promise the ability to politically overwhelm the large-farm class.

While the inverse relationship underwrites an unambiguous structure-performance linkage, there are indications that the linkage is more complex than the inverse relationship suggests. The inverse farm size-productivity relationship would seem to imply that market forces would tend to autonomously shift land toward small-scale producers.[9] Yet the agrarian histories of some Central and South American countries display exactly the opposite tendency, with land shifting away from small farms to large farms in a process which has been dubbed "de-peasantization." Perhaps reflecting an awareness of that history, some of the bolder land reforms in Latin America eschewed the redistribution of land from large to small farm units, and instead chose to form production cooperatives on the base of existing private large-scale farm units. These observed policy choices, together with sometimes expressed doubts about the productivity of small-scale, part-time, or semi-proletarian agriculture, suggest that the relationship between structure and performance is more variegated or complex than a simple inverse size-productivity relationship.

2. UNDERSTANDING AND GENERALIZING THE LINKAGE BETWEEN AGRARIAN STRUCTURE AND PERFORMANCE IN COMPETITIVE MARKET ENVIRONMENTS

In an effort to better understand the linkage between agrarian structure and performance, this section begins by exploring possible explanations of the inverse relationship. It is possible to group the explanations into three general hypotheses:

(1) the misidentification hypothesis;
(2) the Chayanovian poverty hypothesis; and
(3) the multiple market failure hypothesis.

The first two hypotheses are discussed and criticized as generally incomplete explanations. The multiple market failure hypothesis, on the other hand is argued to provide a more comprehensive explanation for the inverse relationship. But, at the same time, it points to a more complex, and ultimately more problematic, relationship between agrarian structure and performance.

The **misidentification** hypothesis asserts simply that the often observed size-productivity relation mistakes what is really a relationship between land quality and productivity for a relationship between size and productivity (for example, farms with better quality land tend to be subdivided to a smaller size, creating the appearance of an inverse relationship; see Carter 1984, p. 137). Another mechanism promoting land subdivision and quality concentration has been identified as "distress sales," whereby, for whatever reason, peasants who must sell part of their land retain the best (Sen 1981, p. 204). Whatever the mechanism the effect is to diminish farm size with the result that soil quality is believed to be the primary contributor to the higher outputs per cultivated unit. Studies in India carried out to assess the impact of soil quality have generally concluded that while soil quality does appear to be better

9. As Carter and Mesbah (1993) indicate, there are answers to this question which are consistent with an inverse relationship-based case for redistributive land reform.

on small farms, the inverse relationship survives independently of this (Sen 1981, p. 204; Carter 1984, p. 39).

More recent studies of India by Bhalla and Roy (1988) and of Java by Benjamin (1992), do find stronger evidence that strength of the estimated inverse relationship tends to sharply diminish as analytical efforts to control for the effect of soil quality increase.

The **Chayanovian poverty** hypothesis posits in its pure form that the inverse relationship arises as a result of demographic changes in the size and composition of the peasant family. Striving to maintain some per capita consumption level, the peasant family as it grows is forced either to increase the cultivated area or to intensify its use of labor per cultivated unit. On a farm of fixed size as the family grows and per capita income falls, the working family members intensify their labor effort and thereby increase productivity per cultivated unit. Significantly, the family labor farm is prepared to accept a lower marginal return per unit of labor than a farm organized on purely capitalist wage conditions (Sen 1981, p. 204).

In situations where no formal land or labor markets are assumed to exist, but where farm expansion is possible to some degree—as in nineteenth and early twentieth century Russia—the family labor farm demonstrates a "cyclical mobility" as farm size increases and later drops with changes in family size and composition. Even in cases where the size of the peasant farm is fixed, as seems to be more the case in present-day India or Latin America, the cyclical nature in labor use by the family labor farm could establish the inverse relationship.

A.K. Sen's variation on the Chayanovian theme (1966, pp. 425-50) posits a subjective family equilibrium based on a marginal product equal to the marginal utility of leisure. Sen defines an internal, endogenous family "wage" or the real cost of labor, given by the individual's rate of substitution between leisure and labor. In his model, labor is applied up to the point where its marginal product equals its "real cost" in terms of leisure foregone. If family size increases while the land size remains fixed, the family's equilibrium consumption level falls and they must intensify their work if they hope to achieve the same utility level enjoyed before. This result is expected since the marginal product of labor per unit of land is lower. In both cases the family labor farm's response "explains" the inverse relationship.

Criticism of the Chayanovian and Sen version of the inverse relationship has focused on its subjective nature and its presumption that peasants live in autarkic isolation from existing markets, particularly for labor (Sen 1981, p. 207). The thrust of these criticisms is to question the empirical veracity of the implied and explicit assumptions. Thus it is claimed that it is not appropriate to assume a leisure preference among poor peasants since many subsist close to a biological limit, with leisure simply not being a relevant option.

The fact that the inverse relationship cannot be explained completely in terms of intrinsic factors such as land quality and demographic and subjective factors suggests that a broader explanation is needed. Given the fact that the family labor farm is frequently involved in varying degrees of market relations, the third hypothesis indicates that the inverse relationship is the result of **multiple market failures.**

The fact that market failures are multiple is central to this argument. If, for instance, the failure of just a labor market is the case, then the family labor farm could achieve an optimal allocation of its labor by resorting to the "perfect" credit and land markets. Here the family labor farm would simply lease in the amount of land needed to keep an optimal cultivated unit proportionate to the family size. If only the labor market was imperfect, labor inputs and output per hectare would be identical across farms (Feder 1985, p. 311).

However, the frequent observation of a farm size-productivity relationship suggests that there are imperfections in other markets (capital and land). For example, small farm capital constraints may limit the small-farm sector's ability to absorb land through rental or sales transactions. Thus excess family labor would still be bound up on small farms as in the Chayanovian theory. Central to this explanation is the notion that access to capital is, in equilibrium, quantity rationed. Stiglitz and Weiss (1981) develop a general theoretical rationale for capital rationing, and Carter (1988) extends their theory to suggest that capital rationing in low-income agriculture will tend to systematically ration smallholders completely out of the market. Feder (1985) and Eswaran and Kotwal (1986) theoretically show that in the presence of farm size-differentiated access to capital, otherwise uninhibited land-rental markets are unable to reallocate land with sufficient agility to eliminate differential factor productivity across holdings. From the multiple market failures perspective, the existence of an inverse relationship says as much about the constraints of the small-farm sector (its capital scarcity and inability to use the market to expand its scope of cultivation) as it does about its strengths (its cheap labor access).

The multiple market failures explanation also carries with it the implication that scarce capital on smallholdings can have countervailing effects on farm productivity. Feder (1985) and Carter and Kalfayan (1989) develop the argument that capital constraints attenuate the inverse relationship. In agriculture, capital is needed not only for land-market transactions, but also to finance the working capital costs of a seasonal production process in which output is forthcoming at the end of the cultivation period. Therefore, in an environment of imperfect capital markets, the strength of the inverse relationship dissipates even in the face of marginally very cheap labor. As Carter and Kalfayan stress, even own labor requires up-front financing (in the form of subsistence costs) when production is seasonal. Without that financing, the cheap-labor household may find it necessary to pursue low paying off-farm jobs whose only virtue is preharvest payment of wages.

Carter and Kalfayan show that the interaction of labor and capital market imperfections can fundamentally alter the linkage between agrarian structure and performance. They demonstrate the plausibility of a "skewed-U-shaped" relationship between farm productivity per hectare and farm size. Very small farms exhibit a seemingly conventional inverse farm productivity-size relationship. This relationship, however, is reversed at the farm size at which external credit becomes available. After this turning point, productivity per hectare increases with farm size to an inflection point after which the productivity-size relationship levels out. This theoretical prediction accords well with some empirical evidence (Villa 1977; Carter and Wiebe 1990), and with the more general stylized fact of low-productivity "semi-proletarian" agriculture in Mexico and Central America.

The multiple market failures hypothesis further complicates the relationship between agrarian structure and performance. It raises the possibility that small farms are not the most productive in some structural and capital market environments. However, smaller farms may still be the most labor absorbing. Transfer of land to larger, better capitalized, farms would reduce labor absorption per hectare. The linkage between agrarian structure and performance thus becomes more complex, with tradeoffs possible, and perhaps necessary, between the productivity and distribution dimensions of agrarian performance.

Finally, the multiple market failures hypothesis raises important questions about the longer-term evolution of agrarian structure. The multiple market failures perspective recognizes that smaller farm units are not unambiguously stronger and more competitive than larger units. How the land market resolves the competition for land between differently sized and differently constrained farm units is a difficult and important question. The possibility emerges that the longer-term evolution of agrarian structure may be intrinsically destabilizing if growth occurs down a large-farm path, displacing peasant households and absorbing relatively little labor.

To summarize, there is ample evidence that how land is distributed (the agrarian structure) matters and shapes agricultural productivity and income distribution. Efforts to understand the persistence of structure-performance linkages identify a series of multiple market failures which seem to intrinsically characterize rural economies. It is the presence of these intrinsic market failures which ultimately links performance to structure in the short run. These same market failures suggest that the longer-run evolution of agrarian structure in a market economy may not optimally resolve output-employment tradeoffs from a social point of view.[10] The often uneasy agrarian transformations of Latin American countries—which have coupled agrarian growth with "de-peasantization," premature mechanization, and perhaps increases in rural poverty and insecurity—testify to the possibility of problematic patterns of structural evolution. At the same time, the smoother transformation of East Asian economies built on stable small-scale family farms indicates that no single, simple statement can do justice to the complexity of structure-performance linkages.

C. Policy Aspects of Land Markets[11]

One policy instrument which has already been discussed earlier in the paper is land titling and registration. When titles and registration are backed by an effective legal system capable of enforcing land rights, they serve to reduce asymmetric information, increase the volume of land transactions, and thus improve the allocation of land from low-value users to high-value users.

---

10. Braverman and Stiglitz (1989) make this same point in a model of prototypical share-tenancy systems of South Asia.

11. This section draws heavily on the presentation in Binswanger et al. (1993).

1. LAND REFORM

The other policy instrument which has been referred to in the preceding section is redistributive land reform. Redistributive land reform is typically motivated by public concern over the increasing social tensions brought about by an unequal land distribution. The efficiency implications of land reform are not obvious given the complex nature of the relationship between farm size and farm productivity discussed above. Redistributive land reform could increase efficiency, by transferring land from less-productive large units to small, family-based farm units. Market forces would not typically generate an ownership structure whereby the large owners will break their holdings to sell to smallholders, given the possibility of a U-shaped relationship between productivity and size. In such a case the value of the land to the large owner may well exceed the discounted sum of agricultural incomes that smallholders can expect to receive where their access to long-term credit is already exhausted (by mortgage-based land acquisition), even though they enjoy some productivity advantages due to the lower supervision costs characterizing operations based on family labor.

Governments can, of course, bring about a redistribution toward family-based farms through coercive measures or by subsidizing the transfer of ownership from general fiscal resources. Efficiency gains can then materialize if issues of access to credit, inputs, and markets are resolved through appropriate institutional arrangements (for example, credit cooperatives and marketing associations). This is of particular importance in circumstances where under the pre-reform system the large landowners performed functions of credit and marketing intermediation for tenants.

As pointed out by de Janvry and Sadoulet (1989), there is a basic difference between Asian and Latin American experiences in the implementation of redistributive land reforms. In many areas of Asia, tenancy, in the form of landlord estates, has been widespread, hence operational units were already being managed by the would-be beneficiaries of the reform. The reform thus addressed essentially the equity concerns of society by transferring the entitlement to land rent without much change to the operational farm structure. Potential efficiency gains were associated with improved investment incentives and increased security of tenure. These gains may be modest if tenants had to compensate previous landowners at near-market prices, security of tenure had been high, and cash-rent for contracts had prevailed (or the disincentive effects associated with share-tenancy were low as suggested by Otsuka and Hayami 1988).[12] Costs to the government of complementary investments supporting the transition in ownership structure (for example, infrastructure, housing, draft animals, management training) were minimal as the structure of the agrarian production

12. Empirical evidence indicates that economic effects of such land reforms could still be considerable. Land reforms in Japan and Taiwan were associated with higher investment, rapid adoption of technological innovations (which had been available before), and higher use of family labor (Callison 1983). In Taiwan, in the 1953–60 period, annual increases of inputs and outputs by 11% and 23%, respectively, show an increase in factor productivity by 12% per annum (Koo 1968, p. 65, quoted in King 1977, p. 215). In Japan, labor and land productivity increased by 5% and 4% per annum, respectively, in the 1954–66 period (King 1977, p. 200). Land reform in Korea had a positive impact, agricultural growth increasing at a rate slightly below 4% a year (Dorner and Thiesenhusen 1990).

system was already in place. But, if governments introduce land reform into an environment that favors large ownership holdings by capitalizing agricultural-income streams into land values, one would expect the recipients—small farmers—to sell out to larger farmers, defeating the purposes of the land reform. Thus, a precondition for a sustainable land reform is the prior elimination of all implicit and explicit distortions favoring large farms.

In Latin America and parts of Africa, the farm structure consisted of labor-based estates. The threat of land-reform legislation, together with subsidized credit, has led to considerable modernization (through capital intensification) of those estates making subdivision more difficult (Castillo and Lehmann 1983; de Janvry and Sadoulet 1989). The social cost of a transition into a viable post-reform smallholder economy is likely to be increased by the absence of management experience among reform beneficiaries and continuation of policies favoring large farms. If unattended, both constraints could lead to a stagnant reform sector, impoverishment, and eventually a failure of the land reform as beneficiaries sell farms on which they cannot subsist, thus leading to the reemergence of land concentration.

An issue which in practice relates to land reform and on which we touch only briefly is farm collectivization. In the history of many countries, land reform consisted of transforming labor-based estates into community-owned, jointly operated farm enterprises. Aside from the ideological underpinnings of collective farming, some proponents of this format of organization were motivated by the desire to maintain presumed economies of scale in both production and related activities (input supply, marketing) or to educate reform beneficiaries during a limited transitional period (Chile). In some cases the concern was that equitable distribution of land to all the eligible landless would imply farm sizes so small as to be below the optimal size for a family farm. Concerns of this kind underlie calls for recollectivization in China in recent years. Some of the opponents to farm privatization in Russia raise similar arguments.

The problems associated with household labor supply and intertemporal consumption in collective production have been much discussed in the literature (Bonin and Putterman 1987; Putterman 1989) and the poor performance of agriculture under a collective-production mode is well documented. In the absence of economies of scale, the only reason to form collectives would be to overcome imperfections in the insurance markets.[13] Even when they were the result of a land reform, collective units of production performed badly in many countries and were in many cases broken up into individual farm units over time.

---

13. Carter (1987) has shown that in the absence of other possibilities to ensure against non-covariate risks, rational risk-averse individuals would choose some degree of cooperation to enjoy the associated insurance benefits even with no economies of scale. While theoretically valid, empirical evidence (e.g., Walker and Ryan 1990) indicates that covariate risks are of much higher importance and that social ties may provide a less costly means to ensure against non-covariate risks.

The conclusion, in the context of land reform, is that cooperative arrangements for the utilization of large machinery, joint marketing, and cooperative credit need to be made,[14] but that for crops where no economies of scale exist, collective forms of production will either be broken up from within or lack efficiency and thus only will be suitable, at best, as a transitional institutional arrangement.

2. REGULATIONS LIMITING LAND SALES

Governments and local authorities have often enacted various rules restricting transactions in land markets. Land-rental markets generally increase efficiency. This may not necessarily be the case for land-sales markets under the conditions of imperfect markets for credit, labor, and other inputs prevailing in most developing countries.

Restrictions on sales typically accompany major changes in the land ownership pattern (redistributive land reform or issuance of titles) and are designed to prevent occurrence of landlessness and the associated social tensions.[15] Land sales and land transactions can increase efficiency under ideal conditions as they improve resource allocation. Frequently the prohibition is not enforceable as disguised sales and rentals (for instance, presented as partnerships) take place, but it is likely that attempts to evade the restriction involve transaction costs, which are a loss to society.

The ability to transact land also has a bearing on the owner's access to credit. Inability to obtain credit due to the inability to use land as collateral has prevented land-reform beneficiaries, or settlers who have received state-owned land which they are prevented from mortgaging, from obtaining credit, often during the establishment phase when they needed it most urgently. Since the only alternative—government-provision of credit—has its own problems, such restrictions may involve considerable efficiency losses.

Land ownership ceilings have often been imposed[16] in an attempt to induce the break up of large estates, or to prevent the processes of land reconcentration. While theoretically efficiency-enhancing in situations where a negative size-productivity relationship exists, such

---

14. Meyer (1991) shows that this "associative farming model" can elicit optimal effort from an administrator, who provides marketing and credit channels and technical assistance, and from beneficiaries, who engage in individual production. Given the success of marketing, input supply, and extension cooperatives in developed countries, this should not be too surprising.

15. Restrictions on rental (including sharecropping), sale, and mortgaging of land are normally imposed in situations where land is de-jure state owned, as in Mexico's *ejidos* (Grindle 1990; Finkler 1978) and Algeria (Pfeiffer 1985). In these cases, beneficiaries are granted only usufructuary land rights, which they are to lose if land is left "underutilized" for a period of time. In the extreme, they may even be prevented from taking any off-farm employment, with serious implications for their ability to generate funds for investment. Restrictions on sales during an initial period are fairly common (e.g., Kenya, Brazil) and may also limit supply of credit from formal sources.

16. Ownership ceilings have been imposed in Bangladesh (Abdullah 1974), India (by states in a variety of ways; see King 1977, p. 293), Indonesia, Japan, Korea, Pakistan, South Vietnam, Taiwan, Egypt, Ethiopia, Iran, Iraq, Zimbabwe, Bolivia, Cuba, El Salvador, Guatemala, Mexico, and Peru.

ceilings were in practice either evaded by fictitious subdivisions, made superfluous over time by inheritance, or had to be enforced by noneconomic means. As would be expected in view of the difficulties of market-based reform discussed above, such regulations alone—even if effective—did not lead to land purchases by the poor landless or extremely small farmers, but rather enabled medium farmers, who had already acquired some equity, to enlarge their holdings (Chile). Still, a number of authors (Cain 1981; Mahmood 1990) credit land ownership ceilings with a major role in preventing new formation of large estates. However, the obvious success of such ceilings in preventing reaggregation of land in Japan and Korea may be associated with the availability of attractive investment opportunities outside agriculture and noneconomic factors such as attachment to land. If, as would be the case after a redistributive land reform, the farm ownership distribution is fairly homogeneous, imposition of an effective ceiling on landownership could possibly prevent massive reconcentration, thus promoting the goal to which land sales prohibitions are normally assumed to contribute, but in a much less distorted way.

Lower limits on landholdings are intended to prevent fragmentation and miniaturization of farms. As will be pointed out in the discussion on fragmentation issues below, it is not clear that fragmentation is necessarily a negative phenomenon. But in a society where inheritance customs would impose extremely small farms, a floor on farm size might provide a countervailing effect, and could be perceived as part of an induced process of institutional change, until the customs change to reflect society's resource endowments. Whether intervention would improve efficiency would be dependent on the specific circumstances. Historically, many restrictions on subdivision of land or minimum limits on landholdings have been used to deprive ex-slaves, tenants, and members of lower classes from acquiring ownership rights to land and thus competing with farms established by the ruling group. Restrictions on the subdivision of large farms in Kenya and Zimbabwe have limited the success of and prospects for resettlement (Leys 1974). As they hardly enhance efficiency, pressure to abandon such regulations has increased.

3. RESTRICTIONS ON LAND RENTALS

Tenure security and rent (share) controls have often been imposed by governments to protect tenants from arbitrary eviction and/or to limit the amount of rent to be paid to the landlord to increase tenants' income. Even the threat of such legislation is very likely to lead landlords to the eviction of tenants and resumption of self-cultivation which would normally be associated with efficiency losses. Attempts to provide higher security for tenants who had been on a plot for a minimum number of years (usually 4-6) in India could be enforced only in states where a land ownership ceiling was simultaneously imposed (King 1977). Even in these cases, the law failed to attain the stated goals. Landlords used short-term tenancy or

wage labor contracts[17] and "rotated" tenants from plot to plot, thus increasing neither efficiency nor equity.

Where (as in the Philippines or in Taiwan) rent controls are effectively implemented, the static effect is to increase tenants' income and thus equity but, without transferring ownership to the former tenants, such regulations are still likely to be associated with dynamic efficiency losses. In the longer run, unless there are ways to circumvent the restriction on rents through hidden charges, such policies are likely to reduce the incentive to rent out by those owners who would otherwise do so. If the volume of rental transactions is curtailed, there is clearly an efficiency loss, as the distribution of operational farm sizes is constrained from approaching optimality. On those farms where resident tenants have a protected status, the landlords will refrain from investment, which may not be compensated by tenant's investments as there is typically some uncertainty regarding the inheritability of the protected status.

Bans on share tenancy are widespread even in countries where rental of land is allowed.[18] Apart from preconceived notions on the "exploitative" character of share tenancy (due to the fact that under land scarcity tenants are likely to receive an income which is close to their reservation wage), such bans have historically been justified as efficiency-enhancing since they were thought to eliminate the "Marshallian inefficiency" associated with share contracts. If, as discussed by Otsuka and Hayami (1988), the choice of contract is endogenous and provides efficiency gains under circumstances of high risk and supervision costs, the efficiency gain to be attained by mere prohibition of a contractual form without changes in the underlying framework of market imperfections is likely to be very limited. It is more likely that bans will be ignored and give way to disguised transactions or less efficient wage labor contracts which enhance neither equity nor efficiency.[19] Both in historical as well as in present settings, tenancy has been an important transitional stage for entrepreneurs to accumulate capital and gain agricultural experience. The elimination of sharecropping from the "agrarian ladder" is certainly not conducive to equity in the long run, and thus from all perspectives, the merits of sharecropping bans are doubtful at best.

Fragmentation and consolidation of farmland is another area where government intervention has been widespread. Necessary conditions for government intervention to be economically justified are that (most of) the forces leading to fragmentation be exogenous,

---

17. Significant eviction of tenants and resumption of self-cultivation with wage labor occurred where, as in parts of India, Nepal, and Bangladesh, landownership ceilings imposed in the course of "land to the tiller" legislation applied to tenanted areas but not to areas under "personal cultivation" (Otsuka, Chuma, and Hayami 1992).

18. Examples are the Philippines (Otsuka, Chuma, and Hayami 1992), Brazil (1964), Zimbabwe (Palmer 1977), South Africa (Bundy 1985), and Nicaragua (Dorner 1992).

19. The absence of the option of sharecropping might be associated with considerable inefficiency in production. Collier (1989) estimates static efficiency losses associated with imperfections in land markets (unavailability of share contracts) in Kenya to amount to more than 10%. Restrictions on private ownership of land impose limitations on the functioning of land-rental markets in Africa (Noronha 1985, p. 138).

that the losses from fragmentation be substantial, and that existing markets be unable to redress fragmentation. Each of these factors are considered in turn.

Exogenous inheritance customs requiring an endowment to each heir of land of different quality, as well as land transactions over time, are assumed to be the most important single factor underlying fragmentation of fields. Given imperfections in other markets, fragmentation can, however, also reflect a conscious choice by farmers. It facilitates diversification of risk (McCloskey 1975); an aspect which is likely to be important if other mechanisms such as insurance, storage, or credit are unavailable or associated with higher costs than fragmentation. If labor requirements are highly seasonal, fragmented fields may be used to smooth out labor requirements over time (Fenoaltea 1976).

Disadvantages associated with fragmentation can be divided into physical problems such as increased labor time, land loss, fencing need, transportation cost, and access limitations; operational difficulties such as lack of suitability of certain equipment, increased difficulties of pest control as well as management and supervision; foregone improvements such as irrigation, drainage, and soil conservation; and social externalities such as the need for extensive road and irrigation networks (Simons 1987). Quantification of the costs and/or benefits associated with fragmentation is difficult, but losses in developing countries generally appear to be limited and in Asia "it is hard to find instances where fragmentation had involved high losses in output" (Heston and Kumar 1983, p. 211). Blarel et al. (1992) show that, although fragmentation is pervasive in Ghana and Rwanda, it does not seem to have significant adverse impacts on productivity, and it increases risk diversification and smoothes family labor allocation over time.

Complete elimination of fragmentation via market forces is likely to be associated with high transactions costs since numerous landowners need to be coordinated. Government programs to consolidate holdings, which are normally coercive and combined with a range of other development initiatives, have been associated with high returns (40 percent for France, according to Simons 1987). In developing countries, one would expect programs to be less successful—or to have significant impact only in the short run—as long as the forces which have led to fragmentation are still in place (Simons 1987; Elder 1962).

Developed countries' experience shows that fragmentation becomes a serious constraint which can no longer satisfactorily be resolved solely within the context of existing markets once the physical outlay of fields impedes the ability to use machinery at a large scale in a framework of rapidly decreasing agricultural population (Bentley 1987). In addition to the fact that this is hardly a problem in developing countries, it has to be considered that consolidation programs are likely to be lengthy and require considerable human capital and the existence of a cadastre and land titles. Given the limited benefits, the high costs, and the fact that there is still much scope to improve the functioning of markets, the absence of which may make fragmentation desirable for individual farmers, immediate government action to consolidate holdings does not appear to be warranted in most developing countries. Further studies into the efficiency losses and gains from fragmentation would, however, be desirable.

D. REFERENCES

Abdullah, A. 1974. "Land Reform and Agrarian Change in Bangladesh." *Bangladesh Development Studies*, pp. 67-99.

Atwood, D.A. 1990. "Land Registration in Africa: The Impact on Agricultural Production." *World Development* 18: 659-671.

Barrows, R., and M. Roth. 1990. "Land Tenure and Investment in African Agriculture: Theory and Evidence." *Journal of Modern African Studies* 28: 265-297.

Benjamin, D. 1992. "Can Unobserved Land Quality Explain the Inverse Productivity Relationship?" Mimeographed. University of Toronto.

Bentley, J. 1987. "Economic and Ecological Approaches to Land Fragmentation: In Defense of a Much-Maligned Phenomenon." *Annual Review of Anthropology* 16: 31-67.

Berry, R.A., and W. Cline. 1979. *Agrarian Structure and Productivity in Developing Countries*. Baltimore: Johns Hopkins University Press.

Bhalla and Roy. 1988. "Mis-specification in Farm Productivity Analysis." *Oxford Economic Papers* 40: 55-73.

Binswanger, H. et al. 1993. "Land Markets and Land Policy Issues in Developing Countries." In *Handbook of Development Economics*, vol. 3. North Holland, forthcoming.

Blarel, B. 1990. "Tenure Security and Agricultural Production under Land Scarcity: The Case of Rwanda." Paper prepared for Conference on Rural Land Tenure, Credit, Agricultural Investment and Farm Productivity in sub-Saharan Africa. Washington, D.C.: World Bank.

Blarel, B. et al. 1992. "The Economics of Farm Fragmentation: Evidence from Ghana and Rwanda." *World Bank Economic Review* 6: 233-254.

Bonin, J.P., and L. Putterman. 1987. *Economics of Cooperation and the Labor-Managed Economy*. New York: Harwood Academic Publishers.

Boserup, E. 1981. *Population and Technical Change*. Chicago: University of Chicago Press.

Braverman, A., and J. Stiglitz. 1989. "Credit Rationing, Tenancy, Productivity and the Dynamics of Inequality." In *The Economic Theory of Agrarian Institutions*, edited by P.K. Bardhan. Oxford: Oxford University Press.

Brazil. Laws, statutes, etc. 1964. Estatuto da terra. N.p.: n.p.

Bruce, J.W. 1993. "Do Indigenous Systems Constrain Agricultural Development." In *Land in African Agrarian Systems*, edited by Tom Bassett and Donald Crummy, pp. 35–56. Madison: University of Wisconsin Press.

Bundy, C. 1985. *The Rise and Fall of the South African Peasantry*. 2nd ed. Cape Town: David Philip.

Cain, M. 1981. "Risk and Insurance: Perspectives on Fertility and Agricultural Change in India and Bangladesh." *Population and Development Review* 7: 435–474.

Callison, C.S. 1983. *Land-to-the-Tiller in the Mekong Delta: Economic, Social and Political Effects of Land Reform in Four Villages of South Vietnam*. Lanham, Md.: University Press of America.

Carter, M.R. 1984. "Identification of the Inverse Relationship between Farm Size and Productivity." *Oxford Economic Papers*.

———. 1987. "Risk Sharing and Incentives in the Decollectivization of Agriculture." *Oxford Economic Papers* 39: 577–595.

———. 1988. "Equilibrium Credit Rationing of Small Farm Agriculture." *Journal of Development Economics*.

Carter, M.R., and J. Kalfayan. 1989. "A General Equilibrium Exploration of the Agrarian Question." Department of Agricultural Economics Staff Paper (revised). Madison: University of Wisconsin.

Carter, M.R., and D. Mesbah. 1993. "Land Reform and the Rural Poor in Latin America: The Future of State-Mandated and Market-Mediated Shifts in the Structure of Land Ownership." In *Including the Poor: Proceedings of a Symposium Organized by the World Bank and the International Food Policy Research Institute*, edited by M. Lipton and J. van der Gaag. Washington, D.C.: The World Bank.

Carter, M.R., and K. Wiebe. 1990. "Access to Capital and Its Impact on Agrarian Structure and Productivity." *American Journal of Agricultural Economics*.

Carter, M.R., K. Wiebe, and B. Blarel. 1991. *Tenure Security for Whom? Differential Impacts of Land Policy in Kenya*. LTC Research Paper, no. 106. Madison: Land Tenure Center, University of Wisconsin, September.

Castillo, L., and D. Lehmann. 1983. "Agrarian Reform and Structural Change in Chile, 1965–79." In *Agrarian Reform in Contemporary Countries*, edited by A.K. Ghose. New York: St. Martin's Press.

Cline, W.R. 1975. "Policy Instruments for Rural Income Redistribution." Paper prepared for Princeton University-Brookings Institution project on Income Distribution in Less Developed Countries.

Collier, P. 1989. "Contractual Constraints on Labour Exchange in Rural Kenya." *International Labour Review* 128: 745–768.

De Janvry, A., and E. Sadoulet. 1989. "A Study in Resistance to Institutional Change: The Lost Game of Latin American Land Reform." *World Development* 17: 1397–1407.

Dorner, P. 1992. *Latin American Land Reforms in Theory and Practice*. Madison: University of Wisconsin Press.

Dorner, P., and D. Kanel. 1971. "The Economic Case for Land Reform." In *Land Reform in Latin America*, edited by P. Dorner. *Land Economics* Monograph Series, no. 3. Madison: Published by *Land Economics* for the Land Tenure Center at the University of Wisconsin.

Dorner, P., and W.C. Thiesenhusen. 1990. "Selected Land Reforms in East and Southeast Asia: Their Origins and Impacts." *Asian-Pacific Economic Literature* 4: 65–95.

Elder, J.W. 1962. "Land Consolidation in an Indian Village: A Case Study of the Consolidation of Holdings Act in Uttar Pradesh." *Economic Development and Cultural Change* 11: 16–40.

Eswaran, M., and A. Kotwal. 1986. "Access to Capital and Agrarian Production Organization." *Economic Journal.*

Feder, G. 1985. "The Relation between Farm Size and Farm Productivity: The Role of Family Labor, Supervision and Credit Constraints." *Journal of Development Economics* 18: 297–313.

Feder, G., and T. Onchan. 1987. "Land Ownership Security and Farm Investment in Thailand." *American Journal of Agricultural Economics* 69: 311–320.

Fenoaltea, S. 1976. "Risk, Transaction Costs, and the Organization of Medieval Agriculture." *Explorations in Economic History* 13: 129–175.

Finkler, K. 1978. "From Sharecroppers to Entrepreneurs: Peasant Household Production Strategies under the Ejido System of Mexico." *Economic Development and Cultural Change.*

Golan, E.H. 1990. *Land Tenure Reform in Senegal: An Economic Study from the Peanut Basin*. LTC Research Paper, no. 101. Madison: Land Tenure Center, University of Wisconsin.

Grindle, M.S. 1990. "Agrarian Reform in Mexico: A Cautionary Tale." In R.L. Prosterman et al., *Agrarian Reform and Grassroots Development: Ten Case Studies*. Boulder, Colo.: Lynne Rienner Publishers.

Hardin, G. 1968. "The Tragedy of the Commons." *Science* 162.

Heston, A., and D. Kumar. 1983. "The Persistence of Land Fragmentation in Peasant Agriculture." *South Asia, Explorations in Economic History* 20: 199–220.

Johnson, O.E.G. 1972. "Economic Analysis: The Legal Framework and Land Tenure Systems." *Journal of Law and Economics* 15: 259–276.

King, R. 1977. *Land Reform: A World Survey*. London: G. Bell and Sons.

Koo, A.Y.C. 1968. *Land Reform and Economic Development: A Case Study of Taiwan*. New York: Praeger.

Larson, B., and D. Bromley. 1990. "Property Rights, Externalities, and Resource Degradation: Locating the Tragedy." *Journal of Development Economics* 33.

Lehmann, D. 1982. "Beyond Lenin and Chayanov: New Paths of Agrarian Capitalism." *Journal of Development Economics* 11: 133–161.

———. 1986. "Two Paths of Agrarian Capitalism: A Critique of Chayanovian Marxism." *Comparative Studies in Society and History* (October): 601–627.

Lenta, G. 1982. "Land, Labor and Capital in KwaZulu: Some Failures in Coincidence." *Journal of Contemporary African Studies* 1(2).

Leys, C. 1974. *Underdevelopment in Kenya: The Political Economy of Neo-colonialism 1964–71*. Berkeley: University of California Press.

Lyne, M.C., and W.L. Nieuwoudt. 1991. "Inefficient Land Use in KwaZulu: Causes and Remedies." *Development Southern Africa* 6(2).

Mahmood, M. 1990. "The Change in Land Distribution in the Punjab: Empirical Application of an Exogenous-Endogenous Model for Agrarian Sector Analysis." *Pakistan Development Review* 29: 149–289.

McCloskey, D.N. 1975. "The Persistence of English Common Fields." In *European Peasants and Their Markets*, edited by W. Parker and E. Jones. Princeton, N.J.: Princeton University Press.

Meyer, C.A. 1991. "A Hierarchy Model of Associative Farming." *Journal of Development Economics* 34: 371–383.

Migot-Adholla, S.E., F. Place, S. Atsu, and G. Benneh. 1990. "Land, Security of Tenure and Productivity in Ghana." Paper prepared for Conference on Rural Land Tenure, Credit, Agricultural Investment and Farm Productivity in sub-Saharan Africa. Washington, D.C.: World Bank.

Noronha, R. 1985. *A Review of the Literature on Land Tenure Systems in sub-Saharan Africa*. Report ARU 43. Washington, D.C.: World Bank, Agriculture and Rural Development Department.

Otsuka, K., H. Chuma, and Y. Hayami. 1992. "Towards a General Theory of Land and Labor Contracts in Agrarian Economics." *Journal of Economic Literature* (forthcoming).

Otsuka, K., and Y. Hayami. 1988. "Theories of Share Tenancy: A Critical Survey." *Economic Development and Cultural Change* 37: 31–68.

Palmer, R. 1977. *Land and Racial Domination in Rhodesia*. Berkeley: University of California Press.

Pfeiffer, K. 1985. *Agrarian Reform under State Capitalism in Algeria*. Boulder, Colo.: Westview Press.

Place, F., and M. Roth. 1992. *Land Tenure Security and Agricultural Performance in Africa: Overview of Research Methodology*. LTC Research Paper, forthcoming. Madison: Land Tenure Center, University of Wisconsin.

Putterman, L. 1989. "Agricultural Producer Cooperatives." In *The Economic Theory of Agrarian Institutions*, edited by P.K. Bardhan, pp. 319–339. Oxford: Oxford University Press.

Roth, M., J. Cochrane, and M. Kisamba-Mugerwa. 1993. *Tenure Security, Credit Use and Farm Investment in the Rujumbura Pilot Land Registration Scheme, Rukungiri District, Uganda*. LTC Research Paper, no. 112. Madison: Land Tenure Center, University of Wisconsin.

Roth, M., J. Unruh, and R. Barrows. 1992. *Land Title, Tenure Security, Credit Use and Investment in the Shabelle Region of Somalia*. LTC Research Paper, forthcoming. Madison: Land Tenure Center, University of Wisconsin.

Sen, A.K. 1966. "Peasants and Dualism, with and without Surplus Labor." *Journal of Political Economy*.

Sen, A.R. 1981. "Market Failure and Control of Labor Power." *Cambridge Journal of Economics*.

Shipton, P. 1989. "Land and the Limits of Individualism: Population Growth and Tenure Reforms in Africa South of the Sahara." Development Discussion Paper, no. 320. Cambridge, Mass.: Harvard Institute for International Development.

Simons, S. 1987. "Land Fragmentation and Consolidation: A Theoretical Model of Land Configuration with an Empirical Analysis of Fragmentation in Thailand." Ph.D. thesis, University of Maryland.

Stiglitz, J., and A. Weiss. 1981. "Credit Rationing in Markets with Imperfect Information." *American Economic Review* 71: 393–410.

Swynnerton, R.J.M. 1954. *A Plan to Intensify the Development of African Agriculture in Kenya*. Nairobi: Government Printer.

Villa Issa, M.R. 1977. *El Mercado de Trabajo y la Adopción de Tecnología Nueva de Producción Agrícola: El Caso de Plan Puebla*. Chapingo, Mexico: Colegio de Postgraduados, Centro de Economía Agrícola.

Walker, T.S., and J.G. Ryan. 1990. *Village and Household Economies in India's Semi-arid Tropics*. Baltimore: Johns Hopkins University Press.

COMMENTARY

by An Xiji

Professor, Department of Agricultural Economics
Beijing Agricultural University,
and Advisor of Land Issue Study Group

The opinions expressed in the paper of Carter, Feder, and Roth are important for us in our study of land problems in China. We can find both positive and negative examples to verify their assumptions; namely, that clear property rights and guaranteed land use rights in land tenure systems are indispensable conditions for agricultural development. I would like to add the following three points.

1. There have been three major transformations affecting the Chinese agrarian system in the four decades since liberation. The first major change took place in the 1950s. Land reform in China was then rather comprehensive and thorough, the major goal being to equalize landownership. Another target was to eliminate the feudal elements of the old agrarian system, which was characterized by overexploitation of peasants by landlords. An ideal "land to the tiller" system was realized in the entire country. Peasant households became independent management units. This particular land reform was a precondition to the new stage of agricultural development, opening up avenues for achieving a market economy. China, however, chose another path immediately after the agrarian reform and initiated an agricultural cooperation movement. This was the second transformation. Advanced agricultural producers' cooperatives were set up nationwide in 1956, and people's communes were organized throughout the country in 1958. Peasants lost the status of landowners. Landownership became collective, and collective management predominated. Advanced producers' cooperatives were purely economic organizations, but communes integrated economic and political functions within comparatively independent social organizations. Communes brought together workers, peasants, traders, students, and soldiers. In their early stage they did not remunerate labor, and all members received their meals in public dining rooms. That system lasted for about twenty years. The most recent transformation began in 1979. Rural communes as social, economic, and political bodies were abolished and replaced with the household contract responsibility system, which linked remuneration with output by agreement.

2. What has been the role of the responsibility system in rural economic development and what difficulties has it experienced? If the grain productivity index of 1952 is taken as 100, it never again reached that level in the 26-year period between 1953 and 1978. Total grain output grew in China, but productivity dropped (for example, it was 65 in 1962); however, it surged from 95 in 1978 to 134 in 1981 after the adoption of the responsibility system. When explaining the role of the responsibility system in rural economic development

in the 1980s, McMillan, a professor at the University of California, suggested that its contribution was 52 percent, that is, that the changes in the agrarian system accounted for more than half of the increase in output.[1] The average growth rate of total output of agriculture in China was 7.7 percent per year, and grain yields grew by 4.9 percent per year. Agricultural productivity increased by 41 percent from 1979 to 1984, and 78 percent of this increase was due to the new land tenure system. I think McMillan's estimates agree with the common view in China. *Da-bao-gan* was the major form of management during this period, and land use rights were well guaranteed. This coincides with the international experiences cited by our foreign colleagues.

The Chinese agrarian system has been evolving since its transformation in 1978. But property rights in land have become more and more obscure. To whom does land belong? It is more and more difficult to answer this question, and the responses vary from place to place. What should be included in land use rights? Should farmers' land use rights be protected, especially by the law? Frequent land disputes have revealed a number of problems in our current land tenure system. The three professors' opinions are proved again by the evidence.

3. Legally, the villagers' committees are the grassroots administrative organizations, and they are the representatives of collective landownership. These committees, however, are unable to place land on the market. Farmers' land use rights are also not able to be purchased or sold. As the Land Administration Law says, farmers who receive land on contract must use and protect the land. They are not authorized to lease, mortgage, or transfer their use rights. But that permission in actuality depends on the leaders in the locality. By law, in other words, neither the ownership nor the use of land is to be circulated.

