AGRICULTURAL DEVELOPMENT AND PEASANT BEHAVIOR IN CHINA DURING THE CULTURAL REVOLUTION

by

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ABSTRACT

Regional data were collected from the People's Republic of China and were analyzed in order to identify the economic effects of agricultural policies and peasant behavior during the Cultural Revolution (1966-1976). There are two perspectives on the Maoist policy of grain self-sufficiency implemented during the Cultural Revolution. (1) The Chinese government holds that an overemphasis on the production of grain caused a national collapse of cash crops. This view is supported partially by some Western scholars who have reviewed data from specific regions. They argue that grain self-sufficiency in traditionally cash-crop producing areas led to a loss of comparative advantage and a decline in cash crops. (2) In contrast, other Western analysts argue that national data do not substantiate the claim of a cash-crop collapse and that peasants in fact put a great emphasis on cash-crop production.

This study makes the following findings: (1) The policy of self-sufficiency did not lead to the suppression of all cash crops in favor of foodgrains. Although the Maoist government placed intense pressure to stop cultivation of certain cash crops--such as sugar cane and bamboo--that tended to be sold in private markets, it promoted the growth of other cash crops--such as cotton and oilseeds--that were grown collectively and procured by the State. (2) To increase the output of both cash and grain crops, the Maoist government adopted a "Double-Harvest" Strategy that featured an intercropping technique of growing wheat and a cash crop interspersed with each other. Self-sufficiency meant that localities had to intensify the production of both cash and grain crops, but had to do so by utilizing their own resources. (3) The successes of the intercropping techniques depended on the resources available in specific regions and on the peasants' self-interest. For example, the Double-Harvest Strategy faced severe problems in implementation in the resource-poor North China Plain. There, the peasants faced the technical constraints of the

"three contradictions"--inadequate water, labor, and fertilizer. Forced to concentrate their limited resources into one crop, the peasants followed their "subsistence first" instincts and channeled inputs out of traditionally grown cash crops into grain production. Therefore, cotton and peanut production collapsed in the North China Plain and wheat production increased. (4) However, in regions where resources were more abundant, peasants followed their economic self-interest. In parts of South China, peasants were able to meet their subsistence and to increase production of cotton, peanuts, and other cash crops when they had the economic incentives to do so, specifically when the prices of cash crops increased in the early 1970s. (5) These major cropping shifts across regions during the Cultural Revolution have implications for egalitarian regional distribution, one of the main goals of Maoist policy. A preliminary analysis finds that the Double-Harvest Strategy had a regressive effect on regional equality.

This study makes two important conclusions: (1) The research provides new evidence that, while certain cash crops collapsed in specific regions, new and significant patterns of cash-crop growth emerged elsewhere. This finding argues against the Chinese claim that cash-crop production collapsed nationally under a Maoist pro-grain ideology. (2) The research provides empirical support to the rational model of peasant behavior. The diverse regional patterns found in this study can be explained not by policies and ideologies of the country's leaders; rather, they can only be explained by the rational nature and actions of the common people in China's vast countryside.

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Finally, I thank my entire family for their support, tolerance, and love.

This dissertation is dedicated to the graduates of the Beijing Institute of Aeronautics and Astronautics, Beijing, China. I salute their creativity.

Table of Contents

Figures

Maps

Tables

Table of Conversions

Systems of Measure

Chinese	Standard	Metric
Area		
mu	acre	hectare
1.00	0.23	0.07
4.32	1.00	0.29
14.99	3.47	1.00
Weight		
Jin	lb	kg
1.00	1.10	0.50
0.91	1.00	0.45
2.00	2.20	1.00
Yield		
jin/mu	lb/acre	kg/ha
1.00	4.75	7.50
0.21	1.00	1.58
0.13	0.63	1.00


Map of China
Heilongjiang
Jilin
Nei Monggol
Liaoning
Xinjiang
Gansu
Ningxia
Hebei
Qinghai
Shanxi
Shandong
Jiangsu
Henan
Shaanxi
Xizang
Anhui
Sichuan
Hubei
Zhejiang
Jiangxi
Hunan
Guizhou
Fujian
Yunnan
Guangxi
Guangdong

x

> ...the instructions from Chairman Mao just didn't work. There was no way to interpret his vague directives and implementing them proved impossible. The peasants brought me to this conclusion; I will always thank them.
>
> Dai Hsiaoai, a former Red Guard

CHAPTER 1

INTRODUCTION

According to the latest Chinese census, conducted in 1982, there are 800 million people in the countryside of the People's Republic of China (PRC), comprising approximately 18% of the world's population (National Statistical Bureau, 1984, p. 93). The main premise of this dissertation is that to understand the pattern of agricultural development in China, specifically during the Cultural Revolution (1966-1976), analysts need to understand the significant role this vast number of peasants played as economic decision makers and actors. To define this role, I will establish that there is a causal relationship between peasant motivation and action, on the one hand, and significant patterns of Chinese agricultural growth and development, on the other. More precisely, I propose that Chinese peasants acted in their self-interest in accordance with the economic condition of their region, even as China was undergoing one of the world's most dramatic socialist movements--the Cultural Revolution. Collected data show divergent cropping and growth patterns in

different regions in China. These patterns of agricultural development cannot be explained by the ideologies and policies adopted by the country's elites; rather, they can only be explained by the nature and actions of the common men and women of China's vast countryside.

Chinese and Western Analyses of Peasant Behavior

Chinese peasants and their role in shaping agricultural development have not been studied in Chinese analyses. Since Liberation, Chinese scholars, writing from a Marxist perspective, have treated peasants as a class whose interests are represented by the Chinese Communist Party (CCP). Therefore, they have assumed that policies adopted by the CCP on the national level devolve through the administrative levels and are accepted by the peasantry. Chinese writers typically direct their descriptions and analyses at policy and ideological levels without attributing any role to the peasantry. One indication of this neglect is that there are no articles on peasant behavior in two of China's leading agricultural development journals, Problems in Agricultural Economics and The Economics of Agricultural Technology, from 1979 to 1983, when reference to the Cultural Revolution was made extensively. Moreover, Chinese writings, in most cases, have become instruments of the State. Therefore, studies have been used primarily to justify, support, and propagate the policy and ideology of the government. For example, in a study of China's agriculture from 1949 to 1985,

state officials attribute all the failures in agricultural development to "leftist tendencies" and all the successes to the Party's correct reforms and readjustments, specially those policies adopted by the Deng government since 1979 (Agricultural Publication Society, 1984).

Compared to their Chinese counterparts, Western scholars have shown a much greater interest in the effects of state policies on Chinese peasants, even though they have not had much access to the Chinese countryside. Travel by Western scholars to villages has been and still is restricted and orchestrated by the Chinese government. Although data on model communes and brigades have been available on a limited basis, they are open to questions as to how valid and how representative they are. Village level studies by Western scholars have been relatively more available only since the late 1970s (Burns, 1981; Parish, 1985; Huang, 1990; and Potter and Potter, 1990).

The perspective among Western scholars on the role of peasants in rural development has changed significantly since the founding of the PRC. From the 1950s through the mid-1970s, Western analysts tended to view China as a monolithic entity in which the polity, bureaucracy, and society were integrated. Linking together ideology, party apparatus, and all aspects of Chinese life down to the village level, Schurmann (1968, p. 11) has been influential in advancing this view. He states that "in Communist China, man (or woman) lives, works, and rests in organization." There is an

implicit assumption within this view that ideology is being carried through the State's organizational network and that peasants agree to policies as part of an integrated whole. Solomon (1971) also links ideology with society. He argues that Maoism is not an accident of history, but grew out of a distinct Chinese political culture. By implication, the Chinese peasantry embraces the Maoist ideology in turn. Townsend (1967) states that China's vast institutions have been able to organize the people to participate in many aspects of political life. Pye (1968) states that the Chinese place an inordinate amount of faith in ideologies. These works contribute to the perception that peasants do not act independently of state actions. Ignored for the most part is the question of how well policies actually are carried out by cadres and accepted by peasants in the broad countryside. One exception to this prevaling view is taken by Berstein (1968). He states that peasants did not follow state directives meekly, but rather, they objected to the "commandism" of the State. He further argues that peasants actively exerted their influence on local cadres. As a result, team and brigade cadres found themselves not only having to follow directives from above, but also having to respond to pressures from below.

When China opened its door to the outside world in the 1970s, Western observers were able to get a glimpse of the impact of Maoist ideology first hand. They were impressed by model communes, clean health clinics, efficient small

enterprises, and apparently diligent and happy citizenry. Accounts of excited travellers fostered an image of a socialist model that had eliminated crime, achieved sexual equality, developed balanced industrial and agricultural growth, and promoted income and status equality. Indication during the 1970s was that China's ideological programs had been implemented and turned into economic and social successes in the countryside (Myrdal and Kessle, 1970; Buchanan, 1970).

Since 1979, however, China has revealed that the Cultural Revolution did not bring about all the successes in the 1970s that were commonly believed. Foreign companies involved in joint ventures found that years of the "Iron Rice Bowl" have made workers undisciplined and lazy. In addition, there were shocking stories about persecutions suffered by many intellectuals and party leaders during the Cultural Revolution. Moreover, Chinese publications began to argue that Maoist policies were grave failures. In agricultural development, Chinese scholars argue that China's terms of trade between agriculture and industry turned against the peasants (Hu Changnuan, 1979) and that there were many significant areas of chronic rural poverty (New China Monthly, 1981).

Since the appearance of these Chinese critiques, Western scholars have begun to investigate more deeply how well Maoist policies were actually received by the Chinese people. Mao Tsetung's mass movements, once viewed with approval for

their spontaneity, lofty ideals, and mobilizational successes, have been re-examined for their actual impact on political outcomes on the village level. Peasants who once were thought to be reading and following Mao's Red Book religiously are now re-examined as to whether they could have actually followed those ideologically inspired policies in the face of the grim realities of peasant life.

Since the late 1970s, a number of analysts have focused on how well policies are actually received by the Chinese people, and on how much those policies conflict with the economic interest of the peasants and the social institutions of rural China. One of the early works with this approach is Shue's 1980 study in which she argues that the state procurement system was well received by the peasants during the land-reform movement in the early 1950s. Specifically, she argues that grain procurement worked because government policy was realistic. Grain security and high prices, two practical concerns of peasants, were used to gain peasant support of the new government's policies.

Other authors, focusing on later, more radical, periods of Chinese Communist history, in contrast, are critical of the fact that ideology and pragmatic implementation were not bridged. Zweig (1989, p. 74) argues that there was an "elite-mass gap" during the Cultural Revolution. He states that rural development policy during that period was actually formed by a small minority in the upper echelon of the government. Despite the propaganda campaigns carried out in

newspapers, Maoist ideology and policy did not devolve into the countryside. Significantly, Zweig argues that peasants and cadres did evaluate the policies of agrarian radicalism, which, in most cases, were far from the pragmatic. Rather than carrying out the directives, however, they interpreted the policies and responded to them in light of their own self-interest. The cadres, who generally came from the ranks of peasants themselves, "buffered" broad radical policies and adjusted directives to fit the interests of conservative peasants.

In her study of peasant-state relationships, Oi (1989) condenses that interaction into a question of who controlled the surplus in the countryside. She concludes that when it came down to who gets the surplus, the peasants, cadres, and officials were not motivated by ideological commitment. Rather, she describes a "clientelist system of peasant-cadre relationship" that allowed cadres and peasants to circumvent state policy goals and targets. Although cadres were the most important actors in carrying out state policies dictated by brigade, commune, and county leaders, they also reflected the common view among peasants that those bureaucrats merely expropriated resources from the countryside. As a result, they adopted many "back door" methods that appeared ideologically correct, but covertly benefitted their self-interest. These included hiding production, falsifying accounts, and manipulating policies. Although political power might have changed hands in the villages as a result of

Mao's attack on bureaucracy, the methods of collusion and patronage remained.

Madsen (1984) delves even more deeply into peasant behavior--into the psychology of the peasant leaders. His argument is that it was not Maoist ideology, but the character of Chinese peasants, that determined political outcomes at the village level. In a case study of a village in Southern China, Madsen finds that the youths sent from the cities to the countryside were the only ones who followed Mao's selfless ethics. There they were first grudgingly tolerated and eventually ostracized, never really accepted or followed by the peasants. The main body of peasantry did not embrace official communist ideology, but tended to integrate Maoist ideology into their own traditional Confucian value system.

Shue (1988) agrees with Madsen that state policies often did not penetrate into the countryside. She offers a model of "cellular" patterns to characterize Chinese peasant economy, with the State being linked tenuously to these cells by the local cadres. This model differs significantly from the earlier model set forth by Schurmann (1968), who assumed a strong vertical integration of ideology and society.

The underlying theme throughout these works, besides the conclusion that Maoist idealism did not turn into reality in the countryside, is the perspective that the Chinese peasant is an economic rationalist, primarily concerned with his or her self-interest. The selfish nature of the peasant is

contrasted against the State's ideology of selflessness. Peasants did not provide the popular support that was aggrandized in state models and slogans; they were concerned with direct financial gains for themselves and their families. These studies concentrated on the tension that local political leaders on the team and brigade levels faced as middle persons, who were caught between the State and the peasantry and within a new political structure that made tremendous demands on them.

I assert that peasants acted according to their own self-interest during the Cultural Revolution and provide evidence that peasant economic behavior, more so than state national or regional policy, can explain the patterns of agricultural development across China. I hope to make a contribution by linking a model of the rational Chinese peasant to economic data and regional patterns of agricultural development. In effect, I present empirical support for a prevalent view among Western scholars that peasants acted rationally during the Cultural Revolution.

Methodology and Organization of the Study

The methodology that I will use is basic induction. Kuhn (1962) has described a process of learning whereby (a) there is a prevailing theory; (b) information and data are gathered that increasingly contradict that theory; (c) finally the theory is discarded because it can no longer explain the preponderance of the data; and, (d) there is an

examination of other theories and ascendency of one new theory that can explain the facts. I will follow this simple, but basic, methodology.

In Chapter 2, I will review the current perspective on agricultural development during the Cultural Revolution in both the Chinese and Western literature. I will examine the existing data against facts that I have collected from Chinese sources; and argue that the prevailing theory is inadequate in explaining the bulk of the data and information. Chinese scholars and policy makers hold the view that leftist pro-grain ideology suppressed cash-crop production throughout China during the Cultural Revolution. This assertion is based on statistics that show a significant decline of cotton and oil-seed production in certain regions. However, I have found data that show significant patterns of growth of those crops in many other regions of China. Moreover, national data on cash crop production do not indicate any significant decline. Also in Chapter 2, I will examine and reject the possibilities that the growth of cash crops was either due to a short period of moderate policies in the early 1970s or due to regional policies that allowed for cash crop production in specific localities.

In Chapter 3, I will develop the argument that the diverse patterns of crop choice and growth across different regions of China can be explained by peasants acting rationally according to the conditions of their region. I will present three Chinese lines of peasant behavior--Maoism,

central planning, and market socialism--and two Western models--moral economy and rational peasant. Furthermore, I will argue that the rational-peasant model can be applied to Chinese peasants even though they live in a socialist system.

In Chapter 4, I will assert that the policy during the Cultural Revolution was not to raise grain production at the expense of cash crops. In actuality, Maoists sought to increase both cash-crop and grain output through new intensive cropping patterns under a Double-Harvest Strategy and through ideological persuasion. The practical problem of implementing the Double-Harvest Strategy and how the peasants reacted to this strategy will be discussed in Chapters 5, 6, and 7.

The most important new intensive method behind the Double-Harvest Strategy was intercropping a winter crop of wheat with a summer crop of cotton. Another important method was intercropping wheat and peanuts. However, producing a double harvest through these new techniques required significantly more labor, fertilizer, and water than the traditional, less-intensive methods. Maoist leaders never accounted for the problem of insufficient resources for producing both subsistence and cash crops, a crisis that the peasants referred to as the "three contradictions of labor, water, and fertilizer." In its stead, the peasants were told to be self-sufficient, as revolutionary spirit was pronounced as all that was required to overcome the obstacles. The Double-Harvest Strategy was not a clear, pragmatic plan with

workable instructions. Targets were fanciful, while the increasing costs of production and the shortage of inputs were painfully real.

Specifically in Chapter 5, I will examine how the Double-Harvest Strategy encountered different technical constraints in various counties and regions in North and South China. I present data to show that cotton production stagnated in traditional cotton-growing areas of the North, but it increased significantly in the South. In Chapter 6, I will argue that peasants reacted to the Double-Harvest Strategy by following policies to some extent to protect themselves politically, but generally pursued their economic self-interest and, in some areas, their self-preservation. For example, in the North China Plain it became more economical to grow grain instead of cotton because the cost of producing the latter had increased dramatically. As a result, peasants fulfilled their quota by planting the targeted amount of cotton land, but did so on the least fertile land and allocated little input to that crop. Chinese peasants described this common phenomenon as turning "patriotic land" into "perfunctory land" (Yang Derou, 1980, pp. 53-55). Consequently, cotton production in the North China Plain declined and grain output increased. In the South, water availability and good weather made the intensive cropping patterns of the Double-Harvest Strategy more realistic. Significantly, peasants there were able to devise separate systems for cultivating cotton and their subsistence crop

(rice), while at the same time, keeping the cost of cotton production relatively low. Their grain subsistence production secured, peasants were willing to grow cotton after an increase in cash crop prices in 1972, and did so at a much faster pace than their counterparts in the North.