Land capitalization, therefore, is not likely to be realized because of obscure land property rights and immobility of use rights. In order to solve these issues, it is necessary to reconsider, fundamentally speaking, the problems associated with the Chinese agrarian system. I wonder if we may introduce state-owned land *emphyteusis*, that is, the state owns land and collects no land rent, but imposes official, unified land taxes. With varied land taxes, the state regulates the economy, especially the relationships between agriculture and other sectors. For example, if farmers invest in cropland, they will be exempt from land taxes by a certain percent. If a section of farmland were taken over for highway construction, it would not lead to disputes because the land belongs to the state. As for the farmers, they would have enlarged their right to exploit and dispose of land. That is a prerequisite to the commercialization and capitalization of land and the subsequent expansion of the scale of land management. As international experience shows, a large scale of management is one of the basic conditions for strengthening the competitiveness of agriculture.

---

1. See John McMillan, John Whalley, and Jing Zhu Li, "The Impact of China's Economic Reforms on Agricultural Productivity Growth," *Journal of Political Economy* 97 (1989): 781–807.

COMMENTARY

by **Chen Xiwen**

Senior Research Fellow,
Department of Rural Development

The presentations by the three professors and the comments by Mr. An have inspired me greatly. I would like to make the following points.

Issues concerning the property-rights system of rural China. Property rights in land are fundamental to the economic system of rural areas. When speaking of this issue, it is necessary to be aware of the fact that the rural property-rights system has experienced a changing process of adjustment in the recent decades of economic reform. Personally, I think that since the household contract responsibility system was adopted in the late 1970s, there have been three significant changes in property rights in the rural economy. One of these changes is the household responsibility system itself, which has continued to exist because: (1) it does not change the nature of collective ownership of land; and (2) it does not change the principle of distribution according to work. However, major changes did occur within the contract system itself. "Household contract responsibility system" is a policy term, varying greatly in concrete form in practical economic activities. The original household contract responsibility system was in the form of "production contract to households." The household, that is, contracted for a specified crop output on the land contracted from a collective unit and would be paid by the collective's production team if it realized its production quota. The household could also be rewarded by the production team if it exceeded its agreed-upon quota. It can be easily seen that the household did not constitute an independent accounting unit since all the produce belonged to the production team, though the household did manage the process of farm production separately and independently on the contracted land. The household could get the income for personal consumption only by means of the consolidated accounting system of the production team. But this concrete form of the household contract responsibility system evolved after not too long into "complete contract to households," which is characterized by a major change in the nature of the contract. Instead of contracting for specified output from contracted land, a household agrees to a certain purchase quota for the state along with a deduction for the collective units from its contracted land. Thus the ownership of all the produce from the contracted land belongs to the household, which can freely allocate all the remaining income from produce after fulfilling its state purchase quota and the collective deduction according to a previously agreed-upon amount. The significance of this change lies in the basic accounting unit in the agricultural economy. Under the new system of complete contract to households, the production teams no longer require all the produce from the contracted land, and there is no need for them to keep accounts of the costs and benefits of agricultural production. Since the ownership of all the produce on the contracted land is given to the individual households, there is no need for the production

teams to make collective distributions. Since the complete contract to households was introduced, therefore, the main operating body in agriculture has been transferred from the production team to the household which contracts land from the collective. Thus, "contract to household" has realized a separation of ownership and use of the land.

The second significant change in rural property rights concerns the status and position of farmers after the progression to the complete-contract-from-households system. Under conditions of unified collective operation and distribution, farmers were merely laborers, and their households, consumption units. Since the change from production contract to households took place, farmers have become the operators of their contracted land and each farmer's household deals independently with the relationship between supply and demand and between consumption and accumulation, thus resulting in a modified rural property system. Under unified operation and distribution by the collective units, it was impossible for farmers to own the means of production because the functions of accumulation were held by the production teams; farm households obtained income for consumption only from the collectives. Fundamental changes have taken place since the complete contract to households was adopted: the farm households now retain the surplus product from land (after the deductions contracted by the state and the collectives), and the more the total output increases, the more the households possess and allocate individually. Thus it is possible for the farm households to accumulate their own assets on land contracted from the collectives. According to investigations by concerned departments, fixed assets owned by farm households accounted for 50 percent of total rural productive assets at the end of 1986, and of those assets owned by collective units, 79.1 percent were allocated for use by township enterprises. Thus it is easy to see that the basic economic relations in agriculture since the mid-1980s have been characterized by the farmers' operating on collectively owned land with their own means of production. It is clear that profound changes, promoted by reform, have taken place in the practice of agricultural management. But I agree with the views presented in the preceding paper that the process of consummating rural landownership has apparently lagged behind the reform of the management system in agriculture.

The alleged ambiguity of landownership refers to the ill-defined form and distribution of land rents instead of implying that there is unclear legal conceptualization of collective ownership of rural land. The economic essence of landownership is land rent. Therefore, uncertain terms for land rent will inevitably lead to an equivocal land tenure system. It should be pointed out that the ambiguity in land tenure did not originate from the rural reforms. Before then, the state had purchased most farm produce at low prices through a centralized purchasing and marketing system, having practically collected rent on the collectively owned land. Therefore, indeterminate land rights originated from the centralized purchasing and marketing system. A more complicated situation, however, has occurred since the reform, and several questions have arisen. Has the land rent collected by the government decreased as the variety and quantity of farm produce purchased at low prices by the government have lessened? Does farmers' possession of the produce from the land mean that land rent is owed by the farmers? What is the exact nature of the deduction collected by the collective organizations from the farmers? Does the deduction refer to management fees, accumulated funds, public welfare funds, or is it part of the land rent? In short, the form and distribution of land rent are very unclear. The ambiguity in the practice of landownership has objectively

caused the instability of the land management system. Therefore, I strongly think that through a series of institutional reconstruction, the collective ownership of land could be defined in terms of economic interest relations. In a modern society, landownership ultimately plays a shrinking role in the process and mechanism of economic operations. After the legal income of landowners is guaranteed, the collective ownership of land will not hinder the establishment of flexible and efficient land-management systems and of a land-market mechanism in which the use right is transferable.

Issues concerning the land-management system. We are faced with two problems in the establishment of an efficient management system for rural land. One concern is that the scale of land management under the existing household contract system is too small to be favorable to improvements in agricultural productivity. There have been methods proposed to obtain large-scale land management. However, judging from the situation in the country as a whole, I think more attention should be paid to preventing the land from being further fragmented. With growth in the rural population and the formation of new rural families, further fragmentation in the scale of land management is constantly occurring. Therefore, it may be more urgent to solve the latter problem compared with enlarging the land-management scale. The second concern relates to the social-security functions of land. Under present conditions in China, rural land is not merely the basic means of production but also a social security net for most farmers. For many farmers, loss of land would mean the loss of the prerequisites for existence. When there is no way to replace land as an insurance for the farmers' basic life, it is difficult to restrain the present trend toward further fragmentation. Therefore, I think that any consideration of constructing a land-management system should be related not only to land productivity, but also to overall socioeconomic development such as the flow of rural labor, the development of nonfarm industries, and the perfection of the social security system.

Issues concerning construction of the land market. The construction of a land market in China is a subject that is presently focused mainly in the fields of urban land and the transfer of farmland to nonfarm uses. One of the relevant issues is that, with land serving as a means of social security for farmers, farmers cannot freely migrate into urban areas. As mentioned, this problem will present a major obstacle to the development of a land market if it cannot be satisfactorily resolved. In analysis, I would divide the economic relations between Chinese farmers and land into three stages. The first is the stage of relatively low socioeconomic development, where farmers regard land as their only means of livelihood. The second phase involves the development of nonfarm industries in rural areas, when land no longer is the only source of income for farmers. The third stage, which has emerged in some more prosperous areas, is the process of land capitalization, where the farmers consider land as a value-added asset. The three stages can coexist in the space of an entire country, but for a specific region, they may emerge in succession. The region then needs to seize the right time to establish a rural land market. When the relationship between farmers and land is still at the first stage, it is practically impossible to set up a market where land use rights can be transferred. At the third stage, the cost for the transfer of land use rights could be very high. Therefore, special attention should be given to the second stage, which is the present situation in many rural areas of China. Where land is no longer the only source of income for farmers, it will be possible to promote the formation of a land market so long as

institutional prearrangements are properly made. We should, therefore, draw on relevant international experience in connection with the actual conditions in China so as to take advantage of the current favorable opportunity for promoting the formation and perfection of a market in land use rights.

III. NEW DIRECTIONS IN LAND POLICIES

by John Bruce, John Strasma, and Edward Friedman

Research Fellow, Land Tenure Center, and
Adjunct Assistant Professor, Department of Forestry,
University of Wisconsin–Madison;
Professor of Agricultural Economics,
University of Wisconsin–Madison; and
Professor of Political Science,
University of Wisconsin–Madison, USA

The paper by Carter, Feder, and Roth (chapter 2) examined the state of our understanding of the relationship between land tenure security (number, duration, and assurance of land rights) and agricultural performance, and the impact of various land policies aimed at land tenure and land reform.

This paper seeks to explore some closely related areas: tenure in natural resources and natural resource management (Bruce), and taxation of land (Strasma). A concluding section (Friedman) discusses farm reforms that might be considered to increase prosperity, while minimizing administrative overhead, within the current socialist framework.

A. TENURE AND NATURAL RESOURCE MANAGEMENT

The Western literature on property rights in land and their impact has been, until quite recently, a literature about property rights in agricultural land. That literature had origins as early as classical Greece, where the political and other implications of denial of ownership of land to slave classes were hotly debated. As Europe emerged from the feudal period, reformers sought the elimination of feudal dues and other burdens on land. At the time of and following the French revolution, economic philosophers such as John Stuart Mill critiqued landlord-tenant systems as undermining incentives for investment. European colonialism soon excited debates over what constituted appropriate colonial land tenure policies, both for subject peoples and for European settlers. Redistributive land reform was widespread in Asia in the wake of World War II, and later in Latin America. Today, much research and policy discussion about land tenure systems remain focused on agricultural production. Food security is an objective that still eludes many developing countries, and the Land Tenure Center and other researchers continue to ask how changes in agricultural land tenure systems could contribute to the achievement of greater productivity and food security. Eastern Europe and the countries arising out of the former Soviet Union are a new focus for those questions.

All the issues raised above concern land used for crop and animal production. But in the past ten years, there has been a gradual shift in the focus of much land tenure research. The shift reflects a change in public priorities, from a relatively exclusive focus on food production to a much broader range of objectives, still including production but now also including conservation of natural resources such as forests, pastures, and fishing grounds.

In the period 1960 to 1980, the tenure research agenda was focused upon (1) impacts on security of tenure; (2) land marketability impacts; (3) impacts of use of land as collateral for credit access; (4) possible inefficiencies created by inappropriate scale, including issues of fragmentation of holdings; and (5) issues in cooperative and collective farm production. By 1980, there was a growing focus upon an issue that did not involve farmland: grazing commons for livestock. In "The Tragedy of the Commons," sociobiologist Garrett Hardin argued that where resources are shared, as on a grazing commons, no one user has an incentive to limit use of the resource in the interests of sustainable use. If a user behaves in a disciplined fashion, trying to keep use at a sustainable level, others will overuse the resource and no benefit will accrue to the disciplined user. As a result, there is no incentive for disciplined use and, Hardin argues, group use of a commons resource leads inevitably and tragically to overuse and degradation of the resource.

Many have critiqued Hardin's conclusions, and the debate has advanced theoretical understanding. Critics have argued persuasively that Hardin's use of the term "commons" is historically inaccurate. A "commons," they have argued, historically implies a community that has control over the resource, can exclude those who do not belong to the community (thereby limiting use), and can potentially regulate use by its members. Now the literature speaks of the free-for-all, which Hardin describes as "open access." It reserves the term "commons" and "common property" for resources that are under community control, and accepts that in certain circumstances a community can mobilize to act upon the interest that all members have in the commons not being degraded. A growing literature seeks to define the necessary conditions for effective CPM (common property management).

The new focus on the commons came as many policymakers realized that our natural resources (not just pastures, but water, forests, fishing grounds, biological diversity) were endangered. Today, the tenure literature tends increasingly to be framed in terms of "resource tenure" rather than simply "land tenure." The term "land" seems too narrow for present purposes, as articles also explore "tree tenure" and "water tenure." We work with four tenure niches: (1) the holding—land possessed and used relatively exclusively by a household; (2) the commons—land held and used in common by members of a community, simultaneously or serially; (3) open access—the absence of tenure; and (4) the reserve—land set aside by the local community or by the state.

There are important ecological issues on the holding, which we characterize as "sustainability" issues. Is the holding used in such a way as to permit its sustained productivity, or is it overused and degraded? What role does tenure play in determining this? The tenure issues often are closely related to those already explored in connection with agricultural land tenure. For example, one of the land use technologies with the most promise for sustainability is agroforestry, the integration of trees into the farming system. This can

take the form of fruit trees in orchards or supplementing a grain crop; alley cropping, where trees are planted in rows interspersed with food crops and used for green manure and fodder; hedgerows, used as property boundaries, windbreaks, and fodder; and other patterns. Because trees are slow-maturing, security of tenure is a critical factor. This issue can be explored in much the same terms as other long-term investments in the holding. The key is that the investor must have sufficient security of tenure to ensure recovery of the investment. Sometimes this is a function of tenure in land; at other times, where rights in trees are protected separately from rights in land, the security of tree tenure is more important than tenure in land.

Community forestry carried out on the second tenure niche, the **commons**, raises a different set of issues. These concern the bases for a common interest in the resource; the definition of the resource-owning community; the legal basis for that community to possess or own the resource, exclude others, and regulate the use of members; the forms of organization available for such communities, both public and private; and the means available to such communities to enforce regulation of the use by members and the exclusion of nonmembers. This analysis is used to explore the bases for environmentally sound use of a variety of resources, including water in irrigation systems or community wells, grazing land, forests, fishing grounds in the ocean or in rivers, and fish ponds held by local communities.

There is the beginning of a literature that explores **open access** and recognizes that, even in the absence of social control, there are regularities in the opportunistic use of resources by individuals which permit predictions about levels of resource use. This is not precisely a "tenure" literature since it deals with behavior in the absence of tenure, but it does shed light on behavior in the tenure niches already noted.

The dominant theme for a **reserve**, an area set aside from use to conserve tree, wildlife, and genetic resources (valuable biological diversity), is exclusion. There is a subsidiary theme which asks whether limited use is possible, if carefully managed. Tenure issues exist within the reserve to the extent that some use within the reserve is allowed. Under *taungya* systems, for instance, farmers are allowed to reside and farm in the reserves, planting protecting tree seedlings alongside their crops, and then, when the trees begin to shade out their crops, move on to new areas for reforestation. There is a longstanding discussion of what kind of rights are appropriate for such farmers. When a reserve is a local community reserve, there are also important tenure issues concerning the right of the community to protect the reserve against outsiders, and even against agents of the national government, such as those who have received tree-cutting permits from the national forestry agency.

There is also discussion of **buffer zones**, the physical areas surrounding reserves. This discussion of buffer zones is most important in "soft states," which have limited capabilities to exclude people from reserves. A buffer zone involves land uses that are planned to discourage encroachment on reserves. Increasingly the buffer zone as a geographical perimeter around the resource is considered an inadequate concept. What is needed instead is a focus on "buffering strategies" that involve tenure arrangements which tend to reduce pressure on reserves. These can involve a wide variety of tenure strategies, such as the

provision of secure tenure to promote agroforestry and thereby reduce pressure on wood products in forest reserves, or land distribution policies which provide broad access to land already under agriculture and thus do not drive land-hungry peasants to clear forests for cultivation. We need to think of the buffer zone not as a tenure niche, but as a series of interactions on the holding and in the commons that affect pressure on reserves. They may also allow limited use of forest products from the reserve by some communities bordering the forest, to provide them with an interest in protecting the forest from unauthorized use by others. The development of sound buffering strategies requires planners to deal in an integrated way with a tenure landscape which involves holdings, the commons, and the reserves.

All this does not mean that the issues of agricultural land tenure are no longer critical. We still do not deal adequately with the productivity and social-security impacts of tenure on the agricultural holding, and research to expand our understanding in that area must continue. But it is no longer the only focus of tenure research. Sustainability of resource use and conservation of unique biological and wildlife resources have joined agricultural productivity as clearly enunciated objectives of tenure policy.

China has long been a country where resources are scarce and under pressure, and tenure policy discussions in China have exhibited a concern for sustainable land use. Often the expression of that concern has been "tenure conditionality," with continued access to the resource depending upon a judgment by the community or state as to whether investments in sustainability (for example, manure applications) have taken place. The Western literature instead tends to emphasize positive incentives for sound land use, with enhanced tenure as one way to increase those incentives. In China, the critical issue may be the relative merits and appropriate mix of positive and negative incentives for sustainable resource use. We hope that the chapters in this publication can take up these issues and identify key needs for research.

B. LAND TAXATION

Farmers have been subject to tax since the earliest days of recorded history. The most common form of tax is the tithe, typically 10 percent of gross production collected at harvest time. This tax was sometimes paid to the state church, and sometimes to the state itself. Another ancient tax was similar to rent: the king or a local warlord was deemed to own the land, and the farmers had to pay a rent of 25 percent or more of the gross harvest. In other cases, farmers were required to work a certain number of days on fields of the ruler, without wages. Some governments tax exported grains at the port and others tax indirectly, by paying farmers for exported grains at an exchange rate less favorable than that applying to other trade. Others disguise the tax, by requiring farmers to deliver a specified quantity of grain to the state, in exchange for a price much lower than the market price. The modern form of land tax consists of a money amount that must be paid each year, based either on the market value or the estimated production potential of each farm.

Land taxes normally have two main purposes: (1) they produce revenue for local and provincial governments, and (2) they encourage production and punish holders who leave land idle or unproductive. In addition, some countries adopt a progressive land tax according to the size of the farms in order to penalize large holdings and encourage large landholders to sell their land to others. Argentina, Peru, and Taiwan have had such taxes, with mixed results.

Implementation of a modern land tax requires four major steps: (1) preparation of a list of parcels or farms, with their respective area and location; (2) determination of the tax base, which is the estimated average or potential output of each, or its market value if sold, or the rental value if leased;[1] (3) determination of the tax due, which requires multiplying the base by the appropriate rate of tax; and (4) collection of the tax, together with sanctions to prevent nonpayment.

Modern technology greatly facilitates all four steps. Aerial photography helps locate and determine the area of each farm. Air photos plus field surveys help estimate the production potential of each farm. Modern computers greatly simplify the calculations, the billing, and the collection of the tax over large areas of a country.

The annual tax on land and buildings (improvements) is an important revenue source for local governments in the United States and Canada. It finances much of the cost of local schools in these countries as well as much of the rest of the budget of local governments, for expenses such as road maintenance, parks, and urban services. The tax is also found in most Latin American and Caribbean countries, although the rate is usually very low or the tax base (value) is very low as the result of inflation that has occurred since the tax base was determined. Some Latin American and Caribbean countries, such as Argentina, Costa Rica, Jamaica, and Paraguay are now reforming their land taxes. Chile, which did a highly successful reform and modernization in 1963–1965, is planning to revalue its land next year in order to correct for massive inflation that took place over the last twenty years.

1. CURRENT DEBATES OVER AGRICULTURAL TAX POLICY

Western economists generally favor a land tax, particularly as a substitute for a tax on sales, exports, or net incomes, or for forced deliveries at low prices (such as "patriotic grain"). Nonetheless, there are some critics. Skinner (1991) argues that the tax must not be very good, or all countries would adopt it. He suggests that taxes on sales or income are better for small farmers because the government shares in the risks of bad climate or falling prices. (That is, if the farmer has an unprofitable year, the government accepts less tax). Binswanger (1990) argues that the rich are able to prevent land taxes from being adopted, so it is futile for economists to urge their adoption. Other critics state that it is difficult to determine the base of the tax, and that tax collection is difficult or expensive.

---

1. In theory, the market value should be equal to the present value of all future net incomes of the farm. The rental value should be equal to the potential net income of each farm, after allowing a reasonable wage to the farmer.

Those who favor land taxes tend to assume that some landowners will hold land for speculative purposes, rather than for production, unless a heavy land tax makes this very expensive. Those who oppose land taxes tend to assume that landowners are all market oriented, rational profit maximizers, who would never leave land idle if it would be profitable to farm it. Therefore, they assume, if a farmer has a low net income it is because the climate or the market was unfavorable, rather than a lack of effort on the part of the landowner. If this is the case, then imposing a land tax that must be paid even if farming is unprofitable is unfair, and hurts the farmer most precisely when the least income is available with which to pay the tax.

In real life, some landowners have more land than they are able to farm with the labor and capital available to them. Others see more profitable activities for their labor and capital, yet they want to retain control of a piece of land for possible future use, or for their children. Some cannot farm the land assigned to them now, but they hope to sell or rent it at a profit in the future. For these people, a fixed amount of land tax makes it seem quite expensive to leave the land idle, and the tax itself may thus cause landowners to sell fields they cannot cultivate in order to escape the tax or rent to get the money with which to pay the tax.

At the same time, it is true that farmer earnings depend on a variety of factors, and not only on effort, skill, and investment. Agricultural commodities sometimes experience wide price changes in world markets. Farmers also suffer floods, insect attacks, drought, and other weather changes—all of which may affect profitability quite independently of the farmers' own decisions and actions. Since few countries have sound crop-insurance schemes in place, farmers may have no way to share part of the risk with others, unless government bases taxes in part on output or profits.

The most dramatic instance of sharp changes in farmer incomes that are not due to any action or inaction by the farmer are those related to wide swings in export crop prices in the world market. Governments frequently tax exports separately, with rates that vary according to the price received and thus serve to reduce inflationary impacts when world prices are unusually high. Some governments also intervene directly in the markets for export goods, thus maintaining relatively stable prices to producers independently of world market price swings. However, African experience with government marketing boards was that government tended to rely on them as major revenue sources even when world prices were not unusually high. In other words, the farmers received net prices at the farm gate far below those of the world market, with consequent depressing impacts in incentives, production, and foreign exchange earnings.

2. LAND TAXES AND DISTRIBUTION OF LANDOWNERSHIP

Some writers advocate a heavy land tax precisely in order to discourage owners from trying to accumulate large areas of land. Most provinces of Argentina have progressive taxes, in which the rate of tax increases as the total hectares owned goes up. In the United States, the rate is constant regardless of the total area owned, but the level of the tax rate varies a great deal from one state to another, and among counties within a state. There is some empirical

evidence that a high land tax is correlated with a greater degree of equality in land ownership (Gafney 1992). Specifically, the state of Wisconsin, where the average land tax rate is 2.1 percent per year of actual market value, has a much more egalitarian distribution of landownership than do states like California, Florida, or Texas, where the average land tax rate is much lower (USDA 1991).

3. LAND TAXES AND DECENTRALIZATION OF GOVERNMENTS

Modern land taxes are usually a revenue source for local governments. Some local government services, such as roads and fire and police protection, provide a direct benefit to property owners, making the taxes more acceptable politically. Even a communist regime such as that of Poland from 1945 to 1985, where much farm land was still held in individual farms, used a land tax to raise revenue for local services such as roads, improved marketing facilities, and machine repair stations.

When a government attempts to create or reform a land tax as a revenue source for the central government, there is much more resistance to it. In Bolivia, for instance, a land tax had been agreed to by the peasant unions that held real political power in 1967. However, at the last minute the finance minister attempted to change the plan to have the revenue go to the central government. The tax was rejected as a direct result. It was only enacted some years later, after the minister agreed that it would be a revenue source for local government.

In the United States, each local government determines the rate of tax each year. The budget of programs to be funded by the tax is divided by the total tax base of the land and buildings in the locality, and that determines the rate. The decision is made by the executive (mayor) and legislative (city council) branches. However, some states impose upper limits on the rate that can be set. California, for instance, forbids any local government to impose a rate in excess of 2.5 percent per year on tax values.

In addition, the primary and secondary schools are governed by a school board, whose members are chosen in local elections. Candidates often state during the election campaign that they will work to lower the tax rate if they think it is too high. If they think the schools should be made better, the candidates may promise to favor spending more, even though this will require higher taxes. When the people vote for the members of the school board, they may thus choose the candidate that comes closest to their own views.

Many states also require a referendum or plebiscite for any proposals to borrow money for major construction or other spending that will have to be paid for from future land taxes. If a majority of the people voting do not approve the referendum, the project is canceled.

Experience in a variety of countries shows that it is possible to collect substantial revenues through land taxes, particularly if the farmers agree that the revenue is used for roads, schools, and other services that are of benefit to them. Thus successful land taxes are usually revenue sources for local governments. The central government benefits too, in that it need not subsidize the local governments as heavily as before.

In the United States and elsewhere, the central government usually supervises the land tax to ensure that it is honestly and fairly administered by the local governments. For instance, in most states the state government collects information on the actual sale price of properties that are sold, and compares these market prices with the value used for tax purposes. If the state finds that properties are selling for much more than their tax values, it will adjust all land tax values upwards by a ratio that will make the average tax value about equal to actual market prices. The ratio will be different from one city to the next, because assessment is a local government task and may be done more efficiently in one city than another.

4. CONCLUSION

An annual tax on those who possess rural land, based on its potential yield, is an ideal revenue source for local government. It must be paid even if land is left idle; this punishes speculators and the lazy. Unlike income or sales taxes, a land tax does not rise for those who are unusually productive; this encourages effort and investment. And if land allotments are not perfectly equal, a tax based on potential yield or income or market value will reflect those differences, thus favoring equity and fairness.

Critics of land taxes complain that farmers pay more taxes than others with similar net incomes. This will occur especially if they have a bad year and hence no profits, yet they must still pay land taxes. At the same time, for some tradeable crops, world market price changes may cause farm profits to be unusually high or low from one year to the next, with no change in the effort, investment, or skill applied by individual farmers. Especially for areas producing crops where year-to-year changes in income come mostly from such exogenous factors, some level of taxation of exports linked to the prices received is probably in order. Thus a consensus of experts appears to be developing, in which a mix of fixed taxes on land is well suited to local government need for predictable revenue with which to finance local government services, while the variable export tax goes to the central government. The latter, unlike local governments, is responsible for macroeconomic policy and may well want to tax unusually high export earnings in order to reduce inflationary pressures, while lowering the tax when export earnings fall.

In countries where landownership is highly concentrated, landowners often have enough political power to prevent implementation of effective land taxes. And critics complain that the determination of potential income is costly, technically difficult, and prone to corruption, which favors the rich. In addition, land ownership records are often incomplete and inaccurate, so it is not easy to collect the tax in some countries.

A land tax must have an effective rate of about 20 percent of potential net income, or about 2 percent of market value of the land if it were to be sold, in order to produce significant revenue and the desired incentive effects. Such rates exist in some states of the US and in several other countries. In most countries with land tax laws, however, the rates are lower or the values on which the tax rates are applied are far below actual market values. The taxes therefore are criticized as inaccurate and unfair.

The very advantage of land taxes as local government revenue sources that are relatively easy to collect, assumes that local governments make wise use of the revenues, and that the people agree as to what is to be financed. If rates are set arbitrarily, without consulting, and if the revenues are spent on things regarded as wasteful or unnecessary, the tax will be hated.

Modern, effective land taxes now exist in many states of the US, in Indonesia, in Jamaica, and in some provinces of Argentina. Reforms are underway in Costa Rica and Paraguay, and will soon take place in Chile and in South Africa. Technology has advanced rapidly in mapmaking and in cadastral survey methods, so that it is now possible to list landholders and to estimate the market value of large numbers of properties at reasonable cost. Methods have also been developed that build popular consensus and acceptance of the tax, if applied skillfully by political leaders.

An annual tax on land, collected under state supervision and used for local services and investment, is an appropriate part of a modern fiscal structure. A central government tax on exports, with a rate scale that varies according to world market prices, is also appropriate for commodities whose prices vary widely. If government is wise, and if expenditures are regarded as justified and reasonable, the tax on rural land may be an excellent revenue source. Also the cadastral survey necessary in order to determine the tax owed by each household will be useful for many planning and administrative purposes.

C. Farm Reforms and Socialist Institutions

The type of reform begun so successfully by China in the post-Mao era of great rural income growth was both totally original and comparable to other land reforms of latifundia, collectives and the like. Self-exploiting peasant households which pool incomes and operate a division of labor with no administrative overhead, have played a crucial role in industrialization, modernization, and export success in post-World War II Japan, Korea, and Taiwan when the government backed such policy interests.

Lesser yet similar successes exist in the socialist world. Yugoslavia decollectivized in 1953; Hungary oriented its collectives toward the market in 1958, but proper credit and trade support from the government was limited; Poland never collectivized, although its private farmers' interests were never supported by government. Cuba has gone back and forth on opening markets for farm products with fear of income differentiation causing a loss of farm incomes and of agricultural expansion that could meet urban and export needs while enhancing rural living standards. In nonsocialist Latin America, nonplantation agriculture does much better than plantation agriculture (nonpeasant farming) in adjusting to new market imperatives. Most strikingly, the 300,000-plus coffee farmers in Colombia are garnering an ever larger share of the high-value end of the market niche for high-quality coffee, while Brazil's collective-like plantations fall further behind in market share and value earned. A similar contrast exists in rice sales between Burma's state-dominated agricultural purchasing policies and Thailand's long flourishing, export-earning rice farmers.

Both government coffers and farm earnings do best when the government is organized to support cooperative efforts of owner-farmers in winning high-value exports. This achievement is facilitated by cheap credit to reward success, by low- or no-priced information on the needs and preferences of end users, and access to foreign purchasers. Such government-farmer cooperation makes farmers more willing to pay taxes, since government services improve farm incomes, and also makes government tax collections easier since the government is privy to contract and sales data.

Should taxes be targeted to local necessities—roads, water, electricity, information, education, and so on—an atmosphere conducive to regularized tax collection? The key problem in making such mutual interests real is how to make policy and data public and believable so that local farmers do not take rumors as facts, and do not feel themselves isolated from the policymaking process. The danger in levying taxes is that farmers are unable to connect the tax with concrete benefits. This fosters a feeling of being exploited by state policies, leading, in response, to ever greater illegality, alienation, and disenchantment. Because a central government cooperating with farmers whose interests cross provincial borders is clearly mutually beneficial, such cooperation can enhance central revenues. A serious policy challenge remains how to give local officials a revenue stake in expanded grain production for domestic consumption so that the services and inputs are not channeled singularly elsewhere.

D. References

Binswanger 1990

Gafney 1992

Hardin, Garrett. 1968. "The Tragedy of the Commons." *Science* 162: 1243-48.

USDA 1991

COMMENTARY

by Wang Jiafu

Director, Institute of Law,
Chinese Academy of Social Sciences,
Advisor of Land Issue Study Group

The paper of Professors Bruce, Strasma, and Friedman is excellent in many respects. It gives an overview of the development of land policy research from a background of world development. It shows how land policy was implemented, and how we can learn from this process.

I would like to examine some problems related to land legislation.

1. Establishing and perfecting the land system is currently of great importance in China. Property rights have been neglected for quite a long time in China. People thought that land, once transferred to public ownership, would lead naturally to a rapid development of productive forces. Since people were in relatively equal positions after the communalization of land and the means of production, and since the distribution of income was carried out according to work performed, it was a just and honorable system. But that type of system in practice led to decreasing productivity when it did not coincide with a system of valid ownership rights. China derived useful lessons from that experience and began reforms in 1978, setting up a system of land rights to protect property ownership. Different results are evident with the same population and same production conditions in China. Grain output rose dramatically owing to the responsibility system, as the land system experienced a major transformation. Landownership, use rights, and land contract and management rights have been written into the Chinese General Rules of Civil Law and the Land Administration Law. These laws were a great contribution to hundreds of millions of Chinese farmers in improving public landownership.

2. The Chinese countryside is now on the development track of a socialist market economy. If farmers are to play a lead role in the market, the legal land system should be further improved. Although state-owned or collective ownership over land as well as farmers' land use rights and contracted management rights are stipulated in law, they are too general in their presentation; details have yet to be worked out. Speaking in legal language, use rights and contracted management rights include possession, utilization, and benefit from use, but they are not specifically provided by law. In particular, there is no article regarding legally permissible land disposition, that is, right of transference and recontract of land. The legislative body is now working on a rights law, or property law, including a law of real estate. This law is fundamental for China in its modernization drive. If a society is unable to encourage individuals, enterprises, or farm households to create and accumulate wealth due

to the lack of a stable property system, the society cannot develop. This is one of the ways in which China could realize better economic development.

3. Efforts should be made in China to concentrate land in the hands of skilled farmers by means of a market in land use rights to realize agricultural modernization. I suppose the responsibility system is suitable to Chinese reality; it is an unhappy situation, however, when almost 800 million people in the rural areas are engaged in food crop production. It is only through a land market that the scale of farm management can be enlarged, while any kind of administrative orders, as practice shows, are ineffective.

4. The state should undertake measures of encouragement or limitation to make land use more rational and scientific. I agree with Professor Bruce that rational use of land should be in the framework of integration of land property rights and resource conservation.

The land system in rural China is a big research project. Reforms in China began at this point. An in-depth study will promote and deepen our reforms. Rural reform is a self-improvement of socialist public ownership of land, a transformative process of a planned economy to a market economy. It is not possible to create a new system by smashing the old one. The land system should aim at national economic development and a growth of people's welfare.

IV. CHANGES IN THE RURAL LAND TENURE SYSTEM AT THE VILLAGE LEVEL

by **He Daofeng**

Research Fellow,
Research Department for Rural Development,
Development Research Center of the State Council, PRC

A. INTRODUCTION

More than a decade ago, the Household Responsibility System (HRS), which linked remuneration directly to output, attracting worldwide attention, was inaugurated in rural China. The initial response from land users was a dramatic surge in output, an inspiring phenomenon, especially for economists supporting the "small-scale farmer pattern." But this stimulating growth was later followed by a stagnation of agricultural production, causing a new round of debate on the existing agrarian system and arousing concern among specialists. At the time, however, we lacked basic statistical data to support our arguments. How does the all-round contract system work? What criteria should be adopted to allocate land to farmers? How should land be managed after allocation? Did land rents and land taxes change? It was hard for us to emerge with constructive conclusions after calm discussions of the subject until we had broken from traditional techniques of analysis and obtained more solid grounds for judging the extent to which the agrarian system in China contributed to agricultural growth or stagnation. To acquire such evidence, we carried out a sample survey of 280 crop-cultivating villages (pastoral regions were not included). The villages were selected from various provinces and were representative forms of land contract and management regulation. In response, we received all 280 questionnaires, of which 253 were proved entirely valid. This report is our preliminary analysis of the information gathered in the survey.

B. HOUSEHOLD RESPONSIBILITY SYSTEM: EMERGENCE AND DEVELOPMENT

1. EMERGENCE OF HRS

The household contract responsibility system in rural China was brought about by an agricultural crisis and was implemented in a bottom-to-top fashion. Its basic feature was seeking explanations for problems at the grassroots level, and then getting approval for the recommended solutions from the national level. The reason for this approach was to minimize

the political risk of reform. With that in mind, what has been the historical process of the reform?

HRS was introduced in 1978 and completed in 1983, with much activity during 1981 through 1983. Villages practicing HRS accounted for only 0.4 percent of sampled villages in 1978, increasing to 1.19 percent in 1979, and to 8.7 percent in 1980. The additional adoption ratios were 28.06 percent, 31.23 percent, and 29.25 percent in 1981, 1982, and 1983, respectively. Only 1.19 percent of the sampled villages still practiced the previous forms of collective management by the end of 1983.

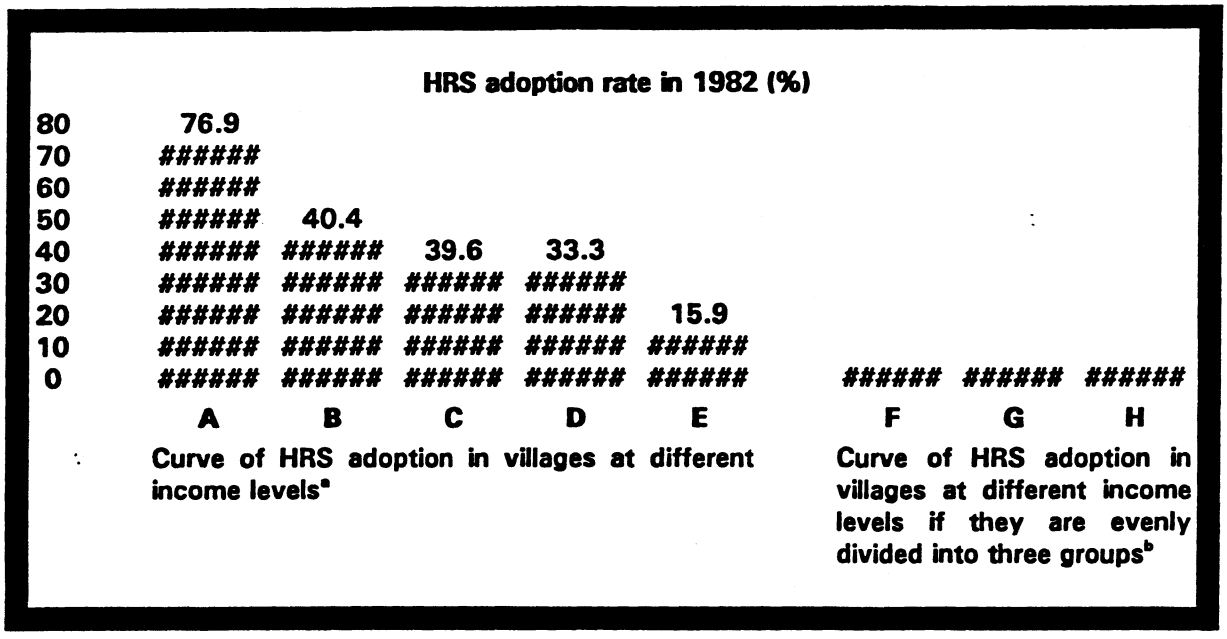
TABLE 4.1 Adoption rate of HRS in sample villages in different regions by income group (%)

	<300 YUAN	301–450 YUAN	451–650 YUAN	651–900 YUAN	>900 YUAN	TOTAL
1978	3.85	0	0	0	0	0.40
1979	0	0	0	2.22	4.55	1.19
1980	15.38	9.62	10.47	6.67	2.27	8.70
1981	57.69	30.77	29.07	24.44	9.09	28.06
1982	15.38	36.54	36.05	22.22	34.09	31.23
1983	7.70	23.07	24.41	44.44	43.18	29.25
CM[a]	0	0	0	0	6.82	1.19
Total	100.00	100.00	100.00	100.00[b]	100.00	100.00[b]

a. CM indicates villages that kept previous forms of collective management.
b. Differences due to rounding.

As table 4.1 shows, the course of setting up HRS varied greatly among different income groups. The low-income regions accepted HRS and completed its installation earlier than the higher-income groups. Prior to 1982, there was no clear authorization from the central government to contract land to households; the policy emphasis was on dividing work teams into small groups and contracting work in a section-to-section manner. After 1982, though, land could be contracted to households, so a nationwide adoption of HRS was possible mainly in 1982/83. However, 77 percent of poor villages, with net per-capita income less than 300 yuan, had already converted to HRS before 1982, while only 16 percent of the richest group (per-capita income over 900 yuan) had done so. Obviously, there was an inverse correlation between the speed of HRS adoption and the income level of villages. Figure 4.1 illustrates that the poorer the village, the more eager it is for reforms.

FIGURE 4.1 HRS adoption rate in sample villages by income group



a. A = <300 yuan; B = 301–450 yuan; C = 451–650 yuan; D = 651–900 yuan; E = >900 yuan.
b. F = <400 yuan; G = 400–600 yuan; H = >600 yuan.

The facts indicate that the transformation of the rural land system, which had a significant influence on the national economic structure, spread from the grassroots to the top and proceeded from villages in less-developed regions to populations in comparatively developed areas. The hidden cause for the transformation was the serious subsistence crisis induced by the regime of the people's commune.

2. WAYS TO IMPLEMENT HRS

Criteria applied in farmland distribution. The main criterion for carrying out HRS was to allocate arable land to each household on an equal-plot-to-everyone basis; alternative criteria were based on the total number of laborers in the work force or on an agreed-upon proportion of laborer to family size. The 253 villages surveyed reported these forms of land allocation in 69 percent, 4 percent, and 25 percent, respectively, of the cases; 1 percent of the villages contracted land to specialized teams or groups (table 4.2). A trend was revealed in which the low-income villages tended to distribute land more simply in an egalitarian way, whereas the higher-income villages often gave more weight to the individual laborer. About 85 percent of the poor villages sampled allocated land plots equally to everyone, while only 53 percent of richer ones did so. Contracts to specialized teams or groups (instead of family contracts) were observed only in the latter group.