The shift in cotton production from the North to the South can be explained by the rational behavior of peasants, not by the policy of the State. The same argument can be applied to the production of three oil seeds--peanuts, rapeseed, and sesame. In Chapter 7, rational peasant behavior is used to explain why peasants in the traditional peanut-producing areas reduced peanut output drastically, while peasants in South China expanded production. It is also the explanation for why output of one oil seed--sesame--collapsed, but the production of another--rapeseed--expanded into eight major regions throughout China.

The fact that there were major cropping shifts across regions during the Cultural Revolution has implications for egalitarian regional distribution, one of the main goals of Maoist agricultural policy. The Double-Harvest Strategy, which did not redistribute resources but called upon local self-sufficiency, is hypothesized to have a regressive effect on regional equality. This particular side effect of the Double-Harvest Strategy is explored in Chapter 8.

Validity of the Data

The data in this study can be divided into two groups: those published in China prior to 1979 and those published in China in 1979 and thereafter. In 1979, the Chinese government began to re-establish the universities and the research institutions that were dismantled during the Cultural Revolution. A renewed emphasis was placed on gathering and verifying statistics. In contrast to the Maoists in control during the Cultural Revolution, the Deng government perceived gathering data and information as an important part of socialist planning and policy adjustments. Therefore, I have accepted the validity of the data published in 1979 and thereafter, as do many Western economists today (Perkins and Yusuf, 1984; Lardy, 1983; and Piazza, 1986). Earlier in this chapter, I criticized Chinese scholars for focusing their writing on policy and ideology, primarily to support and justify state actions. Generally, I disagree with their interpretation of the data and the selective use of the data; however, I have general confidence in the validity of the statistics themselves.

The data that were published in China during the radical periods prior to 1979 are open to skepticism. Information about the accomplishments of model communes often appeared in the press during the Cultural Revolution. These models, as pointed out by Zweig (1989, pp. 39-40), were made to appear to have succeeded by political factions for the purpose of launching specific policies. Therefore, data on these models

are used in this study not as valid information, but as a reflection of the policies being advocated.

The data used in this study are primarily from the provincial and county levels. This study is based on information and data on Hebei, Anhui, Shandong, Henan, Guangdong, Hunan, Hubei, Guangxi and Jiangsu--nine of China's main agricultural provinces; Shanxi, Yunnan, and Qinghai--three outlying provinces; and, the Municipality of Shanghai. In all, there are approximately 510 million people in the agricultural sectors of these areas, comprising 60% of China's agricultural population (Chinese Agricultural Yearbook Compilation Committee, 1986, p. 119). Because of this broad base, the conclusions drawn in this study can be applied to China as a whole.

Each family grows one plant of cotton,
and each person grows one flower.

The peasants' view of the
proliferation of cotton in Anhui

CHAPTER 2

CRITIQUE OF THE PERSPECTIVES ON AGRICULTURAL DEVELOPMENT DURING THE CULTURAL REVOLUTION

Policy makers and scholars in the PRC today adopt three rigid, but interrelated, lines on what happened to agriculture in their country during the Cultural Revolution. One dominant view is that during that particular period of leftist control, the policy of local grain self-sufficiency, promoted nationally under the banner of "taking grain as the key link," 《以粮为纲》 suppressed the production of cash crops in favor of grain. The Chinese publications of the late 1970s and early 1980s on agriculture generally had an obligatory paragraph that denounced the pro-grain/anti-cash crop policy of the "Gang of Four" (a catchword that represented the left, not merely the four specific individuals who were most prominently in power from 1974 to 1976). To show the shortcomings of this Maoist policy, the Chinese routinely cite such areas as Jin County in Hebei Province, where cotton output decreased by 61.4% from 1965 to 1976 (Shen Jianguo et al., 1983, p. 26) and Henan Province, where the amount of cotton land dropped by 50% from 1956 to 1979 (National Agricultural Area Planning Committee, 1981, p. 72). These data are used to support the argument that cash-

crop production collapsed under an extreme pro-grain policy.

The second view held by the Chinese is that this low output of cash crops was caused by the dispersed planting that resulted from the pro-grain policy. Because communes which historically had devoted high percentages of their production to cash crops were forced to lower those shares, a pattern developed whereby cash-crop planting was scattered in small patches across many regions. For example, Chinese agricultural economists note that "the country's 70 million mu of cotton land are scattered over 1,200 counties, of which 700 counties have less than 50,000 mu," and they argue that "scattered planting and planting on land not fit for cotton are important reasons why our country's cotton production cannot advance" (Xu Peixiu, 1982, p. 218). This is a clear criticism of the leftist policy of regional self-reliance, in which concentration of resources into high-yielding lands favored by moderate planners, ostensibly implemented during the Reconstruction Period (1962-1965) and during the post-Mao era (1979-present), was rejected in favor of equalized production across regions.

Third, the Chinese criticize this pro-grain policy as having been put into effect in "one sweep of the sword;" that is, the policy was applied across the entire nation without regard to local agricultural variations. The result was a nation-wide collapse of cash crops. The object of this criticism is Maoist commandism and centralization; that is, Maoist policies were forced upon the peasantry everywhere in

the countryside and were carried out to the detriment of many regions.

The Western Debate on the Policy of Grain Self-Sufficiency

Western analysts hold two perspectives on the effect of the policy of grain self-sufficiency on agricultural production. Perkins and Yusuf (1984, p. 36) find that the national data on cash-crop and grain production do not substantiate the claim that leftist policy devastated cash-crop production on a widespread basis. They argue that "despite the government slogan about taking the grain as the key link, Chinese farmers have also put greater emphasis on cash crops (Perkins and Yusuf, 1984, p. 36)." They state that most cash crops had a higher rate of growth than grain from 1957 to 1980, and that the share of agricultural land used for cash crops nationally actually increased modestly during that period. Moreover, the growth rate of cotton output was 1.4% from 1965 to 1975 and 2.6% from 1976 to 1980. While these growth rates represent declines from the levels of 4.7% and 3.1% reached during the First Five-Year Plan (1952-1957) and the Great Leap Forward/ Reconstruction Periods (1957-1965), respectively, they do not indicate the drastic decline that leftist policies had supposedly wrought (Perkins and Yusuf, 1984, p. 35, t. 3-5).

While Perkins and Yusuf (1984) use national cropping data to refute the Chinese claim that grain self-sufficiency caused the collapse of cash crops, Lardy (1983) examines

regional data and finds that a significant decline in production of specific cash crops did take place in various regions. Lardy (1983, pp. 57-64) has done a far more sophisticated analysis of the effects of the grain self-sufficiency policy than any Chinese economist. He argues that the pursuit of grain self-sufficiency during the Cultural Revolution meant the loss of comparative advantage. Regions such as the North China Plain, the Loess Plain in the Northwest, and Southwest China were forced out of their comparative advantages in various cash crops and animal husbandry, and they did not come close to achieving comparable growth when they were forced to grow grain. Significantly, this forced shift in production and loss of efficiency led to loss of income. Peasants in these areas, once moderately rich growing cash crops, became very poor growing grains. Hence these areas comprised the main share of impoverished counties that had less than 50 yuan of annual income at the end of the Cultural Revolution (Lardy, 1983, pp. 175-185).

Zweig (1989, p. 55) agrees with Lardy and Chinese analysts, arguing that "the political priority placed on self-reliance led to an overemphasis on grain production to the detriment of economic crops." More significantly, Zweig (1989, p. 126) refines Lardy's argument of regional cash-crop decline by identifying specific cash crops that were the target of state suppression. He argues that the State was intent on suppressing cash crops that could be grown in private plots. These included "cash crops such as bamboo,

sugar cane, and tree seedlings, as well as vegetables such as tomatoes, cabbages, and onions (Zweig, 1989, p. 126). Maoists did not have any ideological misgivings against cash crops per se; rather, they were against privatization and opposed those cash crops that could be readily brought to rural markets.

Introduction of New Regional Data

My analysis of regional data supports the argument by Perkins and Yusuf (1984) that the policy of grain self-sufficiency did not lead to a collapse of cash crops. Specifically, the official Chinese lines and the corollary Western analysis cannot fully explain many important patterns and conditions in agriculture during the Cultural Revolution.

To begin with, there are inconsistencies within the Post-Cultural Revolution Chinese lines of arguments themselves. If the State had suppressed production of cash crops, as stated in the first view presented earlier in this chapter, why did so many counties grow cash crops and why were they willing to do so at such low yields so as to form the spread pattern indicated in the second view? In essence, the Chinese are arguing that cash-crop production lost its traditional economies of scale under this Maoist policy. However, it begs the question as to why so many cash-crop farmers would suffer the losses and grow cash crops at all, and why peasants in areas that traditionally were not cash-crop growing regions--and hence presumably did not have a

comparative advantage--also took it upon themselves to grow cash crops.

Lardy's position that regions became poverty stricken because they were forced to grow relatively low-yielding grains instead of their traditional high-yielding cash crops is similarly incomplete. It is logical to expect that peasants in a totalitarian society will conform to party policy, but is it not too much to expect them to adhere to a policy that leads them into abject poverty? That is, a peasant in extreme poverty will do anything to keep "his head above water" (Scott, 1976, p. vii). Would they have followed such an extremely radical policy against their survival instincts? Were there factors other than a pro-grain policy that caused the decline in cotton production and income?

More importantly, there are certain facts that the "grain as the key link" theory and the "loss of comparative advantage" theory cannot explain. There are many regional production patterns of cash crops and foodgrains that contradicted the accepted Chinese lines.

First, cotton production did stagnate in the North China Plain, as pointed out by Lardy and by Chinese economists; however, it also grew at a moderate pace in regions near the North China Plain and increased at respectable rates in South China. For example, the Nanyang region of Henan, which was adjacent to the North China Plain, increased cotton output by 3.2 times, from 30.0 million jin in 1965 to 95.8 million jin in 1979. The cotton-output share in that region grew from

11.1% of Henan Province's total output in 1965 to 24.2% in 1979 (Henan Province Academy of Sciences, Geographic Research Institute, 1982, pp. 66-67, map 19). Similarly, from 1966 to 1976, cotton yield increased by 38% in Hunan Province (Hunan Agricultural Geography Group, n.d., p. 55). In the fertile regions along both banks of the Long River (but to the south of the Huai River) in Anhui Province, a region that had not been known for cotton production, such cultivation increased by 40%, from an average of 1,870,000 mu in the 1960s to 2,620,000 mu in the 1970s (Yao Junze, 1984, p. 10, t. 1).

While the decline in output in the North was significant in and of itself, the rise in output in the South formed with it a definite and dramatic North-South shift in the pattern of cotton production that was even more significant. If there had been a national policy to suppress cash crops in favor of grain, why then did cotton production increase in the South? If comparative advantage could be used to explain the demise of peasants' income in the North China Plain, what changes occurred in the South that made it more beneficial for peasants there to grow cotton? These questions remain unanswered in the Chinese literature.

Secondly, such cash crops as rapeseed declined considerably in Yunnan Province and other regions in the Southwest, ostensibly suggesting the effects of a pro-grain policy; however, new regions of rapeseed production sprang into existence during the Cultural Revolution. For example,

rapeseed became a new and prominent source of vegetable oil in Henan (replacing peanuts), Qinghai, and other regions in the North. After 1970, national rapeseed cultivation increased approximately 3 million mu per year. In the second half of the Cultural Revolution, sown area increased 59%. Most noticeably, areas cultivated on the Yellow and Huai River Plain increased 3 to 5 fold, and in some places as high as 10 to 20 fold (Chinese Academy of Sciences, Geographic Research Institute, Economic Geographic Research Group, 1983, p. 214).

The same line of argument applies to peanut production. From the mid-1950s to the mid-1970s, the peanut-sown area declined by 25% in Shandong, 50% in Hebei, and 70% in Henan (Jiang Dehua, 1982, p. 210). The corresponding reduction in peanut output in these three northern provinces is attributed to the pro-grain policy. However, little attention is paid to another trend elsewhere in China: during the same period, peanuts emerged as an important crop in the South, as output there grew by 35% (National Agricultural Area Planning Committee, 1981, p. 76). In particular, area sown to peanuts increased by 70% in Guangdong Province in Southeastern China (Jiang Dehua, 1982, p. 210).

Economists in China generally have not answered the question of why cash crops emerged in new regions during the Cultural Revolution if the policy dictated suppression of such crops in favor of grain. Those few economists who have acknowledged that such a phenomenon even existed simply

attribute it to a leftist policy of self-reliance carried to "extreme ridiculousness." That is, under the goal of self-sufficiency, an area would attempt to achieve a "self-contained mini-economy" by growing its own cash crops, regardless of whether the conditions there had been appropriate or not, in addition to its quota of foodgrain. For example, they dismiss the emergence of peanut production in Guangdong because it was grown on land "not fit" for peanuts. They ridicule this trend of new cash-crop regions by the catch phrases "南茶北引", and "南竹北移", meaning that some localities in the north have even tried to grow tea and bamboo, which are tropical crops (Jiang Dehua, 1982, p. 210).

One problem with this line of analysis is its inconsistency. Regions that did not grow cash crops are used as examples of a failed policy, yet at the same time, regions that did succeed are dismissed as examples of that same failed policy. Henan Province is criticized for not growing peanuts, while Guangdong Province is chastised for growing that same crop. More technically, this criticism fails to explain exactly why the new crops springing into production were inappropriate for that region. For example, the Chinese line of argument does not account for why cotton and rapeseed yields in terms of output per mu increased noticeably in many areas. Such increases suggest greater productivity in land as a unit of input.

There are two plausible explanations as to how cash crops could have achieved growth during the Cultural

Revolution even within an overall pro-grain and anti-cash crop policy framework. The first is that the cash-crop growth could have been caused by moderate policies in the early 1970s, even though radical policies suppressing those crops were the main line throughout most of the Cultural Revolution. Zweig (1989, pp. 50-73) has identified five periods of rural policy from 1966-1978: Leftism in Ascendancy, 1966-1969; the Rightist Moratorium, 1970-1972; The Anti-Confucian Wind, 1973-1974; The Gang of Four, Hua Guofeng, and Deng Xiaoping, 1975-1976; and, the Era of Hua Guofeng, 1976-1978. Essentially, Maoist ideology rose to a peak from 1966 to 1969; decreased significantly in the early part of the 1970s; and gained a resurgence under the Gang of Four and Hua Guofeng from 1973 to 1978, albeit not all the way back to the extreme leftism of the late 1960s. Gains in cash-crop production may well have taken place only during the early 1970s.

This point of view is persuasive because rural policies dictated by the central Chinese government did vary significantly during the course of the Cultural Revolution. As will be mentioned in Chapters 6 and 7, prices increased 15-25% for various cash crops in 1972, after five years of policies that suppressed material incentives. These price increases, the only ones allowed by the State from 1966 to 1978, had a significant impact on the regional growth patterns of individual cash crops. However, generally, the data do not indicate any difference in the amount of land

sown to various cash crops between the moderate period of the early 1970s and the radical periods of the late 1960s and middle 1970s.

Table 2.1 shows national data on the amount of land sown to various cash crops and foodgrains from 1967 to 1977. If policy changes resulting from ideological shifts had been implemented in the countryside, it would have affected the quota on the planting of the major cash and grain crops. Political pressure affecting planting during any year would have been manifested in the production data of the following year. Consequently, the policies of the period of Leftism in Ascendancy would have impacted the 1967-1970 data on the amount of land sown; the Rightist Moratorium policies would have affected the 1971-1973 data; and, the "Leftist Revival" of the mid-1970s, would have impacted the 1974 to 1977 data.

The data in Table 2.1 do not indicate any consistent pattern that can substantiate the argument that the interlude of moderate ideology affected cropping. There is no perceptible difference in the amount of cotton land between the period of extreme leftism and rightist moratorium. During the former period, land sown to cotton averaged 74.66 million mu per year; during the latter period, land sown to cotton averaged 73.81 million mu. In addition, the patterns of the three oilseeds, peanut, sesame, and rapeseed, varied significantly. Rapeseed proliferated, peanuts remained the same, and sesame declined steadily. These data are consistent with neither an anti-cash crop policy nor any

Table 2.1--Amount of Land Sown to the Major Cash Crops in China, 1966-1976 (million mu)

	peanuts	rapeseed	cotton	sesame
1967	28.98	24.97	76.47	9.89
1968	26.11	21.07	74.79	9.33
1969	26.03	21.41	72.44	8.99
1970	25.64	21.80	74.95	8.32
1971	26.80	24.24	73.85	8.87
1972	28.17	29.50	73.44	8.99
1973	26.42	31.44	74.13	8.73
1974	27.40	30.95	75.20	8.04
1975	28.16	34.70	74.33	8.01
1976	27.61	35.19	73.94	8.42
1977	25.31	33.26	72.67	8.35
ave. 67-70	26.69	22.31	74.66	9.13
ave. 71-73	27.13	28.39	73.81	8.86
ave. 74-77	27.12	33.53	74.04	8.21

Source: National Statistical Bureau. 1984. Chinese Statistical Yearbook, 1984. Beijing: Chinese Statistical Publication Society. pp. 138-139.

relaxation of that policy during any specific period of time.