TABLE 4.2 **Land contract forms adopted in sample villages by income group (%)**

METHOD OF DISTRIBUTION[a]	<300 YUAN	301–450 YUAN	451–650 YUAN	651–900 YUAN	>900 YUAN	TOTAL
EPE	84.62	71.15	70.93	66.67	53.49	69.40
L	0	0	1.16	15.56	11.63	4.37
L & EPE	15.38	28.85	27.91	17.77	27.91	25.00
ST	0	0	0	0	6.97	1.19
Total	100.00	100.00	100.00	100.00	100.00	100.00[b]

a. EPE = equal plot to everyone; L = according to number of laborers; ST = specialized teams or groups.
b. Difference due to rounding.

Among villages sampled, 175 distributed the farmland in an egalitarian way, with 97.1 percent of these sharing out equally regardless of age and only a few reducing the quota (by a half or some percent) for children. There was no difference between poor and rich villages in this respect.

Taking account of both family size and number of laborers, 83.1 percent of villages chose proportions in the range of 7:3 and 3:7, among which about 62.7 percent narrowed the ratio to 6:4 and 4:6, reflecting a tendency toward 5:5 between family size and number of laborers. No essential difference could be discovered between income groups.

Of the sample villages, 85.7 percent adopted a labor-priority principle and distributed farmland equally and exclusively according to the number of laborers; the rest of the land was assigned to skilled farmers. No villages awarded contract land by bidding.

The villages which did not institute HRS modified their management forms. One change was to fix production targets to the teams; another method was to contract work loads to groups, which then delivered fixed payments to the collectives. All villages kept the previously used work-assessment and work-point recording and unified income distribution system.

Approaches to farmland of different quality. When farmland was shared, it was necessary to resolve problems related to soil fertility. Most villages (76.5 percent) distributed land of high, medium, and poor fertility equally among the villagers; 13 percent of villages allocated equally only the land of intermediate quality, while sharing out by means of drawing lots the fields of best and worst quality; fewer than 7 percent of villages converted all farmland into a standard area and then divided the land into squares (without cutting it into small patches), so the farmers could choose their own.

TABLE 4.3 Approaches applied to distributing land of different quality in sample villages by income group (%)

APPROACH TO DISTRIBUTION[a]	<300 YUAN	301–450 YUAN	451–650 YUAN	651–900 YUAN	>900 YUAN	TOTAL
A	84.6	80.8	84.7	68.2	57.5	76.5
B	7.7	7.7	8.2	20.5	25.0	13.0
C	7.7	5.8	5.9	11.3	5.0	6.9
D	0	1.9	0	0	5.0	1.2
Other	0	3.8	1.2	0	7.5	2.4
Total	100.0	100.0	100.0	100.0	100.0	100.0

a. A = all land was equally apportioned according to classified quality (high, medium, and poor); B = equal distribution of medium-fertility land, of best and worst by drawing lots; C = all land converted into standard area and then divided into squares without further segmentation; and D = land evaluated and compensated for in cash.

Table 4.3 demonstrates that poorer villages tended to share out the farmland in a more egalitarian way, and richer ones applied more diversified approaches such as converting or drawing lots, reflecting their weakened dependence on land cultivation as a means of livelihood.

3. REGULATIONS AND RULES REQUIRED IN THE ADOPTION OF HRS

Family size changes. Did the villages take account of population-related issues when they apportioned land in the course of introducing HRS? According to the survey, 48.8 percent of them stipulated clearly that the area of contracted fields should be altered as farm household size changed; 19.2 percent set an immutable land contract (no land adjustment in spite of any changes of family size); and 32 percent of villages had no regulations on this point.

TABLE 4.4 Population-related changes in contracted farmland in sample villages by income group (%)

REGULATIONS[a]	<300 YUAN	301–450 YUAN	451–650 YUAN	651–900 YUAN	>900 YUAN	TOTAL
A	53.8	45.1	59.8	35.6	41.5	48.8
B	15.4	15.7	12.6	28.9	29.3	19.2
C	30.8	39.2	28.6	35.5	29.2	32.0
Total	100.0	100.0	100.0[b]	100.0	100.0	100.0

a. A = regulations about land adjustment according to changes in family size; B = regulations denying adjustment when family size changes; and C = no regulations.
b. Difference due to rounding.

There were no significant differences between the three income groups in relation to adjustments by family size, as shown in table 4.4. About one third of the sample villages did not have any rules about population-caused adjustment of land, and nearly half considered it necessary to adjust the distribution of fields among contracting households.

Of the 253 sampled villages, 175 (69 percent) set up rules in this regard. Again, they might be divided into three subgroups: (1) 30 percent of the villages decided that the village administration was authorized to adjust the size of contract land as family size changed; (2) 42.3 percent of the villages stipulated that contract land size was to be regulated once every three or five years in line with changed population; and (3) 27.7 percent of the villages chose the once-and-for-all pattern of distribution regardless of changes in population. Also, the difference between income groups was small. The reasons for adjustment, however, varied greatly in the first two subgroups.

Varied reasons for adjustment. As can be seen from table 4.5, there were on the whole seven reasons for population-related adjustment of contracted land plots. Coincidence was observed for items A and D-1, D-2, and D-4. Opinions diverged for reason D-3, but only a small percentage of villages wanted to reduce the apportioned land of a farmer when s/he left for a nonagricultural job (reason D-5). From these data we might conclude that about 50 percent of the villages placed emphasis on the principle of "land to the tiller" when HRS was carried out. Withdrawals of contract land in case of a death or a woman's marrying were also based on this consideration. On the other hand, villages reserved arable land for farmers who did not obtain the status of urban citizen after they had transferred to nonagricultural jobs. These principles have been consistent in most villages in the course of implementing HRS.

TABLE 4.5 Reasons for land adjustment in sample villages by income group (%)

REASONS FOR ADJUSTMENT[a]	<300 YUAN	301–450 YUAN	451–650 YUAN	651–900 YUAN	>900 YUAN	TOTAL
A-1	94.1	100.0	100.0	94.1	94.7	98.5
A-2	100.0	100.0	100.0	94.1	100.0	100.0
D-1	100.0	96.5	98.1	82.4	100.0	97.0
D-2	100.0	96.5	96.2	82.4	100.0	96.3
D-3	76.5	79.3	81.1	64.7	78.9	78.4
D-4	88.2	93.1	90.6	100.0	94.7	93.3
D-5	11.8	3.4	5.7	17.6	21.0	9.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

a. A-1 and A-2 = increasing land for (1) a newborn baby and (2) a woman's moving into her husband's household upon marriage; D-1 and D-2 = subtracting land because (1) a person dies and (2) a woman gets married and leaves her parents' household; D-3, D-4, and D-5 = reducing land because (3) a person leaves home for college or technical secondary school, (4) a person gets the status of urban resident, and (5) a farmer engages in nonagricultural activity.

Room for manipulation. It is interesting to see whether any village kept a part of its land for reasons of manipulation with an ever-changing population. The survey showed that 37.9 percent of the sample villages reserved this leeway, but 62.1 percent did not.

There were large differences in the area of the land reserved in the villages with maneuverable land. Most of them (53.33 percent) left 1–5 percent of the total contracted land, 31.11 percent kept 6–10 percent, and 14.44 percent and 1.12 percent retained 10–20 percent and 20–30 percent, respectively, of land as leeway for adjustment.

4. Brief Summary of HRS in China

(1) HRS in the Chinese agrarian system was necessitated by a crisis of rural development; it was not a result of a program implemented from top to bottom.

(2) Poorer rather than richer villages were more prompt and eager to introduce HRS. Perhaps this was because of the heavier subsistence pressure in poverty-stricken villages, and also because the grassroots cadre's control was weaker in the disadvantaged regions.

(3) The land contract was characterized by an egalitarian apportionment of land use rights, though there was some difference between alternate distribution patterns. Low-income villages thought highly of the principle of equality.

(4) Whether the contract fields could be adjusted as population changed varied in the sample villages. Nearly one third did not set rules; 36.8 percent had oral agreements; and only 30.4 percent had written regulations. Of the latter subgroup, 72 percent stipulated that land plots should be adjusted as population changed, implementing highly egalitarian principles of "land to the tiller."

(5) Thirty-eight percent of villages reserved public land to cope with the demands of a changing population and to solve the problem of public deductions. This part of the land was commonly awarded to a limited numbers of farmers by contract for rent and in case of need could be distributed to newcomers.

C. Land Management System and Rules at Village Level

Employment patterns and income levels have changed remarkably during the past decade since HRS was adopted in rural China. The net per-capita income of the rural population grew from less than 191 yuan in 1980 to 601 yuan in 1989, and the number of workers engaged in agriculture decreased from 74.3 percent in 1977 to around 60 percent in 1989, though in the context of a continuing increase in the absolute amount of farm labor. All this was reflected in the issues of land use transfer and contracted-land size as well as in the rules for adapting to the new situation. What really happened to the village organizations, which had been authorized to have the final word in concrete land regulations?

1. ADJUSTMENT AND REDISTRIBUTION OF CONTRACTED LAND

The landownership issue has become quite sensitive under the conditions of HRS. Expectations of the returns of long-term investment are uncertain because farmers are worried about losing their land management rights. This fear has been displayed in a considerable decrease of farmyard manure application to land, reduction of sown acreage of nitrogen-fixing green-manure crops (alfalfa, etc.), and cessation of soil improvement projects, so the content of organic matter in soil has declined in many regions. The Chinese government established a policy in 1984 to prolong the length of land contracts to fifteen years or more, and stressed the stability of contract relations to ensure the farmers' confidence in their long-term investments in the land.

After 1985, land adjustments were frequently required in some developed regions because more and more workers had shifted to nonfarm jobs and because of population changes everywhere. All these cases were reported in various forms to the national government, which adopted a principle of "overall stability with minor adjustments." Under this policy, decisions of whether land-plot adjustments were necessary were made at the village level according to real needs.

Land adjustments since HRS. Of the 253 villages surveyed, 65.2 percent have adjusted contracted land since HRS was first introduced. Among these, 37.1 percent did so once, 19.8 percent and 8.3 percent did so two and three times, respectively, and 34.8 percent made no changes (table 4.6). This shows the uniqueness of the Chinese farmland contract system compared with other countries—as a rule, such dramatic adjustments could not be observed elsewhere ten years after the determination of landownership.

TABLE 4.6 Difference in frequency of land adjustment by income group (%)

FREQUENCY OF ADJUSTMENT	<300 YUAN	301–450 YUAN	451–650 YUAN	651–900 YUAN	>900 YUAN	TOTAL
Once	30.8	34.6	40.8	35.6	38.6	37.1
Twice	23.1	23.1	20.9	13.3	18.2	19.8
Thrice	11.5	5.8	11.6	4.4	6.8	8.3
No adjustment	34.6	36.5	26.7	46.7	36.4	34.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

Reasons for adjustments. The reasons for land-plot adjustments are shown in table 4.7. The primary reason, found in 70–80 percent of villages in the survey, is that contracted land was adjusted due to population changes, a revision which was stipulated when the land was allocated; 15 percent of the villages made adjustments because of strong internal pressure

from the inhabitants, even though they had not previously set rules relevant to increased population. Nearly 30 percent of the villages changed land assignments because of massive labor transfers to nonfarm activities which caused some troubles in land management. Fewer than 20 percent of the villages adjusted the farmland to solve problems related to land improvement or excessive segmentation.

TABLE 4.7 Major reasons for land adjustment (%)

REASON	FIRST ADJUSTMENT	SECOND ADJUSTMENT	THIRD ADJUSTMENT
1. Population changes agreed upon before	80.00	72.06	78.95
2. Farmers' demand and approval by village committee	12.26	16.18	10.53
3. Poor land management due to massive labor transfers	3.23	2.94	0
4. Mechanization impossible due to excessive fragmentation	1.94	1.47	0
5. Support skilled farmers as required by the top	0	1.47	0
6. Other	2.57	5.88	10.52
Total	100.00	100.00	100.00

TABLE 4.8 Primary reason for land adjustment by income group (%)

REASON[a]	<300 YUAN	301–450 YUAN	451–650 YUAN	651–900 YUAN	>900 YUAN	TOTAL
Reason 1	88.2	90.0	87.7	70.8	55.6	80.00
Reason 2	11.8	6.7	8.8	12.5	25.9	12.26
Reason 3	0	0	0	4.2	14.8	8.23
Reason 4	0	0	1.8	8.3	0	1.94
Reason 5	0	0	0	0	0	0
Other	0	3.3	1.7	4.2	3.7	2.27
Total	100.0	100.0	100.0	100.0	100.0	100.00

a. Reasons are in same order as in table 4.7.

We can compare the difference between the first-ranked reasons for land adjustments by income group. As many as 90 percent of low-income villages reported that their adjustments were made according to regulations set at the beginning, while this percentage was significantly smaller (55.6 percent) in the higher-income villages. By contrast, the second reason listed was more important for the latter group, that is, 25.9 percent of the higher-

income villages adjusted the land because of pressure from farmers after household size had changed. This could be explained by the heavier dependence of poorer farmers on the land, a situation in which it would be difficult to reallocate land plots if there were not earlier pre-agreed rules. In the richer regions, farmers had more access to other kinds of employment and thus their income was less dependent on farmland.

The cases of land adjustment caused by the movement of labor support our proposition. The probability of land adjustment for labor transfer was zero in the low-income villages, while it rose to 14.8 percent in the high-income group. Adjustments because of land fragmentation took place in the middle-high income villages, which were located mostly in the land-abundant farming area of northern China.

If we make a correlation analysis of indicators of frequency of land adjustments to such factors as time of HRS adoption, form of contracts, policies, and regulations, it becomes clear that the adjustment frequencies were related almost solely to the presence of regulations concerning land adjustment that were agreed upon at the very beginning of HRS. Land adjustments occurred in 90.1 percent of the villages that had instituted such rules; among them, 41.3 percent experienced two or more adjustments. However, similar cases of adjustment were reported in only 36 percent of the villages that did not allow alternations as family size varied. Of villages with no regulations, 44 percent altered the land distribution pattern (table 4.9).

TABLE 4.9 Regulations on land adjustment and frequency of adjustment (%)

REASONS	NO ADJUSTMENT	ONE ADJUSTMENT	TWO ADJUSTMENTS	THREE ADJUSTMENTS
Adjustments are made as family size changes	9.9	44.6	33.9	12.4
No adjustments are permitted when family size changes	64.0	31.9	4.3	
No regulations	56.0	30.0	8.8	5.0

The above data indicate that land property rights in China have typically been ill defined under current conditions of collective landownership because there were no clear-cut boundaries between collective properties nor was there relevant legislation. There was only an obscure understanding about landownership, the village committees were weak when they exercised their rights as property owners, and the farmers were not psychologically prepared. Villagers are accustomed to thinking that the land belongs to "all of us." However, what does "all of us" mean? Does it include all members of the village at a specific point in time, or does it include those people who potentially belong (next year's newborn or wives, for example)? It is an extremely complicated matter to determine which persons are eligible for land-plot allocations. From a long-term perspective, the boundary of the property owner is

elastic as the population changes, which is in conflict with the rigidity of limits set up by a single owner at one place in time.

There may be two solutions: a dynamic system of adjustment to adapt to population changes, and a static system, which may again be subdivided into allocating land according to the current number of persons in a family without clarifying possible adjustments in the future or allocating land in a once-for-all manner without any subsequent variation. Neither of the static approaches is likely to come unstuck as the population grows. The newcomers to a community will demand their equal right to land, that is, they will want to have their share of the land rent. The pressure on community leaders will increase over time. They may resist initially, but the contradictions in land-rent sharing will not disappear. Sooner or later they will be forced to reallocate the contracted land plots. That was the basic cause of the frequent adjustment of land after 1984. It is related to our next topic of study, the influence and effects of the frequent changes on agricultural production.

2. REGULATIONS AND RULES OF LAND TRANSFER

Land transfer is associated with economic development in China, as in any country after implementation of agrarian reforms. This problem is especially prominent in regions which enjoy a beneficial development environment due to industrialization and its absorption of a large number of workers. China lacks unified legislation for farmland administration. We assume that some kind of regulations or rules must exist at the village level to cope with new conditions. To a certain extent these rules filled the vacancy produced by the state's failure to make laws. The following is a discussion on the data collected in the sample survey.

Supervision over farming situation. Should village committees supervise farm households and prevent them from leaving land uncultivated? According to the data from 253 villages, 14 percent recognized the total responsibility of farmers for their contracted plots, village leaders not needing to become involved; 2.54 percent said that village heads should look over the "responsibility fields" for their own needs but not the "food fields"; 46.59 percent examined all the contracted land and punished those who left cropland to waste; and 36.87 percent did not establish any rules on this point.

Another question concerned the village's response to lowered land productivity caused by the out-migration of principal workers to nonfarm jobs. The survey shows that 8.02 percent of the villages would retrieve the farmer's contract land if productivity declined; 6.75 percent would withdraw the "responsibility field" but leave a part of the land as "food field"; 9.7 percent would compel the farmer to give up all land to other farm households; 18.14 percent would not take away land, but require the farmer to come back to the cropland during busy seasons; 11.81 percent would not intervene in personal matters and allow the farmer to assume full responsibility; and the remaining 45.58 percent did not have any stipulations. The latter may be explained by the small number of similar cases, by the lack of review by higher levels, or by leaders being unaware of their roles. If we compare the results by income groups, low- and middle-income villages clearly tended not to supervise their farmers, the portion resting between 56 percent and 69 percent, while only 37 percent of high-income

villages opted for no intervention. The reason for the difference between income groups seems to lie in the higher opportunity cost of labor for the richer group and the large gap between state-fixed purchase price and market price for grain. That is, the grassroots agencies were more concerned in grain yields; otherwise, they would pay a higher cost to collect the hidden tax from the outgoers. Also, the middle-income villages have more land reserves and, as a rule, their grain sale quotas to the state are comparatively low; hence their heads need not worry much about grain yields.

Regulations about land transfer. Of sampled villages, 54.3 percent allowed a farm household to recontract its land on the condition that the farmer deliver the fixed quota of grain as the government-set task and agricultural tax; 18.5 percent permitted recontracting with an approval by the village committee; 9.4 percent forbade such recontracting and would arrange the land transfer in a unified way if a worker could not engage in farming; and 17.8 percent stipulated nothing. Low- and middle-income villages (52 to 64 percent) tended to let farmers recontract on their own, whereas only 42.5 percent of high-income ones thought it reasonable. Actually, 22.5 percent in the latter group required an approval before recontracting and then placing on file, and 17.5 percent forbade laissez-faire land transfers and the outgoers had to return their land to the collective, reflecting a stricter control and stronger economic power of the village organizations in the richer group.

How did the village agencies approach the problem of once-and-for-all, nongratuitous land transfer among farmers? Based on the survey, 25.5 percent of villages let the farmers decide on their own; 16.8 percent required an approval from the village committee; 30.4 percent forbade such transactions; and 27.3 percent had no rules. The differences consisted of a higher level of liberalization in the poor villages. Only 15 percent in the rich group permitted the recontracting for payment, but as high as 45 percent (average 40 percent) of poverty-stricken villages allowed recontracting.

Rules on compulsory transfer. If a farm household begins to enjoy the status of urban residence (class A), this implies that the government will take care of the job arrangements and social insurance of its members. Of sampled villages, 81.6 percent stipulated that under these circumstances the contract land should be withdrawn; 0.8 percent would leave only a part of the land as "food field"; 7.4 percent would not retrieve the land on condition that the land would be cultivated conscientiously; and 10.2 percent cared nothing about it. There is another group of farm households that are settled in urban areas, but do not enjoy the state-offered grain quota (class B). As far as group B is concerned, again, there are different views in the sampled villages: 11.4 percent would take back their contract land; 7.9 percent would reserve a part of the land as their "food field"; 45.9 percent would let them keep their contract land on the condition that they guarantee conscientious crop cultivation; and 34.8 percent do not have any rules. Obviously, the approaches to classes A and B vary greatly: 81.6 percent versus 11.4 percent, respectively, of villages would take away the contract land. That could be compared with the cases of reduced family size (for example, outgoing women after marriage or deaths): 48.2 percent of villages stipulated that the contract land would be withdrawn; 21.6 percent let the households cultivate the plot; and 30.2 percent had no regulations.

Inferences. Cropland in rural China is not only a necessary means of agricultural production but also—and more importantly—a social guarantee for existence. Once a family gains urban status and at the same time the social guarantee (households of class A), it need not keep the contract land which is so valuable to other villagers; therefore, over 80 percent of villages demand the withdrawal of land. Families of class B, however, should have the final insurance even though they are employed in towns and may get paid more than those of class A. Nevertheless, their urban status is not confirmed and is not included in the urban guarantee system. That is why very few villages want their land back. By contrast, a big percentage of villages take the contract plots away from households of reduced size. The function of the social guarantee of land has been at the core of the Chinese agrarian system.

The security function of land is essential, especially to low-income villages, because they are more dependent upon the returns from their land. It is relatively easy for a farmer in a rich village who loses the land guarantee to find a job; but it would be a real crisis of employment and income if the farmer were from a poor village. We discovered, however, a discrepancy between land-transfer regulations of villages at different income levels. The stipulations set in more-developed regions (where the social guarantee function has been weakened) should be considered as interventions or obstacles to farmland transfer, even though land circulation is desirable for reallocation of resources and increase of land productivity. Meanwhile, land has a strong security function in low-income villages and it might be necessary to establish rules to stabilize the land system and to equalize the land-rent distribution; but, on the contrary, the low-income villages tend to slacken control over the land transfer. This is an interesting and important phenomenon in the evolution of the agrarian system at the village level in China.

Penalties. If a farmer violates the agreed rules, 60.4 percent of villages with above-mentioned regulations would compel an end to the improper actions with a warning; 2.3 percent would cancel welfare benefits available for other villagers; 13.1 percent would stop the contract and withdraw all land plots; 7.2 percent would have more detailed punishment rules; 0.5 percent would resort to legal procedures; and 16.5 percent would have diversified penalties. No evident statistical regularity was seen between villages at different income levels.

Cases of intervillage transfer. At present, most land transfers take place among farmers of the same village. Occasionally, some farmers from other villages sign land contracts for cultivation, which account for 11.3 percent of the sample surveyed. This kind of transfer happened mainly in high-income regions (22.2 percent in the group over 900 yuan), the probability being 6 percent in villages with incomes of 450 yuan and less. The same is true in terms of land acreage recontracted to the "newcomers," that is, it was larger in the richer group.

Higher probability and larger scale of intervillage land recontracting are reported as having a positive correlation with income level, which coincides with the theoretical assumptions of development economists. Among the recontracts to newcomers from other villages or counties, 51.4 percent were made between farmers on their own initiative, 29.7

percent were agreed upon by farmers and then approved by village committee, 10.8 percent were organized by villages in a unified manner, 1.4 percent were recontracted by specialized households, and 6.7 percent took other forms.

3. DISPUTES AND ARBITRATION SYSTEM

Incidence and types of land-caused disputes. Land-caused disputes are unavoidable because of the wide variation of land regulations from village to village. According to the sample survey, such disputes took place in 95.1 percent of villages, and high frequency was observed in 18.6 percent of them. The figure was 76.3 percent in 1988, the least number of disputes being 1, and the most, more than 30.

TABLE 4.10 Incidence of land-caused disputes in 1988 by income group (%)

FREQUENCY OF DISPUTE	<300 YUAN	301–450 YUAN	451–650 YUAN	651–900 YUAN	>900 YUAN	TOTAL
1–5	55.0	52.6	49.3	58.8	61.5	53.9
5–10	10.0	18.4	18.7	14.7	23.2	17.6
10–15	20.0	7.9	12.0	11.8	3.8	10.9
15–20	0	2.6	6.7	5.9	7.7	5.2
20–30	0	10.5	5.3	5.9	3.8	5.7
>30	15.0	8.0	8.0	2.9	0	6.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

Incidence of disputes was higher in lower-income villages (table 4.10). Of poor villages (<300 yuan per capita), 35 percent saw 10 or more cases in 1988, but the percentage was 29 percent for the lower-middle-income group, 32 percent for the middle-income group, 26.5 percent for the upper-middle group, and only 15.3 percent for the highest-income group.

These disputes were mainly associated with wooded mountains, farmlands, and homesteads. Of sampled villages, 86.8 percent had these three types of disagreement as their major cause of dispute, homestead-related troubles, in particular (table 4.11).

TABLE 4.11 Types of land-caused dispute in 1988 by income group (%)

TYPE OF DISPUTE[a]	<300 YUAN	301–450 YUAN	451–650 YUAN	651–900 YUAN	>900 YUAN	TOTAL
Type 1	0	2.0	5.0	8.1	3.2	4.1
Type 2	13.0	12.5	7.5	16.2	3.2	10.1
Type 3	13.0	6.3	1.3	5.4	3.2	4.6
Type 4	4.3	0	3.8	0	0	1.8
Type 5	34.8	41.7	45.0	27.0	9.7	35.2
Type 6	26.1	37.5	35.0	43.3	74.2	41.6
Type 7	0	0	0	0	3.2	0.2
Other	8.8	0	2.4	0	3.3	2.1
Total	100.0	100.0	100.0	100.0	100.0	100.0

a. Type 1 = disputes associated with orchards; type 2 = wooded mountains; type 3 = waste mountain or slope-side; type 4 = beaches or waters; type 5 = farmland; type 6 = homestead; type 7 = alternate uses of arable land.

Distribution of various land-associated disputes indicates farmland was the main type of dispute for the low-income group, while as high as 74.2 percent of land-caused disputes were due to homesteads for the high-income (>900 yuan) group. No regularity could be seen for wooded hills or mountains, but waste mountains or slope-side land more often served as the origin of disagreements. More troubles caused by orchards were reported in the middle-income group, while none of this type was reported in the poorest villages. It seems that there was some relationship with the forms adopted for HRS. About 80 percent of the poor villages awarded bids for those who wanted to work at an orchard, only 10 percent of them assigning the contractors; but the corresponding figures for the upper-middle-income villages were, respectively, 36.4 percent and 27.3 percent. It is logical that the bidding system makes the rent payment relatively reasonable and is more acceptable for the public, thus reducing disputes. A similar picture could be seen for wood- and mountain-related disputes, which were frequent in the poor and low-middle-income villages, because they shared out woodland and/or hillside in an egalitarian manner. The value and management of these resources vary greatly, their boundaries also being vaguely determined. It is also true in the case of waste mountains.

In brief, the incidence of land-related disputes and their origins could be explained by three factors: (1) resource endowment (a constant factor); (2) economic income (a slowly changing variable); and (3) agrarian system (the only factor that can be improved). Therefore, emphasis should be made to seek a better agrarian system to cut down the number of disputes.

Causes of land-related disputes. The majority of disputes were caused by unclear land boundaries. That was true for 79.2 percent of the 253 villages and there was no significant difference between income groups: from the lowest of 71.4 percent (the poor group) to the

highest of 81.3 percent (the middle-income group). The second important cause (constituting 63.6 percent of all cases) was land adjustment to fit changing family size, which ranged between 50 percent in low-income villages and 72.4 percent for the lower-middle group. The third cause was associated with recontracting with payment as well as alternate uses of farmland; both happened to account for 28.4 percent, separately, and ranged between 12.5 percent and 62.5 percent (table 4.12).

TABLE 4.12 Main causes of land-related disputes (%)

DISPUTES	CAUSES		
	No. 1	No. 2	No. 3
Unclear land boundaries	78.8	5.4	10.2
Land adjustment to fit family-size changes	11.3	63.6	8.0
Payment claims in land recontracting	1.8	9.3	28.4
Payment claims to nonfarming uses of land and their sharing	1.2	10.1	28.4
Right of succession	1.2	6.2	15.9
Other	5.7	5.4	9.1
Total	100.0	100.0	100.0

Orchard land was a unique example. The price for fruit was liberalized in 1985 and went up by a wide margin, while the majority of staple farm products remained under a double-track system (partial control with partial commercialization). A dramatic upsurge of the comparative income of fruit-growers led to resentment of the villagers because the relative rent-to-income ratio of the former reduced greatly. Encroachments and looting incidents against orchards were reported frequently. Sample data showed 52.2 percent of orchard-related disputes could be explained by fruit-price liberalization, especially in villages where the contractors were assigned by the local leaders. This was obvious in high- and upper-middle-income villages in particular. Besides, some village committees changed the contracts arbitrarily, which also often resulted in unhappy incidents. This demonstrated the necessity to formulate a standardized system of registration, contracting, administration, and arbitration according to the new situation of HRS. That is an inevitable step to streamline land management and cut down on various disputes.

Conciliation and arbitration between disputing sides. It is mainly through villager committees that land-associated disputes are settled. For example, 86.7 percent of all disputes of this kind were solved by the committees in 1988, 3.2 percent and 1.4 percent of cases were ended via the township governments and county courts, respectively, and the rest (8.7 percent) after mediation of prestigious members of the elder generation. The difference between income groups was reflected in higher capability of the committees of the richer villages and more influence of the elders in poor communities to mediate disagreements

between villagers. It was obvious and logical that the traditional mediating function of the eminent community figures is weakening as the economy develops and incomes grow.

With regard to the arbitration of the most serious case that happened in individual villages, over 70 percent of the disputes were arbitrated by villagers' committees, 16.6 percent at the township agencies, 6.7 percent at the county courts, and the juridical organs above the county level were involved in only 4.2 percent of the total disputes. Compared to the low-income group, the ratio of "big" cases settled in richer villages was higher by about 25 percentage points, and so fewer were shifted to the townships, reflecting a greater capacity of their leaders in land administration.

4. SUMMARY OF LAND ADMINISTRATION SYSTEM AND RULES SINCE ADOPTION OF HRS

Elastic boundaries of property rights and land adjustment. Under the unique contract system, boundaries of land property rights are rarely elastic or changeable due to a lack of necessary legislation as well as to the dynamic character of the population in villages. Troubles are thus unavoidable between the inelastic boundaries and the egalitarian principle popular in land allocation, and pressure on decision-makers to adjust land plots according to changed family size is endless. Continual variation of land plots is harmful in the sense that the producers are reluctant to make long-term investments in land. That has been a serious challenge for China.

Discrepancy in land-circulation regulations and their long-term impact on economy of scale. The land-transfer rules on the whole are in a primitive phase. Over one third of villages have no rules at all, but those that have formulated their regulations remain ambiguous as to whether farmers are permitted to recontract their land plots, or to what extent the village agencies should intervene in these cases. The rules in more-developed regions typically include greater intervention, which runs against rationalized factor use, whereas the ones in poor villages tend to liberalize land transfers or even take a laissez-faire attitude, which is likely to weaken the social-guarantee function of land in these areas.

Deviation in the contract system applied to nonarable land. This is reflected in a higher percentage of low-income villages that adopted the bidding system before contract and stipulated a longer contract length. That may result in further enlargement of gaps in economic performance.

Land-associated disputes and their arbitration. These disputes are mainly related to farmland, homestead, and woodland. The most prominent causes are unclear land boundaries and frequent adjustments as population changes. The minor reasons are payment claims to recontracted land and nonagricultural uses of cultivated land. The village committees are the major mediators. The disputes demonstrate that there are many problems in terms of land property rights and circulation, including determination of land property rights, cadastres, recontracting procedures, arbitration, and other modern standards of the land administration system.

D. LAND TAXATION AND MICRO-ADJUSTMENT POLICIES AT THE VILLAGE LEVEL

1. CHINESE LAND TAX SYSTEM: HISTORIC BACKGROUND

Chinese land taxation is quite complicated and ambiguous. Two kinds of taxes for farmers have existed since the state monopolized purchase and the marketing system was introduced, namely, overt and countable, or "explicit tax" (grain as tax in-kind, and small amount of tax on slaughtering animals, bazaar sale tax, etc.), and hidden and invisible, or "implicit tax."

The main product paid as tax in-kind has been grain. The tax rate dropped from about 12 percent in the 1950s to 7 percent in the 1960s, 5 percent in the 1970s, and 3 to 4 percent in the 1980s because of a significant increase in total agricultural output. On the other hand, the "implicit tax" multiplied quickly in form and in amount.

The quantity of state-fixed purchase quotas grew constantly, but the purchase price set by the government was apparently below the market price. For grain alone, the total amount fixed as quota was 40 million metric tons, 50 million tons in the late 1970s, and reached 100 million tons in 1984. The huge quantity of purchases contained a considerable amount of tax owing to the difference between state-set price and market price. As estimated by some economists, the hidden tax was about 20 billion yuan, and according to Mr. Cui Xiaoli's study, that tax might have been 5 to 6.9 billion yuan per year in the 1960s, and 10 to 11 billion yuan per year in the 1970s.

All kinds of agricultural products besides grain were included in the state mandatory purchases, composing a large part of invisible taxes.

A noticeable portion of financial expenses of the central government became the farmers' responsibility in the 1970s in the name of the "policy of walking on two legs." The items included salaries for the teachers in schools run by local people, salaries for grassroots cadres at village and township levels, and other kinds of administration expenditures. After the rural reform, these expenses were renamed "collective deductions," which became a virtual tax imposed on farmers. These taxes took hidden forms and various names, so it is very difficult to calculate the total amount. Rural land taxation began to change in 1985. The government cut down imposed grain purchases to 50 million tons, lifted controls on prices for almost all farm products except grain, cotton, and oilseeds, and then introduced taxes on special farm and forestry products. Understandably, a part of the hidden tax exists in terms of the state-fixed grain purchases, and a "third price" (something between the state-set price and the market price) is used for 20 to 30 million tons of grain, which also means a tax on farmers. The character of collective deductions has been mixed with community financial accumulation, which makes implicit taxes more obscure and complicated.

2. IMPLICIT TAX IN THE STATE-FIXED PURCHASE QUOTAS

The state-set purchase quotas of agricultural products before the reform had to be apportioned to farm households when the responsibility system was being adopted in two ways: according to family size, or according to acreage of the contracted land, which again could break down into three subgroups: acreage of all contracted land, acreage of "food fields," and acreage of "responsibility fields" only. As the 253-village survey showed, 90.5 percent took land acreage for quota sharing, and 9.5 percent took land according to the double criteria of family size and acreage. Within the "acreage group," 76.1 percent, 0.5 percent, and 23.4 percent, respectively, on average, opted for the listed subgroups. As far as the upper-middle- and high-income villages were concerned, 35 percent to 51.6 percent of them preferred "responsibility fields," or 20 to 40 percentage points above the poor villages. That may be explained by the fact that the main purpose of adopting the "two-field system" in the more developed regions was to narrow the target households for fixed purchases, thus cutting down on the cost of collecting the implicit taxes.

How much were the fixed purchases assigned to 1 mu (1 mu is equal to 1/15 hectare, or 1/6 acre) on average? Of the sampled villages, 24.8 percent were below 25 kilograms; 22.9 percent, between 25 and 50 kilograms; 18.1 percent, between 50 and 75 kilograms; 9.4 percent, between 75 and 100 kilograms; and 24.8 percent, over 100 kilograms, with the heaviest at 375 kilograms. As a whole, richer villages had heavier burdens than poorer ones. For example, 47.1 percent of the above-100-kilograms group were high-income villages, versus 4.1 percent of lower-middle-income ones, but inequality was apparent. Of poorer villages (with <300 yuan per capita), 11.1 percent had heavy quotas above 100 kilograms per mu, implying an invisible tax of 60 yuan if including the price difference in 1988.

From table 4.13 we see that richer groups tended to pay more implicit taxes; 50 percent of them paid 30 yuan or less while the percentage for poorer groups was 60 to 80 percent. However, the implicit tax paid by the latter was heavier; for example, they accounted for 33.3 percent in the interval of 30 to 50 yuan per mu; 85.1 percent of the lower-middle-income villages paid 30 yuan or less, or 24 percentage points more than the poorest group. On the other hand, there is no regularity inside these income groups in terms of tendency of distribution of implicit tax, and the richest group in particular: from less than 10 yuan (18.2 percent) to above 100 yuan (18.1 percent). This indicates a high extent of inequality caused by the purchase quotas as an implicit tax.

Obviously, the decision-maker did not have enough time to systematically consider the agricultural taxation. The practical cadre could only apportion the previous taxes among the farm households. The implicit tax inherited from the past decades along with the varied person-to-land ratios inevitably led to imbalanced interests among villages or regions. The impact of the inequality of tax burden is profound on agricultural production and income distribution.

TABLE 4.13 Difference of fixed purchase quotas and implicit tax by income group[a] (%)

	<300 YUAN	300–450 YUAN	451–650 YUAN	651–900 YUAN	>900 YUAN	TOTAL
Purchase quota[b]						
PQ 1	50.0	46.9	11.5	25.7	8.8	24.8
PQ 2	22.2	26.5	24.4	20.0	17.7	22.9
PQ 3	16.7	14.3	20.5	17.1	20.6	18.1
PQ 4	0	8.2	14.1	8.6	5.8	9.4
PQ 5	11.1	4.1	29.5	28.6	47.1	24.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
Implicit tax[c]						
IT 1	53.3	51.1	16.7	22.9	18.2	28.4
IT 2	0	17.0	16.7	17.1	15.2	15.4
IT 3	6.7	17.0	12.8	14.3	21.2	14.9
IT 4	33.3	8.5	24.4	14.3	9.1	17.3
IT 5	6.7	6.4	24.3	22.9	18.2	17.8
IT 6	0	0	5.1	8.5	18.1	6.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

a. Villages with average per-capita income <300 yuan are classified here as poor; 300–450 yuan, lower-middle income; 451–650 yuan, middle income; 651–900 yuan, upper-middle income; and >900 yuan, high-income villages.
b. PQ refers to state-fixed grain-purchase quotas (kg per mu) in 1988; numbers 1 through 5 refer to average grain quotas (kg per mu): 1, <25; 2, 25–50; 3, 51–75; 4, 76–100; and 5, >100.
c. IT is the implicit tax (yuan per mu) contained in the quotas because of the difference between the state-set price and the local market price in 1988; numbers 1 to 6 represent average tax burdens (yuan per mu): 1, <10; 2, 10–20; 3, 21–30; 4, 31–50; 5, 51–100; and 6, >100.

3. IMPLICIT TAX IN THE "COLLECTIVE DEDUCTIONS"

The village as a geographical community has always been the unit to coordinate the collective (for example, economic and cultural) actions of its members. The community thus needs a certain amount of funds to do so. Historically some money could be obtained from public-owned land, and the coordinating function might be performed in the ancestral temples. The people's commune system extended its community-specific function to cover productive management and government activities, thereby introducing a concept of "collective deductions." At that time, deductions represented a kind of accumulation fund. The accumulating bodies were first of all production teams, and production brigades and communes. When HRS was adopted in the reform, farm households became the major accumulators, while villages (that is, former production brigades) became the main collectors

of deductions and coordinators of farmers' behavior. Villages thus greatly increased their function.

By villages we mean here administrative rather than natural or geographic villages. Communities were typically demarcated geographically. The 253 villages we studied support our assumption. Only 1.97 percent of them had fewer than 300 people; 3.15 percent were in the 300–500 range; 28.35 percent, 501–1,000; 43.7 percent, 1,001–2,000; 12.2 percent, 2,001–3,000; 9.06 percent, 3,001–5,000; and 1.18 percent, 5,001–6,500. The villages were large enough to embrace several natural villages and were not comparable to traditional communities. They represent a mixture of local authorities and autonomous organizations of villagers, and the final executing bodies of policies of the central government. This makes collective deductions very complicated.

There are many ways to collect the deductions. We think it is convenient to break down the main ways into three types: apportioning according to family size; allotting according to acreage of contracted land; and township enterprises paying for all of the villagers (table 4.14). As we can see, the richer groups have various ways to raise funds, especially by means of their profitable industrial enterprises.

TABLE 4.14 Importance of different ways of collecting the collective deductions by income group (%)

METHOD OF COLLECTION[a]	<300 YUAN	301–450 YUAN	451–650 YUAN	651–900 YUAN	>900 YUAN	TOTAL
FS	23.8	27.1	20.2	25.0	5.4	20.4
ACL	61.9	58.3	52.4	42.5	54.1	53.1
TE	4.8	6.3	10.7	10.0	18.9	10.4
Other	9.5	8.3	16.7	22.5	21.6	16.1
Total	100.0	100.0	100.0	100.0	100.0	100.0

a. FS = according to family size; ACL = according to acreage of the contracted land; and TE = township enterprises paying for all villagers.

Table 4.15 shows that the collective deductions do not seem to be very heavy. Over 80 percent of lower-middle- and low-income groups paid 15 yuan or less per mu; about 60 percent of them were within 10 yuan. On the other hand, over 60 percent of the upper-middle- and high-income groups collected deductions of 15 yuan or less per mu; about 40 percent of them were less than 10 yuan. In other words, 80 percent of the poorer villages delivered less than 6 percent of total grain output from 1 mu, while for the richer ones, less than 3 percent. The same was true on a per-capita basis. Of the high-income group, 58.6 percent paid 30 yuan or less, which accounted for less than 3 percent of their per-capita income. The rate would not exceed 5.65 percent if every person paid only 50 yuan.

However, disparity was in fact very serious. Some poor villages had to pay 25 to 50 yuan from 1 mu (or we can take 36.7 yuan as the average), which made up almost 15 percent of the total output in the locality. If we add to that the agricultural tax in-kind and the implicit tax of the fixed purchase quotas, the total burden may surpass 40 percent of total grain output of 1 mu. It is intolerably heavy. On the other hand, there were some rich villages with deductions less than 10 yuan per mu or 5 yuan per person, paying only 3 percent of their output or 1 percent of their income, which is too little. The situation is similar to the implicit tax contained in purchase quotas.

TABLE 4.15 Different rates of collective deductions on farmers by income group[a] (%)

	<300 YUAN	301–450 YUAN	451–650 YUAN	651–900 YUAN	>900 YUAN	TOTAL
Collective deduction per mu[b]						
CD 1	58.8	68.3	51.4	45.5	42.3	53.4
CD 2	23.5	17.1	23.0	15.2	19.2	19.9
CD 3	11.8	7.3	16.2	18.2	15.4	14.1
CD 4	5.9	7.3	6.8	18.1	15.4	10.0
CD 5	0	0	2.6	3.0	7.7	2.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
Collective deduction per person[c]						
DP 1	27.8	27.9	14.1	16.2	6.9	17.6
DP 2	27.8	30.0	18.0	18.9	13.8	21.0
DP 3	11.1	14.0	20.5	10.8	10.3	15.1
DP 4	16.7	4.7	16.7	16.2	13.8	13.7
DP 5	5.6	7.0	11.5	10.8	13.8	10.2
DP 6	11.0	11.6	15.4	10.8	27.6	14.2
DP 7	0	4.6	3.8	16.3	13.8	8.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

a. Villages with average per-capita income <300 yuan are classified here as poor; 301–450 yuan, lower-middle income; 451–650 yuan, middle income; 651–900 yuan, upper-middle income; and >900 yuan, high-income villages.
b. Average collective deduction rate in yuan per mu; CD 1 refers to <10; CD 2, 10–15; CD 3, 16–25; CD 4, 26–50; and CD 5, >50.
c. Collective deductions in yuan per person; DP 1, <5; DP 2, 5–10; DP 3, 11–15; DP 4, 16–20; DP 5, 21–30; DP 6, 31–50; and DP 7, >50.

To what extent do deductions serve as taxes and do they play an integrating function in the community? It is interesting to know their outlay. The largest items of expenditure of the village deductions are as follows: payments and/or subsidies to the village or cooperative

cadre; salary and subsidies to the teachers in schools run by local people; subsidies to households enjoying five guarantees (households with single, childless, aged, or disabled people who have no one upon whom to depend have the five guarantees which refer to food, clothing, housing, medical care, and burial expenses) and soldiers' families; other administration expenses; construction of village schools; and construction of small-scale fields and water conservancy projects. About 70 percent of the villages spent the lion's share of the funds on the listed purposes. These items, except the last one (which is related to agricultural production), should be included in the tax category rather than proper functions that are to be implemented by the community. Only the tax took a hidden form and shifted from government financial expenditures to village outlays.

The collective deductions as hidden taxes in villages have been the result of policies under the commune system (such as running schools by the local people as well as by the government, policies of walking on two legs, etc.). This agricultural taxing mechanism remains in operation and contradicts the responsibility system in several ways.

First, both the state-fixed grain-purchase quotas and the collective deductions are not taxes in name, though they are in essence, so farmers can resist them in a "soft" way.

Second, these taxes are uncertain and their real rate varies constantly as market prices fluctuate. They are affected by very region-specific policy settings, but they influence the interests and behavior of farmers, local authorities, central government, and commercial agencies, and result in biased tax rates and large year-to-year oscillations.

Third, the above-concerned parties play in a multisided game, and it is difficult to prevent the tax rates from being distorted and difficult to obtain true information. Meanwhile, the disparity of tax rates aggravates the issue.

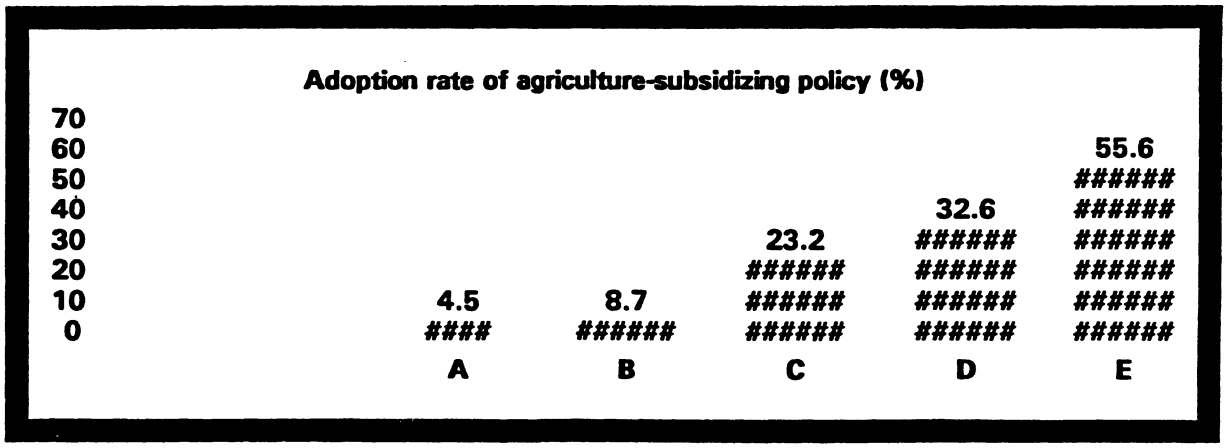
Fourth, the "soft resistance" of farmers makes tax collection more costly. It takes more and more time and involves more and more cost when grassroots workers request collective deductions, apportion the state-set purchase quotas, and so on. Increasingly more villages are tending to adopt the "two-field system" to narrow the name list of taxpayers, resulting in tax-free "food-fields" and heavily levied "responsibility fields" in order to cut down the cost. The increased tax rate has pushed up the profit-versus-loss equilibrium point of enlarged farms and hence reduced their marginal returns. It is necessary, therefore, to introduce a policy of "subsidizing agriculture with industry" to retain incentives to farmers to facilitate tax collection.

4. SUBSIDIZING AGRICULTURE WITH INDUSTRY AT VILLAGE LEVEL

Among the 253 villages studied, 25.7 percent implemented a micro-adjustment policy of subsidizing the farm sector with profits from industrial enterprises. Among them, 36.7 percent were villages of the high-income group, and 23.3 percent were in the upper-middle-income group. The adoption of this policy was highly correlated with income level. Only 4.5 percent and 8.7 percent of the two poor groups were able to do so, but the percentage rose

to 23.2 percent and 32.6 percent, respectively, for the middle- and upper-middle-income groups, while 55 percent of the richest villages supported agriculture by means of their industrial returns (figure 4.2).

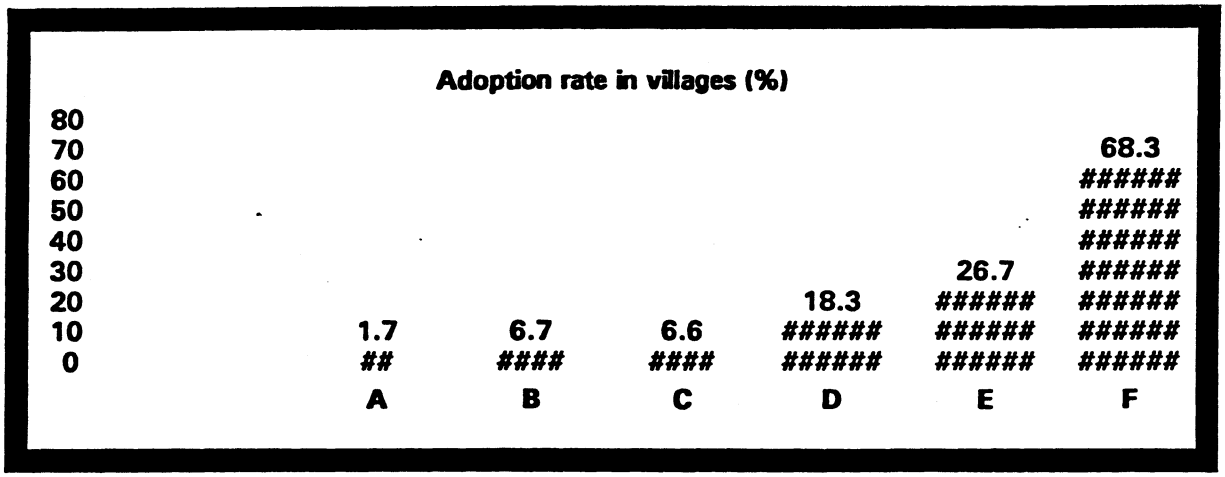
FIGURE 4.2 Correlation between agriculture-subsidizing policy adoption in sample villages and their income level



Notes: A = poorest villages; B = lower-middle-income; C = middle-income; D = upper-middle-income; and E = richest villages.

Ways to subsidize agriculture were quite diversified and complicated. They consisted mainly of two types: overt and covert subsidization. Examples of overt ways include: (1) 6.7 percent of the villages subsidized farming workers month by month from their industries; (2) 18.3 percent of the villages shared subsidies according to the acreage of the contracted land; (3) 26.7 percent of the villages subsidized those who delivered purchase-quota grain for every 50 kilograms; (4) 6.7 percent of the villages paid a certain amount of money only to those who sold extra grain above the quota; and (5) 1.7 percent of the villages subsidized agricultural households according to their grain output. By covert subsidization we mean invisible benefits returned to the farm workers through low-priced or free services (machinery plowing, irrigation and drainage, plant protection, supplies of farm inputs, etc.), which were reported by 68.3 percent of the villages. Some villages applied both forms of subsidies. It was clear that the covert subsidies were the dominant form in the sample villages (figure 4.3).

FIGURE 4.3 Ways to subsidize agriculture with industry in sample villages



Notes: A = subsidizing farm households according to their grain output; B = subsidizing farm households according to number of agricultural workers; C = subsidizing households if farmers sell extra above quotas; D = subsidizing farm households according to acreage of "responsibility fields"; E = subsidizing farm households according to amount of contracted grain-purchase quota; and F = covert subsidies with low-priced or free services.

Among the villages subsidizing farming workers, 50 percent of the total paid fewer than 10 yuan per month, 25 percent gave a subsidy between 10 and 50 yuan, and 25 percent awarded over 50 yuan. Of the villages that adopted a variant to subsidize farmers according to their "responsibility fields," 72.7 percent paid 40 yuan or less per mu, 18.2 percent varied from 40 to 200 yuan, and 9.1 percent paid more than 200 yuan in addition. Some villages subsidized farm households according to their sales to the government as contracted purchase quotas. For every 50 kilograms of grain, 62.5 percent paid an additional 9 yuan or less, 31.2 percent awarded 10 to 15 yuan, and 6.3 percent paid over 15 yuan. If any farmers sold grain above the quota, some of the villages paid them an additional 9 yuan or less (in 75 percent of sample villages that practiced such a manner), or 10 to 20 yuan (in 25 percent) per every 50 kilograms. Only one village subsidized grain producers according to their output, 8 yuan for every 50 kilograms.

The overt ways to subsidize agriculture could not be compared between income groups because of the small size in each of the forms and because of a lack of statistical significance (table 4.16).

TABLE 4.16 Difference between covert subsidies by income group (%)

COVERT SUBSIDIES[a]	<300 YUAN	301–450 YUAN	451–650 YUAN	651–900 YUAN	>900 YUAN	TOTAL
CS	3.8	1.9	12.8	20.0	43.2	16.2
<10 Y	100.0	100.0	90.9	33.3	36.8	53.7
10–20 Y	0	0	0	22.2	31.6	19.5
21–50 Y	0	0	9.1	11.2	21.1	14.6
>50 Y	0	0	0	33.3	10.5	12.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

a. CS = percentage of villages adopting covert form of agricultural subsidization; <10 Y means the subsidies contained low-priced or free services in an amount less than 10 yuan, and so on.

Subsidizing agricultural production with industry is associated partly with the community function in respect to farm households, but to a greater extent is a product of the implicit taxation in rural China. The opportunity cost of labor has risen considerably in more-developed regions with prosperous township enterprises, widening the difference between local market prices and the state-fixed prices for farm products. It becomes more difficult to reach the grain-purchase quota. The "two-field-system" has in fact concentrated the invisible taxes on the part of the land plots named as "responsibility fields." The tax burdens on this part are thus much heavier. Farm-subsidizing policy attempts to maintain an incentive to grain producers and to ensure food self-sufficiency and purchase quotas. This is, however, only a "patch" put on the original land-taxing system and makes it more complicated. This policy has further blurred the cost-benefit ratios of agriculture and hinders a flexible response to any changes. Macro-allocation of agricultural resources may be inappropriate from a long-term point of view, but cannot be corrected soon. That problem needs to be studied later.

E. SOME BASIC CONCLUSIONS

The household responsibility system with remuneration linked to output implemented in rural China was pushed by an agricultural crisis caused by the people's commune system and by the employment and income crisis of farmers. The route was from poverty-stricken regions to high-income areas, reflecting a distinguished characteristic that "the poor tend to change their own situation."

The function of land as a social guarantee had priority over its function as a production factor when land was allocated during the introduction of HRS. That was well reflected in the egalitarian manner of "equal-plot-to-everybody" (which also considers the quality of the land in distributing land use rights to farmers). To interface different systems, some of the land plots were retained to maneuver and to cope with an ever-expanding population.

HRS has yielded new problems related to property rights. The property rights boundaries of collective land are fairly elastic because population is a dynamic factor. Demand for land as a kind of social guarantee is a big pressure on village cadres in settings where there is no detailed official land legislation. Village leaders take various attitudes (for example, to respond actively, to avoid making any regulations, to put off their decisions, etc.), but as population pressure increases, they have to adjust land among farm households. This process is likely to move faster in the future.

Economic development has also brought new issues of land circulation. The idea of land as a social guarantee is decreasing in developed rural areas, and land is reconsidered as a production factor; therefore, the demand for larger farm scales is growing. It is imperative to set up a rational land-transfer system. The idea of land as a social guarantee remains important in less-developed regions, and it is necessary to keep land possession stable. However, an apparent discrepancy was observed in land circulations at the village level, which consisted of large obstacles to land transfers in the developed regions and few hurdles in the poorer villages. The same can be said in respect to the contracting system of nonagricultural land. This institutional disparity and tendency are in discord with the demand for land transfers in different regions.

The incidence of land-associated disputes and their arbitration further indicates that many troubles occurred because of a lack of standard institutional rules on demarcation of land property boundaries, cadastres, land transfers, and arbitration procedures.

Land taxation on the whole remains within the framework of the commune system. It lags far behind the new situation of reforms. Land taxes could be divided into "overt" and "covert," and the latter might in turn be separated into two kinds: one is the government-fixed grain-purchase quotas, and the other comprises collective deductions (though they should be regarded as a shift of burdens from the official budget). The farmers might resist covert taxes because they assume no legal name. Besides, tax collection becomes more costly as the taxpaying units are now individual farmers who are quite scattered. More and more villages are turning to the "two-field system" to cut down the collection cost. This has led to a concentration of tax burdens on particular sections of land, so a farm-subsidizing policy is an expedient. However, land taxation is complicated, and tax disparities are becoming more prominent.

It is our new task to solve the above problems in the agrarian system of China. No simplified approaches can be regarded as reasonable. We should pay close attention to the historical background of the situation, the succession of occurrences, and the support core of legislation. This calls for an in-depth investigation, integrating theory with practice, holding dialogues and interviews with farmers and grassroots leaders to reach a wide consensus. All of these approaches are important and of real significance.

COMMENTARY

by **Liu Kan**

Senior Advisor,
Land Issue Study Team

Mr. He's article, "Changes in the Rural Land Tenure System at the Village Level," is good and is based on realistic foundations. Mr. He and the research group have done useful work.

The land problem in China has always been a research topic of great importance. The land problem historically had, and still has, a profound influence on socioeconomic transformation and development in China. The current economic reforms in China trace their origin to the rural areas, and a central part of rural reform depends upon a satisfactory solution of land-and-farmer relationships. The reforms have laid a solid foundation for development of a rural commodity economy and have created necessary conditions for the reform and development of the national economy. However, how was the present agrarian system formulated? What are the relations with other socioeconomic conditions, and how do they accommodate each other? What kind of problems will arise in the future, and how should the system be improved? These and other issues should be studied systematically and in depth, following the reform's practice. In short, this research topic has broad value regarding the developmental process, and we should pay constant attention to it.

Mr. He's article was prepared on the basis of empirical analysis of a sample survey of 253 crop-producing villages from various provinces. This is an expanded study of selected aspects in the decade-long reform of the rural land-tenure system with the obtained data, and it has enabled us to know the features and problems in the operation of the present system. It is very helpful for us to understand correctly the present situation and to explore solutions presented in the report, such as the incidence of transfers of arable land, the changes in land taxation, the discrepancies of agrarian systems in different regions, and the incompleteness of property rights. This information is of real significance. Statistical analysis and sample investigation of a relatively large scope made possible the description of the actual picture of the rural land system. This is a remarkable improvement on and supplement to our usual understanding based only on empirical inference from case studies.

I have been engaged in research work on rural policies for quite a long time. Research means discussion and exploration, which are related to contesting opinions, their supplementation, infiltration, or compromise. I would like to share some of my views on the land-tenure system.

Commodity character of land. As we know, the character of land as a commodity was not recognized within the previous socialist framework. Land, being a public-owned means of production in the socialist model, can only be allocated free of charge. When the state needs collective-owned arable land (as well as land occupied by state-owned enterprises) for nonagricultural construction, the land is "requisitioned according to law" and the owners are "compensated" in some way, but in a gainful exchange. The law forbids the purchase and sale of land, the lease or mortgage of land, the use of land for admission, and any form of covert land transfer. Ideologically, even a discussion about land as a commodity fell into the forbidden zone.

Land policy was not adjusted until the mid-1980s, when the new economic environment became more open to the outside world. The restriction on land leasing was removed in the 1988 amendment to the constitution. At the same time, the Land Administration Law was altered to allow transfer for payment of use rights to state-owned land. Nevertheless, until now there have been no concrete policies or rules about whether collective-owned rural land can be used or transferred in a "market" way.

This rigid policy became more flexible as the reforms and policies of openness to the outside world progressed. The flexibility arose from the requirements of objective practice:

First, as secondary and tertiary industries in rural areas developed vigorously and as farmers demanded more land for the construction of housing, local authorities adopted some policies to curtail improper nonagricultural uses, such as requiring payments when land use changed from farming to rural enterprises or homesteads. This, however, served only as an auxiliary instrument of administrative control, unpopular in most rural areas, and was far from being a standard regulation.

Second, the obligatory plans in crop farming have been weakened or abolished as the reform of farm-produce purchasing and marketing systems continues and as control over purchasing and marketing prices is lifted. Commercialization of agricultural products reveals the possibility of arable land becoming a commodity. If the land is to be planted in high-valued crops or if it is newly opened to nonagricultural uses, it is contracted with higher rates of payment or, after bidding in some villages to increase returns to collective land, as a fixed asset.

Moreover, nonagricultural land appreciates by a large margin in zones of accelerated economic development and in industrial microregions. That increase awakens farmer awareness of the value of land as an asset. This is especially true in urban subdistricts and along railway arteries, where land use transfers take place frequently. The government has a dual policy with respect to land (state-owned urban land is used with payment, while rural collective-owned land is "requisitioned first, and then sold" or allocated without payment) and its monopoly over beneficiary rights of differential rent are challenged.

It is obvious that the old understanding of land is changing as the economy becomes more commercialized and more market oriented. This new perception shakes the very foundations of the previous agrarian system and land policy. At the first stage of reform,

collective land was shared out to farmers in an egalitarian way, and the farmers thought that they had a natural right to share in the collective landownership as an indispensable condition of living and as a means of production. Later, as the economy developed, some of the farmers got second jobs, which increasingly became their main source of livelihood. Although these farmers do not rely heavily on land for income, they continue to regard their contracted land as a social guarantee in case of failure in off-farm industries. Economic circumstances awakened the farmers to the idea of land as an asset, namely, that land is not only the most important means of production and a reliable social guarantee, but also is a "commodity" which can have value.

That is to say, economic activities are like a kaleidoscope, which reflects the multiple facets (functions) of land, remolding the mind and behavior of all people who have experienced the changes from the old system. However, our existing policies and regulations about land—cultivated land, in particular—lag behind the new reality. As many specialists have pointed out, these problems—such as the property-rights system of land, the composition and decomposition of land's "bundle of rights," transfers of property rights and distribution of benefits, land taxation, the incentive principles of the agrarian system, the economies of scale, and the like—will become our research topics in the future. Legislation has its roots in economic life. I believe that research findings and achievements will benefit the formulation of a land system and legal framework suitable to the specific features of China. This is a matter of cardinal significance to agricultural development and to the whole national economy.

When we study the issues relating to the land-tenure system, we must proceed from the perceived reality of China, taking the market system as our goal and persisting in the principle of economic efficiency and social equality. Here we must emphasize the special character of the good called "land." Land as a "natural good" is a renewable resource and the basis of human life. This resource is related to the ecological environment and quality of life and has the character of a "public good." It has been a phenomenon characteristic only of certain historical periods for land to be owned by individuals, groups, or certain social strata. Land resources are relatively scarce in China, and the level of social and economic development differs greatly between regions. Most farmers are still dependent on land as their source of livelihood. That should be viewed especially from the perspective of poorly developed (on the whole) market mechanisms. On the one hand, we should recognize the character of land as a commodity; on the other hand, we must intervene strongly in land development, use, and changes of property rights by means of laws and administrative instruments. This is to be done through both macrocontrol and management at the microlevel. It is our ultimate goal to include land as a commodity, to protect land, to evaluate land accurately, to make rational use of land, and to maximize land productivity. However, that should not be realized at the expense of social equality and stability. The dual character of land calls for more attention to both efficiency and equality.

"Household responsibility system with remuneration linked to output": the name and content. The key to rural reforms in the past, decade-odd period in China has been to transform the system of the people's commune and to introduce the "household responsibility

system with remuneration linked to output." The success of the reform is unanimously recognized.

The emergence of HRS (Chinese farmers call it *dabaogan*), as with any other innovation in society, must be studied from its specific, historical background. We might first discuss its name. As we know, there were a series of management systems in the collective economy (including "planned management," "labor management," "financial management," "goods and materials management") during the periods of agricultural cooperation and communalization, and the "responsibility system" was then referred to mainly as labor management. Similarly, "contracts" had a character that might be associated with individual field work for a particular plot or a farm season, because it was a tool for the managers (the cadres of the collectives) to oversee the workers (farmers). In other words, it was an oral or written work agreement between two sides of an economic process. This situation has changed since HRS was adopted. The farmers now determine the labor input on their own, and they are responsible for the quality of their work. Therefore, the function of direct labor management in the collective has ended, for the farmers are no longer responsible to the collective organization in terms of quantity and quality of work performed.

But does this also mean that the object of collective management has shifted from direct labor management to control of the ultimate goods (the output of work) and evaluation of the work? I think that this latter change is not true and, furthermore, that it is impossible. It should be remembered that "contract linked with output" was practiced during the period of collective management but was discontinued because the leaders worried about the tendency of "lapsing into a quagmire of individualism." As history has shown, the essence of the low efficiency of the "output-linked contract" has been that agricultural production was not necessarily determined by the amount and quality of the farmers' work, even though the agricultural output does have a close relation with labor input. Unlike industrial production, output from farming is heavily affected by natural conditions. As the saying goes, "Farm produce is a gift from God." Therefore, more labor input does not necessarily yield greater output, and less output in some cases requires more effort. That was the cause of the difficulties in working out accounts after the autumn harvest under the "system of contract linking remuneration to output" in the collective-management period. That is the inherent nature of agricultural production, which will not change just because we created a new name for the system. Farmers prefer the new system of farm-household contract because they know all residual products belong to them after their deliveries to the state (purchase quotas) and the collective (deductions); any output quotas become useless.

So we can see that there is a vestige of the collective-management period in the name of the HRS during institutional transformation. It suited the people's mode of thinking at that time and a consensus could easily be reached.

As mentioned before, the core of the transfer from collective management to individual farm households was a change in the form of combining labor and land, that is, contriving contract relationships of farm households with respect to land. That has meant the farmers' actual or partial possession of land, land use, and beneficiary rights.

Chinese farmers have accepted the collective ownership of arable land after the decades-long period of evolution before the reform. They consider it necessary to keep farm organization at the village as the carrier of socioeconomic activities. Those were the two preconditions when the household management system was introduced, so it was inevitably a period of trial and error. For example, the forms of management began from *bao-chan-dao-hu* (fixing output quotas to the household, and products to the collective) to *bao-gan-dao-hu* (or *dabaogan*). As far as the land-distribution pattern was concerned, some regions adopted specialized contracts according to farming, forestry, livestock raising, or sideline occupations; some villages allocated contracted land according to the "ability" or skill of the workers or according to an agreed-upon ratio of total persons in a household to the number of workers; and so forth. Unfortunately, most of these variants failed. In 1984, the most popular form became the egalitarian pattern of land distribution according to the "equal-plot-to-everybody" principle for almost all members in the villages (communities). In the farmers' opinion, everybody (including newborn babies) in the village naturally has an equal right to a piece of land because the land belongs to the village collective. When they are given a plot of land, they have the right to enjoy their income in the form of rent. This is driven by a strong tendency for benefits, which could hardly be resisted by the leaders at the time.

It was to some extent a reappearance of an old practice that the collective-owned land was distributed to farm households in an egalitarian way for their operation. According to an analysis of the origins of Marxism, there was a long period of farm communes in the transition from public ownership under the primitive commune system to private ownership under the small-scale peasant farming system in many European and Asian countries. The vestige of such communes existed in Russia until the past century. Public ownership of land was kept unchanged in these communes, but the land was distributed equally to every commune member for cultivation, though they no longer worked collectively. Also, the products derived from the land belonged to the peasant households, which delivered only a portion to the communes; but the latter no longer owned and distributed the products in a unified manner according to consumption, as in the primitive communes. Several years later, as family size changed, the communes reapportioned land to avoid an inequality of land allocation. Gaps of wealth arose due to different personal abilities among peasants. That caused the emergence of private property and inequality of wealth, which led to private ownership of land and the disintegration of communes.

I do not intend to belittle the importance of the reform, and in no sense do I claim that privatization of land is unavoidable in China. History has progressed. The macroconditions of socialist China are incomparable with the old days. Some helpful instructions, however, might be drawn from the past to understand correctly the nature of agrarian relations in rural China today.

Some views on land property rights. Collective landownership in rural China has typically been that of community ownership. It is characterized by exclusivity with respect to anyone outside the community, though it is uncertain within the community exactly who is the owner of the land. The representatives are usually the village cadres, and they replace each other in succession. Changes are constant: one is born, another dies, one moves, another

comes to settle, and people shift from farming to industry and other enterprises. Everyone owns the land, but no one can realize it. This state of affairs was formulated parallel to collectivization, which cannot be altered completely in a short period. There is another question, how to demarcate the collective versus the individual farmer property rights? The answer seems to be stipulated in legislative regulations and contracts.

First, we have to face the reality that land rights are separated. According to laws of China, rural landownership belongs to "the collective of farmers of the village," and land may be "administered and managed" by the village cooperatives or villagers' committees. These organizations, in turn, may award the land by contract to the collectives or to individuals who have the "right of contract and management." For the time being, we might ignore the proper meaning of "one right versus one thing" and not argue about the correct explanation of the "right of contract and management"; but one point is evident: separation of property rights has been recognized de jure. As stipulated by our policies, the length of contract for agricultural land is at least 15 years, and the contract may be prolonged when the term expires. In fact, it is recognized that farm households retain land possession and succession during the contract period. What is important to the farmers is "a stable policy" regarding the land allocated to them, that is, stability of contracted possession rather than the nominal "ownership" of land. In theoretical circles, however, some authors argue that when the farmers have obtained the "right of contract and management," it does not mean that they have the right to use the land; the latter still belongs to the collective while the contract is only a pattern of allocation of the means of production within the collective organizations, that is, a form of the responsibility system. This view seems to me to contradict the reality of the majority of villages. "Use" of agricultural land means "land management." As for the land used for nonagricultural purposes, we must work out other regulations. Since land resources have the character of public goods, decomposition of land property rights is likely to be inevitable. Landownership, disposition, possession, use, succession, and so forth seem to belong to different subjects and are conditioned by each other. This is the trend of modern economies, reflecting a historic process and the requirements of development of the commodity economy. That is why legislation should play a more important role.

Leasing is one preferable system of clarifying the collective ownership of arable land and the rights of farm households to use land with definite boundaries. The current contract relations, in fact, are "possession under contract" of fields by farm households for a predetermined period and in a "market" way (in the form of payment to the collectives or so-called "deductions"), which differs little from the lease system. Leasing is the traditional form of separating ownership from use, and agreement on the rights and duties between the two parties can be easily reached in a standard manner. To inspire confidence in the farmers' expectations from investment and to guarantee independent decision-making in management, it is necessary to prolong the leasing period and permit recontracting, thereby enhancing the efficiency and optimal combination of resources used. Under the system of collective ownership of land, the members of the collective are the landowners and, at the same time, the practical tenants. This is a particular feature of the internal leasing system in the rural community, which does not lead to confusion of property-rights relations. This kind of agrarian relation existed in rural China before liberation, when communal land was to be

leased out. Land leasing was allowed before all-round collectivization in the Soviet Union, but sale and purchase of land were forbidden.

The agrarian problem is closely related to organizations in the rural communities because the community authorities are able to influence the realization of land property rights. Chinese community organizations, mainly those at the village level, are typical of the oriental culture and tradition, which, as a rule, perform very different economic, social, and other functions from the organizations of modern enterprises. To standardize the land system, it is necessary also to disintegrate and clarify the functions of the community organizations. As far as the organizations at the village level are concerned, their functions associated with land include: (1) (as representative of the landowner) awarding (leasing) land by contracts, signing contracts, collecting land rent, and so forth; (2) (as entrusted by the government) administrative and jurisdictional supervision over agricultural use and protection of arable land and implementation of changes in land contracts; and (3) services related to agricultural production. The duties of the landowner and the administrative supervisor are to be divided to ensure the farmers' independence in production management as well as the realization of administrative power at the village level.

In short, it is necessary to strengthen legislation and to standardize contracts in order to perfect the arable land-leasing system, to prolong the leasing period to a reasonable extent with permission to recontract, and to distinguish between the functions and powers of community organizations. Of course, that should not be done impetuously, especially in China's rural areas. We can make law or regulations only when abundant cases exist in real life. Production conditions in rural areas differ remarkably, so it is likely that the two agrarian systems (land-leasing and responsibility) will coexist in China.

How to understand "no changes in HRS for a long period of time." To remove farmers' concerns about the instability of the current system or policies, the government should announce that the HRS will not change for a long time. However, what will or will not change in the system as the society and economy develops must be given a scientific answer.

There were objective conditions for the appearance of the contract system in rural China in the 1980s, characterized by egalitarian distribution of land. First, as we mentioned above, farmers recognized public ownership and existence of community organizations to represent the ownership. Second, China was in transition from traditional to modern agriculture. The agrarian system was poorly socialized and commercialized, self-consumption oriented, and mostly traditional experience and technologies were applied. Third, the rural employment structure remained basically unchanged, crop cultivation still being the farmers' basic means of livelihood; that is, the most important goal of their work was to feed themselves and their families. So it was inevitable to distribute land in an "equal-plot-to-everyone" pattern. Farmers have shifted, and will continue to shift, from land cropping as rural economic activities expand and employment structures change in the process of economic development. A more commercialized agricultural sector will be more profit oriented, and the incentive mechanism will be to obtain an optimal combination of production factors. When agriculture develops in the direction of an optimal scale and reasonable specialization, then the egalitarian

land-resource-allocation models (aiming at self-sufficiency of food) will change. The change, however, will take place gradually according to economic law and in line with farmers' demands; an enforced collectivization will not work. Land-system research is now revealing the character of land as a commodity to lay an institutional foundation for such a change.

I put forward the above issues to be discussed. In no sense do I want hastily to change present policy and cause undesirable confusion. This is of practical significance in a confined academic circle, and I hope that we can take a down-to-earth attitude and use clear concepts to reach more realistic conclusions.

COMMENTARY

by **Michael Carter**

Professor of Agricultural Economics,
University of Wisconsin-Madison, USA

I usually hope to comment on very small, very thin papers. "Changing the Rural Land Tenure System at the Village Level," by Mr. He, is neither small nor thin. It is large in its number of pages, and in its content, information, and ideas. In my commentary I will briefly remark on some of the major contributions of this important and interesting paper, and call our attention to some specific challenges and questions it gives us.

Mr. He's paper can be read and appreciated at several levels. At the first level, it is a description or catalogue of the changes in the rural land-tenure system at the local level. As readers we discover that there have been great variations in the land system across villages. In some villages land is frequently reallocated by village authorities, either to meet the needs of new population or to reallocate land which is being underutilized by its contract holders. In other villages few such reallocations occur and individuals seem unconditionally secure in their leasehold rights. For the student of rural China, such description of the variability in the new rural land system is informative and fascinating.

Mr. He's paper can also be read and understood at a second level. Implicit in its catalogue of the attributes of the rural land-tenure system is a theory of property rights which tells us why each of these attributes is important. The propositions of this property-rights theory are as follows. (1) Property rights may affect agricultural productivity and investment. Key property rights attributes include (a) the degree of security of leasehold rights from reassignment by village authorities, and (b) the degree of land fragmentation. (2) Property rights and land may be an integral part of an imbedded social-insurance or safety-net system, especially in an economy in which off-farm employment grows unevenly and cyclically. By separately analyzing the rural land system by average village-income strata, Mr. He calls our attention to the fact that the value of such embedded social insurance will vary across regions according to their degree of labor-market development.

Looked at from the perspective of this theory, we see that this paper offers us a series of hypotheses about the existing rural land system or, more accurately, systems, which warrant further investigation. For example, as Mr. He asks in his paper, Does the greater degree of insecurity to leasehold rights in villages where reallocation and compulsory transfer are greatest really have a negative effect on agricultural investment and productivity? The variability in experience across rural China which Mr. He's paper documents so well presents an important opportunity to evaluate this hypothesis.

Another hypothesis suggested by the property-rights theory in this paper is, Are household incomes more stable and perhaps poverty incidence less in areas where villages retain redistribution rights? Are those same things true in villages where compulsory transfer powers of the village are less? Answers to these and other questions are important to find if we want to search through the diverse and fascinating experience of rural land systems to locate systems which make the most sense from the perspective of national social welfare.

These questions of division of property rights between individuals and villages have important analogies to customary tenure systems in other countries. In customary tenure systems certain property rights reside with the village (including the right to periodically reallocate land in the face of population growth), and each village member may have not only a right to an amount of land (perhaps 1 hectare per adult household member), but also a right to each type of land within the farming system. The apparent uncertainty over land rights in such a system has been criticized by Gershon Feder among others. Yet other authors have argued that the productivity-dampening effects of these customary systems are minimal, and that these tenure systems embed important risk-management and social-insurance functions which the market economy cannot provide. While there are of course many differences, this literature and experience of other countries may provide some interesting perspective on the China rural land problematic.

Finally, I would like to suggest that He Daofeng's paper can be read at a third level. Not only does it describe the existing rural land systems and offer important testable hypotheses regarding their efficiency, it also challenges us to think about the desirability and properties of land systems and rules which do not yet exist in China. I would like to briefly comment on one such possibility.

Reading Mr. He's paper I was quite impressed by his description of an apparent irrationality in the current system. It seems that it is in areas where the off-farm labor market is weakest that the individual's ability to use land as a safety net is weakest. For it was in such poorer areas that individuals were most likely to lose their land rights should they pursue off-farm economic opportunity. In other areas, where off-farm employment is stronger and the need for an agricultural safety net is less, land rights were more secure against reallocation to others. There is of course a logic to this seemingly irrational set of arrangements. In the poorer areas, it may be that the demand is much greater for land underutilized by those pursuing off-farm economic activity. The income forgone by land which is left idle or poorly exploited would be much more important to households in such poorer areas. It is thus not so surprising that compulsory transfers might be most likely to occur in areas where households find it most desirable to retain those rights for safety-net purposes.

How would freely marketable land rights function in this context? That is, how would a land market mediate this competition between land as safety net and land as producer of current income? Would a land market do better than the current land-rights system?

An economic theory of land markets suggests that individuals in poorer areas with weak off-farm labor markets would capitalize their unemployment probability into a very high

reservation sale price for their land. That is, they would demand a very high price to sell their land rights. Work in Paraguay confirms this theoretical expectation empirically. Individuals in poorer areas have a very high reservation sale price for their land, a price much higher than the price they would pay to buy land. The reservation sale price is also much higher than the market price for land, indicating that these individuals would have no interest in selling their land at the market price. If correct, this theory and evidence suggest that a land sales market is likely to permit individuals to retain their social safety net of land if they wish. The price individuals would pay to have this safety net or insurance would be the income forgone from sale of the land at the market price. In areas where the off-farm labor market is stronger and unemployment prospects lower, we might expect to see a lower relative reservation sale price for land, and more active sales of land might be expected to occur.

While a land sales market might be expected to correct the irrationality of the current system, which tends to provide the weakest safety nets of land where they are most needed, it would not by itself take care of the productivity problem implied by idle land. However, a land rental market could in this instance be an important complement to the land sales market. Indeed, individuals holding land for safety-net purposes might be expected to have a very low reservation rental price for their land, making it possible that the land rental market could be very active in poorer areas even if the land sales market were very stagnant or inactive. We might expect the opposite configuration of market activity in wealthier areas. I would like to see more investigation on the prospects for land markets to mediate the tradeoffs of the land transfer-social security-productivity problem.

I strongly recommend Mr. He's paper, with the full expectation that its many levels will yield much information, provocative hypotheses, and questions.

V. LAND TAXATION: CASE STUDY IN FOUR VILLAGES

by **Jiang Zhongyi and Pei Changhong**

Research Fellow, Research Center of Rural Economy,
Department of Agriculture;
Research Fellow, Research Center for Development,
The State Council, PRC

In 1991, we investigated land taxation in four villages: Yangwuhou Village, Liangjiadian Township, Yutian County, Hebei Province (YV); Baoshansi Village, Baoshansi Township, Huairou County, Beijing (BV); Xiyanfa Village, Banbidian Township, Daxing County, Beijing (XV); and Wanghu Village, Sungezhuang Township, Shunyi County, Beijing (WV). The economic development of the four villages is among the upper and middle levels in North China. YV and WV are traditional agricultural areas without rural industries, while in BV and XV, rural industries have been developed to some extent, even though the industrial output value in both areas is less than the agricultural output value.

TABLE 5.1 Economic development in four villages of North China, 1991[a]

	YV	BV	XV	WV
Population	645	880	675	407
Arable land (mu)	1,650	1,022	1,476	1,260
Grain production (kg)	569,400	432,000	583,000	800,000
Agricultural output value (000 yuan)	721	1,302	862	620
Industrial output value (000 yuan)	-	620	405	-

a. YV = Yangwuhou Village, Liangjiadian Township, Yutian County, Hebei Province; BV = Baoshansi Village, Baoshansi Township, Huairou County, Beijing; XV = Xiyanfa Village, Banbidian Township, Daxing County, Beijing; and WV = Wanghu Village, Sungezhuang Township, Shunyi County, Beijing.

The development level of rural industries has a great effect on land rent and tax collection. Generally speaking, rural industrial profit can make some contribution to lessening the burden of land rent and land tax by replacing land rent and tax in townships and villages. Therefore, rural industries are promoted at both levels to support public expenditures.

The funds collected from land are in fact shared among counties, townships, and villages, and the ways of collecting and applying the tax are quite different.

The agricultural tax we usually think of is what is included in county revenues. It is collected on areas of land and is used primarily to support local agricultural development. Since the agricultural tax has a fixed amount and the expenditures on agricultural development vary from time to time, the percentage of agricultural tax in county revenues is quite low in some cases. In such a situation, the agricultural tax may lose its meaning and become symbolic. For example, the agricultural tax in Shunyi County is less than one thirtieth of the county's revenues. The amount of agricultural tax is far short of meeting the demand of agricultural development. However, because the tax level is low, peasants are willing to pay it, and we hardly hear peasants complain about the agricultural tax. In addition to this tax, peasants also pay implicit tax (that is, the grain margin between market price and contracted price) to the state. This margin becomes profit for local departments which are responsible for grain purchasing. Some of the profit is changed into the commercial tax of the county, and the remainder is included in revenues of government at higher levels. Since this tax is collected implicitly, in contrast to the obvious land tax, it is difficult to know which department enjoys a share of it and how it is used. But we can conclude that most of it becomes a monopoly profit of the grain-purchasing departments, with part of it being used to support its operation and part being transformed into a food-processing fund. Fortunately, this margin is no longer as large as before, so peasants can bear it.