This finding is supported in Huang's (1985, 1990) two-volume study of the Yangzi Delta from 1350 to 1988. Huang (1990, pp. 279-283) argues that grain intensification during the Cultural Revolution did not develop at the expense of cash crops. His data on land sown in Songjiang County, Jiangsu Province, indicate that land sown to cotton increased 76%, from 23,904 mu in 1968 to 42,183 mu in 1969--in the midst of the most radical phase of the Cultural Revolution. Rapeseed production also increased in Songjiang County, albeit steadily over the course of the entire Cultural Revolution. The changes in the amount of land sown to cash crops were due not to quotas determined by ideological winds, but rather to technical innovations involving irrigation and drainage that allowed cotton and rapeseed as dry crops to be planted in wet rice fields (Huang, 1990, pp. 230-231).

The second possible explanation of why cash-crop output could have increased under the policy of "taking grain as the key link" is that cash-crop production was allowed under regional plans adopted by the State. As pointed out by Zweig (1989, pp. 60-61), a Northern Districts Agricultural Conference took place in the autumn of 1970, establishing policies for more mechanization and capital construction in order to improve grain output in the North. The Conferees also exchanged their "Learn from Daizhai" experiences (Agricultural Publication Society, 1982b, pp. 136-137,) but limited the adoption of the Daizhai model (Lardy, 1983, p.

184). This emphasis on grain in the North suggests that there might have been less political pressure to grow grain in the South, particularly during and after the Rightist Moratorium. Therefore, cash crops proliferated during that time in certain regions because the State allowed them to be grown. Peasants in these regions had the capacity to reach their grain self-sufficiency quotas even when resources were channelled toward cash crops. Alleviating the pressure to suppress cash crops in specific grain self-sufficient regions compensated for the loss of cash crops in regions that needed to concentrate resources into grain self-sufficiency. Such a regional plan would be enforced through production quotas planned from each province down to each production team.

This line of debate can be rebutted, in turn, by two responses. First, the pressure to sell grain to the State at quota or above-the-quota prices, even in those regions which could easily meet their self-sufficiency, did not lessen during the Cultural Revolution. Second, there was similarly no reduction in the State's quota for cash crops in those areas that had difficulty in reaching grain self-sufficiency. In sum, the policy was to increase the production of grain and cash crops at every locale. The following statement from a Local Party Committee summarizes the State's persistence on production of both cash and grain crops at the same time:

> The levy and purchase of grains... for the areas where economic crops are concentrated should be properly arranged... We should educate cadres and commune members to energetically increase the grain production at the same time when they fulfill the task of levying

> and purchasing the national economic crops in order to obtain "total high yielding" and exert "double distribution." (Ssumao District Party Committee, 1972, pp. 93-94).

The 1970 Northern Districts Agricultural Conference was part of a long-standing effort to increase grain output in the North. Since Mao proclaimed in the 1950s that flooding along the Northern rivers must be controlled, much capital construction has been invested into improving northern grain yields. During the Cultural Revolution, 10 provinces, autonomous regions, and municipalities were declared grain deficient: Tibet, Gansu, Shanxi, Ningxia, Shaanxi, Qinghai, Shanghai, Beijing, Tianjin, and Liaoning (Chinese Academy of Sciences, Geographic Research Institute, Economic Geographic Research Group, 1983, p. 136). From these provinces, autonomous regions, and municipalities, two areas on the North China Plain were identified as under reconstruction as a new grain production base: the Northern Huai Plain and the Heilongjiang Plain; and two others were identified as low production areas requiring construction: the Northwest and Northwest Shandong (Chinese Academy of Sciences, Geographic Research Institute, Economic Geographic Research Group, 1983, pp. 136-137). Although these regions were targeted for increases in grain output, they were not relieved of the responsibility to meet cash-crop quotas. For example, the Northern Huai Plain, the Heilongjiang Plain, and Northwest Shandong were part of the Yellow River Valley District, a traditional cotton-producing area. Under the "National Agricultural Development Targets," this region was to produce

80 jin per mu of cotton (Chinese Academy of Sciences, Geographic Research Institute, Economic Geographic Research Group, 1983, p. 193). Actual yields during the Cultural Revolution, generally speaking, were only 30 to 40 jin per mu in this region. The state policy in cotton regions was represented by the "five definites"; that is, the State was to guarantee the amount of cotton land, cotton output, procurement quota, grain output, and level of subsistence grain available to the peasants. To the peasants, however, these standards were not upheld (Chinese Academy of Sciences, Geographic Research Institute, Economic Geographic Research Group, 1983, p. 194). As shown in Chapter 4, the State imposed an intercropping scheme into those regions without providing the resources to make it work. Peasants therefore had to abandon cotton production in order to grow enough grain to subsist.

Yunnan Province was another example of how the State implemented the goal of grain self-sufficiency without reducing the burden of cash-crop production. According to the minutes of the Yunnan Conference on Rural Works (draft), the duty of Munglien County, Yunnan Province, was to "...guarantee the accomplishment of the glorious strategic task of purchasing 700,000,000 catties (jin) of grain and 9,200,000 catties (jin) of oil and fat in this county in 1969" (Issues and Studies, 1971b, p. 99). Peasants resisted the procurement of grain and oil by the State, as they were reported "to show little interest in the Daizhai spirit of

hard work and self-reliance. Twenty percent of the communes and production teams were in serious trouble--plagued by a "mountain stronghold mentality" (Issues and Studies, 1971b, p. 99). Peasants in Yunnan wanted to keep as much of the oil as possible for their own use; per capita consumption of plant oils in Yunnan was 1.5 jin in the early 1970s and 1.2 jin in 1975, as compared to 4.2 jin in China as a whole (Yunnan Agricultural Geography Group, 1981, p. 157). The demise of plant oil production was not the result of a deliberate State plan to suppress cash crop in favor of grain, as argued by Lardy (1983, pp. 184-185). Rather, there was pressure from the provincial revolutionary committee to grow both cash and grain crops.

Another example of the pressure to grow grain and cash crops was Anhui Province. During the Cultural Revolution, the Northern part of Anhui, as discussed in Chapter 6, was a poor region subsisting on wheat production. That region, however, was forced to grow cotton in addition to wheat. The Central and Southern regions of Anhui were fertile regions that were self-sufficient in grain. However, political pressure in that region of Anhui to sell grain to the State was not abated. Grain targets were set so high that, in 1977, only three out of the hundred or so counties in Anhui reached the state goals, while the majority did not reach even 60% of the target (Anhui Agricultural Geography Group, n.d., p. 42, map 26).

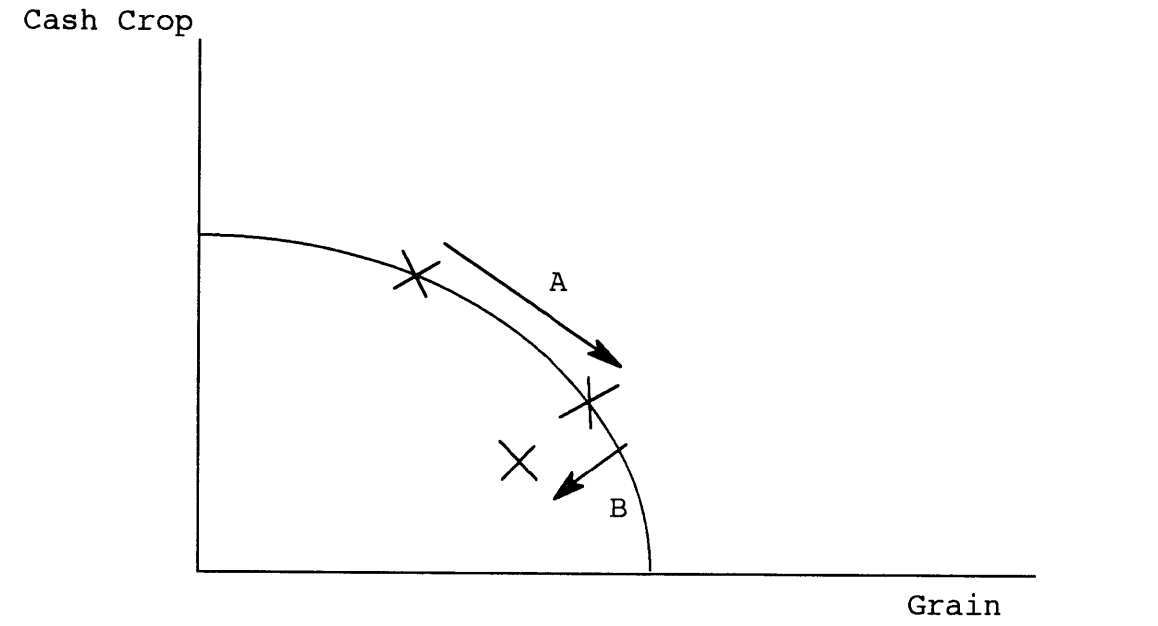
Finally, the argument that peasants grew cash crops

because they were allowed to do so, even if it were valid, still leads to the essential question of why peasants would choose to grow cash crops instead of more grain. What motivates the peasants in their cropping choices in the absence of political pressure? The fact that ideological pressure in some regions could have been lax by design should not obscure one of the main argument of this study--peasants rationally calculated their subsistence needs, relative prices, and political risks and acted according to their interests.

In summary, the current state of literature largely reflects the Chinese belief that leftist pro-grain ideology and little else adversely affected agricultural production across the board during the Cultural Revolution. The official argument of the Deng government, if stated in the language of Western economics using a standard transformation curve that models the technological possibilities in the production of grain and cash crops, is that Maoist pro-grain policy opted for a trade-off leading to more grain and less cash-crop production. (See Figure 2.1). Such a policy would have forced a move along the transformation curve significantly toward more grain production. Lardy's refinement of this argument is that the policy of self-sufficiency also caused a loss of comparative advantage and led to inefficiency; that is, this Maoist policy forced an inward movement from the production frontier.

The overall analysis of the adverse effects of Maoist

Figure 2.1--Production Possibility Frontier



A. Chinese economists' position: A pro-grain policy opted for more grain and less cash-crop production.

A & B. Lardy's position: A pro-grain policy opted for more grain and less cash-crop production, and the loss of comparative advantage also caused inefficiency.

policies on agricultural development, however, is not borne out by all the facts. Regional data on growth of cotton, peanuts, rapeseed, and other cash crops, as well as various foodgrains, suggest a deeper explanation. These patterns are not caused by either a short period of liberal policies or a relaxation of political pressures in some regions. What are the factors that affected such a diverse pattern?

My major premise is that some 800 million Chinese peasants would constitute one such factor. The basic flaw of Chinese studies to date is the absence of analysis on how peasants had reacted to policies. In the next section, I present three models of peasant behavior, of which only one can account for the patterns of agricultural development during the Cultural Revolution.

> The spirit of real love the people all have for each other... you can see it in their eyes.
> ... Either everyone is telling the truth or everyone is pulling my leg.
>
> Jerry Rubin, after visiting China in the 1970s

CHAPTER 3

MODELS OF PEASANT BEHAVIOR •

Riskin (1983) has identified three lines of ideology in China: Maoism, central administrative planning, and market socialism. Each of these lines, whether explicitly or implicitly, holds a different perspective on peasant behavior. The purpose of this chapter is to examine the models of peasant behavior that are based on these three lines and to compare them to two Western models of peasant behavior.

The Chinese Models of Peasant Behavior

The basic tenet of Western philosophies begins with the innate goodness or evil of an individual. In contrast, Maoism begins with a moral ideal: that men and women can be good, and more importantly, they should become good. According to Mao, women and men are not necessarily selfish and evil by nature. Those who are oppressive to others are so because of class distinction arising out of capitalistic and feudalistic societies. Shed of class structure, individuals in "bad" classes, such as landlords and rich

peasants, can be reformed into the correct thinking of the masses. Moreover, Mao believed that in order for class struggle to continue to eliminate class distinctions, peasants thinking also needed to be constantly molded and their consciousness continuously raised.

Specifically, Mao wanted to eliminate the conservatism and inwardness of the traditional peasant way of thinking. He was driven by the belief that continuous revolution was the only way to eliminate China's Confucian culture. The vestige of Confucianism, with its sharp division of scholars, land owners, and other elites, on one hand, and an oppressed, poverty-stricken peasantry, on the other, was the scourge of China that Mao was devoted to keep from reemerging after the Liberation. The four "olds"--traditional culture, customs, ideas, and habits--had to be eliminated to make modern economic development possible. In place of the feudalistic Confucian landed gentry, the selfless, self-effacing man or woman who works tirelessly for the collective good would become the model of China.

This transformation was to have been accomplished through intensive thought reform. The period of thought reform in the 1960s began with the Socialist Education Movement Campaign (1963-1965), which was launched by Mao in response to the economic readjustment programs conducted after the Great Leap Forward. When the Socialist Education Movement actually consolidated bureaucratic rule in the countryside, the Four Cleanups (1963-1965) was launched to

eliminate corruption among village elites in four areas of management: the allocation of work-points, management of surplus, use of collective equipment, and accounting. It continued with the Study the Thoughts of Chairman Mao Campaign (1965-1966) and the radical period of Leftism in Ascendancy (1966-1969).

The goal of these radical mobilization campaigns ultimately was moral: it was to instill a code of conduct among cadres and peasants alike, so that they worked for the collective, eschewing selfish material gains. Self-sacrifice and revolutionary spirit would bring China out of its backwardness into the modern world.

What did this Maoist model mean to the peasant in the field? Specifically, the Maoist model, as presented by commune and county officials to the masses, meant that subsistence crops, such as wheat, maize, and rice, can be made to increase dramatically in yield--if peasants had the correct attitude of working for the collective good. Hinton (1983) has argued that this Maoist vision did essentially pervade the village of Long Bow during the Cultural Revolution, and did translate into spirited efforts in the fields. While Hinton deplores the factionalism that engulfed Chinese life during the Cultural Revolution, he remains steadfast in his belief in the Maoist cooperative model. He saw that peasants could generally be unselfish, that the collective was a tremendous pool of labor for large-scale projects, and that the Daizhai spirit worked:

> ... I felt once again the tremendous social and productive power of this cooperative community. Whenever there was a big job to do, whenever the direction was clear, Long Bow had the capacity to mobilize brains, muscles and enthusiasm on an unprecedented scale. Confronted by a challenge, Long Bow saw feuds, grievances and resentment fade away, factionalism lose its sting, and everyone turn out in high good humor to lend a hand. It was exciting to observe and exciting to take part in (Hinton, 1983, p. 743).

Hinton clearly believes that Chinese peasants who historically had worked as individuals on their own small plots of land increased their productivity and improved their own livelihood by working collectively with a central purpose and direction. However, the question remains as to whether these cooperative efforts actually made a significant difference in the broader agricultural development picture. Can change in organization, based on egalitarian forms of work point assignment, contribute significantly to growth?

In order to prove a linkage between the Maoist model of collective peasant behavior and actual patterns of growth, two important issues must be analyzed. The first is whether the Maoist spirit observed by Hinton in large-scale projects had pervaded into all aspects of agricultural production, including the more mundane tasks of planting, harvesting, and land preparation. The second is whether collective labor was applied to agricultural policies and plans that could have effectively improved yield and output? Labor, however assiduously applied and however well motivated, would have been wasted if cropping pattern, irrigation design, or seed

development was ineffectual.

According to other observers of village-level developments, peasant transformation into the Maoist ideal did not transpire. As mentioned in Chapter 1, Oi (1989, 104-130) has argued that old Confucian values were still very much in evidence in the countryside during the Cultural Revolution. Cadres were motivated not by a moral Maoist commitment, but by their own selfish interest. Team leaders had state-enforced production targets to meet; however, they circumvented those targets by juggling accounts, hiding output, and using many other strategies to evade state control. Brigade leaders generally tacitly went along with the many forms of evasion because it was to their interest to allow teams to keep as much of the surplus as possible for reserve or for investment as cadres on the brigade level depended on the teams' production for their incomes. The collusion that took place also had elements of personal and lineage ties (Oi, 1989, p. 152). The Confucian landed gentry may have been eliminated by the revolution, but they were replaced by a new communist gentry of cadres. The players and the lexicon they used changed, but their motivations and strategies remained the same.

One reason why Maoism did not penetrate into the peasants' Confucian mindset was that, ironically, the methods of Maoist campaigns were essentially Confucian. On the surface, the form of the campaigns--the mass rallies, the struggle sessions that broke down familial and kinship ties,

the rhetoric urging everyone to work hard for the public good--were Maoist. However, they also resonated with Confucian themes.

The most obvious was the teaching style of the Learn-from-Mao sessions. The Mao Tsetung Thought Counselors sent to train peasants were young urban youth with only a short training in Maoist ideology. They essentially used the method of the classical Confucian tutor. As did ancient scholars, peasants first had to memorize and recite texts, without deducing or learning the meaning (Madsen, 1984, p. 134). Unlike classical scholars, however, peasants did not have the time, educational background, or experienced tutelage to contemplate and deduce the meaning. As such, peasants learned the Maoist lexicon without comprehending the reasoning behind the ideology. They learned broad and vague directives without understanding how to apply them. One manifestation of this problem was that in any discussion group, cadres, peasants, sent-down youths alike were able to quote Mao freely to support vastly different positions.

The Maoist goal of working selflessly for the collective good, though revolutionary in the extreme commitment it demanded, did not contradict the essence of the Confucian ideal. The peasants could justify taking care of their own family first, because that would be the necessary first step to benefitting the larger collective (Madsen, 1984, p. 134). Maoists tried to attack selfishness as a direct product of Confucianism. However, the Confucian metaphor that linked

family and society made it difficult for that challenge to be successful.