Table 5.2 shows that the agricultural tax in WV is the highest, reaching nearly 6 yuan/mu, while it is only 1.56 yuan/mu in XV. The amount of implicit tax can be calculated. In 1991, grain purchased on contract in YV was 107 tons, including 43 tons of wheat. That figure multiplied by the margin is the implicit tax (15,276 yuan), which averaged 9.26 yuan per mu. Grain purchased on contract in XV was 15 tons, 5 tons of which were wheat. The implicit tax was 1,800 yuan, or 1.22 yuan per mu. Grain purchased on contract in WV was 75 tons, 35 tons which were wheat. The implicit tax was 5,350 yuan, or 4.25 yuan per mu. It is clear that both the amount of grain purchased on contract and the margin played an important role in the implicit tax. The amount of grain purchased on contract is a constant while the margin varies, so the amount of grain purchased on contract is a popular measurement to estimate the level of the implicit tax. Although the level of implicit tax tends to be higher than that of the agricultural tax, peasants can bear it to a certain extent because it is fixed without large fluctuations, and the government has raised the purchasing price of grain several times in recent years.

The fund collected by township governments are called "township apportionments." They are used for such public utilities as education, family planning, taking care of disabled servicemen and families of martyrs and servicemen (TCDF), militia training, and road building. These funds are collected by the village committee and then given to the township government. Since the amount collected is based upon the expenditures of the township government and is somewhat random, it is usually criticized and rejected by peasants. Given this situation, the State Council provided that the amount of collection by townships and villages "should not exceed 5 percent of the income per capita per year." However, this limit was often exceeded. In villages where rural industries are rather developed, the industrial

profit can pay; in this case, it is not a land tax. But in areas where rural industries are underdeveloped, the township apportionment becomes a burden on the land and is a kind of land tax.

TABLE 5.2 Agricultural tax and implicit tax in the four villages

	YV	BV	XV	WV
Agricultural tax (yuan)	7,370	2,588	2,300	7,500
Tax per mu (yuan)	4.5	2.5	1.6	6.0
Grain purchased on contract (kg)	107,000	-	15,000	75,000
Contracted price for wheat (yuan/kg)	0.62	0.72	0.66	0.72
Contracted price for corn (yuan/kg)	0.36	0.37	0.44	0.37
Market price for wheat (yuan/kg)	0.75	0.76	0.86	0.77
Market price for corn (yuan/kg)	0.51	0.48	0.52	0.46

Even though there are some rural industries in BV and XV, the industrial profit is not enough to pay the township apportionment, because the amount of profit remitted is limited and a large part of it is deducted by the villages. Therefore, the township apportionments in the four villages are mainly from land and become a kind of land tax of the township government. Table 5.3 shows that the land tax collected by township governments is higher than the agricultural tax and the implicit tax. So it becomes a burden on peasants. Because

TABLE 5.3 Township apportionment in the four villages (in yuan)

	YV	BV	XV	WV
Education	9,030	3,640	3,375	3,240
TCDF	1,935	-	-	-
Road and irrigation works	1,935	3,040	21,600	18,360
Other	968	-	-	-
Total township apportionment	13,868	6,680	24,975	21,600
Apportionment per mu	8.4	6.5	16.9	17.1

it is apportioned by the number of people and is a percentage of net income per capita, it conceals its nature as a land tax and intensifies the contradictions between local governments and peasants. In addition, the annual variation of this amount made it unbearable to peasants. Expenditures on public welfare, apart from those used in road building and water conservancy, are the main uses of the fund. So it is difficult for such a distorted land tax to play an important role in the construction of the agrarian system, let alone to rationalize and regularize the taxation system. It is why little progress has been made in lessening the burdens on peasants in recent years.

The collection by villages is called a "deduction." Most of it comes from fees from contracted land and deductions from various contracted industries (including rural industries). The deductions are generally used to support village organizations as well as allocated for fundamental construction or productive expenditures. The amount of deduction varies among villages.

TABLE 5.4 Deductions in the four villages (in yuan)

	YV	BV	XV	WV
Contracted fees from land	5,028	24,539	54,081	64,000
Other income from land	4,000	-	-	-
Deduction from rural industries	-	21,300	24,000	-
Other deductions	172	8,092	41,919	-
Other incomes	5,300	-	-	-
Total village deduction	14,500	53,931	120,000	117,000

The fact that deductions in XV and WV are more than 100,000 yuan indicates that they are well-off villages. Village deductions and township apportionments in the four villages accounted for 5.66 percent, 7.06 percent, 19.1 percent, and 18.92 percent, respectively, of their net incomes per capita. All exceeded the limit of 5 percent provided by the State Council. The deduction from rural industrial profit is not a land tax, but may imply some component of land rent within it, because the land is freely occupied by rural industries. So the deduction from industrial profit is in fact a kind of rent transformation for the land occupied. But it is difficult to estimate how much land rent is implied in industrial profit because the areas occupied by enterprises are quite different. However, the fact that the profit remitted remains unchanged whether an enterprise profits or loses, makes it clear that the industrial deduction is actually a land rent and equipment rent.

"Other deductions" mean deductions from such industries as animal husbandry, aquatic production, and forestry. Part of this is doubtless the land rent, but it can only be a theoretical inference of the percentage of rent.

Only YV has "other incomes," a kind of interest for capital stock deposited in a cooperative fund.

"Contracted fees from land" are generally borne by grain land. It is very unequal in the four villages. The fee is 4 yuan per mu in YV, 24.0 yuan in BV, 36.64 yuan in XV, and 80 yuan in WV. To a large extent, such large differences among villages stem from the combination of rent and tax. For example, the contracted fees from land in WV, where division of labor is rather developed, are determined based on land contracted through public

bidding. The situation in BV and XV is somewhat the same. Therefore, the contracted fees from land include not only land tax deducted by villages, but also some differential rent taken by village economic organizations as owners of land. And so the contracted fees from land in such villages are higher than the general level. It can be confirmed that in places where land is contracted through public bidding, the more intensively the land is managed, the higher the contracted fees. The contracted fee of 4 yuan per mu in YV is roughly the same with land tax. Still, there are 60 mu of land in that village which are contracted through public bidding and pay a land rent of 4,000 yuan per year (66 yuan per mu). This rent is in the row of "other income from land." The divorce between rent and tax in YV occurs because the division of labor is underdeveloped, and the amount of grain purchased on contract is quite large. Moreover, the cropping system plays an important role in the combination of rent and tax as well as in their percentages. Cash crops can greatly increase the income from land rent because their economic value is relatively high. For instance, the 52,000 yuan of WV in the row "other income from land" were made up of income derived from 200 mu of watermelon. We can see that the level of labor division, the way of contracting land, and the type of cropping system all can greatly influence land rent and tax.

The amount of deduction is determined not only by the level of economic development but also by the expenditures. Generally, when fundamental construction investment and productive input are included, the expenditures will be increased and then the amount of deduction will be increased, and vice versa.

TABLE 5.5 Expenditures of deductions in the four villages (in yuan)

	YV	BV	XV	WV
Wages	3,200	9,051	13,000	11,500
Administrative expenses	1,300	2,007	2,000	2,000
Farmland and irrigation works	-	-	34,000	32,000
Farm machinery	-	-	37,000	57,000
Entertainment expenses	3,000	5,754	5,000	8,600
Other	2,000	2,497	-	-
Total expenditures	9,500	19,309	91,000	111,100

From table 5.5 we can see that the expenditures in YV and BV are not very large because they are basically administrative costs, and, comparatively, those in XV and WV are quite large because they also include expenditures on fundamental construction and productive input. It is the higher level of collectivization in the latter two that make them invest the deductions in their productive and service entities apart from the normal administrative expenses. It reveals that villages with powerful collective economies are both administrative main bodies and investing ones. Such dual status is an important factor that results in the

combination of land rent and land tax. Whether peasants satisfy village expenditures depends primarily on if the cadres' wages and entertainment expenses are reasonable. There are large gaps in wages in the four villages, but their entertainment expenses are not much different. So entertainment expenses for various dealings with departments at higher levels are heavy burdens on villages, especially the poorer ones. As for whether productive inputs are rationalized or if proper consideration is given to both immediate and long-term interests of peasants, so long as villages are both administrative and investing bodies, it will remain a vague and generally philosophic subject. Without an effective mechanism of democratic supervision and a mechanism of economic penalty, and lacking scientific procedure for decision-making, in the event that erroneous decisions are made, peasants will suffer losses and not have the opportunity to express their grievances. Some conclusions from the case studies in the four villages of North China are the following:

1. Under the existing system of sharing land taxes among villages, townships, and counties, the key point of the land tax system is how to clarify their respective duties in protecting, developing, and utilizing farmland resources and how to use incomes from land tax to realize these objectives.

2. There are many shortcomings in the method of collecting township apportionments and village deductions, especially those apportioned by population. Such methods cannot institutionally guarantee protection for peasants from heavy financial burdens. Some modernized taxation, such as land estate tax, resource tax, as well as rational business income tax, should be introduced gradually to regularize the economic relations of rights and duties between peasants and governments and to improve the construction of the agrarian system.

3. The combination of rent and tax hampers the transition to a modernized land operation. Land tax collection is an economic function of the government, whereas land rent consists of earnings for landowners. How to make tax collection, application of land rent, and land tax more helpful to the improvement of agrarian systems and land operation as well as to the development of modernized farming systems is an issue which needs to be further studied.

4. The case studies in four villages of North China indicate that land tax is a complicated issue which involves many problems, such as the grain purchasing contracting system, the accounting systems at the village and township levels, and the village organization systems. Therefore, the process of improving and perfecting the land tax should be gradual. Currently, the government eagerly looks for ways of lessening economic burdens on peasants. Whether the government can push reforms of land taxation remains a subject for further research.

COMMENTARY

by John Strasma

Professor of Agricultural Economics,
University of Wisconsin–Madison, USA

The research by Mr. Jiang and Mr. Pei and their team was well designed and executed. It clearly provides valuable information for policymakers. It also confirms patterns which I discovered in a different part of China in 1988, studying two villages in Xinxiang city. That was a very preliminary study based only on visits of one day, at the very beginning of this research program. This time, the research has been carried out in much more detail.

The authors of the four-village study conclude that it is necessary to make clear who is responsible for deciding how much tax is levied and how the money is used at every level. At present, the national government collects a small agricultural tax. Some people in Beijing and in other countries suppose that this is the only tax on land. As the four-village study makes clear, this is not the case. Add-ons or extractions are applied by the county, township, and village. In 1988, in the other visits to villages, I was told that these land taxes were more than five times as great as the central government land tax. They were collected by the grain-buying agency, along with the hidden tax in the form of quota deliveries of grain at a price lower than the contract price or the market price. As to rates, this study confirms that in 1992, the additional taxes are much more than the central government tax. No wonder the farmers complain, especially if they have no voice in determining the rates or the uses of the money.

In most places with such taxes, the agricultural land tax is applied by local governments. It is used for roads and bridges and to pay the wages of school teachers. In Wisconsin, over half of the tax receipts go to pay for the operation of primary and secondary schools. In Costa Rica, it is the same. The people support this tax because they can see the benefit. Also, the people elect local government officials, so if the officials spend the money foolishly, the people turn them out and elect wiser officials.

When farmers build barns or other improvements, this increases the value of the property. In most land taxes, the value of the improvements is also taxed, at least for urban properties. However, for farmers the improvements may be exempted as an incentive, at least for some years. Public improvements raise another question. In 1988, I was told that the present land tax per mu is based on the net income of average land in each commune in about 1958. It may be time to revalue all of the land in order to allow for irrigation, highways, electricity, and other public improvements. Some of this land has a much higher potential net income now than it did when the basis for the land tax deductions and overall fund was established.

The authors of this study correctly calculate that rent collected by township or village authorities is much like a land tax. We call such contracts leaseholds and we tax them on the basis of the price which the tenant could get by selling the right to occupy that land to someone else for the number of years remaining on the lease. The authors recommend further research on the relation between land tax, rent, land estates, and agricultural modernization. I agree. They might also consider the following topics for further research.

Conversion tax: it is important to discourage the unwise conversion of the best agricultural areas into sites for factories, stores, and dwellings. Because flat land is easier to build upon, developers prefer it. A high tax on the conversion of arable land could force developers to use nonagricultural land instead. Some local governments are so eager to attract industry that they may forgive the conversion tax or give other preferences to industry not given to farmers. This is an error, and research should attempt to establish whether it happens and what criteria should be used to make such decisions.

The impact of land tax on farmers: future surveys should interview farmers to determine whether the present taxes affect their decisions on what to plant, whether to hire labor, and whether to apply more fertilizer and other inputs. In 1988, in Xinxiang, I was told that farmers who raised vegetables did not have to deliver the quota grain, so they did not have to pay the hidden tax. Of course, many of them changed to raising vegetables. The officials wisely planned to require all farmers to pay a land tax equivalent to the hidden tax and then let the farmers decide what to grow. I do not know the result of that experiment. This research program might investigate farmer views on the tax: the research might interview farmers to ask which kinds of expenditures they are willing to help pay.

It was reported in this symposium that some land has been left idle when the contract farmer went to urban employment. A land tax should be collected even when this occurs so the farmer will take care to have someone subrent the land and make it produce. As to enforcement, the study does not say whether there is a collection problem with the land tax. In Wisconsin, a landholder who does not pay the tax during two years loses the land. The county becomes the new owner. Naturally, every holder is very careful to pay.

Part-time farming is normal, yet some speakers complained that many parcels are too small to support a family. In modern times, such land is farmed by families with one member working in a city. About one third of the farms in Wisconsin are operated by persons who hold other employment as well. Yet, these farms are quite modern. Research could determine whether part-time farmers are as efficient as full-time farmers with larger holdings. If they are, there is no economic reason to consolidate holdings. Of course, it is impressive to see large tractors at work, but that is emotional and not economic.

Finally, some suggestions for the paper itself. I hope the authors can complete the calculations to show taxes per mu and tax as percent of net income by village. I attempted to do this myself with tables 5.2, 5.3, and 5.4, but my results were not the same as those of a presentation done by Mr. Jiang. The reason appears to be that table 5.4 is not the same as table 5.5. Table 5.4 is the deduction fees in the villages; table 5.5 is the expenditure of deduction fees. Perhaps the difference is that table 5.4 is a budget and table 5.5 reflects the

actual collections and the difficulties of collection which Mr. Jiang mentioned. Or perhaps there is an accumulation which could be made clear in the tables themselves.

Also, the hidden fees are based on a quota, a number of jin of kilograms of grain which each contract holder must deliver. In 1988, I was told that the quota of jin per mu, the agricultural tax per mu, the deductions, and the overall fund were all in exact proportion to the estimate of potential income in 1958 in times of the collective. Perhaps a revaluation is needed. As the paper of He Daofeng (see chapter 4) shows, net income per mu varies greatly among parts of a village, parts of the former commune. The information in the four-village study about public bidding land also proves that some land is much more valuable than other land.

The technology to estimate the potential output of large areas of land exists and is well developed. It is known in China. I was told that the task might take two to four years. I would hope this research might incorporate evidence and views of the authors as to whether perhaps a cadastral survey, a new valuation, should be attempted.

COMMENTARY

by Qi Mingchen

Chief Economist,
State Land Administration

I have to say that my research has been mainly on urban land issues, and I am not very clear on the situation in rural areas. The papers collected here give me a good opportunity to learn.

Mr. Du Runsheng argued that the methodology used in the investigation and research for this project has universal significance. The report on the reform of the land-tenure system at the village level and the case study on land taxation of the four villages in North China have strengthened my feeling about this point. The examination and exploration in the two reports were based on a great quantity of data accumulated over a long time. Comparatively, the data for the research on urban land are fragmentary. This is exactly where the gap lies. The ratified leasing of land in urban areas has been very popular in recent years. The press reports on land generally use the term "according to incomplete statistics" when referring to how much land has been leased out by the state as a landowner. I have some knowledge of the inside story because sometimes the statistics are provided by my institution. I am afraid that the so-called "incomplete statistics" are often less than half of the actual figure. There are various reasons for this phenomenon. The outstanding one is the problem with the percentage allotment by the central government. In this case, the local governments either do not report their income or underreport it. I have heard that the Ministry of Finance has issued a document saying that starting from 1993, the percentage of income shared by the central government will be reduced to a lower level. This may lead to an improved situation.

In addition, it is not easy to collect data on the cost and profit of those development companies. Prof. Strasma mentioned yesterday that some farmers in Latin American countries could state their production costs very clearly, but were rather vague about their income for the purpose of avoiding taxes. The difficulty in obtaining information on the costs of the development companies has led to difficulties in our research. There have been some data collected on the compensated use of land for housing (foundation land) in rural areas. Last year we attended a seminar in Lingxian County, Shandong Province. The data they provided, including the proportion of the use fee of foundation land in the total income of the farm households (0.55 percent on average in Shandong Province in 1991), have their practical significance. But no papers in the seminar mentioned the percentage of the user fee of foundation land in the financial revenue of the county. Even if the user fee of foundation land in a county could reach a level of 1 billion yuan, I am still not clear about its weight. Therefore, I think that one thing I have learned from this symposium is the methodology used in projects where the research is based on in-depth investigation and a host of essential data.

I think that the main report and some other reports have summarized some issues which have inspired our research on urban land. For instance, the two functions of rural land also exist in urban land. In other words, urban land also cannot be fully marketized. Nonmarket assignment still exists in the allocation of urban land, including afforested land. In Taiwan, "gratuitous assignment" is used as one of the ways of distributing public land. There have been different views about whether ratified leasing and administrative assignment should be incorporated into the former. Originally, I was simple-mindedly in favor of ratified leasing. In my grassroots investigation, I have found that it is impossible to have all land leased. What we can only do is to maximize the range and scale of ratified leasing. For marketable land use rights, everything should be dealt with according to market law. But, at the same time, we must honestly admit that there is indeed some land that cannot be put on the market. There is a Chinese saying that "poverty gives rise to a desire for change." Rural reform actually started in the poorest areas, and the reform of the urban land use system seems to be a similar case. As I understand it, the grading and evaluation of urban land was first started in Shanghai in about 1985 and then in Beijing. These cities seem to be rich places. But actually they were forced to grade and evaluate the land because they were too poor to fund their infrastructural construction.

In addition, I fully agree with what Mr. Liu Kan mentioned in his commentary on Mr. He Daofeng's paper (see chapter 4) that the nature of land contracts is a kind of leaseholding. The compensated use of urban land should also be leaseholding. Whether it should be called leaseholding is a disputed issue with legal implications. I will discuss this issue later.

Mr. Jiang and Mr. Pei argued that the combination of rent and tax is somewhat out of date. I agree with them at this point. In history, the Asian mode of production was characterized by the combination of land rent and land tax. This practice should be changed and the two things should be entirely separate. Land rent is collected by the state-as-landowner while land tax is collected for government functions. There are both land use fees and land use taxes in urban areas. It is a task not only for research on rural land but also for research on urban land to find out what land use fees and land use taxes should be.

The papers collected here have raised a very important issue, namely, that of property rights. It has been clearly stated that a property-rights system is, in the final analysis, conditioned by economic relations and by the development of production forces. Farmers have different requirements at different stages of that development. For example, as several papers have mentioned, there is less administrative intervention in the underdeveloped areas where the farmers do not wish to transfer the use rights of the contract land. Professor Carter also pointed out earlier (see commentary to chapter 4) that the prices of rural land are higher in the poverty-stricken areas of Paraguay. At the beginning of this year, I was told by the officials of Guangdong Provincial Land Administration that, in their province, the expenses for collecting land in the remote mountainous areas are contrarily higher than in the coastal developed areas. Because the farmers in the mountainous areas rely more heavily on land to make a living, they do not intend to give up their land.

In short, China's economic reform was started in its rural areas. Land reform in the rural areas has given impetus to the reform of the urban land system. This is my personal

view and, from what I understand, the leaders of our administration hold the same view. If the reform of the rural land system encountered considerable resistance in the initial stage, we can say that the reform of the urban land system has been relatively smooth from the very beginning. The reasons are as follows. (1) The reform of the rural land system has resulted in the rapid development of production forces. This great achievement, which has proved the vitality of the separation of ownership and operating rights on public land, is enough to silence skeptics and opponents. (2) I think that the more important support for reform of the urban land use system is what the reform of the rural land use system has proved: public ownership of land is compatible with a commodity economy and a market economy and there is unity of public landownership and the development of production forces. In addition, it is my personal view that, before the reform, there had been basically a separation of landownership and operating rights in the urban areas, but in an abnormal status leading to the atrophy of both the ownership and the use rights of the state-owned land. I have been involved specifically in the research on urban land and I deeply feel that the rural reform has given great impetus to the reform of the urban land use system.

In the years to come, reform of the urban land use system is likely to be sped up in some aspects. For instance, in 1990, the State Council issued the "Regulations of the People's Republic of China on Selling and Transfer of the Use Rights of State Land in Towns and Cities," which has standardized the flow of land use rights.

I will state my views about the issues of stabilizing the household contract responsibility system for your reference. I fully agree with the view that stability is not absolute but relative. What is stability? I think it means, for example, that I can sell my land whenever I want to. This is the ownership by which we can judge how the right is exercised. In this case farmers may feel that their own rights and interests are stable and guaranteed.

I would like briefly to introduce the situation of requisitioning land for urban construction. Our country has already had some experience in this regard. We can also consider these experiences as reform. The prerequisition of farmland in large areas is being conducted in the special economic zones of Zhuhai, Shenzhen, and Shantou with 10 percent of the requisition fee paid. The fee is fixed when the land is requisitioned and will not be changed. Farmers can still farm on the prerequisitioned land if it is not under development. Whenever construction on the land is to be started, it will be practically requisitioned. In Qingdao development zone, a method has been introduced in which farmers use their land as shares to be shareholders in order to leave out the burden of paying the requisition fees. Personally I am not in favor of this method. Because the land has become land for urban construction, it should be turned into state land. Everything should proceed from China's actual conditions. Judged by international practice, land the government has the power to requisition is confined to land for public use. However, according to the constitution of the PRC, all urban land in China is state owned. The state has the power to requisition the land either for public purposes or for other urban construction projects. This is a national condition very different from that in other countries.

Meanwhile, the interest of farmers should also be considered. When I was in Zhuhai and Shenzhen in 1989, I learned that a specific method adopted there was: If 1,000 mu of

farmland is requisitioned, the local farmers are allowed to change the use of part of other nonrequisitioned land to develop secondary and tertiary industries. Farmers could benefit tremendously from the transfer of land use from farming to nonfarm industries by which the profit from the land could increase tenfold. Therefore, the prerequisition in this way is acceptable to farmers. In places like Shenzhen, farmers are indifferent as to how much they are compensated for the requisitioned land. The key is that you must give them some land to begin nonfarm industries. When I was in Xiamen at the end of last year, I found that there had been some further development there. The government requisitioned all of the 1.2-square-kilometer land of the Jiangtou new district under construction. The use right of 1.5 hectares of land in this district was allocated to the local farmers to develop tertiary industry according to the overall planning of the district. The essential distinction of this policy is that the land allocated to farmers has already been requisitioned; it is a use right left over to the farmers.

To conduct better research, I suggest that economists and jurists form an alliance to promote the understanding and complementarity which are necessary for a common analysis of some issues. Otherwise, there will be no unanimity of opinions like Mr. Liu Kan described. There have been some different opinions about whether the contract responsibility system of farmland should be straightforwardly named "land leasing." According to my knowledge, there have also been different views on whether the compensated use of urban land should be called "land leasing." According to traditional jurists, "leasing right" refers to a full right, unlike a material right which is exclusive. Therefore, it is not favorable to the stability and development of the contract production responsibility system to define it as land leasing. This issue needs to be further explored. It has been very common in the world to popularize material rights for real estate leasing. Personally I think that the leasing of both rural and urban land has its exclusivity. In addition, we should deepen our research on various forms of leasing and the economic relations and obligations between the two sides in the different forms of leasing. This is essential for defining the rights of leaseholders.

COMMENTARY

by **Duan Yingbe**

Director of the Research Center for Rural Economy,
under the Ministry of Agriculture, PRC;
Senior Research Fellow

The land taxation system in our country is far from complete owing to a series of factors. Land tax collection and its use are confusing to an absurd degree. The most important contribution of the paper by Mr. Jiang and Mr. Pei is to make clear the real land taxes, especially the hidden taxes, as if the ends of chaotic reels of thread have been found. Some problems have been disclosed, laying a good foundation for our further research.

We may start from two angles to study land taxation. The first approach is to examine land taxes from the perspective of the farmer's economic burdens if the taxes exceed financial capacity; the other is from the viewpoint of construction of the agrarian system, from which we can observe whether the property rights in land are clearly realized. The confusion of land taxes is caused by obscure boundaries of property rights, that is, incompleteness of the agrarian system. In the past, the problems were studied mainly from the first angle, while, in my opinion, the second is more important. This is so because: (a) farmers' burdens will not be rationalized until the agrarian system becomes sound and the confused taxation system is clarified; and (b) a sound agrarian system is closely related to a well-designed land-taxation system, which is also associated with the circulation of land as a commodity. I strongly support research on land taxation from the perspective of the construction of an agrarian system to promote rural reform and accelerate the establishment of a new system of socialist market economy.

Judging from the supply of agricultural commodities, Chinese agriculture to some extent witnessed a change of periodic significance beginning in the mid-1980s. An insufficient supply of agricultural products was followed by a relative equilibrium in supply and demand, implying that the development of modern agriculture depends not only on the capacity to provide agricultural products, but also on the size of market demand. Growth of agricultural production has been quite fast in recent years, but farmers' incomes have stagnated, indicating that the current aimless production structure surpasses market demand and so higher output is not necessarily associated with higher returns. An increase of agricultural production and farmers' incomes, therefore, is decided by an adjustment of the economic structure induced by technological innovations. First of all, the agricultural production structure should be redetermined to meet the market demand, so that the kinds and qualities of all farm products are to be well received by consumers. Agriculture should be transformed according to principles of high productivity, high quality, and high efficiency. The rural economic

structure should also be changed to favor nonfarming sectors to induce a shift in surplus rural labor.

How is the economic structure to be adjusted? It seems difficult to do with our tradition of central planning. We should resort to a well-operating market environment. It is necessary to speed up market formation, not only in terms of commodity markets, but also in terms of production factors. Around 80 percent of agricultural products have now been deregulated. Basically, a general situation where market regulation plays a leading role has taken shape in spite of the incompleteness of the farm produce market. The problem is that the production factor market lags seriously behind. There is no free circulation of land, labor, or capital, so there is no opportunity for farmers to make an effective combination of the factors of production. This results in an impediment to the production structure adjustment.

From the above analysis, I suggest that the main point of rural reform in the future is to form markets, especially markets for the factors of production. Land is the fundamental factor of production. We must permit the free circulation of land use rights if we want to form a new socialist market economy. It is inevitable that the circulation of land use rights and the commercialization and capitalization of land will take place, whether we like it or not. In short, I want to emphasize that we should study land taxation in-depth from the angle of intensifying rural reform and, in particular, promoting circulation of rural land use rights in order to formulate an agrarian system which integrates the land market. This is my hope.

VI. CHINESE AGRARIAN SYSTEM: CASE STUDY IN PINGDU, WUXI, AND YUEQING

by **Wang Xiyu**

Research Fellow, Department of Agriculture,
Research Center for Development,
The State Council, PRC

A. INTRODUCTION

Since the household responsibility system was introduced in rural China, increasing divergence has emerged in economic development as well as in institutional arrangements. Therefore, it was necessary to establish an agrarian system that corresponded with such a situation.

In recent years, various transformations of institutional arrangements have actually taken place under the conditions of collective ownership of land and the household responsibility system. These transformations provide abundant data and experiences for our research on the agrarian system and its changes under varied economic conditions and systems.

Pingdu (city) in Shandong Province, Wuxi in Jiangsu Province, and Yueqing in Zhejiang Province were selected for studying the reasons, the processes, and the effects of the transformations of agrarian systems. The study is based on the actual changes that have already taken place in these areas.

B. PRESENT SITUATION AND FEATURES OF INSTITUTIONAL ARRANGEMENTS

Pingdu, Wuxi, and Yueqing differ greatly in natural conditions, types of economy, social and cultural development, and agrarian system arrangements.

1. PINGDU

The arable land in Pingdu was divided into two sections according to the role of land and its utility. One section consists of "food fields," which are used mainly for producing grain for basic household demands, and so represent self-sufficient means of production. The other section consists of "contracted fields," which are used for producing commodity grain to meet social demands, and so represent commercial means of production.

The rights, obligations, and distribution of the two kinds of field are also different. The food fields are equally distributed to everyone following a welfare principle. The areas are calculated according to three kinds of need: 225 kilograms for food per capita; 400 kilograms of feed grain for traditional animal raising in the households (it is assumed that one household raises two fattening pigs, one sow, and ten chickens per year); and seed grain (usually 20 kg per mu). The aggregated grain per capita per year is 350 kilograms. Then, based on the local yield, 0.5 mu of food fields was distributed to everyone. Villages with more land tend to exceed this figure. All the remaining land is divided into contracted fields, which are distributed through public bidding following an efficiency principle. Generally, about 20–30 mu of land are assumed to make up a single cultivation unit. In addition, such infrastructure as wells, irrigation ditches, and farm machines is appended. The peasants can contract the land according to their management abilities. The contracted time limit cannot be changed for five years. If there is a change in the population, the ratio of the two fields is changed within a household, that is, the process is to "change the account rather than to change the fields," or to have "the two fields complement each other." Food fields in Pingdu total 804,000 mu; the contracted fields total 1,631,000 mu. They account for 33 percent and 67 percent, respectively, of the total arable land. Many villages also reserve 3 percent of the land for the migration of households or some other necessary adjustment.

The food fields can be used freely; peasants can make their own decisions. Apart from the agricultural tax, this type of field no longer bears the collective deduction and the task of state purchasing. As for the contracted fields, peasants are required to pay an agricultural tax to the state; they also pay the collectives for their contracted fields and sell grain on contract to the state. The amount of payment for the contracted fields depends upon the grade of the fields and is usually 30–40 percent of the net income from the land, or 50–70 yuan per mu. Peasants themselves can gain about 100–120 yuan per mu from the land. Grain sold on contract to the state is shared among all households and the remaining grain can be sold freely on the market.

Some necessary programs were established in Pingdu to ensure the enforcement of the two-fields system: for example, the land management system aimed at protecting land, increasing soil fertility, and promoting land circulation; and the rural accumulation system aimed at strengthening the accumulation ability of collectives and households and increasing the volume of pre-production, in-production, and post-production per household.

The agrarian system in Pingdu is a typical two-fields system. It properly deals with the relations between equity and efficiency. It has four characteristics in terms of transformation of the system:

(1) It is an integrated system with standardized regulations which provide not only a foundation to deal with various interests within the agrarian system but also necessary procedures to coordinate external relationships.

(2) It correctly handles property rights relationships under "the three terms unchanged" (that is, the collective ownership of land, the family-operation system, and the double-level management system remain unchanged). Such rights as ownership, possession, use, and

benefit are gradually clarified and standardized, and so create conditions for further improvement of the household responsibility system.

(3) Both administrative adjustments and competitive mechanisms are used in regulating land circulation in order to optimize the composition of factors of production and to solve problems of resource utilization resulting from land being equally distributed to the population.

(4) The traditional method of subsidizing agriculture by industry was changed by enlarging the scale of operation and establishing a system of accumulation. Agriculture has gradually become a self-accumulating and self-developing sector.

2. WUXI

The agrarian structure in Wuxi has undergone great reorganization in recent years. Various forms of agrarian systems co-exist. Most villages in the county contract land to households based on population or on the ratio of population to the labor force, and some villages have introduced a two-fields system, by which food fields are distributed to the population and responsibility fields are contracted to laborers who also bear the task of selling grain on contract to the state. At the same time, an experiment of enlarging the scale of land management has been carried out in fourteen villages of the county. A group of management units which enlarged their land-operation scales through various means also emerged in nontrial villages.

In addition to the specialized households and the responsibility households which enlarged their operational scales on the basis of individual operation, various collective farms run by villages have been established in recent years. One type of collective is the integrated agricultural service station run by villages. It can provide services for households which cultivate the food fields and can directly manage the responsibility fields for the whole village. Such stations usually emerge in villages where the area of responsibility fields is relatively small. Another kind of collective is the farm or specialized team which is made up of farm laborers who uniformly cultivate the rather concentrated responsibility fields. The farm (or team) is an independent accounting unit containing various responsibility systems. The other type of collective is the agricultural enterprise (or the agricultural workshop) run by villages; the agricultural enterprises manage some of the fields by subcontracting them to workers or groups.

By the end of 1990, the management units in Wuxi county with at least 15 mu of arable land totaled 317, and they cultivated 14,126.6 mu. In 52 villages of the county, 58 collective farms were established, averaging 95.5 mu of cultivated land per farm, or 20 mu per laborer. The collective farms accounted for 39.2 percent of the management units in the whole county with more than 15 mu of land.

The improvement of the agrarian system in Wuxi County and the introduction of scale management are greatly affected by two factors. First, the collective economy in Wuxi is

powerful and its composition is quite simple. Second, Wuxi is a traditional grain-producing area in China, and so the amount of grain purchased on contract by the state is very large. Consequently, the local government is supposed to give priority to the task of selling grain to the state when planning its agricultural development strategy. And the role of collectives in the new institutional arrangement is remarkably strengthened:

(1) The land-concentration and management scale expansion are realized mainly through unified adjustments by the communities. Collective farms and specialized teams are the main forms of operation.

(2) The communities usually have strong powers to provide preferential services in terms of technology, machinery, crop protection, irrigation, fertilizers, and agricultural chemicals. Some services can also be provided free for households.

(3) Rural industries subsidize agriculture in various ways. Some villages subsidize the households based on responsibility areas (usually 30–100 yuan per mu), and some according to the amount of commercial grain provided (generally 0.06–0.1 yuan/kg). Some villages also take the years of operating land with an enlarged scale as working years and allow the peasants to enjoy an old-age pension like workers in township enterprises.

3. YUEQING

In Yueqing County, since the land has been contracted equally to households, the pattern of household operation has been quite stable, though the extent of both land circulation and land centralization there is higher than in the other two counties. The areas cultivated by specialized households are generally 10–30 mu, some being more than 100 mu. These households often possess farm machinery and barns, but mostly depend on hired labor. Some of the specialized households which have strict management regulations have become family-farm-like enterprises. Also, some households run a farm in partnership. They share farm machinery and agricultural infrastructure, but maintain separate accounts for each household. In 1991, nearly 20,000 households enlarged their management scale from land transference in this county, of which 3,097 households cultivated more than 10 mu of land, averaging 13.8 mu per household. This was 6 times the average level for the whole county. By the end of 1990, 18 percent of households in the county had transferred all of their land out of agriculture and specialized in secondary or tertiary industries.

The characteristics of the agrarian system in Yueqing are distinct from the other two counties:

(1) The agrarian system in Yueqing stabilizes contracting rights while liberalizing use rights. Since the land was contracted to households, there has been no large adjustment countywide, except involving those who violated the regulations of the contracts, such as illegally selling or buying land, building houses, leaving land uncultivated, or destroying land fertility. Even so, the collectives have never taken back the contracted land. Households can make their own decisions on planting areas or management practices under the condition that

grain production not be reduced. Peasants can also commit others to operation or transfer out of their use rights.

(2) Use rights can be transferred with payment through the market. Land circulation is realized mainly through free transference among households; still, it can also be sold through coordination by the communities. The transfer can be paid in kind or in cash; that is, 150–250 kilograms of grain or 30–50 yuan per mu should be paid to the households who transferred out of their land.

(3) The communities no longer subsidize agriculture from industry, except for those necessary productive services provided to specialized households or farms. The households can get compound revenue mainly from diversified production such as planting high-value cash crops, developing animal husbandry, and processing agricultural products.

In general, each of the three counties has its own characteristic agrarian system and has undergone unique changes. Wuxi County depends primarily on the collective forces of communities to regulate population-land relations and to develop collective farms and specialized households. In contrast, Yueqing County relies on market mechanisms to develop specialized households, mainly from the transference of use rights. And Pingdu City uses both measures; that is, the two fields are divided by the communities while responsibility fields are distributed to households through market mechanisms or public bidding. However, some general trends can be noted from the changes of the systems in the three counties: (1) small-scale management resulting from equal distribution of land has gradually changed into large-scale management through land concentration; (2) purchasing of commercial grain is one of the reasons that led to reform of the system; (3) the original distribution method of subsidizing agriculture by industry has begun to change, and market mechanisms have played an increasingly important role in it; and (4) it is generally accepted that the socialized service system is a necessary measure for institutional changes.

C. INDUCEMENT OF TRANSFORMATION

Since the household responsibility system was introduced in Pingdu, Wuxi, and Yueqing in the early 1980s, all of the counties have decided to extend the time limits of contracting land in order to stabilize the laborers' connection with the land. However, the relations between people and land have, in fact, continually and simultaneously changed. On the one hand, land has become further divided and the average scale of operation is decreasing; on the other hand, land has become relatively concentrated and some large-scale management units have emerged. Such changes are sometimes complicated in many regions.

Changes in agrarian systems usually stem from various factors, including economic and social conditions, management systems, policies, and so on. Even under the same macroeconomic situation, different inducements can result in different changes of the agrarian system.

The three counties have some common experiences as well as some singular ones. The important common causes for change are as follows:

(1) The variation of population is the chief factor which causes adjustment for the contracted land. Since contracting land equally based upon population is one way through which incomes from resources are distributed, any kind of variation in the population resulting from birth, death, or marriage means a change in income distribution. Therefore, it is reasonable for households whose interests are infringed by a change in the population to demand a readjustment of land, especially in those villages where productivity is quite low and land is the primary means of livelihood. Also, the variation in population leads to a change in the ratio of labor to land and so results in a waste of utilization of both resources. According to an investigation in Pingdu in 1987, 45 percent of households demanded an increase in their contracted land so as to enlarge their management scale, 28 percent asked for a decrease or transfer out of part of their land, and another 2 percent planned to give up all of their land in order to specialize in nonagricultural production. In a few economically developed villages, the phenomenon of land lying waste sometimes appeared because the comparative advantage of plant production is gradually decreasing. Given this situation, apart from the unified regulation by the county, some villages have had to make partial adjustments every two or three years.

(2) The task of selling grain on contract to the state contradicts individual operation of land. One objective of the cooperative movement in the 1950s was to make it easier for the state to buy grain through cooperatives at a low price and to accumulate it for industrialization. Under the present situation, where land is cultivated individually, the state has to deal with nearly 200 million peasants in order to purchase the grain it needs. This situation not only greatly increases the cost of procurement, but it also adds tension to the relationships between local cadres and the masses and between government and peasants. Therefore, to adjust the distribution of land so as to concentrate the task of selling grain to the state from fewer households or collective farms became an immediate factor that resulted in the change of the institutional arrangement. In 1990, in Wuxi County, management units (including specialized households) which sold over 5,000 kilograms of grain accounted for 0.18 percent of total households, while the grain they sold on contract made up 5.08 percent of that of the whole county. On an average, each productive unit contracted 31 mu of land and sold 15,000 kilograms of grain to the state, 28 times the average level of the county. In the experimental townships of Huazhuang and Xuelang, 75 and 79 productive units, respectively, accomplished 50 percent and 58 percent of the task of selling grain to the state for their entire townships. In Dongjiang, in contrast, grain was sold to the state by 85 productive units. There are similar cases in Pingdu and Yueqing.

(3) Changes in industrial structure greatly affected the transformation of the agrarian system. The responsibility system not only enabled peasants to operate their original productive fields based on their own decision-making, but also greatly expanded their scopes of living and development. Peasants could plant either grain or cash crops. They could engage in both agricultural production and forestry, animal husbandry, and fishery, as well as in industrial, commercial, construction, and transportation activities. They could join production

TABLE 6.1 Gross agricultural output value, by kind of economic activity (%)

	PINGDU		WUXI		YUEQING	
	1978	1987	1978	1987	1978	1987
Plant production	89.4	78.6	76.75	53.3	73.1	39.4
Forestry	1.2	1.4	0.5	0.6	1.5	1.4
Animal husbandry	5.1	10.3	21.1	20.9	15.5	19.1
Sideline production	0.1	0.1	0.05	17.4	8.4	22.7
Fishery	4.2	9.6	1.6	7.8	1.5	17.4
Gross agricultural output value	100.0	100.0	100.0	100.0	100.0	100.0

Note: 1978 represents the year when individual management was introduced, while 1987 represents the year when institutional arrangements began to be changed.