The novelist Gu Hua also found that Chinese peasants did not embrace the Maoist ideology. Gu Hua's A Small Town Called Hibiscus (1983), while fictional, clearly depicts the activities of the extreme left during the Cultural Revolution. In this book, the cadres, Red Guards, militia, and peasants engage in struggle sessions and political maneuvering, but they seem to do so in a separate play, far removed from the production processes of the peasants. Peasants act and follow according to the form of ideology but do not seem to believe in its substance.

In summary, there is evidence that the Maoist model of peasant behavior was not embraced by the peasantry to any substantial degree. More importantly, there is general agreement that Maoist goals were circumvented by cadres and bureaucrats pursuing their own self-interests. Hinton (1983) was particularly critical of the fact that cadres and state officials, from the national level down to the brigade level, abused power and suppressed the initiatives of the masses. Most importantly, the struggle for power on all levels affected agricultural decisions handed down to peasants. In their penchants to surpass each other in using the correct ideological methods, as will be indicated below, cadres pushed many technologically ineffective techniques onto peasants. Any positive effects of Maoist collective action were offset by the failures of the techniques from above.

As an agronomist, Hinton (1983, pp. 699-702) was able to identify many techniques that had dubious value to production and wasted great amounts of collective power. For example, he stated that an intercropping scheme of wheat and corn required too much labor to make the marginal crop gain in corn worthwhile (Hinton, 1983, p. 376), and seeds brought in by high officials gained considerably less yield than traditional seeds developed by local peasants (Hinton, 1983, p. 741). The irrigation scheme sent down from the commune level to Long Bow was far too simplistic: the pumps were not strong enough and the intake gates from the reservoir were built too high; and when irrigation did operate, water often was taken by another brigade. In all, Long Bow lost 20,000 person-days in labor and 6,000 yuan in investment. More importantly, Hinton pointed out that the order for such a system was issued by the Commune because irrigation was one of the most acceptable methods ideologically. Even if the plan had been implemented correctly, the State still would not have solved the main problem of the brigade: the salinity of the soil (Hinton, 1983, pp. 699-702).

Hinton's solution is that a true socialist leadership would have come down to the farms and studied the technical problem objectively rather than relying on broad ideological guidance. General solutions that were ideologically correct, such as intercropping, irrigation, and the use of any Daizhai tools or techniques at all, did not fit well into local conditions but they were nonetheless forced upon the

peasantry by the State. To Hinton, the correct socialist leadership would have understood and utilized the creativeness and knowledge of the peasantry (Hinton, 1983, pp. 699-702).

The basic issue remains: even if Maoist ideology had successfully mobilized peasants in villages such as Long Bow, the resulting increase in production would have been compromised by political polarization caused by the same overarching Maoist ideology. Whether the successful democratic aspects of Maoism could be separated from the problems caused by its centralism, as Hinton implies that it could, is beyond the scope of this dissertation. However, it seems that the Maoist model of peasant behavior did not directly link to any specific pattern of agricultural development. This conclusion is supported by Perkins and Yusuf (1984, p. 198) who find that the strategy of mobilizing rural labor for construction could claim only a small part of the increase in agricultural output. They argue that:

> ... the commune was a very effective vehicle for mobilizing rural surplus labor. The North China Plain was made level. Irrigation ponds and ditches were built everywhere. And yet after all of this expenditure of effort, the irrigated acreage had expanded only modestly, and most of that expansion resulted from factors other than the public works carried out by surplus labor. Much of the North China Plain still suffers from a lack of water...
>
> From the mid-1960s on, agricultural production has grown at a respectable 4 percent or more per year, but mobilized rural labor can claim comparatively little credit for the increase.

In contrast to the Maoist ideology, the central-planning and the market-socialism lines have less rigid ideological

bents. Both lines combine planning and materialism; they differ primarily in the degree to which central administration or the market is emphasized. The central planning model utilizes bureaucratic controls to implement production plans, relegating market forces to a secondary role. In comparison, market socialism assigns more importance to material incentives, but it still maintains the supremacy of the socialist planned economy. The differences between these two lines have been examined by Solinger (1983) and Zweig (1989, pp 32-49).

While Maoists viewed human behavior through a utopian prism, proponents of central planning and market socialism perceive peasant behavior through a more pragmatic light of human self-interest. Although peasants are seen as materialistic, they are not viewed as laissez-faire capitalists. Rather, peasants' materialist tendency is one of the tools by which they can be controlled within a planned economy with top-down party discipline. More importantly, the advocates of central planning and market socialism perceive Party members as having a broader moral obligation than the peasantry. They believe that Party members must adopt a broader moral view in order to lead and to plan for the greatest good of the country.

The basic weakness of the proponents of central planning and market socialism is that they assume that there is no disconsonance between the short-range self-interests of the peasantry and the long-term, planned, interest of the

country. When there is a conflict, the Party will "enlighten" the people, but the predominant view is that peasants will follow their policies without challenge or independent response.

I now refer back to Chapter 2 on how today's Chinese writers, following the market socialism and the central planning framework, view the behavior of peasants during the Cultural Revolution. They believe that peasants primarily followed the dictate of the State, rather than expressing their material interests. They criticize the Maoist approach for replacing material incentives with ideological ones, but ironically, they dismiss the notion that peasants might have acted to pursue those interests rather than following the dictate of the State. In addition, they respond to Maoist commandism by criticizing the pro-grain policy, but they ignore the notion that peasants might have reacted negatively to this policy also and could have acted independently of those policies.

In summary, on one hand, those who follow Mao's vision of the Chinese countryside believe that the peasantry would eschew material incentives and that collective forces would rise to form ideal communes. The agricultural policy of the Cultural Revolution was based on the premise that the impulse from the masses would be driven toward the collective good. This model, however, had limited impact on peasant behavior and on actual patterns of agricultural development. On the other hand, the central-planning and market-socialism lines

believe that a combination of administrative fiats and material benefits are needed to control the peasantry. The transformation of the socialist man and woman is not based on movements from below, but rather from correct resolutions within the Party. The CCP, as the vanguard, reflects the broader struggle in society and is the only instrument within which and by which true consciousness could be formed. Under this view, Party policy is dominant, and peasants are expected to follow in the correct behavior. The behavior of the peasants during the Cultural Revolution also contradicts this perception. While appearing to obey the Party's agricultural policy, peasants actually acted according to their own needs.

Western Models of Peasant Behavior

The current debate in Western social sciences on peasant motivation and behavior is between Scott (1976) and Popkin (1979). Both authors investigate peasant life in Southeast Asia in the early 20th century and examine the conditions that led to peasant revolts. However, they make such powerful statements about universal attributes of peasants that scholars have applied Scott's and Popkin's models to the case of Chinese peasants (Madsen, 1984; Little, 1989).

Scott argues that peasants share a "traditional" morality that bonds them to relationships and institutions within the village. The root of this morality is that peasants share the primary goal of providing subsistence for

themselves and their families. In order to avoid any risks that would jeopardize their subsistence, peasants establish institutions and moral relationships that ensure adequate foodgrains from harvest to harvest. Therefore peasants share a solidarity with each other and collectively are committed to resisting landlords, state officials, and others in position of power when their subsistence is threatened. Hart (1990) refines Scott's moral economy theory with evidence that women in rural societies have greater capacities than males in collective action, and that gender is important to understanding collective action as a social process.

Scott's main detractor is Popkin (1979), who identifies the peasant as an economically rational being concerned primarily with his or her narrow self-interest. Based on his study of Vietnamese peasants, Popkin argues that peasants generally try to advance their own interests and are unwilling to form any kind of cooperative and collective institutions aimed at group goals. Popkin's "rational peasant" model is used and supported by Nee (1985, pp. 172-173), whose case study of a Chinese village finds that peasants make rational calculations to maximize the welfare of their own family over that of the collective. In addition, Zweig (1985) has found that peasants, responding to the agricultural programs of 1978-1981, supported or resisted changes in the collective system depending on the material welfare they had obtained and expected to attain from the collective. In essence, peasants made rational calculations

about collective farming according to whether it benefits their own interests and not the interest of the collective as a whole. Burns (1988, pp. 178-179) states explicitly that Chinese peasants are rational, and that they pursue their self-interest by actively trying to influence policy.

My data supports Scott's fundamental premise that peasants view their subsistence as the overarching concern for themselves and their family. It is a point that Popkin does not dispute. It is rational to maximize the utility of self-preservation. On the level where survival is at stake, peasants meticulously calculate the risk of drought or calamities that would cause the loss of subsistence. This risk-adverse behavior is crucial to understanding the actions of Chinese peasants in many parts of China during the Cultural Revolution. I examine the question of risk caused by the Double-Harvest Strategy more closely in Chapter 5.