TABLE 6.2 Gross social production value in rural areas, by kind of economic activity (%)

	PINGDU		WUXI		YUEQING	
	1978	1987	1978	1987	1978	1987
Agriculture	50.7	40.4	16.6	6.9	66.9	32.1
Rural industry	34.5	43.5	71.4	84.6	19.8	51.9
Rural construction	-	-	8.2	4.8	8.6	10.4
Rural transportation	14.8	16.1	1.2	1.1	1.3	1.7
Commerce and catering	-	-	2.6	2.6	3.4	3.9
Gross social production value	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 6.3 Rural labors, by kind of economic activity (%)

	PINGDU		WUXI		YUEQING	
	1978	1987	1978	1987	1978	1987
Plant production	83.6	67.0	69.3	18.1	57.3	40.1
Forestry, animal husbandry, sidelines, fishery	2.2	1.8	4.5	3.9	14.6	14.7
Industry, construction, commerce, and others	14.2	31.2	26.2	78.0	28.1	45.2
Total labor	100.0	100.0	100.0	100.0	100.0	100.0

either locally or in other places. This led to remarkable changes in the planting structure, in the industrial structure, and in the distribution of labor in rural areas.

Structural changes also caused a change in sources of income. In 1986, according to data from 100 sample households in Wuxi County, income from farm labor was 139.49 yuan and that from industrial labor was 714.71 yuan. In the same year, in Dongjiang township of the same county, income from farm labor was 552.85 yuan and that from industrial labor was 1,544.93 yuan. These returns increased the opportunity cost while decreasing the comparative advantage of plant production and so became a driving force for the recombination of factors of production. From 1986 to 1987, in Dongjiang township, the number of laborers engaged in plant production decreased by 344. In the same period, the number of laborers employed in township enterprises increased by 591. So, by giving up the right of contracting land, peasants in fact won the right of obtaining a higher industrial income.

(4) The joint utilization of farm machines and infrastructure is constrained by existence of small, scattered plots. Individual management and equal contracting of land resulted in land fragmentation. During the early stage of individual operation, the average number of fields owned by a household was 7 plots in Pingdu and 7.05 plots in Wuxi, and the area per plot was 1.3 mu in Pingdu and 0.53 mu in Wuxi. Therefore, it was difficult to utilize farm machinery and the existing irrigation works. From 1986 to 1987, the areas plowed by tractors and irrigated totaled less than before the introduction of the responsibility system in many villages. However, the level of modernization of agricultural equipment was increased, and it gradually contradicted the small scale of management. So, it is necessary to concentrate land and enlarge management scale.

TABLE 6.4 Agricultural equipment in Pingdu

	1978	1987
Power of agricultural machinery (kw)	50,236	656,668
Power of agricultural machinery per mu (w)	73.4	251.9
Tractors	18,138	83,480
Motor-pumped wells	18,718	34,336

Because of the above-mentioned common factors, the situation of small-scale operation resulting from equal contracting of land in the early stage of the responsibility system began to change. But the development patterns are distinctive due to the differing internal and external conditions of the three counties.

(1) The institutions of community organization in the three counties are different. The institutions of community organization in Pingdu and Wuxi are rather sound, with strong abilities to administer regulations. Apart from executing normal functions of social management, the community organizations make the most of their efforts to develop the local

economies, including providing services for households. In Yueqing County, collective economic management was not very powerful during the period of the people's communes. Since the responsibility system was introduced, the main function of the communities has been providing services to households. Moreover, the economic forces of the communities also play an important role. During the period when unified management of the people's communes was changed to individual management, the means of public production in Pingdu and Wuxi were basically reserved and even experienced some new developments after the change. While nearly all the means of public production, except land, were divided in Yueqing, they later increased somewhat, though they remained far below the level of the two other counties. Around the time of transforming the institutional arrangements (1987), the per-capita productive fixed assets of the community collectives in Pingdu and Wuxi were, respectively, 3.8 and 17.4 times that in Yueqing.

In Pingdu and Wuxi, farm machinery owned by community collectives or the state made up 31.35 percent and 99.5 percent, respectively, of total farm machinery, and the mechanical operation provided for households accounted for 50 percent and 99 percent, respectively, of the total amount of mechanical works. Comparatively, farm machinery in Yueqing basically belonged to the individuals. In 1988, the number of households specializing in various farm machines reached 4,500 and their output value totaled 26 million yuan, or 81.4 percent of the gross production value of social mechanical operations.

TABLE 6.5 Fixed assets owned by collectives

	PINGDU		WUXI		YUEQING	
	1978	1987	1978	1987	1978	1987
Fixed assets per community (000 yuan)	86.1	1277.2	184.0	1623.2	23.1	44.8
Fixed assets per capita (yuan)	11.1	173	112	785	27.6	45.0

(2) The distribution relationships within the three communities are different. In Pingdu and Wuxi, apart from distribution through the household responsibility system, the communities make various redistributions, such as "subsidizing agriculture by industry" and so on. In 1987, in Pingdu, profit from township enterprises used for subsidizing agriculture or allocated directly to farm labor reached 5.54 million yuan, accounting for 10.1 percent of the profit after taxation. From 1983 to 1987, in Wuxi, 19.18 percent of the profit from township enterprises, or more than 300 million yuan, was used for farm machinery, irrigation works, and agricultural distribution. The collective unified distribution from industrial revenues covered 52.8 percent of peasants' net per-capita income. In Yueqing, agriculture enjoyed few subsidies from industry; though some communities provided some subsidies for households through services provided at preferential prices, the amount was quite limited.

The distribution relationships discussed above resulted primarily from the burden on land, though the disparity of collective economic strength also played a role. Both Pingdu and Wuxi historically are commercial grain-production counties. In 1987, grain allocated out of Pingdu totaled 89,987 tons and grain sold on contract amounted to 98.7 kilograms per mu; these figures in Wuxi were 50,950 tons and 153 kilograms per mu, respectively. In the peak year of 1984, the latter figure reached 255 kilograms per mu. In Yueqing, grain allocated out basically balanced grain allocated in, and only 75.9 kilograms per mu grain was sold to the state. Therefore, an important factor that communities and local governments should consider in agrarian system arrangements is to balance the burdens on agriculture and industry and ensure that the task of selling grain to the state is fulfilled.

(3) The market environments in the three counties are also different. Wenzhou Prefecture, where Yueqing County is located, has a long history of prosperous small-commodity production. Before the rural reforms, it had been criticized for "developing capitalism." The reforms and open policy permitted a rapid development of the market and commercial production in Yueqing. In 1987, the state procurement of agricultural products according to plan accounted for 35.15 percent of trade value of the whole county, while market trading accounted for 64.85 percent. The people in Wenzhou have more commercial sense and so the law of value and the market mechanism are accepted more easily. Such a situation contrasts strikingly with Pingdu and Wuxi, where more administrative management is used and which mainly depends on plan regulation.

D. Transformation Process and Government Behavior

1. Pingdu

The transformation process in Pingdu is rather simple. There are two measures which greatly affected the agrarian system in the process of introducing the household responsibility system. First, collective accumulation was not divided when land was contracted, so former productive abilities were protected. Whereas collective accumulation was reduced in many places, it was somewhat increased in Pingdu. From 1982, when land was not contracted, to 1987, it increased by 3.8 percent. The initial endowment of collective infrastructure and farm machinery was continually used to provide services for households under certain conditions (including a unified plan of planting; unified purchasing, management, and utilization of large- and middle-sized farm machines; unified farmland construction; unified tractor-plowing; unified purchasing of main production means such as fertilizers and pesticides; and unified collective sideline production). That is, the production process was not completely transferred to households from the beginning in Pingdu.

Second, in 1987, a readjustment of land aimed at combining the scattered fields was instituted. Except for hilly areas and some scattered fields around villages, all of the farmland was joined, formed into large plots, and fitted with necessary ditches, wells, and roads. These measures not only helped overcome the difficulties met by households in the individual cultivation, but also created conditions for enforcing the two-fields system. By 1987, labor

engaged in the secondary and the tertiary industries made up one third of total rural labor, nonagricultural income covered 50 percent of total rural income, and tractor-plowing and machine-irrigation areas accounted for 90 percent and 59.5 percent, respectively, of the total cultivated area. These provided the physical and social foundations necessary for the introduction of the two-fields system.

Pingdu City is one of the national experimental regions of the agrarian system reform. Governments and communities at all levels played an important role in organizing the trials of reform. Every experimental project was uniformly determined and then enforced at all levels. The municipal government successively issued nine documents, including "Proposals on optimal land scale management and perfection of the contracting land agreements," "Proposed regulation of the agrarian system construction," "Proposals on establishing and perfecting accumulation systems in rural areas," and so on. Also, they put forward a guiding policy of setting up "one standard" (that is, the productivity standard), correctly dealing with "two relationships" (that is, the relationships between stability and improvement, and between reformation and development), and insisting on "three terms unchanged." Before each reform measure came into effect, it was tested, cadres were trained, and then it was introduced step by step. In the last four years, there were 687 sundry special training classes run at city and township levels, and approximately 157,000 persons were trained. Meanwhile, cadres at all levels were divided with individual responsibility for regions or villages to help local cadres discover and resolve problems. Also, they held feedback meetings and experience-exchanging meetings regularly in order to promote the reform experiments. The local leading groups in Pingdu and their cadres were well qualified. About one half of the cadres at the village level had received at least a high-school education. It was these cadres which did the most work of organizing, enforcing, and controlling the two-fields system, such as grading land, inviting bids, evaluating land quality variations, relating rewards to punishments, dealing with use-right transferrals, and managing and utilizing payments for contracted land. Obviously, such a complicated institutional arrangement could not have been carried out without these cadres.

2. WUXI

The agrarian system changes in Wuxi County were somewhat dramatic. After the introduction of individual management, the county went through a process of "centralization, decentralization, and recentralization." This reflected the impacts of the task of selling grain on contract to the state, the development of collective enterprises, and the derived interest distribution on the transformation of the agrarian system. Also, it reflected the government's behavior.

Before the reform, an extremely high quota for grain purchased by the state was allocated to Wuxi since it was a high-yield grain-producing area. Grain procured by the state at that time accounted for about 30 percent of the total yield. In 1982, given the high quota, land contracted to individual households was divided into three parts: 0.5 mu of food fields for each person; responsibility fields for all farms, to be used for fulfilling the grain quota; and forage fields, distributed according to pig-purchasing targets set by the state. That farmers could meet the grain quotas at that times occurred primarily for two reasons: (1) the household responsibility system stimulated peasants' enthusiasm for agricultural production

and hence greatly increased their incomes; and (2) though incomes of township-enterprise workers were 100 yuan more than those of farmers, the difference then was not all that large.

By 1984, however, the foundation for the three-way distribution pattern changed in the following ways:

(1) Deteriorating trade terms further reduced the original low incomes from land operation. During the 1986–88 period, input cost per mu increased by 5.14 percent.

(2) Rapid development of township enterprises resulted in a great change in the distribution of rural labor. Both the number of farm laborers and the percentage of farm to total laborers were higher than corresponding figures for industrial workers in 1983, but the situation was reversed in 1984. By 1987, farm laborers accounted for only 18.1 percent of rural laborers, while industrial laborers accounted for 59.5 percent.

(3) The difference in incomes between industrial laborers and farm laborers increased. In 1986, the difference in income per laborer was 575.22 yuan, and it increased to 1,036.2 yuan in 1988.

Clearly, the arrangement that meted out burdens among farm laborers by contracting responsibility fields could not continue. Therefore, in 1984, all the villages readjusted their contracted land, except for a few villages which concentrated their landholdings in order to introduce large-scale management. Nearly all villages transformed the institution of contracting responsibility fields to farm laborers to a system of contracting land to all rural laborers (including enterprise workers). Since then, because of the increased population and the decreased amount of farmland, the self-sufficient food fields have gradually become indistinguishable from the responsibility fields which are responsible for selling grain to the state. Given this, some villages further changed their pattern of allocating contracted land into one of distributing the land equally to all of the population.

Unfortunately, the continual redistribution of land aimed at rebalancing the burdens of farming made the already small and divided fields much more fragmented. According to a survey undertaken in 1986, 80 percent of 100 sample households operated less than 5 mu of land, and 14 percent, more than 5 mu. By 1988, households having less than 5 mu had reached 90 percent of the total; among them, those households with landholdings less than 3 mu in size increased from 34 percent to 50 percent, while households with land more than 5 mu declined to 7 percent. The way of contracting land equally among the population aggravated the issues resulting from small-scale management of individual households and contradicted the original intention of separating food fields from contracted fields. Therefore, a key component of the "agricultural modernization experiment" initiated in 1987 was to centralize the land and enlarge the management scale so as to develop an optimal scale of management.

(1) The county selected 17 villages to test the experiment of enlarging the scale of land management; also, each township was asked to select an experimental village, which totaled 56. The trial will be extended to the whole county during the period from 1992 to 1996.

(2) In 1987, contracted fields were readjusted in the county. Within 94.4 percent of the villages, 22.1 percent of responsible households and 12.9 percent of landholdings were involved in the readjustment. The readjustment ameliorated the condition of scattered responsibility fields, creating a situation for land concentration and scale enlargement.

(3) While the management units which enlarged their land scale were assigned the task of selling grain to the state, they enjoyed their previous services and subsidies. The task of selling grain on contract usually involved 500–600 kilograms per mu, some reaching 700 kilograms (the quota decreased somewhat after 1988). The above-mentioned management units were provided with previously distributed inputs and capital equipment, including infrastructure such as storage houses and productive sites, farm machinery, and technical services. Some villages also provided favorable or even free services, and some subsidized agriculture from industrial incomes. In 1988, in Dongjiang Township, where scale management was popularly carried out, direct subsidies for grain at the village and township levels totaled 552,100 yuan (not including investment in agricultural construction). Since 1988, some villages have provided subsidies for pesticides and fertilizers because the prices of agricultural inputs have increased.

(4) Double-management and double-checking systems were established. At township and village levels, cadres which engaged in agricultural administration works were to be reviewed for their achievements as well as their fulfillment of annual responsibility targets. Township enterprise workers were also required to complete targets of agricultural production. Every enterprise was allocated a cadre which was responsible for agriculture. The cadres educated workers on how agriculture is the foundation of the whole economy, so as to emphasize the importance of cooperation between enterprises and villages, and enforced the double-management system. For enterprise workers whose households had responsibility fields, 150–200 yuan annually would be kept from their wages and linked with agriculture; that is, whether the funds would be repaid to them would depend on their performance in agricultural production.

3. YUEQING

Peasants in Yueqing County have more options in the transformation of the agrarian system because of their more favorable conditions. Since the household responsibility system was introduced, industries and rural commodity markets have experienced great development. Large numbers of laborers flowed into the secondary and tertiary industries. In 1982, the second year of the household responsibility system, land began to be transferred among households. The transferral of land in this county occurred spontaneously. But in the early years, only a few fields were transferred, basically because the peasants did not trust the stability of policies and because their production enthusiasm was quite high then, for they had just obtained the use right of land. With the development of transferral of land, the issue of landownership became prominent; there were many disputes and misgivings about it in public. Some held that individual management meant that the land was privately owned and could be used freely; some peasants engaged in industrial work worried about their flexibility after transferring their land; some village cadres believed that since land belonged to the

collectives, it should be returned and not freely transferred if the household did not cultivate it; and some people also considered that transferral of land should be banned because of exploitation in the sense that households receiving land had to pay the households transferring out of land.

On the one hand, further development of nonagricultural sectors widened the disparity in incomes between different sectors, thereby diminishing the peasants' enthusiasm for planting grain crops; on the other hand, productive factors could not be combined optimally since little land was transferred, thereby leading to a decline in agricultural production. In light of this, since 1986, the county government has set up a series of policies to guide the transferral of land. It chose 7 villages to take part in an experiment of land circulation and operation scale, and it set up files for grain-specializing households to assist with their economic accounts. At the same time, the selected households were provided with input supplies, technical services, marketing products, and so on, to encourage them to develop a diversified economy and to increase their incomes. To dispel peasants' misgivings and to define the landownership, the county government in 1987 set up a policy of "three terms unchanged" and "three rights separated": that is, the policy was to clarify the ownership of land, to stabilize the responsibility right of land, and to liberalize the use right of land under the prerequisite of keeping the collective ownership of land, the household responsibility system, and the double-management system unchanged. According to this policy, peasants can freely transfer their use rights of land and can charge for it within their responsibility limits. The charges can be freely negotiated among them. In addition, households from other regions are welcome to contract land and can enjoy the same favorable policies.

From 1988 to 1990, the county held three training classes for specialized households to instruct them on accounting, management, and agricultural technologies. Agricultural technicians have set up a regular extension system with 50 specialized households. In 1988, the county insurance company began to insure paddy harvests for specialized households under the "Insurance Provisions for Paddy Harvesting." In the three years from 1988 to 1990, 11,923.4 mu of early and late rice and 1,332.4 mu of breeding fields for hybrid rice were covered by insurance, the insurance premium collected totaled 52,274.42 yuan, and 54,432.03 yuan of insurance indemnity were paid to households. Townships and communities also managed to control materials and funds which were linked with grain production, and helped the households overcome difficulties with drying and storing grain and using rented farm machines. All of these measures promoted land circulation and the development of specialized households.

The situation discussed above illustrates that the methods and results of changing an agrarian system depend upon its internal demands as well as its external conditions. The main determinants are the government and the communities. However, different kinds of institutional changes are usually accompanied by different behaviors of government and communities, and so bear different costs.

TABLE 6.6 **Numbers and areas of households with land more than 10 mu, Yueqing County**

	1986	1987	1988	1989	1990	1991
Households	652	1,114	1,383	2,336	2,834	3,097
Cultivated land (mu)	9,257	14,772	20,210	33,094	38,122	42,616
Land scale of:						
10–20 mu:						
Households	607	1,036	1,248	2,194	2,679	2,848
Areas (mu)	7,506	12,388	15,187	27,398	31,267	33,814
21–50 mu:						
Households	38	73	114	120	120	220
Areas (mu)	1,116	1,834	2,960	3,600	3,278	6,339
51–100 mu:						
Households	3	1	15	15	23	21
Areas (mu)	183	157	1,049	1,027	1,582	1,426
>100 mu:						
Households	4	4	6	7	12	6
Areas (mu)	454	493	1,014	1,069	1,995	1,037

Note: In Yueqing County, cultivated land per capita is 0.39 mu, and operation areas per household is 1.2–1.5 mu.

E. Effects of the changes

The actual changes in an agrarian system are the result of adapting the system to the development of the overall economy. Therefore, the reform of the agrarian system has had remarkable effects on the system itself and on the development of the economy.

1. PROGRESS OF INSTITUTIONAL CONSTRUCTION

In view of the system itself, institutional construction has made progress in the three counties, though with considerable differences.

Property rights in land have gradually become clarified. The household responsibility system is based on the separation of use rights in land from the ownership of land. However, the equal distribution of land and the basically free use of land confused the distinction between the two rights. Earlier transferral and concentration of land require a clear distinction between possession rights, use rights, benefit rights, and transfer rights, so the behaviors of landowners and land users can be standardized and their interests protected. The new institutional arrangement provides that: landowners may charge households for contracted land; households which transfer out of land may charge for the transferral; households which

improve their land quality should be rewarded and those which degrade their land quality should be punished; land contracting should be managed; transferral procedures should be established; and so on. All these rules, together with the "separation of three rights" in Yueqing County, have standardized the behaviors of all parties and clarified their respective rights and obligations.

Comparatively, the institutions of property rights in Pingdu are more refined. Pingdu has effective regulations covering various aspects of the agrarian system, such as a land-file management system (including certificates of collective ownership of land, registers of land management, and agreements of contracted land issued by the county government); a land-resource protection system (including rewarding or punishing households according to variations in their land quality, and compensating households for investments in land); approaches for public bidding, for calculating charges for the contracted land, for adjusting the relation between population and land, for handling the interests of households unable to enter the bid, and so on. Yet, an important element of the property rights, that is, the use-right transferral system, remains to be established. Besides, the short time limit of contracting is likely to discourage long-term investment in land. However, the practices in Pingdu have provided valuable lessons for research on the Chinese agrarian property rights system.

Great progress has been made in separating use rights from ownership and in clarifying that the benefits of profit and welfare are permitted to be obtained from land. An important aim of the transformation of the agrarian system in the three counties is the resolution of problems caused by equally dividing the land by means of land circulation (including adjustments by the communities) and enlarging the management scale. The basic design is to divorce use rights from ownership and to appropriately distribute the profit and welfare functions of land. Nevertheless, this goal was realized through different institutional arrangements.

In Wuxi, it was carried out by developing specialized teams with optimal management scale and collective farms on the assumption that by means of redistribution, the interests of all sectors within the communities could be adjusted. Yueqing and Pingdu tried to promote circulation and concentration of land under the condition of insisting on the household management system. But the methods of approach in the two counties are quite different. Yueqing separated ownership from contracting rights and operation rights, so in fact admitted the peasants' possessory rights in land. Within the time limit of contracting, households could realize their possession of land, that is, to keep their contracting right through transferring out of their operation rights with payment. Whereas in Pingdu, the land was divided into two sections and different mechanisms were adopted for the welfare function of land and the efficient utilization of land. By means of issuing contracts to households through invitations for bid, charging for contracted land, and controlling the use of land, this strengthened collective ownership of land. At the same time, by altering the amount of charges for contracted land, it regulated the supply and demand of land as well as the interest among households resulting from the disparity of quantity and quality of contracted land. These institutional arrangements have good effects in terms of both adjusting the population-land ratio and enlarging the operation scale.

Market mechanisms have begun to be introduced. Land circulation in Yueqing is basically through the market. Public bidding for contracted land in Pingdu also breaks the traditional method of equal distribution and regulation upon administration. Even in Wuxi, bids for contracting are invited. Although this is only a beginning, it gives us important inspiration on how to increase efficiency under public ownership of land, and so will have a profound impact on the reconstruction of the agrarian system.

As mentioned above, adopting a particular institutional arrangement should depend on the special situations of the various regions. Actually, each circulation mechanism at present has its unique advantages and disadvantages. Land circulation is more flexible in Yueqing than in Wuxi because it is mostly regulated by the market mechanism. As a result, the amount of land in circulation and the extent of land concentration in Yueqing are greater than in Wuxi under a similar level of development of nonagricultural industries. However, fields freely transferred among households tend to be scattered and do not conform to scale management; moreover, the incidence of scrapping contracts is frequent in Yueqing in proportion to its underdeveloped market and imperfect market regulations. In Wuxi, on the other hand, though its land circulates slowly, the scale operation is more easily formed and is more stable than in Yueqing.

2. Economic Effect of Institutional Changes

The primary criterion in evaluating the changes of the agrarian system is the actual economic effect. New institutional arrangements in the three counties have greatly increased the factors' productivity and the integrated economic efficiency.

Land productivity. According to investigation in 1,000 households in Pingdu in 1990, grain yields averaged 739.3 kilograms/mu, which was 10.4 percent higher than in 1987. The yield of cultivated land with optimal scale was about 10 percent higher than the average level, and income per mu was about 15 percent higher. Investigation in Wuxi in 1990 showed that the grain yields of 42 management units had enlarged their management scales averaged 704.1 kilograms/mu, which was 5 percent higher than the county's average level. Yueqing has made a 4-year follow-up investigation of 40 households which cultivated land of ≥ 10 mu, showing that grain yields per mu reached 890 kilograms, or 5.7 percent higher than the average level of the 14 villages in which they reside.

Labor productivity. A follow-up investigation of 60 households in Pingdu in 1990 indicated that grain production per unit of labor reached 3,815 kilograms. Income per laborer was 4,107 yuan, 32.8 percent and 60 percent, higher, respectively, than what was recorded one year before the introduction of the two-fields system in 1987. Investigation of 47 management units in Wuxi showed that cultivated land per laborer was 14.77 mu and grain production per laborer was 16,826 kilograms, or 4.67 times the county's average level. In the 40 specialized households which were investigated in Yueqing, 62 laborers were totally engaged in farm work, cultivated land per worker was 23.1 mu, grain production per worker was 18,870 kilograms, and net income per worker was 3,867.5 yuan. There were, respectively, 21.7 times and 1.49 times higher than the average level of local villages.

Commodity ratio. Investigation of households with more than 20 mu of land in Pingdu indicated that the commodity ratio of agricultural products averaged 72 percent, 26 percentage points higher than the average level. The commodity ratio of various commodity grains (including purchasing by the state, deduction by villages, and selling on the market) provided by 47 operation units in Wuxi reached 91.4 percent, which was 70 percentage points higher than the county's average level. The commodity ratio of grains provided by 40 specialized households in Yueqing reached 93.1 percent, 56.5 percentage points higher than that of the local villages.

Promotion of forestry, animal husbandry, sidelines, and fishery. The relative centralization of land and the enlargement of the operational scale not only fully realize the potential of laborers engaged in plant production, but also release some laborers for the development of forestry, animal husbandry, sidelines, fishery, and other nonagricultural industries. The changes in Pingdu are very convincing. From the beginning of the two-fields system until 1990, about 104,000 farm laborers flowed out of plant production and into forestry, animal husbandry, and secondary and tertiary industries. At the same time as the development of plant production, incomes from forestry and fruit production increased by 21.9 percent, and the production value of animal husbandry increased by 67.2 percent. Township-enterprise production value grew more rapidly, recording a 250.6 percent increase and accounting for 64 percent of the city's gross production value. Township enterprises have become the pillars of rural economic development. Although Wuxi and Yueqing are still in the experimental stage, the same effects have also been seen.

3. Discussion

The agrarian system is the basic economic system; however, its evaluation is complicated. It should include not only economic improvement but also social development and political stability, not only in the short run but also with long-term, extended effects, especially in input-output indices. This study makes only a preliminary comparison of economic growth. Since the institutional arrangements in these counties are still under the process of experiment and in continual change, overall evaluation and conclusions cannot be made until the institutional arrangements have become relatively stabilized.

No doubt the experiments of agrarian system transformation in these counties have witnessed exciting progress. However, not all of the problems in the construction of an agrarian system have been resolved, let alone the resolution of new challenges which the institutional arrangements have met, along with the reform of the grain purchasing and marketing systems which have important impacts on the agrarian system and the development of the market mechanism. These changes will comprise a new task for these counties.

Given the complexity of Chinese conditions, it is possible that various patterns of institutional arrangement will exist. The transformation of the agrarian system in Pingdu, Wuxi, Yueqing, and some other counties explores a method of institutional reform for the whole country. However, further research is needed to analyze property rights relationships and operation mechanisms within various development patterns, and, at the same time, to

analyze external economic and social conditions. This research should be done so as to discover the institutional arrangements best suited to the Chinese conditions and to offer a theoretical summation of the process.

COMMENTARY

by **Guo Shutian**

Ex-Administrator of Department of Policy,
Laws, and Institutional Reforms,
under the Ministry of Agriculture, PRC;
Senior Economist

The case study of Mr. Wang Xiyu is based on empirical data from Pingdu, Wuxi, and Yueqing, and reflects the causes and results of cropland system changes in these three different regions in China. Selection of typical counties in various regions and a detailed analysis of their approaches and experiences in reform enabled the research staff to understand the main features of unbalanced socioeconomic development in rural China. The research methods are scientific and should be recommended.

Transformation of the agrarian system in mainland China has been a zigzag process. There were four steps in the recent decades after land reform: private ownership and individual management; private ownership and collective management; public ownership and collective management; and public ownership and individual management. Practice shows that under public ownership of land, the household contract system provides farmers more freedom in production management and product disposition, creates incentives in production, and thus greatly promotes growth of productive forces. It is correct for the Chinese government to make this a fundamental policy and a basic management system, and to keep it unchanged for a long time.

Various fruitful experiments and good results from different regions were reported to solve many issues in the past ten-odd years; for example, segmentation of contract land plots, short-run management behavior, disputes associated with ever-changing population, and adjustments of contracted land. The experiments could be summarized as follows:

(1) Family contract plus socialized services to enhance socialization of agriculture and economy of scale. The double-track management system integrating unified services and individual management tends to increase land and labor productivity and commodity ratios of farm produce. This form has been adopted in most rural areas.

(2) "Two-field system" to divide contracted land into "responsibility fields" and "food fields." As the population changes, the two kinds of fields supplement each other to avoid frequent land adjustments, requiring only changes in file records. Contradictions between population and land can thus be settled more or less properly. About 38 percent of townships (villages) have accepted this form to date.

(3) Most farmers have shifted to the secondary and tertiary industries with booming rural enterprises. Farmers are ready to give up their contracted land (usually responsibility fields at the beginning, then their food fields). So land management scale could be enlarged in various ways, including setting up specialized teams, cooperative farms, "big specialized households," agricultural workshops, farm enterprises, and so on. Contract land serves as a social guarantee for the majority of farmers. This security function will be reduced step by step only with socioeconomic development in rural areas. This function will eventually disappear, but it takes time. We should wait for conditions to ripen; no compulsory administrative enforcement should be applied.

(4) Exploitation of waste mountains, beaches, and waters should be conducted after public bidding to enlarge management scale.

(5) Township enterprises should subsidize agriculture where possible. The strategy to develop agriculture by means of industrial returns aims at increasing input in land, improving production conditions, and enhancing overall productivity. Various patterns should be used in different regions, and in no case should we "cut everything with one knife."

Currently, there are two prominent problems in the land system: To whom do property rights of collective ownership belong de jure, and what are the forms of their realization? How do we construct the land market? These two questions are closely related to the rights and interests of 900 million members of the farm population and to the enhancement of land effectiveness. Can agricultural modernization be realized in rural China, which contains a huge population yet limited land endowment? We should study the issue theoretically and practically to find new ways that are suitable to Chinese conditions. It is urgent to determine property rights in order to set up a land market, commercialize land, and accelerate circulation of land use rights. The reasons are as follows:

(1) Many places actually have expanded villagers' collective ownership of the previous production team (that is, natural village) to collective ownership of the previous production brigade (that is, administrative village) or even to ownership of the previous commune (that is, township). That is to say, they have enlarged the owner's size and promoted the re-emergence of a "communist transition in poverty"[1] which we opposed so much.

(2) Industrial development zones are booming in many provinces, continually pushing up land prices. Some government agencies arbitrarily took over farmland to make real estate transactions, depriving farmers of landownership and rights of management (that is, their added returns from commercialized land) and making the farmers the new "proletariat."

(3) There are no unified rules concerning the ownership-executing representative organ (villager committees? collective economic organizations? or township governments?). It varies from place to place. It is also related to the amendment of the laws in effect, including the

1. In the late 1950s, we in the West called this "the craze for communalization." [Translator's note.]

Constitution, General Rules of Civil Law, Land Administration Law, and some articles in the Law of Villager Autonomous Organization. We should speed up this work.

We should solve the land rent problem when commercializing land. The research on rent should be placed on the agenda. The cost of agricultural products does not contain the land price, but it must be considered in the future as our agricultural trade becomes more internationalized.

A vigorous development of township enterprises is the basic measure to settle the problem of land carrying capacity. A great number of workers will be shifted to the secondary and tertiary industries, which we call "transforming farmers into non-farmers." Here are two examples. In Daqiuzhuang Village, Jinghai County of Tianjin Municipality, 8 farmers cultivate 4,000 mu (267 ha) of land, or 500 mu (33 ha) per person. On average mechanical equipment and land construction fees per mu were estimated at over 1,000 yuan, and their grain yield amounted to 900 kg per mu (13.5 tons per ha), or 200 tons per laborer. Their average income was higher than that of "farmers" engaged in industrial activities. "Big households" in Yueqing County, Wenzhou City of Zhejiang Province, operate over 300 mu (20 ha) of land, which is relatively large-scale management in China. If we calculate according to the above examples, 3 to 5 million farm workers will be sufficient to cultivate the existing cropland, while over 90 percent of farm labor will be transferred to nonagricultural jobs. Urbanization of rural areas is, of course, to be accelerated by development of the secondary and tertiary industries. The majority of farmers will leave land cropping and gradually settle in townships and cities. China's urbanization ratio is very low; it currently has 27 percent of its population residing in urban areas while the world average is 45 percent (80 percent in developed countries and 30 percent in developing countries). Middle- and small-size cities are poorly developed. Cities with populations of 300–500,000 account for only 5–8 percent of the urban population, and townships of 100,000 people make up merely 0.2 percent. There are 55,000 townships in China today; among them, 2,300 are county centers. There is an immense potential to absorb rural labor in these townships and county centers. Agricultural modernization will be realized and the dual economic and social structure will be eliminated as a historical vestige in the course of rural industrialization and urbanization, integration of industry with agriculture and towns with the countryside. That seems to be the fundamental way out of the contradiction between population and land in China.

COMMENTARY

by **Edward Friedman**

Professor of Political Science,
University of Wisconsin-Madison, USA

There is a common tendency to take the modern policy history of China as beginning after the Chinese Communist party gained control of the national government, but it is useful to look back a little further. Between 1938 and 1943, the Communist party carried out many reforms in its base areas on land, but the most important thing was that it equalized landownership and it created security. It was becoming a petty bourgeois paradise. At the same time, between 1938 and 1943—the year of Mao Zedong's speech, "Get Organized"—the party was also imposing one system, and it was beginning to impose bad things that were also working against the good things. But because the Kuomintang and the Japanese blockaded the base area, the party had a great interest in trade, and it supported the market. The market grew as did the economy in the poor areas; under very bad conditions and some horrible things done by the Japanese, the market nonetheless did very well. When the Japanese were defeated, there was a tendency to impose class-struggle land reform in 1947/48. But because the civil war was still on, and the Communist party had to compete with the Kuomintang, it drew back from class-struggle land reform.

The result was, between 1938 and 1952, the Chinese peasantry in the old base areas enjoyed this petty bourgeois paradise, where land could be bought and sold legally, where there was relative equality, where the market flourished, and where there was peace and stability. To me, it is very important not to forget 1938 to 1952.

Most discussions begin in 1952, when China experienced the biggest decrease in productivity as the state began to take over grain and cotton markets. That imposition of the state bureaucracy added to the monolithism that was there since 1943. So from 1952 on, China began to experience the negative effects of a foreign model—a Soviet model. This imported model undermined the successes of 1938–1952 (which I would call the Chinese model). The full imposition of the Soviet model came in the last stage, 1958/59, with the household registration system, the *huko* system, in the countryside.

Basically, all the discussions of how to have a good land tenure system deal with the questions of how to do away with the bad things which were imposed by the Soviet model—the 1938–43 monolithism and class struggle, the 1952 state takeover of the market, and the 1958 *huko* system. Everybody talks as if 1938 to 1952 occurred in a foreign country. Much discussion today struggles with the foreign categories from the Soviet Union instead of looking to the great successes of 1938 to 1952 and a Chinese economy where the market flourished. There was great equity in the countryside, and, against extraordinary obstacles

imposed by civil war and foreign aggression, the economy produced a sufficient surplus to provide for an army which created the People's Republic of China.

My conclusion is very simple. It would be very useful when we talk about property rights to remember the Chinese system, 1938 to 1952, and not have the debate talk only about the things imposed from the Soviet system.

COMMENTARY

by **Zhou Cheng**

Professor in the Department of Agricultural Economics,
People's University of China

Mr. Wang's paper gives me a comprehensive, objective, and detailed picture about the agrarian system in three typical counties in East China, from northern Shandong to southern Fujian. The paper is informative and suggestive. It also puts forward some questions to be studied in the future.

Real characteristics of China. China is a country with many specific features in its politics, economy, organization, history, and culture. China's population is huge, but farmland is very scarce. We had strictly formed, large-sized collective organizations and adopted public land ownership. It was and is our reality, which no one can ignore when we begin to study our rural land-system construction.

Land property rights. What does this term mean? One point of view juxtaposes landownership and property rights in land, that is, the latter excludes the former. It claims that China has solved its landownership problems and faces problems related only to property rights. This means that we may study the problems of property rights and find solutions which by-pass the ownership problems.

I suggest that real rights include the right to property for oneself and the right to property of another person according to the Roman (continental European) legal system (to which legal tradition Chinese civil laws belong). As far as land is concerned, real property rights include ownership (that is, right of property for oneself) and use rights (and corresponding beneficiary rights and transferral, which are rights to property of another). Hence, it is natural that ownership and use rights are both included in the "bundle of rights" of land as a whole.

A few years ago, disputes over landownership did not lead to any conclusions, but that does not mean that there are no more problems in this respect. Some still favor land nationalization while others stand for privatization. I think the former is the right direction. The socialist system of our country developed from a primary to an intermediate, and then to an advanced stage, so rural landownership also will take the direction of nationalization some day, but it is too early to do so now. As for land privatization, though it is not reactionary in the primary stage of socialism, it poses two major problems: (a) it might cause a severe political shock if we re-introduce private ownership of land after four decades of collective landownership; and (b) it might not contribute to a rational flow of land and its concentration within agriculture. If we compare the cases of Japan and India, land

privatization does not help land flow and concentration in a desirable direction under conditions of small labor-land ratios. It tends to result in part-time farming, which is most typical in Japan.

Some people argue that we do not need to spend much time on problems related to landownership, and should pay more attention to the rules about land use. But if we adopt a land use system similar to *emphyteusis* without changing collective landownership, that will be quasi-private ownership, which is not feasible.

Since collective landownership is realistic and reasonable in rural China at the present stage of development, neither covert state nor covert private landownership is practical. It seems more appropriate gradually to inject the "whole-people-ownership factor" into the collective ownership system and to strengthen farmers' land use rights to such an extent that collective landownership integrates the merits of both state and private landownership.

Rural land circulation. Should rural landownership be circulated freely on the market as a commodity? Some people think so, because collective economic organizations, being the landowners, naturally have land disposition; otherwise, the ownership is not complete. But in my opinion, this situation has more negative than positive aspects. First, it would be difficult to control nonagricultural use of farmland. We should seriously check farmland outflows because they are the basis of agricultural development. It is impossible for the state to arrange nonfarming uses of land if any enterprise can purchase cropland from rural collective economies. Second, it is unlikely to ensure economic equity when collectives sell their land for enormous sums in land-scarce regions. In addition, when landownership is purchased, does it mean that there is a new form of ownership—"enterprise ownership" or private ownership? Judging from this, I suppose it is difficult to let land enter the market under the circumstance of collective landownership (land may be taken over by the state for specific purposes and become state-owned). An exception is intercollective exchange of land plots for their convenience.

Could collective land use rights enter the market the same as state-owned land? It seems improper. It will have the same harmful consequence as ownership transfer if rural collectives convey their land use rights to nonfarming enterprises for a long period. A more reasonable way is for the state to take over the land at first, then approve and lease to the enterprises. Some places conveyed their use rights of waste mountains and slopes for a long period to other organizations or individuals for agricultural uses (cultivation, livestock breeding, etc.). That is to be encouraged because the land was still used for agricultural purposes.

Should we allow members of collective economies to put their land use rights on the market as a commodity? My answer is also negative. A farmer possesses the land use right only within the contract period—it is not *emphyteusis*. When a farmer is not able to cultivate contracted land, at most he or she may convey the land contract right (that is, use right) for the remaining years to another person for agricultural purposes only. The recontractor has no right to use the land for nonfarming purposes. Farmers may mortgage their land use rights for credit, but it is valid only within the contract period.

I think that four aspects must be emphasized when we are talking about circulation of land use rights in collective economies.

(1) We need to control the outflow of farmland to guarantee agricultural production. This also concerns the rural collective economies. They should accept state planning and regulations and limit nonagricultural uses to comply with government permission.

(2) Rural collective economies should combine working farmers with cropland. In other words, those farmers who have given up agricultural production should convey their contracted land use rights to full-time or skilled farmers.

(3) Collective economies should give priority to their own members when apportioning land use rights. They should lease land to the public only when labor is insufficient and land is abundant.

(4) Regulating the circulation of land use rights includes organizational (via collective economic organizations) and market regulation. But generally speaking, the former is the main form. In other words, the aim is to integrate organizational mechanisms with market mechanisms to guarantee the priority of agricultural uses and the needs of collective economies. Market regulation should not dominate.

In short, it is extremely problematic to commercialize farmland and its use rights because of the peculiarities of its use value in rural collective economies. Farmland and its use rights will not circulate freely on the market like manufactured goods.

VII. CHANGES IN THE PROPERTY RIGHTS SYSTEM IN MOUNTAINOUS REGIONS AND FARM HOUSEHOLDS' RESPONSES: CASE STUDY IN HUAIHUA PREFECTURE, HUNAN PROVINCE

by **Liu Shouying**

Assistant Research Fellow,
Research Department for Rural Development,
Development Research Center, The State Council, PRC

A. INTRODUCTION

The role of property rights in the economic growth of a society has attracted more and more attention in recent decades. A widely accepted point of view is that the stability of property rights and their feasibility of being implemented influence people's behavior and, hence, the economic performance of the society. Theorists have tried to reveal the relationships between property rights and economic performance, and have produced weighty evidence that shows a strong link.[1]

Chinese scholars seem to be situated in a favorable environment for institution-relevant research. Significant institutional reforms have been carried out in almost every field in China since the 1980s, and, in particular, rural reforms have been considered the most dynamic and fruitful. This situation provides plentiful evidence to test the role of institutions in economic development. The rural household responsibility system (HRS), with remuneration linked to output, has yielded positive results in agricultural growth that have been recognized worldwide. A number of articles have been published which examine the contribution of the new system to agricultural growth.[2]

Meanwhile, there is a wide divergence of opinion among economists and policymakers with respect to many problems associated with noncultivated land (mountainous land, wooded land, beaches, etc.), which occurred after the introduction of the new institutional arrangement. One of the most controversial and puzzling issues was over what caused the unexpected, harmful results of the inauguration of HRS in rural areas; that is, why did the

---

1. See, for example, *Property Rights and Institutional Change: Collected Papers of the New Institutional School*, ed. Liu Shouying et al. (Shanghai: Sanlian Shudian, 1990).

2. See Lin Yifu, "Rural Reforms and Agricultural Productivity Growth in China," in *A.E.R.* (forthcoming); John McMillan et al, "The Impact of China's Economic Reform on Agricultural Productivity Growth," *J.P.E.* 97 (Aug. 1989); and Wen Guangzhong, "The Current Land Tenure System and Its Impact on the Long-Term Performance of Farming Sector," Ph.D. dissertation, University of Chicago, 1989.

responsibility system when applied to hilly or wooded land not promote development and improved utilization of these resources but, instead, led to uncontrolled tree-felling? This question was a serious challenge to researchers. Some scholars argue that mountain land as a kind of asset is common property and so should only be managed collectively. Others suggest that the phenomena reflect farmers' diffidence due to changing governmental policy: currently, farm households possess use rights to hilly land in the changed policy setting, but they think these use rights may be taken back in the future; therefore, farmers tend to exploit land in a predatory manner without considering long-term consequences. Scholars with this latter opinion, then, believe that the guaranteed stability of current policy would induce the farmers to invest more in the land and to conserve, more rationally, the potential of their resources.

We cannot arbitrarily judge which opinion is correct because plenty of cases nationwide can be found to support either conclusion. Every successful case will be rational and contain an incentive-creating mechanism. A researcher should seek to discover the likely incentives to farmers as investors while comparing the internal institutional arrangements and preconditions for implementing these incentives. A researcher must also investigate the policy implications for the country as a whole.

Huaihua Prefecture of Hunan Province was chosen as our research site for a study of the impacts of the mountain land system on farmers' behavior and agricultural performance for several reasons, including:

(1) Huaihua Prefecture is located in a typically mountainous region of western Hunan. The total area of the prefecture is 41.4 million mu,[3] of which mountainous and arable land account for 30 million and 3.77 million mu, respectively, and the per-capita land availability of these two kinds of land is 8 mu and 1 mu, respectively. Mountain-producing resources are rarely abundant or very promising in terms of development. The forested area makes up 20 million mu, with timber forest over 12 million mu, and economic forest 4.98 million mu. Forest cover is estimated at 49 percent. Oranges, tangerines, red bayberries, grapes, and other fruits are grown in large quantities. About 2.2 million mu of waste land are suitable for fruit production, with 500,000 mu and 200,000 mu, respectively, already under citrus and other small-sized fruit cultivation.

(2) Various institutional changes have taken place in agrarian relations in the recent decade, especially with respect to mountainous land. Reforms centered on HRS were carried out in the early 1980s to share out the hilly land to farm households, and, later, a considerable number of farmers voluntarily transferred their land use rights. As a result, there was a contingent of larger-sized households specializing in forestation and fruit production, thereby speeding up the exploitation of mountain resources and yielding remarkable income for the region. In addition, the local authorities made a series of experiments of this process to solve newly arising problems, thus providing us with an excellent case study for this project.

---

3. For purposes of conversion, 15 mu=1 hectare, or about 6 mu=1 acre.

B. CHANGES IN PROPERTY RIGHTS IN MOUNTAINOUS REGIONS AND RECONTRACTING MOUNTAIN-LAND USE RIGHTS

HRS was adopted in Huaihua Prefecture for cultivated land, and a similar system has been implemented for hilly land since 1981. The basic principle observed consisted of allocating use rights to mountainous land to every household in an egalitarian manner without any change in the collective landownership. By doing this, around 90 percent or more of the villages took into account the distance of land location, quality, species of woods and their heights, and so forth, to equalize the sharing. Many villages distributed the land to households according to the situation which existed after the agrarian reform in 1949. The farmer's plot is called a "private mountain" or "responsibility mountain." The use rights of the farmers to their mountain land were substantiated by people's government certificates issued at county level rather than by the previous production brigades, which were dismantled when the contract system was introduced and agency organization reformed.

It is interesting that the farmers once again got their certificates after several decades of collectivization. The "Private Mountain Certificate" stipulated that the trees on the private mountain belonged to the farmer without payment or with payment at an agreed discount rate. The boundaries of the private mountain were fairly clear and the total area was estimated. Usually, the private mountain was situated close to the owner's house and could be used for forestation or as a homestead. As far as the "responsibility mountain" was concerned, it seemed that neither the local government nor the farmers showed much concern. The limits and acreage of the responsibility mountain were inaccurate because the boundaries were determined by pointing with hands. The "Responsibility Mountain Certificates" were quite often filled out more than once due to an abundance of errors or missing items. The certificates were mostly kept by the village committees instead of at the farmers' homes. In turn, the farmers did not have property rights over the responsibility mountains because the woods were owned by the collective and entailed delivery duty. Afterward, both kinds of mountain were generally called "private mountains" or "management mountains." In short, there was great divergence in the definition of property rights to mountain land in various regions.

HRS for mountain land, however, had no real effect on the farmers like it did immediately with arable land. More than 27 million mu, or 82 percent of mountain land, were allocated to farm households in the period 1981–1984, but no optimistic results were recorded, though exploitation of mountain land had started. According to our data, most farm households did not invest in orchard development in 1983–1984; 1.08 million mu of forests were created artificially, but primarily not by farmers. Farmers' incomes generated from mountain development were negligible. On the contrary, some unexpected incidents happened against the policymakers' wishes. Farmers actually manifested interest only in the woods rather than in the mountains themselves. The value of mountain land was measured merely according to the trees growing there, so many people were reluctant to take waste mountain land or to reclaim it even if it were apportioned to them. When they got the use rights to mountain land, they were apparently interested in the short-run benefits of the resources, but paid little attention to long-term investment. Unchecked tree-felling was popular in many

places. The "No. 1 Document" issued by the Central Committee of the Chinese Communist Party in 1984 called for relaxing forestry policy, abolishing monopolized purchases of timber, lifting controls on the timber market, and permitting free trade of timber of forest-growers and collectives. Shortly after this, as reported by the Policy Research Office of Huaihua Prefecture, many cases of forest devastation took place in this region. Only two of twenty-two villages and townships in Tongdao County were able to avert such devastation.

There was no immediate effect from the contracted management of mountain land. Did this indicate that property rights failed to stimulate mountain land management? Or did it mean that farmers did not respond to the new system or that they acted in a contrary direction? An in-depth analysis was necessary.

In fact, farmers responded to the new system from the beginning of the household contract system for mountain land, and this led to its wide adoption in the prefecture in 1984. It resulted in a faster rate of development of hilly land than that which occurred between 1958 and 1980, the years of the collectivization period. The total acreage of reclaimed mountain land during that period was 8,395,000 mu, or 365,000 mu per year, while 500,000 mu per year was the average in 1983 and 1984. Farmers were the major contributors. The shift from collective management of mountain land to household management under collective ownership, which is similar to the reform of the management system for cultivated land, has created an institutional foundation (including use rights and beneficiary rights) to encourage farmers to exploit and develop mountain land.

Why did the mountain-associated HRS not have as significant results as the farmland-related HRS? We suggest that this could be explained by the conflict between the conditions provided by the system and the services required for investment in land, which typically include the following aspects.

Longer-term investment cycle. It takes three years to invest in orange groves and have returns, and as long as twenty-five years or more for forestry.

Larger-scale investment and higher risk. As a rule, current input is needed for farmland but can be returned in the short term, while several thousand yuan per mu need to be invested in mountain land.

More obvious economies of scale. Farmers cultivate mainly labor-intensive crops and need little capital input due to the small population-land ratios in China; sizable amounts of investment in mountain land would lead to financial loss if the scale is not large enough.

Higher requirements for human capital. Field crop cultivation has been managed mainly by using traditional experience, and farmers may learn from each other if necessary; mountain land utilization requires that the workers have a higher standard of skill and know-how, which again requires a more secure guarantee of their use rights to mountain land, for otherwise they will not put money into the land.

Nevertheless, no commitments were made in the institutional arrangements to the contractors (farmers) that they would enjoy all the benefits from long-term investment in the mountain land. Compared to the previous system, the new system gave farmers a mere stimulus to get quick results. It is thus not surprising that mountain-land exploitation proceeded quite slowly after contracting, and the farmers' behavior can be easily justified. It is imperative to carry out reforms to improve property rights, encouraging investors and arousing farmers' confidence in the long-term stability of the system.

Fortunately, the policy environment and institutional arrangements have changed favorably since 1984. HRS has been continued with respect to both farmland and mountain land without land withdrawals, and the contract length was extended to fifteen years or more in the above-mentioned 1984 "No. 1 Document." Moreover, it was stipulated that mountain-land contracts could be further prolonged and that contractors were permitted to transfer their use rights. Meanwhile, price controls on primary agricultural products (except such items as grain, cotton, and oilseeds) were lifted. This was a direct impetus to farmers to increase their incomes by reclaiming hilly land. Both capital flow and development strategy in Huaihua began to respond to the policy changes. The World Bank and the Agricultural Bank of China have offered their support to mountain development since 1985. A number of pioneering farm households were given awards by the local authorities. Mountain land developed in the period between 1985 and 1991 totaled 5.3 million mu, mostly because of individual farmers' efforts.

This development has directly challenged the egalitarian system in mountain land-allocation. As discussed earlier, there are great differences among farmers' abilities when they face profitable opportunities: only those of a higher skill make active responses. In addition, once a decision about a development project is made, certain conditions for economies of scale are required from the point of view of investment and the constraints contained in existing policy regulations. The responsible agencies and financial organizations set strict rules associated to management scale. For example, the forestry bureau would approve investment only for a forestation project comprising 100 mu or over, and would provide subsidies to farm households if their wood-planting acreage was not less than 30 mu. The World Bank's loan provided only for orange-tree development projects of 100 mu and over. The egalitarian system thus became a direct obstacle to development. Skilled farmers wanted to get more land, while available mountain land had already been distributed among all farm households according to kind, quality, and location of forest. The actual situation is typical of "one owns several mountains; one mountain belongs to many owners." For example, there are 54,006 mu of mountain land in Xindianping Township of Zhijiang County. The land was segmented into 14,190 plots for 3,991 households, that is, 3.6 pieces of land per household with an average of 3.8 mu per plot.

There may be two solutions. The first approach is for the local authorities to retrieve land use rights from all farm households and then award contracts for bidding according to "skilled workers." This method would be very costly, highly risky, and infeasible both theoretically and practically. The reasons are as follows. (1) According to the principles of collective ownership of land, every member of a collective naturally enjoys use rights and beneficiary rights even if only to waste mountain land. Deprivation of these rights is beyond the jurisdiction of local government agencies, which are not authorized to favor some farm

households at the expense of others in terms of equal rights. (2) If the authorities decide to withdraw the farmers' rights, farmer confidence in government policy would collapse, which in turn would create massive and uncontrolled forestry destruction. Even the lucky "skilled farmers" would not invest in the contract land because they would think their that rights could also be taken away if top government officials lost their belief in the users' abilities. (3) The "skilled farmers" would be selected by government clerks, who might be misled by false appearances. A skilled crop farmer, for instance, might be incompetent to exploit waste mountain land. So this approach is easy but ineffective.

An alternate method is to allow farm households to transfer their use rights among themselves by voluntary contracts on the condition that their mountain-land use rights are to be maintained. Capable or skilled farmers could thus obtain land relinquished by other farmers; the latter would receive a certain amount of transfer payment without altering their land use rights; and, what is more important, the policy would remain stable. While many economists and policymakers disputed the legality of this approach, it was adopted by the farmers of Huaihua Prefecture in 1984. The number of farm households involved, along with the scale of land recontracting and the variety of contract forms, were far beyond the expectations of the disputing parties. Table 7.1 shows that more than 145,000 farm households took part in recontracting activities and that the area of the transferred land exceeded 1 million mu. It also shows the different forms of adjustment that were applied.

TABLE 7.1 Mountain-land use-right transfers in Huaihua Prefecture

	NUMBER OF FARM HOUSEHOLDS	AREA OF TRANSFERRED LAND (mu)	AS PERCENT OF TOTAL
Leased out	74,830	511,000	46.9
Used as shares	69,305	566,000	51.9
Exchanged	1,113	5,000	0.5
Sold	26 cases	8,000	0.7
Mortgaged	3 cases	180	-

Large-scale transferral of mountain-land use rights at the user (farm-household) level has been very attractive to economists and challenging to current policy. It took place under the institution of collective ownership of land in China rather than under private ownership (though it is natural in the latter case), whereas the "owner" (collective) had little to do in this process. At least one fact cannot be denied: the farmers' understanding of ownership and use rights along with the role of property rights in practical economic life diverges from prevailing theory. Now we will examine the forms and rules applied in land transfers and the content of property rights to see how farmers understand their property rights.

1. LEASE

This is the most common and interesting form of transfer of mountain-land use rights. Up until now, 74,830 farm households have leased out their use rights, making up a total area of 511,000 mu, or about 47 percent of total transfers. The forms, rent, and length of the leases are determined through negotiations between the use-right owner (party A) and the hilly-land developer (party B). The main forms of leasing are the following:

Share leasing. Party B obtains the mountain-land use rights and beneficiary rights during the contract period by refunding an agreed portion of total returns to party A. The share proportions may be 2:8 or 1:9 and be based on either net or gross returns. Great differences may exist in the lease contracts between the developer and the use-right owners of the same mountain land in terms of refunds and shares.

Fixed-rent system. An agreement is reached between parties A and B whereby party B may enjoy the mountain-land use rights and beneficiary rights for the contract period on the condition that s/he pay a certain amount of rent. The rent may be paid immediately after the land transfer or when the land yields its benefits. The terms of the lease may also vary. For example, a specialized household farmer in Yanlong Township, Qianyang County, Qin W., rented 100 mu of waste mountain land from 10 different households farmers for 100 years when he paid them each 3,050 yuan as rent. Tuanhe Lumber Farm of Huitong County rented 3,000 mu of cutover, village-owned land to plant China firs on the condition that it pay party A (the village) 39 yuan per cubic meter of timber when the forest was ready for felling.

In some cases, rent is determined according to the expected returns from the mountain land under crops currently planted. A young farmer in Yanlong Township leased 6 mu of land under oil-tea camellia to Hong J., an orange grower. The oilseed yield was estimated at 50 kilograms per mu, so Hong paid an annual rent of 220 yuan to party A (the farmer). Rent payment may be given to party A on a per-capita basis when the boundaries of the leased mountain land cannot be mapped. Tang C. of Jishui village, Huitong County, took in over 50 mu of land cultivated with oil-tea camellia from 7 households. That plot of mountain was shared out per capita to 44 persons in 1982, but the boundaries were not clearly set. Therefore, Tang had to pay 10 yuan per year to each of those 44 persons during 25 years of the lease agreement.

2. SHAREHOLDING

This is popular primarily in forested regions, with 69,305 households preferring this method of exploiting mountain land. As a rule, there is a lead body (for example, collective, enterprise, or government agency) responsible for land development, and the farm households contribute their land as shares, making good use of the forestation fund from the state budget. Shares of the forest farm thus consist of land shares, labor shares, capital shares, and accumulation shares. Land and labor make up the dominant portion.

3. SELLING AND BUYING

Party B pays a certain amount of money to party A and then obtains permanent mountain-land use rights. Altogether there were 26 cases of this kind, including selling waste mountain land or wooded land, reflecting an essential change of the farmers' understanding of property rights despite the negligible percentage of this form recorded. Three households sold 75 mu of mountain land to Qin W. for 750 yuan for orange cultivation.

4. EXCHANGES

Mountain land was exchanged for other plots, either waste mountain land or arable land, by 1,113 farm households.

5. MORTGAGE

There were three cases of farmers' mortgaging their mountain-land use right for loans with a bank or farm-input supplier. In Ganxi village, Qianyang County, 10 farm households mortgaged 100 mu of waste mountain land for a loan of 70,000 yuan from the collective. The farmers will build up an orange grove on the 100 mu of land, and refund the collective in-kind within 20 years. That is to say, they will deliver 500 tons of oranges to the collective from the sixth year of production, while the collective will take back the 100 mu of orange grove in case of breach of contract.

Judging from the land recontract agreements of the farmers in Huaihua Prefecture and their connotations of their property rights, they have actually made a transformation of the property rights system on their own. They greatly expanded the content of their mountain-land use rights without changing the "flag" or framework of the current collective ownership. Namely, the land contractors obtained their use rights in a new sense, which can be transferred freely with a legal repayment according to the agreements. From the economic view of property rights, the use rights of farmers in Huaihua can be considered relatively complete (right of use, benefit, and transfer). It is the transformation of the system of property rights that promoted the development and utilization of resources in mountainous Huaihua Prefecture.

C. DEMAND FOR INSTITUTIONAL CONSTRUCTION

These significant changes took place without legal basis or theoretical support, which is similar to the way many institutional changes have occurred in recent decades in China. Farmers carried out the transformations spontaneously, while government either played a negligible role or did nothing at all. The landowners de jure did not intervene in the transfer process. Nobody is responsible for settling the frequent disputes among farmers during land transfers. Therefore, new institutional support is necessary after the spontaneous transformation period. We suggest that attention should be paid especially to the following.

(1) In spite of the colorful transfer of mountain-land use rights among the farmers based on their own needs, lease, sale, or purchase of land—and its illegal transfer in other forms—are prohibited de jure, according to the Constitution and Land Administration Law now in effect. Regarding this law, opinions in economic circles vary greatly. When Huaihua farmers began to reclaim waste mountain land, local authorities encouraged them with political slogans. The farmers' interests and rights were thus beyond legal protection. Contradictions between the status quo and the law (and theories) are not serious in a relatively beneficial, macro-policy environment and in a period when the returns after land transfers are not apparent. Severe conflicts become inevitable, however, once the macro-policy environment alters or the developers reap surprisingly high returns. Then, questions are raised: Is the status quo rational, and are the law and the government lagging behind the changed situation? Or has the transformation violated legal regulations and therefore should be stopped? Obviously, farmers' investment behavior will be hindered until clear answers are given.

(2) Massive land transfers in Huaihua in recent years took place mainly between farm households acting on their own. The mountain-land owners de jure were little concerned in this matter. In the transfers of land use rights, these owners did not concern themselves with who was involved, the specific conditions of the agreements, the kinds of disputes, and so on. Moreover, they did not act economically as property owners because they did not receive rent. This was the result of the loss of their de facto rights as landowners under collective ownership as the mountain-land-related HRS was adopted. The rural grassroots organizations such as production brigades and teams were dismantled, and their decision-making powers in terms of management, use of resources, and income distribution were also removed and realized by individual households. To be sure, village economic cooperatives or other kinds of collective organizations were set up to become the landowners. Their practical functions, however, were quite different from those that were created during the collectivization period. Therefore, they could not enjoy the corresponding powers, though such authority could be endowed by issuing laws or documents. The most outstanding feature of the new "owners" when they realize their rights is that they are constrained by the desires and needs of farm households, which are the de facto property owners. So, in the relationships between owner and user, conflicts exist between prevailing theory and legal regulations and practical experience. Theoretically, the landowner not only has the right to limit the user's behavior but also can collect land rent from the latter. But, in fact, most of the owner's functions are superfluous at the user level or can be performed by the farmers themselves. A survey conducted by the Office in Huaihua Rural Reform Experiment Area among 1,096 farm households showed that farmers indeed recognized their beneficiary rights, inheritance, and nongratuitous transfer among their rights as contractors. They were well aware of who constitute the real landowners. The second-largest group of farmers, in fact, thought that the mountain land belonged to the farmers themselves (see tables 7.2 and 7.3).

TABLE 7.2 Huaihua farmers' understanding of use rights over contracted mountain land (multiple choices)

	TOTAL	IN[a]	OUT[a]
1. I can fell trees when I want to do so.	81	2	7
2. I can transfer my land to others for a certain amount of money.	454	31	65
3. All returns of my contracted land are mine.	832	41	113
4. My children may inherit the land during the contract period.	797	39	111
5. I have the right to let land waste if I pay rent to the collective in a timely manner.	107	3	9
6. I don't know.	124	2	5

a. In=leaseholders who took land in; Out=leasers who leased out land.

TABLE 7.3 Huaihua farmers' understanding of mountain-land ownership

	TOTAL	IN[a]	OUT[a]
Land belongs to:			
1. State	196	8	21
2. Village collective	316	15	45
3. Group collective	125	4	14
4. Farm households	309	15	32
I don't know	110	1	10

a. In=leaseholders who took land in; Out=leasers who leased out land.

(3) What is most important is to discover how to ensure the validity of the transfer contracts. As the potential value of mountain land is developed and economic returns become more visible, this problem will be of critical importance in protecting the land investors' anticipated returns, which will ultimately decide whether mountain-land development succeeds.

As mentioned earlier, neither mountain-land owners nor contractors care about the land boundaries or acreage when it is left in waste and uncultivated. Their obscure knowledge of the recontracted land is reflected in their psychology: first, it is always better to get some money (rather than nothing) from the waste mountain because it is useless; and, second, even if the policy changes, the developer will be out of luck, not me. This, in turn, results in careless agreements in terms of form, duration, payment, and so forth. Some agreements or receipts of payment were oral or written in pen or pencil and kept only by the leaseholders. According to a survey in Yanlong Township, Qianyang County, there were 1,243 transfers

of land involving a total acreage of 12,300 mu. Oral agreements accounted for 205 of the transfers, or 16.5 percent, but 72 percent of the other 1,038 written contracts were invalid because they were not standardized. A number of the leasers claimed additional payment since they were not initially aware of the potential value of the land.

A high incidence of disputes has been reported due to the above shortcomings at the level of both landowners and users. This is a real threat to the developers. Table 7.4 provides data from a survey in 11 townships of Huaihua Prefecture.

TABLE 7.4 Disputes associated with mountain-land property rights in 11 townships, Huaihua Prefecture

OWNERSHIP-RELATED		USE-RIGHT-RELATED	
Between counties	21	Between groups	497
Between townships	83	Between households	1,873
Between villages	281		
[Before 1982	134]	[Before 1982	197]
Total	385	Total	2,370

A lack of legal standards in the proprietary system and a high incidence of disputes produced negative impacts on the economic activities of the mountain-land developers. This is reflected most obviously in the nature of their short-term investments and income disposal. Yanlong Township, for example, used loans from the World Bank and local branches of the Agricultural Bank at the beginning of land development. But only one-third of the borrowers put their money into land reclamation. Worried about probable losses in case of policy changes, some developers refused to repay the loan or tried to repay as little as possible, though they were in no sense insolvent. Some sought patronage from state organizations or collectives; others sold their orange groves or timber trees at bargain rates to get quick profits. Some village leaders themselves were engaged in mountain-land development, but under the name of their relatives. In other words, farm households have expressed their desire to protect their lawful benefits from property gained after their spontaneous transformation of the prevailing system of proprietary rights in mountain regions.

D. POLICYMAKING AND GOVERNMENT BEHAVIOR

The local government of Huaihua Prefecture was determined to become the new policymaker since land-transfer regulations were lagging far behind the farmers' spontaneous behavior. It is interesting that such policymaking generated a panic among farmers when the well-intentioned work began. A working team was sent by the local government to study the real situation in mountainous Yanlong Township. Rumors spread that "a working group was

coming to get back the mountains and fields, and to collect money," and that "they would leave every person only a rice field for food and 5 orange trees; the rest would be given to skilled farmers." That demonstrated how closely the farmers were watching the "top," where every step could directly influence their behavior and the land development process. The key issue was to enhance the farmers' confidence in the stability of their property rights or to check their spontaneous actions. Huaihua authorities chose the first approach. They worked out a target in their institutional construction before the study: to make the farmers' mountain-land use rights more complete and to set up legal rules; to clarify relations between the owner and the user and their corresponding competence so that institutional arrangements and rules wold encourage long-term investment by farmers and thus promote the mountain-land development. There were no subjectively created rules for enforcement at the grassroots. Huaihua leaders at first chose some villages as experimental points and carried out surveys to aid in their understanding of the farmers' demand and urgent problems; only then did they formulate legal regulations. Yanlong Township of Qianyang County was selected as the key experimental point, and then 11 townships were added to represent all counties or cities within the prefecture. Huaihua made great efforts to carry out the survey: 34 staff members of prefecture organizations were chosen and sent to Yanlong for a 70–day study, from May to July 1991, and 900 persons then worked in the 12 townships for 50 days each. Their jobs were mainly as follows.

(1) Demarcating mountain land to determine the land acreage. The working groups mediated problems or corrected mistakes left from the past such as unclear boundaries and omissions or discrepancies in the farmers' land use certificates. They measured the land, drew maps, and fixed the area of forest land in the certificates and use rights of all farm households concerned.

(2) Redefining all items of land-transfer contracts. This was an extremely sensitive task and was done only when both parties desired it. The crux here was to judge whether all items in the written agreements signed by the concerned parties were in effect. Some of the leasers, for example, wanted to increase the rent, which they now considered too low. Working teams helped to amend 2,698 oral and 975 nonstandardized agreements, corrected faults in those contracts in excess of authority, and adjusted repayment rates for 117 agreements.

(3) Creating mountain-land archives and issuing usage certificates. Huaihua authorities designed a series of tables and record books to register cases of leases (in and out) and transfers of mountain land, using one card per household. The records, reproduced in triplicate, are bound in volumes group-by-group for every village and kept in at village economic cooperatives, at township land-management stations, and at forestry stations. On this basis, the village cooperative (the leaser) issues the "Collective Mountain Land Usage Contract Certificate" to the contracting farmers.

It is worthwhile that Huaihua Prefecture formulated local "Regulations on Mountain Land Development" on the basis of experimental points to standardize farmers' activities. The rights and duties of both land owners and land users were clearly determined, including land contract period and transfer rules. The major aspects are as follows.

(1) Affirming that cooperative economic organizations at village or township level are the owners of mountain land. Land is to be registered by the County People's Government, which issues landownership certificates. The mountain-land owner is the leaser and has the right to collect land rent from the contractor. The annual rent rate ranges between 0.5 and 2 yuan per mu. The owner may impose a penalty on the contractor if s/he fails to afforest waste mountain land within the agreed period. The owner should create files about the land users and contractors, mediate and arbitrate various disputes, and protect the benefits of the land developers.

(2) Clarifying that the use rights to collective mountain land belong to the farm households of the cooperative economic organizations and mountain-land management units. They have the rights of use, disposal of returns, inheritance, and transfer.

(3) Separating landownership from use rights. The term of land use rights have been prolonged to 60 years, that is, from 1991 to 2050.

The role of the government in affecting farmers' investment behavior should be judged in relation to the overall policy environment. Generally speaking, the central government's attention was focused on improving the farmers' land use rights either in practical experiments or by working out regulations. Economic cooperatives were re-established at the township level in the experimental points, but they are meant to provide the farmers with needed services rather than to erode their property rights. The competence of these cooperatives is strictly defined. By contrast, the regulations are to a higher degree favorable for farmers who are engaged in mountain-land development or want to invest in land reclamation. According to the new regulations, nobody should intervene in farmers' land use decisions or take their benefits, and the new regulations establish the policy basis for land transfers. Under current circumstances, where we do not have official law, local rules are quite effective in protecting farmers' interests. As the survey shows, these regulations have been well received by farmers, who have accepted most of the rules (table 7.5). It is more

TABLE 7.5 Huaihua farmers' understanding of the government experimental regulations

	YES	NO	DON'T KNOW
Land regulations are useless.	198	718	152
Unrestricted land use right transfers are good for land development.	804	132	135
Formerly signed contracts are to be standardized.	844	98	129
Land use right transfers may be enforced by village collectives.	46	618	134

TABLE 7.6 **Huaihua farmers' responses to the institutional innovations: Investment behavior**

	TOTAL	LEASEHOLDERS	LEASERS
I will increase investment.	555	35	57
I won't increase investment.	-	3	17
I didn't think about it.	277	5	43
Not applicable	135	0	9

interesting to note that the majority of farmers have decided to enlarge their mountain-land investments (table 7.6). It is an open question as to how these institutional innovations will contribute to economic performance. We could answer the question after in-depth research and comparison of data obtained from the experimental points in the macroeconomic setting of the same period.

E. SOME THEORY AND POLICY IMPLICATIONS

This paper presents a case study of changes in the agrarian system in a mountainous region. The data are within the confines of a prefecture, yet they are enlightening enough for us to draw some general conclusions.

(1) Farm household level. Farmers will be interested in long-term investment and thus will use the land effectively only if the property rights of the resource are clearly defined and can be materialized. De facto property rights are different from the name of ownership entitled by law. Content of ownership de jure is lagging behind the changed situation when the meaning of the former diverges from farmers' practical understanding of property rights.

(2) Role of government. The government plays an indispensable role in institutional transformation in the sense of providing services, including working out new regulations, but not creating all kinds of obstacles to control it. The government is to provide reliable legislative guarantees and a policy basis for the farmers' spontaneous innovations.

(3) Stability of mountain-land policy. The reforms of the agrarian system in mountain land did not bring results comparable to cultivated land because of some characteristic features of the former: large scale of investment and slower effects, for example, and the need for a higher intellectual level of the managers. Such things call for a more stable proprietary system. As the experience of Huaihua Prefecture indicates, mountain-land resources can be developed rapidly if farmers are permitted to improve their competence to use the mountain land on the basis of voluntary agreements.

COMMENTARY

by **John Bruce**

Research Fellow, Land Tenure Center;
Adjunct Assistant Professor, Department of Forestry,
University of Wisconsin-Madison, USA

In that it is a case study, the preceding stands in contrast to the survey research seen in abundance elsewhere. I have always been struck by one advantage of case studies: they supply a time perspective to the situation under examination. Survey research obviously has its own advantages. But it is fascinating to take a story like this of what has happened in certain communities over a period of time and try to puzzle out exactly why these things have taken place.

This particular case study is excellent, and it suggests a number of things. First, while tenure and rights in land may be an important element of what farmers need, they are not sufficient in themselves. This is something we come back to again and again in our line of work—tenure rights are not a magic wand that you wave and suddenly things begin to happen. They are one element, a necessary element, but other economic preconditions are needed as well before farmers are able to invest and function effectively. In this case, as the case study pointed out, the farmers needed better access to capital than they had; they were confronted by more attractive labor opportunities in the cultivated sector; and they were not well positioned to undertake the long-term risks that were involved in developing the hillside land.

The application of the responsibility system and the rights this involves seems to have been appropriate enough; the problem was that the scale was too small. What might they have done differently at the beginning of the process of land distribution? One possibility would have been to offer larger blocks of land on auction to groups of farmers who would pool their resources. Some of the problems involved in the transition might have been avoided. It is not surprising, by the way, that this commercial forestry did not function well as a smallholder enterprise. If you look around the world at commercial forestry, it is generally organized on a larger scale. A smallholder may have a woodlot that he uses for his personal use, but it is usually not a highly commercialized operation. If a private individual holds a larger area of forest, he often will not exploit it himself but license a larger, specialized operator to harvest the trees.

Another interesting factor in the case study is the role played by the market in land rights. In spite of the fact that it did not have a very clear legal basis, it permitted the scaling up of operations in the sector; that is, it performed the functions that we expect of a land market in automatically adjusting the size of operation on land to the needs of that particular

type of exploitation and the conditions in the economy. The response of the government in providing recognition to what had happened was undoubtedly the appropriate response.

There are a number of lessons to be learned from the case. One is that, where reforms do not go far enough (for instance, giving land under the household responsibility system but not providing a clear regime for transfers), local people will get out ahead of the reform process. That creativity impresses me; yet I do not want to romanticize expectations that are out of line with the formal legal position.

The second lesson lies in the response of the government, which included investing quite a lot in the provision of an infrastructure for a market in land rights. When Liu Shouying suggests that simple laissez-faire is not the answer, I agree, because markets in land rights require a public infrastructure for them to function well. They require systems of demarcation and registration such as were put in place in connection with the government's response to the problems which arose in this case. Public investment is necessary in order to make land markets function properly, and it is something that is often neglected or forgotten.

One final comment: in focusing this study on mountainous regions and looking at the use of land in those regions, the Development Research Center is very much in the vanguard of thinking about this set of issues. One of the developments in the last few years has been the establishment of a new Center for Mountainous Areas, an international center for research based in Nepal. Research on these areas is taking place in a number of other countries in the region, and there will be opportunities to pool and compare research results with those of other countries which are developing hillside and mountain land. The results should be very interesting.

At the same time, I want to stress that in looking at use of mountain land we should remember that we are looking at households that are using land in other areas as well. So the focus should not be exclusively upon the use of the mountain land, but should look also at the incentives which the household has to use land in the different parts of the landscape. This case study usefully examines the opportunity costs of investment in the forestry sector compared to the profits that can be made in investment in grain and lowland agricultural uses. But it is important to keep the focus on the household as an economic decision-making unit and integrate what the household is doing on the mountain with what it is doing in other areas of land to which it has access.

COMMENTARY

by **Du Ying**

Chief, Office for Rural Reform Experimental Areas,
under the Ministry of Agriculture, PRC;
Associate Research Fellow

The study provided by Mr. Liu S. is excellent and interesting. It has enriched the research on Chinese rural agrarian problems and has disclosed in detail a component of this field: that is, the changes in land systems in mountainous regions. The study is significant for quite a large territory of China: the collectively owned forest regions of nine provinces (autonomous regions) in southern China. Mountain land system construction and agrarian systems are closely related: there are some common aspects, but also many peculiarities. Development of forest land and mountain land in China has traditionally imitated the pattern of plain regions for grain production. The true value of these resources was discovered only after the mid-1980s. As Liu mentioned, Huaihua cadres realized that they had undervalued their resources prior to 1984, finding that their major advantageous resources are in the mountains: one share is paddy fields; one portion is waters; while the other eight are mountains.

Many incidents happened unexpectedly, however, when the responsibility system as applied in arable land was introduced to mountain development. A third round of uncontrolled tree felling took place after 1958 and the Cultural Revolution. That put forward a profound theoretical question: What is the suitable institution for mountain land development in accordance with the characteristics inherent in mountain resources (large amount of investment, long period of returns, economy of scale, etc.)? The answer should not be simplified. Given the current environment of policies, laws, and other external conditions, once mountain land is shared out, local people fell trees. Such phenomena are reported from many places. Why? The first question is whether property rights are under protection, and whether farmers are confident in the long-term stability of the policy. I also found this point to be true when I made a study trip to Huaihua. For example, Qin Wanyou has the largest developed household in the locality. He opened an orange grove of 2,000 mu (133 hectares), composed of his contracted and recontracted land. His property rights are under "special" protection from the local government, because leaders from high to grassroots levels had visited his grove, and, in addition, he was elected as a national model worker. But still he is not fully aware of the extent of the special protection. It is very important to define property rights, and is more urgent in the case of mountain land.

Liu Shouying's study also concerns public property. What will be the institutional arrangement for mountain land? This question relates not only to mountains, but also to many other problems; for example, marketing of forest goods, market channels for mountain products, financing agencies for mountain land exploitation, and infrastructure, including

roads, storage facilities, and the like. Is there an insufficient supply of public goods in the forest regions of southern China following the introduction of the mountain-land responsibility system? Compared with policy stability and final legal confirmation of individual property rights, the inadequate supply of some public goods presents a problem of equal importance. For example, Huaihua has different organizational forms of mountain-land exploitation: contracts by large households or by technical workers, farmers' shareholding, purchase of mountain land by state-owned large enterprises to set up their own food production base, or even demonstration plots run by the party and government officials. Any of the above forms calls for a scale larger than that of common arable cropland. Huaihua established a mountain-land exploitation company to link supply and demand, offer mountain-land sections suitable for specific purposes, arrange negotiations between local farmers and developers, and help with contracting, auctioning, or making agreements of other kinds. But there are no reports of such organizational services anywhere but in Huaihua Prefecture. I suppose that the deficiency of public goods and organizational services in mountain land system construction will be an obstacle to the exploitation of land in mountainous regions.

Liu put forward the problem of the institutional supply equilibrium of public versus private goods. It is of great significance.

There is a new trend in the agrarian system within the experimental areas. Grain price controls have been removed in Guangdong Province, and some interesting facts are reported in land system construction. The hidden taxes have been abolished, grain price controls have been lifted, and farmers are free to choose their crop mix; so their opinions about land and its value have changed. Thus land prices and rents are necessary. Guangdong farmers now have a sense of incremental value of land capital, whereas they treated land as a "ragged, quilted jacket" before the liberalization of grain price, saying, in effect, "land is useless but it would be a pity to throw it away." Now, after price liberalization, there is no implicit tax, land prices are going up, and farmers have discovered the value of their land use rights. For example, if their land plots happen to be taken over for industrial uses, they would ask a very high price, resulting from time to time in disputes and confrontations. It is imperative to re-examine the land use rights of farmers, collective landownership, and state authority in land requisition and administration in the new background. For this purpose, a new trial is being carried out in Nanhai Experiment Area, Guangdong. The county has been divided into three zones: industrial development, cash-crop zone, and grain-crop zone. Unified planning is under way for the industrial development zone, for which the local authorities will solicit entrepreneurs to settle on contracts when roads, telecommunications, and other necessary infrastructure are completed. The cash-crop zone is mainly for fishing ponds for public bidding. As for the grain-crop zone, the land originally contracted to farmers is "purchased" (that is, their use right is taken back, but they reserve the right to make contracts), while they are provided 400 to 600 kilograms of paddy rice by the collective at parity price per mu annually as a compensation for their use rights. This form has been applied in Lianjiao Village: 12 farmers cultivate 2,000 mu (133 ha) of land, and the rest of the workers are employed in nonfarming enterprises. This is called "separation of three rights" by local leaders: land-ownership belongs to the collective; land-contract rights belong to the farmers; and land use rights return to the collective. That raises a question: What is the future for

family management? Nanhai farmers have become "land-rent-eaters" rather than land cultivators. Does this go against the desire of our decision-makers?

We should study the new trends in Guangdong and other provinces. Is this the future tendency of the reform of the rural agrarian system?

In China, we have had five experimental areas for four or five years. Our goal is to find solutions to the segmentation of land plots, tiny management scale, uncertainty in land contract owing to population pressure, and obscure land property rights boundaries. Any solution must clarify property rights and realize optimal management scale. Judging from our monitoring data of the experimental areas in Pingdu, the southern part of Jiangsu Province, and Nanhai, there is no evidence that land productivity decreases as land management scale becomes larger.

We are going to make overall reform designs in these experimental areas in order to find solutions in the agrarian system construction. We hope to have advice and help from our colleagues.

VIII. GENDER ANALYSIS IN RESOURCE TENURE RESEARCH

by **Susana Lastarria-Cornhiel**

Research Fellow, Land Tenure Center,
University of Wisconsin-Madison, USA

A. INTRODUCTION

This conference examines a number of land tenure issues, including theoretical relationships between tenure and agriculture, comparative overviews of land tenure systems, and research and political implications of tenure research for China. This paper attempts to present some of the gender considerations that should be included when examining resource tenure issues.

Incorporation of gender in land tenure research is logical once it is recognized that a number of our assumptions about farming, land tenure systems, and households are not completely accurate. If we tend to think that farmers are only of one gender, that all agricultural workers are paid equally for similar labor, that all members of a household have equal status with regard to resource access, or that they benefit equally from their work regardless of their gender, then we will assume that gender analysis is irrelevant. However, once we recognize that there are very real gender differences, not only in the division of labor, but also in the allocation of resources, in the use and control of resources, and in the distribution of benefits and income, then it becomes evident that gender analysis cannot be ignored.

The objective of incorporating gender analysis into resource tenure research is a concern with equity and efficiency. Increasing agricultural production is often achieved by more efficient use of natural resources (for example, land, water, trees) and other factors of production (labor and inputs). If we comprehend more completely how tenure systems function and affect agriculture, including how gender impacts those systems, we will better perceive the constraints on agricultural production and be better able to design policies and implement programs that overcome those constraints. This should result in more efficient use of resources and factors of production and an increase in agricultural productivity.

The other reason for incorporating gender analysis is the concern with equity. Both men and women should have equal access to the resources they need to produce more efficiently. And both men and women should benefit in the same way and degree from the results of their work. While these two ideals (equity and efficiency) are not perfectly correlated (for example, efficiency considerations do not always involve or result in equity among producers), they are obviously interrelated. This paper will consider both the equity and efficiency aspects, but focus more on the efficiency rationale for gender analysis.

B. DOES GENDER MAKE A DIFFERENCE?

In the last few decades, many studies have been carried out demonstrating the important contribution that women make in agricultural production. In Africa, women provide 70 percent of the labor for agricultural production, in Latin America 40 percent, in Asia 60 percent. There is little dispute at this time about the important role that women play in producing food and other agricultural products.

What has not been extensively studied is the relation between women's work in agriculture and their access to land, their control over resources. Land tenure is basically a cluster of relations: the relation between a person and land, the relations between persons around land and resources, and the relation between persons and the state vis-à-vis land. In other words, land tenure, in the broad sense, is how people relate to each other around land, and the structures that have developed out of those relations.

These relations, which determine the rights that a person has over land, are based on a number of factors including age, class, kinship, ethnicity, economic power, and gender. How these factors fit together to determine a person's rights to land is the land tenure system of a particular society. How gender interacts with other factors to determine a person's access to land (and other resources) has not received much attention. And yet it is one of the most pervasive determinants. Perhaps one reason is that women are the "invisible producers." Because of women's subordinate status in most societies, their contribution to society's production is not accurately reflected in national statistics (Lewis 1981). It is assumed that men are the producers and women are the caretakers of children and the home. It is also assumed that as heads of household, men distribute the household's goods and benefits equitably to all members. Women working as agricultural producers is seen as either a temporary situation (for example, when men migrate in search of wage labor) that will revert to normality when the household's economic status becomes stable, or as a social taboo and to be discouraged. Once we recognize that women are, and will continue to be, important agricultural producers, that the ideal of having men in the field and women in the house is not really relevant in today's societies, then we will be able to address the issues concerning their ability to produce efficiently as well as the equity issues.

There are gender differences in tenure rights, access to resources, and resource management both across households and within households. And there is certainly a difference in the benefits that directly and indirectly accrue to men and women from the utilization of resources. In this discussion, resources are defined in a very general sense. Not only do resources include land and other natural resources (for example, water, trees) used in agricultural production and household reproduction, but they also include labor and other inputs (for example, credit, technical assistance). Access to these resources and a person's or household's ability to combine them so as to produce food and income for themselves and the market are basic determinants in rural development.

How resources are allocated and utilized often determines who benefits from them. In Africa, for example, two types of agricultural systems can be distinguished. In one type,

women work their own plots of land separate from those of men, and perform all the work from sowing to harvesting. Women market the produce from their own plots and have a high degree of economic independence. In the other type, women and men work the same land, but the division of labor is task-specific. For example, men do the plowing, participate in the harvesting, and market the produce. Women plant, weed and spray, participate in the harvesting, but not in marketing. In this case, women's contributions to production are undervalued and unremunerated, and their economic independence is significantly less than that of women in the former type (Aredo 1992).

It is essential to recognize the particular restraints some women face, especially when there is a gender bias against women farmers. While in some societies women have traditionally worked the land, in others they have taken over the management of the farm because their husbands, brothers and sons have left to look for work elsewhere. These women not only must continue to perform their tasks of maintaining and reproducing the household, but now must also carry out the agricultural tasks that male members of the household previously did. In addition, customary and legal practices may constrain women's ability to produce efficiently. For example, women may not be allowed to use machinery or drive oxen, or to obtain credit.

C. Impact of Market Development on Women

Development of the market economy has had different effects on women and their role in agriculture. The general effect of different development paths on a peasant woman, however, is that she tends to become more and more involved in agricultural production, but the conditions of her participation are not improved, particularly with regard to her direct access to land.

Let me sketch out three scenarios of how market development in agriculture can potentially affect women in smallholder families. In one scenario, the men of the family migrate to look for wage labor, either because their parcel can no longer support the family or because wages on large, capital-intensive farms or industries are attractive. In this case, women take on the responsibility of the peasant farm, often with scarce labor and limited access to other inputs. The increased farm work is in addition to women's other responsibilities in and around the home.

In another scenario, the peasant family adopts cash crop production with some machinery and/or high-yield technology. What often happens in this case is that the men grow the cash crops, using the best land, credit opportunities, and new technology. The women are left to grow the food crops for the family, often on marginal land, with limited labor and inputs. Not only is women's productivity considerably lower than men's, they receive minimal or no cash income from it.

In the third scenario, families have access to so little land or their productivity is so low that both men and women leave their parcel and seek wage labor, usually seasonal labor on

large commercial or richer peasant farms. Often women are either paid a lower wage rate than men (for example, women are paid 80 percent of what men receive for the same work), or the type of task they are assigned receives lower remuneration (for example, women do weeding, which is paid lower than the plowing the men do). In some cases when family members work on the same farm, wages earned by all family members are paid out to the male head of household—in these cases, women do not even receive the wages they worked for.

These women farmers face a number of obstacles, in addition to the ones they inherit as smallholders, and therefore cannot produce as efficiently as they might. They often do not own the land they farm and therefore cannot obtain credit for agricultural production. They cannot readily leave the farm (because of their family responsibilities and cultural mores), making it difficult for them to purchase inputs, learn about new technology, or market their products. They also face cultural resistance when they try to hire farm labor. And they have very little access to the benefits of government agricultural programs such as agrarian reforms, credit programs, and training programs designed to increase agricultural productivity, because these programs are directed at men. Women are seldom invited to participate in technology transfer programs and these programs are not designed to permit women to participate: the place and times they occur often conflict with women's household responsibilities.

Even programs, such as agrarian reforms, that attempt to increase peasants' access to land tend to exclude women. One of the main objectives of land reform is to create or foster an independent peasantry through property ownership. However, land reform laws generally consider only men producers, leaving women out of the reform process (Deere 1987). Women benefit only indirectly, based on their relation to a man, either their father or a husband. Consequently, many land reforms actually result in half of the peasant population remaining or becoming more dependent. In some areas of Africa, for example, where traditional law has given women some rights to land, independent of their husbands or fathers, land reform has often taken that right away, particularly for married women. Where land reform has distributed collective land to households, land is given out to male heads of households. In some cases, land reform laws explicitly state that land is to be distributed to male heads of households, whereas in other cases the law only states that land be given to heads of households without specifying gender. However, even in the latter case, in practice, land is distributed to only men, in part because reform officials are men and only consider men to be legitimate heads of household (Bruce et al 1992).

D. GENDER AND RURAL DEVELOPMENT PROGRAMS

Research that is undertaken to inform rural development projects and policy design concerned with access to resources should take into consideration gender differences for two reasons: (1) the design and implementation of a program will be improved if all potential participants and target populations are identified and understood, enhancing its effectiveness; and (2)

chances that negative effects from the project on a significant portion of the population will be decreased.

For example, projects that seek to increase tenure security by titling land parcels already occupied generally grant the property title to the head of household, in most cases a man. This is done without considering the rights that other persons within the household may have to that piece of land. It is simply assumed that the male head is the only or principal farmer in the household, that he represents every household member's interests, and that he will distribute benefits from the land fairly and appropriately. This titling practice not only extinguishes those rights that other household members may have previously enjoyed, but also makes it possible for the household head to legally mortgage, sell, or rent that land without consulting with other members of the household. Household members may feel that their rights have been diminished and may not produce as intensively or efficiently as they otherwise might.

Another area where gender differences are important is the case of resource management. If it is assumed that only household heads, or men, appropriate and utilize resources (land, water, trees, among others), the use of these resources by other members of the household and community will be overlooked. Men and women often use resources in different ways and for different reasons. Projects that seek to improve resource management (be it to improve productivity or to conserve resources) but that do not take these differences into account may be doomed to failure.

Another reason for looking at gender differences is the impact that women's other responsibilities have on their agricultural work. A project may be aware that women undertake certain agricultural tasks or grow particular crops; however, if their other household and childcare work and responsibilities are not also considered, attempts to increase their agricultural participation may not have the desired effect (Charlton 1984).

After this brief review of women's roles as agricultural producers and the effects of market development on agriculture and specifically on women farmers, I would like to discuss how to incorporate gender into the research process. The next section will explore some of the methodological aspects of gender analysis. The objective is to articulate research problems and their concomitant research questions and concepts in such a way that gender differences, and the implications of those differences, are not overlooked. In other words, we are attempting to conceptualize and operationalize resource tenure issues in a way that permits us to ask: Does the inclusion of gender as a factor in tenure research modify our results in ways that are relevant to resource tenure concerns?

E. METHODOLOGICAL CONSIDERATIONS

The inclusion of gender analysis into research should occur at all levels of the research process. This paper will briefly consider three methodological levels. Who is included and excluded at all three methodological levels is important. What are the criteria for including

certain persons as units of analysis or respondents in our research design? When framing our research problem and questions, what groups or sectors of the population are being specifically included and which groups therefore excluded? Once a research method has been chosen, how is the sample drawn (be it a random sample for a survey or a selection of case studies)? Does the sampling method inadvertently exclude women? When collecting data, who are sought out as respondents, which persons are data collected on? While cost and time are important restrictions on research methodology, when and how are these criteria imposed? Are women consistently being excluded because it would be too expensive and time-consuming to include them? Is it assumed that the household head speaks for everyone, is knowledgeable about all individuals' activities and resources, and that resources and benefits are equitably distributed within the household?

The first methodological level is the **research problem** itself and the **research questions and concepts** derived from it: How does one approach a research problem? How the research problem is defined will be determined mainly by the theory the researcher is using to guide his/her work. If that theory explicitly includes gender considerations, incorporating gender analysis into one's research is facilitated. However, if the theory upon which the research is based does not include gender, then the researcher will have to reconsider that theory and the concepts it utilizes.

In other words, the definition of a research problem and the specific research questions that flow from it should allow for the consideration of gender in order to determine whether it is relevant for that particular research problem. We may find that our research questions and concepts as determined by our theory need to be posed differently, that the questions and concepts themselves are biased against women. That will mean the modification of research questions and concepts, and, in some cases, the formulation of new ones.

For example, a research problem that looks at rural household income levels as an indicator of well-being and that assumes equal access to income within the household will not capture the different wage levels often paid to men and women, the different opportunities that members of the household have to earn and use income, or the different priorities that men and women have with regard to expenses. In many societies, women hold primary responsibility for household maintenance and support. Thus, income earned by men is invested in their enterprise or spent on entertainment, whereas women's income is primarily spent on the children, on food, and on improving the home. In this case, who earns and controls income determines to a large extent how much it will contribute to the household's well-being. If the research ignores wage differentials, earning power, and income expenditure patterns within the household, an erroneous picture of household well-being may emerge.

Second, there is the question of what **research method** or technique to use. Once the research questions and concepts are defined, what method is best for collecting the information we need to examine them? For example, large, formal surveys, such as household surveys, are not particularly suited for gathering the data needed to understand complex intra- and inter-household relations, processes, exchanges, and so on. This is particularly true for understanding women's very complex set of tasks and responsibilities,

and gender relations within the household and the community. Methods that allow for more in-depth analysis, rather than extensive coverage, may be more appropriate. Case studies or more detailed survey questionnaires for a smaller sub-sample of the target population are alternative methods to large, extensive surveys that use limited, closed questionnaires.

Third, how can **data collection techniques** be improved? This is the most technical and detailed methodological level. Having chosen a particular technique, how can it be used to gather gender data that will accurately capture reality and allow us to address the research questions we have posed (for example, which variables need to be disaggregated, does the sampling method inadvertently exclude women, how can the farm manager(s) be quickly and accurately determined, who should be the respondents)?

For example, if households in an agricultural production study have several plots or fields worked by different household members, then production data for each household should not be collected at the household level, but rather at the parcel or field level. Aggregating at the household level masks any differences that may exist among members in their ability to access resources and invest labor, in productivity levels and crop mix, and in marketing (Irvin and Neuman 1991). These differences may be explanatory in predicting agricultural production levels. If these differences are ignored, the problem and constraints that some farmers face will not be addressed in state policy.

Another aspect of data collection is the respondent. Will only the household head be interviewed or will other household members also be questioned? Often, in the desire to quickly and efficiently apply a questionnaire, only one person is targeted for questioning. But once again, this ignores different information that other respondents in the household have, and may result in biased study results.

Incorporating women researchers on the research and interview teams has often been found to facilitate collection of gender-specific data and encourages women to respond more openly. In general, it has been found that women on a research team in the field bring out very different and often very valuable information, from both women and men, that male interviewers are not able to gather.

The following sections review a number of conceptual and methodological areas pertinent to research on access to resources and indicate why and how gender analysis is relevant. These research areas presuppose that theory has framed the research questions and chosen the concepts to be utilized.

Since our research deals with issues of resource tenure, it is tempting to start directly with an analysis of who has access to and controls resources. However, an analysis of the activities that households undertake—which households do which activities and, within the household, who does what—is very useful in determining what resources are being used and how, both within and across households. Therefore, I suggest that tenure research begin by considering the different productive and reproductive activities undertaken by the population under study. This examination of activities will be more or less detailed depending on the specific research topic. If the research problem is the relation between agricultural production

and access to and management of resources, a comprehensive and detailed analysis of activities would most likely be needed. If, on the other hand, what is being studied is the impact of property reform on land markets, a less detailed diagnosis of who does what would suffice.[1]

F. ACTIVITIES ANALYSIS

Productive and reproductive activities should be listed and described. There is a strong interrelation between these two types of activities, and it may be difficult to understand why a person participates or does not participate in one type of activity if we do not understand his or her involvement in the other type and how both fit together. The activities most relevant to tenure research are those that deal with the use of resources; therefore, they should be the most detailed. The parameters suggested for describing activities are:

- **gender and age** (for example, older woman, adolescent boy, young girl);
- **time allocation** (actual time needed and whether daily, seasonal or occasionally); and
- **location of activity** (for example, at home, around the house, in the field, in the village, away from the village).

It should be kept in mind that these household activity patterns may well differ for different sub-populations in the area of study. For example, younger families (with fewer adult working members) may have a different activity profile than an older family that has several adult children at home and able to work. Or a household with access to a significant amount of land may have a very different division of labor and activity pattern among its members than a household that has insufficient land to feed and support all its members.

Activities can be divided into four categories to facilitate data collection:

- **agricultural production** (both crop production and agroforestry production);
- **livestock production** (large and small animals);
- **household production** (maintenance and reproduction tasks for household, including gathering activities); and
- **off-farm activities** (for example, wage labor, marketing activities, artisan production, school).

The patterns that emerge from an analysis of these activities by gender and age may show that some activities are carried out almost exclusively by women while others are carried out by men, and that some are carried out by both. Analysis may also show that for some activities both men and women participate but at different stages. This is most evident in crop production where men may prepare the land and plant, women thin and weed, and the entire family, including children, works on the harvest. How labor and activities are

---

1. The next several sections draw extensively from Feldstein and Poats (1989) and Overholt et al. (1985).

divided among gender and age groups differs markedly across geographical regions, cultural groups, and classes.

G. ACCESS TO AND CONTROL OF RESOURCES

It is conceptually and empirically useful to distinguish between these two rights. "Access to" resources is the freedom or permission an individual has to use a resource in carrying out his/her activities. That permission may include some decision-making power. "Control" is the command an individual has over that resource and over the benefits that derive from using that resource. In other words, access to a resource does not necessarily include the power to control it and the benefits from it.

The concept of "bundle of rights" may be useful in understanding the complex structure of rights that different people in a society have over resources, particularly land. These rights can be likened to a bundle of sticks, with each stick representing a separate right. Some of these sticks include the rights to sell, lease, lend, grant a mortgage, subdivide, bequeath, and inherit. In most societies, not all rights are held by an individual—different sticks are held by different individuals both within and across households. Some rights are held by the state.

The notion of bundle of rights is also particularly useful for examining access to and control of resources within households. A household may own or possess a piece of land with a set of rights defined by society (this may be the national government or the village elder and custom). However, women within the household may hold a different set of rights than the men or the household head. Thus, a woman may be allowed to plant and care for a fruit tree, and to harvest the fruit from that tree. However, she may not be allowed to cut down the tree or do extensive pruning.

Some household members may have indirect access rights to resources and therefore little control over them and their products. A woman may have access to a plot of land through her husband for crop production; however, this should not be taken to mean that she has control over that land. She may work the land but cannot use it as collateral to obtain credit. She may also be restricted as to what and how she can plant, and to the benefits from that production.

In addition to natural resources such as land, water, and trees, other resources needed for agricultural production and household reproduction should be included since they combine to allow a household and its members to produce and reproduce. These other resources include inputs for agricultural production (for example, seed, tools, animal or motor traction), capital and/or credit, labor, and agricultural services such as extension and technical assistance.

Thus, in some societies, women cannot receive credit without consent of their husbands or fathers. In others, women do not control the benefits of their own labor. For example,

women work on cash-crop fields planted by men, but do not have control over the proceeds from the sale of these crops.

An analysis of access to resources should consider not only who has access, who has control, but also how the resources are accessed (are they bought with cash, exchanged for other goods or services, or simply available, such as forests and family labor).

H. FACTORS THAT INFLUENCE ACTIVITIES AND ACCESS TO RESOURCES

The factors that influence which activities an individual undertakes, and his/her access and control of resources are many and varied. They range from macroeconomic and political factors (such as land and income distribution, inflation rates, prices, class structure, and infrastructure), to sociocultural factors and community/ethnic norms and values, and to demographic trends such as migration and family life cycles.

These factors are important because they both restrict what households and individuals can do and determine who will benefit from certain activities. The connection to resources is evident. Land distribution and class structure, for example, will restrict households and individuals within them as to what agricultural activities persons can engage in, as well as their access to and control of resources needed to carry out these activities. These will also determine what benefits different sectors of the population will derive from these agricultural activities and resources. Thus, women from different socioeconomic strata will have different access levels to resources, and may even relate differently to resources and have different benefit levels. For example, women from upper strata may be able to circumvent restrictions to resources, such as restrictions on inheritance of land, that custom denies to lower class women. Sociocultural factors or ethnic norms also influence who can do what. Thus, entire groups, such as women or junior adult men, may or may not be allowed to own land, to plant trees, to drive a tractor, to participate in certain economic activities such as cash-crop production, to fetch water, or to cook a meal.

Development projects often attempt to change or modify these 'external' factors that constrain access and control of resources in order to increase efficiency. If we do not understand how these factors influence the behavior of different people, the goal of efficiency may not be achieved. Many of these factors, however, will not be influenced or modified by development projects and so will have to be considered as exogenous variables. Therefore, it is also important to be able to distinguish which factors can be realistically addressed. In order to minimize unforeseen and unexpected results or changes from these projects, how these external factors influence behavior across gender and affect gender patterns should be understood.

I. CONCLUSIONS

Having reviewed why gender analysis is important in resource tenure research, and some of the conceptual and methodological issues that need to be addressed, this paper will close with

a number of questions that may be considered for future and ongoing projects in China. How have interventions undertaken in the last fifteen years affected the division of labor **within** and **between** households? How has the re-organization of agricultural production affected access to resources for women and for men? What are the legal (both statutory and customary) restrictions to access and control of land and other resources for women? What constraints do women, as de facto managers of agricultural enterprises, face in operating their farms? In other words, do men and women experience different problems in raising agricultural productivity? What services (social and agricultural) have women and men in rural areas gained and lost because of new economic reforms and how does this affect their ability to produce and their well-being? What can be done to improve collection of data on gender patterns at national (for example, agricultural census) and local (for example, case studies) levels?

J. REFERENCES

Aredo, Dejene. 1992. "The Gender Division of Labour in Ethiopian Agriculture: A Study of Time Allocation in Private and Co-operative Farms in Two Villages." Project on African Agriculture, Working Paper, no. 9. New York: Social Science Research Council, July.

Bruce, John, Edward Friedman, Susana Lastarria-Cornhiel, and David Stanfield. 1992. "Consolidating Property Rights in Albania's New Private Farm Sector." Madison: Land Tenure Center, University of Wisconsin.

Charlton, Sue Ellen M. 1984. *Women in Third World Development.* Boulder, Colo.: Westview Press.

Deere, Carmen Diana. 1987. "The Latin American Agrarian Reform Experience." In *Rural Women and State Policy: Feminist Perspectives on Latin American Agricultural Development*, edited by Carmen Diana Deere and Magdalena Leon. Boulder, Colo.: Westview Press.

Feldstein, Hilary Sims, and Susan V. Poats, eds. 1989. *Working Together: Gender Analysis in Agriculture.* West Hartford, Conn.: Kumarian Press.

Irvin, Carol, and Martha Neuman. 1991. "Survey Studies and Gender Analysis at the Land Tenure Center." Madison: Land Tenure Center, University of Wisconsin, July.

Lewis, Barbara C. 1981. *Invisible Farmers: Women and the Crisis in Agriculture.* Washington, D.C.: Office of Women in Development, Agency for International Development.

Overholt, Catherine, Mary Anderson, Kathleen Cloud, and James Austin. 1985. *Gender Roles in Development Projects: A Case Book.* West Hartford, Conn.: Kumarian Press.

COMMENTARY

by **Li Xiaoyun**

Deputy Director, China-German Co-Project,
Center for Integrated Agricultural Development

Ms. Susana Lastarria-Cornhiel's study examined women's problems from two sides. First, she noticed the importance of sex differences and gave some basic assumptions on relationships between sex differences and development, especially on the basis of case studies in many developing countries of Africa and Latin America. Second, she suggested some study methods. She examined the problems at the following three levels: (1) from what angle to begin the research on the relationships between sex differences; (2) what methods are to be applied to observe and study the problems logically, including experiences of many countries and the author's own opinion; and (3) how to collect firsthand data. Dr. Lastarria-Cornhiel put forward some principles. A few years ago I would have thought her ideas merely an intentional fabrication and useless to research. But now I have changed my mind. I would like to put forth the following:

(1) There was an international trend of studying sex differences and development in the 1980s. Poverty and women, and human rights and property rights were placed at the center of international issues, especially when rich countries/groups offered their development assistance and supported development efforts in developing countries. Economic growth, equal opportunities, free trade, and so on, were included, but women's problems were highlighted because any development assistance should meet the needs of the neglected community, which includes women. In the Netherlands, for example, there is a research institute of sociology, where a Master's degree on women's problems has been offered. The same is true in Britain. There is also a general trend in China toward this, but what is more important is to discuss why this has become an international trend.

(2) Research efforts have been made mostly in women's emancipation and their political position, while very few have been made to examine problems associated with development. A symposium on women's development in the Asian and Pacific regions was held in Sichuan Province, China, under the auspices of FAO to promote women's development in our country. The symposium did not attract wide attention due to the absence in research circles of consensus about the importance of women in development. In September 1992, the Conference on Women and Sustainable Development was convened in Beijing, which led the way for the International Women's Conference to be held in 1995. Regrettably, many of us were ignorant of the policy implications of women and development problems, reflecting a backwardness of research in this field.

(3) The main problems in this sphere consist of a lack of social recognition, a shortage of methods to operate, and a poor understanding of the policy implications of research efforts. Our work is preliminary and unsystematic. The following is, in my opinion, important. (1) Women have already participated in the development process and made great contributions in spite of different degrees of social recognition. It is a purely academic dispute whether women should take part in productive activities and so forth. (2) The concept of women in development and measures to development are in accordance with the understanding of development of an entire society. The theory of sustainable development holds an important position in recent theories of social development. Sustainable development implies a comprehensive and effective development of the economy, society, and politics. Equal participation of the whole population of the society is a necessary prerequisite for political and economic equality, stability, and sustainable development. (3) To realize participation of women as equal partners, we should have a women-oriented development policy, and make women involved in the entire process—from the very beginning of policymaking to project implementation and evaluation.

COMMENTARY

by **Li Zongmin**

Doctoral Candidate, Development Studies Program,
Land Tenure Center,
University of Wisconsin-Madison, USA

Dr. Lastarria-Cornhiel's paper is very interesting. She starts from a theoretical background and methods provided by international academic circles on problems related to agricultural development and gender, and then gives an analysis at the macro and micro levels. Dr. Li X. offered his recent experience in a fine commentary on Dr. Lastarria-Cornhiel's valuable contribution. Gender analysis has attracted more and more attention of the experts of various disciplines since the 1980s. It seems to me that the recent literature has concentrated on the role of women in agricultural development. These authors have included economists, sociologists, anthropologists, feminists, and home economists.

On 5 January 1992, I made a survey and gender analysis of land use and labor resources in farm households in Dongyao Village, Yutian County, Hebei Province.[1] It is interesting that the main question in the people's commune period was: Should men and women enjoy equal pay for equal work? At the time, women's work points were only about one-third of those of men, even though the women's work was of the same quality and quantity. In addition, the discussion was strongly politicized. Women's participation in collective labor was considered an indicator of women's emancipation, which was always a clear political goal of the Chinese government. Although husbands were always considered as the heads of the families, they and their wives were equally regarded as ordinary commune members in production teams and had to obey a unified job distribution. Both men and women were deprived of freedom in production.

As the responsibility system was adopted in the late 1970s and early 1980s, the labor-gender problem became prominent because land use and agricultural activities were to be realized family by family. The farm household has become the basic production unit under the responsibility system. The economic functions previously performed by production teams, brigades, or communes have shifted to the households. Farm households are now basic production units, which use, allocate, and manage production resources such as land, capital, and labor. Labor varies according to sex. Men and women have different physical powers and abilities. One has to pay attention to this problem to make labor allocation more efficient.

---

1. See Zongmin Li, "Changes in the Role of Rural Women under the Household Responsibility System: A Case Study of the Impact of Agrarian Reform and Rural Industrialization in Dongyao Village, Hebei Province, North China," LTC Research Paper no. 113 (Madison: Land Tenure Center, University of Wisconsin, 1993).

Labor, as human capital of different sexes, affects the efficiency of land, capital, and other production resources.

My study supports another view of Dr. Lastarria-Cornhiel: female labor is becoming more and more important worldwide in agricultural production. Figures show that about 25 percent of farm households are part-time farm households, in which the husbands are employed in township enterprises, leaving the field work for the wives. Undoubtedly, women are now the main force in agricultural production, but husbands maintain their status of "family heads" and have decision-making powers in production. When we study labor allocation, we cannot neglect the changing labor composition of farm families, their employment structure, age, schooling, housework-to-farmwork ratios of female labor, and so on. Objectively, women have been an ignored factor in China, where the authority of the husband was historically dominant. Comparing the schooling of men and women aged 46–47, on average, the women's level was only about half that of the men's. If women as a production factor become the main source of agricultural labor, will that affect agricultural output? Since women are less educated, will that cause a reduction of planting areas of high-valued crops due to women's low cultural level and shortage of farming know-how? It is certainly an interesting question when we study land allocation and its implications for agricultural input-output relations.

In my case study, I found another important fact: the traditional marriage system in rural China is unfavorable to women's use of land. I will not go into details, but those who are interested in this problem may read my study.

IX. DETERMINANTS AND EFFECTS OF FARM SIZE: PRELIMINARY ANALYSIS OF THE 800-HOUSEHOLD DATA, OUTLINE FOR DISCUSSION

by Shi Zhengfu

Research Fellow, Land Tenure Center,
University of Wisconsin-Madison, USA

A. INTRODUCTION

There is much debate among Chinese agricultural economists on the issue of proper farm size. While the majority opinion regards the current state of farm size as one of the obstacles to agricultural growth, some researchers have different views. Recently, the Land Issues Research Group at the Development Research Center of China has reported results from analysis of the 600-household data set. According to this group, the "current pattern of farm size is not yet an obstacle to efficient use of land; and further increase in farm size will have little effect on land productivity."

More studies on this issue seem to be warranted. This paper is aimed at providing one more test for the debating ideas. Perhaps some concepts for improving the research design in future studies can be obtained.

B. PRELIMINARY FINDINGS

1. FARM SIZE AND OUTPUT LEVEL

Data in table 9.1, from the 800-household data set, are consistent with the results from the 600-household data set: that is, as farm size increases, output per mu decreases at first and then increases.

However, this correlation between farm size and output is not statistically significant in the following regression:

$$MOPT = .0003\,SIZE^{*} + .09\,EDUC - .05\,PF - .05\,MTAX$$

where PF = index for part-time farming, calculated as proportion of income from nonfarming activities in household's total income;
MTAX = amount of tax and surcharges per mu.

TABLE 9.1 Basic indicators classified by farm size

INDICATORS[a]	SIZE[b]					TOTAL
	0–2.5 mu	2.5–5 mu	5–20 mu	20–30 mu	30+ mu	
PIH	3.2	4.39	4.83	5.07	5.74	5.03
EDUC	8.41	8.78	8.82	8.49	9.06	8.76
MOPT	402.6	394.1	492.2	451.9	508.4	464.97
MLB	197.9	179.4	197.0	183.4	148.3	175.74
MLK	124.9	104.8	80.6	75.9	64.8	80.34
MFK	56.73	50.0	100.6	107.1	72	84.6
MY	743.9	906.9	738.0	871.9	1429.2	1008.6
MCONS	376.3	591.2	458.3	994.9	982.5	801.3
Cases	46	110	146	260	234	796

a. PIH=number of persons in each household;
EDUC=highest number of years in school among laborers;
MOPT=mean output of grain per mu;
MLB=mean hours of labor input per mu;
MLK=mean investment of working capital of each farm, 1988;
MFK=mean investment of fixed capital of each farm, 1984–1989;
MY=average net income of each household;
MCONS=per capita consumption of each household; and
cases=number of households in each category of farm size.
b. Size=total mu of land held by each household.

In this model, farm size is the only variable that is statistically insignificant. In other words, there is no support from the data for the claimed positive relationship between farm size and output per mu.

2. EDUCATION AND OUTPUT LEVEL

As indicated in the model, education is positively correlated with output per mu. This is inconsistent with the results from the 600-household data.

3. PART-TIME FARMING AND OUTPUT LEVEL

As in the findings from the 600-household data, part-time farming in this model has a negative effect on output per mu. The reason why this is so may be because part-time farmers are conservative in using inputs. Here are regressions on inputs:

$$MLB = -.19PF + .25COMM - .18SIZE$$

$$MFK = -.22PF - .09COMM - .18SIZE$$

$$MLK = .22PF + .25COMM - .22SIZE$$

Part-time farming in the models has negative effects on the household's use of labor and fixed capital, but is positively correlated with the use of working capital.

To sum up: (1) there is no simple relationship between farm size and output level per mu; (2) the education level of farmers has a positive effect on production, though the effect is quantitatively weak; and (3) part-time farming is negatively correlated with input use and, therefore, has a negative effect on land productivity.

4. Determinants of Farm Size

Farm size is not the result of free choice; instead, it is conditioned by many socioeconomic factors. We regressed farm size on several variables:

$$SIZE = a + B1\ PIH + B2\ LANDTR + B3\ LLI + B4\ EDUC$$

where LANDTR = index of land transactions, measured by the proportion of recontracted land in the household's total land;
LLI = index of local industrialization, measured by the per-capita transfer from TVE (town and village enterprise) to farmers.

I did not include a variable for the arable land per capita, because the information was not available. The results of the regressions indicate that the number of persons in each household and the level of land transactions are positively correlated with farm size, whereas education and level of local industrialization have no significant effect on the size of farm. Why does local industrialization have no effect on farm size? There are two possible explanations. First, the areas where TVE is more developed are usually the areas with less arable land per person. Second, workers in TVE may have the same rights as the villagers to the collectively owned land. Therefore, we should not overlook the possible role of local industrialization in increasing the size of farm.

C. Considerations for Further Research

Several possibilities deserve further investigation:

- selecting a subgroup within the 800-household data set;

- integrating the 300-village data and the 800-household data by using overlapping samples;
- asking more questions on the effects of changes in the land tenure system;
- allowing a longer time coverage and retrospective questions for some variables; and
- using broader definition of the issues for the inclusion of questions on changes in income, occupation, gender, credit market, agrarian technology, and so on.

COMMENTARY

by **Michael Roth**

Senior Research Fellow,
at the Land Tenure Center,
University of Wisconsin-Madison, USA

Unlike some of the other case studies that represent relatively completed analyses, the preceding data set that Shi Zhengfu has provided has only recently been finalized on computer, and most of the work on data analysis still remains to be done. That point should be kept in mind when interpreting the results in his paper. Therefore, my comments will focus on the assessment and interpretation of Shi Zhengfu's very preliminary findings.

First, however, it is important to recognize the many people who make data sets possible—the unseen heroes, so to speak. These are the enumerators, the people who enter and verify data on computer, the people who develop and run the statistical programs, and finally, the researchers. There has been a lot of work put into the data set. When Michael Carter and I had the opportunity to review the data and file structures we found that, by any standards, the data sets appear to be very well organized and constructed, and constitute a rich source of information for future analysis.

Wang Xiyu, in his case study on the Chinese agrarian system (see chapter 6), has pointed out the rather dramatic transformation in the structure of the Chinese economy that took place over the 1978–1987 period. His paper shows a relative decline in the agricultural sector's share of total social value. Conversely, there has been a relative increase in the income share of rural industrial activities and a relative increase in labor spent on nonfarm employment (that is, commerce, industry, construction, service, and "other" sectors).

This transformation from an agricultural economy toward one with a greater industrial and service orientation is having two profound effects on the labor market, according to Shi Zhengfu's analysis. First, there has been a dramatic decline in the amount of physical human labor (total persons) in agriculture. Second, the number of workers in nonfarm sectors has increased. An important question not addressed by his analysis is: What has been the shift in the gender composition of the agricultural labor force? It might be hypothesized, based on limited anecdotal evidence, that a greater proportion of farm activities are now being carried out by women. So that while the agricultural labor force in relative terms is declining, the importance of women in agriculture, on net, may be on the rise.

The current transformation of the Chinese economy raises a number of issues with respect to farm productivity and rural incomes:

- Has the rise in nonfarm incomes created pressures for consolidation of farms and for an increase in farm sizes to maintain parity of income between farm and nonfarm incomes?

- Is part-time farming a durable phenomenon that will allow incomes in the small-farm sector to keep apace with incomes in the nonfarm sector, or is it an intermediate step toward a sector characterized by greater mechanization (to increase productivity) and large farm structures?

- How is farm structure, whether defined by full-time or part-time employment, or by farm size, affecting agricultural productivity, farm incomes, the distribution of income within the household, and poverty?

I would now like to turn to some of Shi Zhengfu's econometric results and add my interpretations of the findings of his regression analysis. In the output regression equation, there does not seem to be a significant relationship between output of grain per mu and total farm size, all other factors held constant. That may in fact be the case, but I would like to suggest two limitations or perhaps two different ways to examine the relationship between farm size and productivity that might produce different results. First, I suggest regressing output per hectare on arable land under cereals (not total land) along with the other variables already included in the model. The reason is that sometimes there are economies of size in marketing that allow larger farms to engage in the production of higher value crops (for example, horticulture). The total farm size variable may be masking a shift to more fruits and noncereal crops as farm size gets larger. If that is true, regressing cereal yields on total land area would lead to confusing and perhaps contradictory results.

The second limitation stems from the relationship Michael Carter discussed earlier (chapter 2): that is, a situation where small farming units, whether part-time farmers or full-time farmers, may be intensively farming very small areas of land with high yields; followed by an intermediate size of farms that may be constrained by labor and capital with low yields; and finally followed by farms with larger farm size, better access to capital, better access to farm machinery, and better access to inputs, with increasing yields. The result is a U-shaped productivity relationship with farm size. The simple linear relationship defined by the output regression model in Shi Zhengfu's paper would not be able to capture that phenomenon should it exist in China.

There has been considerable research done around the world linking agricultural productivity with human capital in the agricultural production function. That body of research consistently shows very high economic rates of return to education. The positive and statistically significant relationship between yields and education in the output regression model would also seem to confirm that relationship in China. The total tax variable in the output regression model appears to be having a negative and statistically significant effect on output. But the analysis raises further questions about which taxes in particular are imposing that negative effect. There is a close correlation between taxes and type of landholding, in particular, between ration or subsistence land and responsibility or contract land. The tax variable in the model, as currently specified, is picking up the net effect of taxes on the two

types of landholding. In future work, the tax effects in agriculture might be made clearer by distinguishing between taxes on subsistence and responsibility land and between land and nonland taxes.

The negative and statistically significant relationship between yields and part-time farming is particularly interesting. It indicates that for any level of farm size and education, being a part-time farmer tends to have a negative effect on agricultural productivity. Two further regressions examine the relationship between part-time farming and labor use (hours of labor/mu) and between part-time farming and working capital invested in farming operations. The statistical analysis indicates that being a part-time farmer tends to have a negative effect on labor demand but a positive effect on working capital, suggesting the substitution of capital for labor in the farming enterprise. This is a relationship that we are observing in Africa and Latin America, particularly in peri-urban situations, where households use nonfarm employment to increase capital in the farming operation and to increase the productivity of farm labor. I do not want to overemphasize this relationship here because it is indeed very complex, but two testable hypotheses emerge: (1) due to capital constraints in agriculture, small farmers in China are seeking nonfarm employment to increase capital access; and (2) due to a widening gap between wages in the industrial economy and farm earnings, households are seeking part-time farming as a remedial measure to maintain income parity. Whether the latter phenomenon is leading to farm concentration or to greater numbers of part-time farmers would depend on the substitution of mechanization for human labor in agriculture, for which no data are reported.

Interestingly enough, Shi Zhengfu's findings show that farm size is negatively related with all types of inputs: the larger the farm, the less labor; the larger the farm, the less working capital used; the larger the farm, the less fixed capital invested. There are possible measurement errors here in trying to develop costs for fixed equipment, buildings, and the like, but it may suggest that full-time small farmers are relatively more efficient in intensively employing inputs in the production process. This inverse relationship between labor use and farm size also suggests the positive effect of small farm size on labor absorption.

Finally, Shi Zhengfu's findings on the determinants of farm size—that is, that size increases with number of residents in the household and with the percentage of recontracted land out of total land held by the household—are very consistent with the data reported in He Daofeng's paper, "Changes in the Rural Land Tenure System at the Village Level" (chapter 4). According to He Daofeng's analysis, landholdings in the study villages increased when people were born or upon marriage into the family. Given the process of industrialization and the shift of labor to nonfarm activities that is taking place in the Chinese economy, important questions should be raised about the effects of this transition on farm size. According to He Daofeng's analysis, if an individual goes to the nonfarm sector, only 10 percent of the 300 villages studied diminished the amount of land allocated to the household. Thus despite the loss of family labor to urbanization or to employment in the manufacturing sector, the effect on farm size would be minimal. The proportion of recontracted land would be expected to increase with larger family size or with larger work force in agriculture, but the fact that both the family size and the recontracted land variable is significant in the farm size regression suggests that adjustments in recontracted land are being determined by other factors beyond

family demographic changes alone. Future work should attempt to isolate these factors. Also, I would like to propose that in future work the analysis be extended to examining the impact of economic factors (income, profitability) and exogenous forces (nonfarm wage rates) on farm size.

Shi Zhengfu's analysis raises a number of very important and useful hypotheses for further work with the data set. It is an important first step in using a data set to examine a very important question, that is: How is productivity influenced by farm size? His preliminary findings underline the importance of the data set as a resource for testing this and other hypotheses.

COMMENTARY

by **Zhu Ling**

Associate Research Fellow,
Institute of Economics,
Chinese Academy of Social Sciences

Mr. Shi Zhengfu's paper is very informative. I think Shi's study of 800 farm households is important because it contains a series of firsthand data from the whole country. A correct analysis of these figures will be a positive contribution to policymaking on land issues in China. I would like to focus on the following:

First, China began rural reforms by changing landownership. There are millions of family farms in China, but they are far different from those in the West both in scale and in formation. The first question is: Are Chinese family farms efficient? I assume that the most important criterion is whether agriculture under the family farm system is able to ensure sufficient food for the population. This is also the first indicator with which the Center judges performance of local governments. As for farmers, their ultimate goal is an increase in family income rather than output alone. There is a discrepancy between the behavior of government and that of farmers. Many academicians accuse small-scale farms of low efficiency in land use for agricultural production. I had supported this view in the past, but I have changed my mind after a study trip to India. Farm households will make full and effective use of their land only when their ownership of farmland property rights is definite, and food security will then be improved. The poverty of many people in India was caused by their inability to acquire land. The remarkable reduction of poverty in China since the reform is associated mainly with the introduction of the household responsibility system, under which farmers possess partial land use rights. Farmers successfully realized food self-sufficiency not only for themselves but also for the country. We must pay attention to policy implications on farm households when we work out a land circulation policy. It will be more realistic and urgent under the circumstances of liberalization of agricultural prices, because farmers will have to face awesome market pressure in their efforts to raise their income levels and guarantee food supplies.

Second, the study was carried out at the village level. This is a unique merit in project design. Since rural land belongs to the village community, we must consider the influence of this landownership form on the circulation of production factors.

Third, we should have a clear understanding of Chinese reality when discussing farmland scale and its efficiency. What can we do if farmers have no chance to enlarge their land scale, or have no reason to give up their contracted land? Land scale enlargement is necessarily accompanied by rural labor transfers and the process of rural industrialization. I

suggest that Mr. Shi take more notice of our current situation in rural China, including the goals of national food security and food self-sufficiency of farm households, and differentiate between government and farm family behavior.