My study also supports Popkin's contention that peasants are economically rational. As seen earlier in this chapter, there is substantial evidence that peasants have resisted Maoist attempts to change the selfish attitude of peasants. Madsen (1984, p. 7) argues that peasants were resistant to joining collective activities because they were afraid that they would be cheated by officials. As also noted earlier in this chapter, many of the plans sent down to the rural areas were inappropriate for the locale. In addition, peasants were also resistent because they knew that collective schemes were often technically unfeasible.

To build the case that Chinese peasants are rational, I refer to Hinton's endorsement of Chinese peasants as intelligent, competent, and independent. According to Hinton (1983, p. 701), peasants did not verbally contradict any of the plans from the State, but they "simply voted ... by not working very hard at implementing them." He writes:

> What struck me was the independence of the peasants. Over and over again they made up their own minds and went ahead and did what they thought best, regardless of the shrill instructions from on high. When things didn't work, or looked dubious, they simply held back, voted with their feet, did things their own way, and the less said about it the better. What the cadres didn't know wouldn't hurt them. Sometimes the gap between leaders and led widened to a veritable chasm (Hinton, 1983, p. 743).

Oi (1989) also agrees with Hinton that Chinese peasants adopted many "back door" methods, which appeared ideologically pure, but covertly benefitted their self-interest. These included hiding production, falsifying accounts, and manipulating policies (Oi, 1989, pp. 104-130). If peasants had acted outside of the State system of control, then it would be logical to assume that they acted in an utilitarian way. Moreover, the fact that peasants did use a "back door" to circumvent state policy meant that they continually made utilitarian calculations, factoring political risks as a cost against potential gains.

In fact, there is much historical evidence that Chinese peasants are capitalistic. There is evidence that, as early as the 5th Century B.C., the Chinese attempted to apply

economic solutions to the chronic problem of famine in the countryside. Keenly aware of the laws of supply and demand, a writer named Fan Li designed sophisticated plans in which wealthy landlords would release reserves from granaries during times of famine into the market in order to control inflation. He implored emperors to enforce such a strategy, guaranteeing steady prices and civil order (Hu Jichuang, 1984).

In the 17th century, there were handbooks that detailed market prices of various crops and recommended the mix of crop that would maximize income for the farmer. For example, one author calculated relative crop prices and yields in the province, and argued that the most profitable product mix, after rent, was one crop of rice and a new crop of silkworms. Another author calculated that peasant families could increase their profits by hiring laborers to work in the field to order to allow women to weave silk, rather than investing inputs to grow a second crop of rice (Rawski, 1972). Immediately before Liberation, the Chinese were acutely aware of war-time inflationary food prices and conducted extensive field surveys analyzing the effects of farm prices on the distribution of wealth.

In addition to this history of economic thought, there has been a 300-year history in which peasants were primarily independent decision makers who sought to maximize their profits. The rural economy of the Qing Dynasty (1644 - 1911) was a market economy, with a predominance of independent,

small-scale farmers (Rawski, 1972). The percentage of farmers who own land, for example, in the Province of Szechwan in 1940 was approximately 50% and many of the remainder were free, permanent tenants (Buck, 1942, p. 20). Land tenancy during the Qing Dynasty did not constitute any disincentive to maximize profit. Peasants under permanent tenancy generally paid a set amount of rent to the landlord, keeping any production above that amount. Under this fixed-rent arrangement, the peasants bore the risk of having to pay a standard rent in bad times, but assumed the risk as well as the benefits of increased inputs and outputs. More importantly, they had the right to sublet the land, hire workers, and choose what crops to grow. Toward the end of the Qing Dynasty, a landlord's rights were limited. He could not evict the tenant, nor could the landlord act violently against the tenant, a common practice during the earlier Ming Dynasty (1368 - 1643) but eliminated by imperial edict. In most cases, the absentee landlords hardly saw the land, cared only about receiving the rent, and essentially left all decisions to the peasants. Markets as a result flourished during the Qing and the Pre-Liberation period. Based on this period, Rawski identifies Chinese peasants as utilitarian in the capitalist mode.

In light of the fact that Chinese peasants acted as economic rationalists in their long history through the Pre-Liberation period, it is not surprising that this basic nature of peasants persisted during the Cultural Revolution.

As mentioned earlier, the first factor in any rational calculation is survival. What causes peasants to use the "back door," especially in light of the political consequences? It seems logical to assume that the answer is survival. To the extent that peasants believed that inappropriate state plans jeopardized their subsistence, they would attempt to circumvent the state sector. Peasants in general are risk-adverse, tending away from long-term investment in technological or social changes that might be risky in the short term. In the Chinese case, peasants would have had a natural resistance to new cropping schemes or technological innovations that were put upon them from above, particularly those that appear to be more ideologically inspired than scientifically proven.

There are ample examples of peasants' circumventing the state dictates in order to survive during the Cultural Revolution. Oi (1989) contends that administrative controls were often too tight during the Cultural Revolution, and team leaders had to form a "rationality of evasion", better described as "strategy of survival" (Oi, 1989, pp. 104-105). Hiding and underreporting foodgrains were common strategies used by peasants and cadres to reduce state levies. During the Cultural Revolution, peasants were known to fulfill instructions from the State to plant certain crops by planting them on the least fertile land and allocated little input to them. As noted earlier, Chinese peasants described this common phenomenon as turning "patriotic land" into

"perfunctory land." Oi also describes how easy it was to interpret policy to benefit themselves rather providing grain to the State:

> ... During this same period (1969 to 1972) (the brigade's) grain ration was decreased while grain sale quotas increased. The basic ration decreased from fifty jin per month in 1968 to only forty-five jin per month in 1969; at approximately the same time the "loyality to Mao" grain sales were instituted as well as the "war preparedness" grain sales. To avoid selling large amounts of "loyality to Mao" grain but still appear to be politically correct and keep more grain in the team, the team leader took advantage of the campaign to build local reserves, begun in 1969, and voluntarily reserved large amounts of grain. Accordingly, the team each year kept over 20,000 jin of reserves, in line with Mao's call to "store grain everywhere." But the team leader did not keep the reserves as a stable emergency stock. Instead, the reserves became the crucial source of grain to supplement the team's reduced rations. In 1969 alone, the team leader loaned out over 14,000 jins to meet the grain deficiencies that existed in almost half of the team's households (Oi, 1989, p. 122).

The radical campaign of Mao Tsetung elicited two kinds of responses from the Chinese peasantry. In general, Maoist ideological directives were broad and vague. Hence, implementation was open to varying interpretations, and peasants found it expedient to interpret those directives to fit their self-interests. As Oi argues, in those cases, peasants through their team leaders used considerable guile and personal ties to attain material gains. Other Maoist directives, particularly those concerning agricultural

methods, were too specific. In those cases, peasants found covert ways to undermine state policies when the techniques sent down by the State did not respond well to local conditions.

The ineffectiveness of the Maoist thought reform and peasant endeavors to evade state policies meant that peasants were basically utilitarian during the Cultural Revolution. Beneath the revolutionary fervor that was to carry China down the socialist road, peasants in actuality held on to their universal values of first assuring the safety of the immediate (and extended) family and also to calculate ways to improve their own livelihood.

In the next sections, I show how this type of adaptive and resourceful behavior affected the development of agriculture? To do so, I first examine the agricultural policies adopted by the State that had impact on the peasants' most basic level of productive capabilities. What were the cropping patterns imposed by the State? What were the technical constraints of those policies and techniques that peasants had to face? How did peasants respond? Finally, how did their decisions and actions on the micro level lead to changes in development patterns on the macro level?

> We only need to take command of the thoughts of Mao Tsetung, establish the Dazhai spirit, and take the road of Dazhai. This makes everything possible. Grain will make a great gain at the same time that cotton makes an huge increase.
>
> -- A Common Presentation of the Double Harvest Strategy

CHAPTER 4

THE DOUBLE-HARVEST STRATEGY

From 1979 to 1983, a period during which Chinese scholars and policy makers extensively attacked the Cultural Revolution as "10 years of chaos under the Gang of Four," practically every article that appeared in Problems in Agricultural Economics and The Economics of Agricultural Technology, had an obligatory passage that criticized the leftist policy of "taking grain as the key link." These and other criticisms by Chinese officials and scholars of the Deng government have created and fostered the view that agricultural policy during the Cultural Revolution centered around an ideological fanaticism for grain. Moreover, they acknowledge that the Maoist slogan "the South grows--the North transfers (grain)" is an accurate reflection for the underdevelopment of grain production in the North; however, they argue that grain self-sufficiency, applied with Maoist commandism throughout the country, suppressed cash-crop production and increased grain output without increasing peasant welfare.

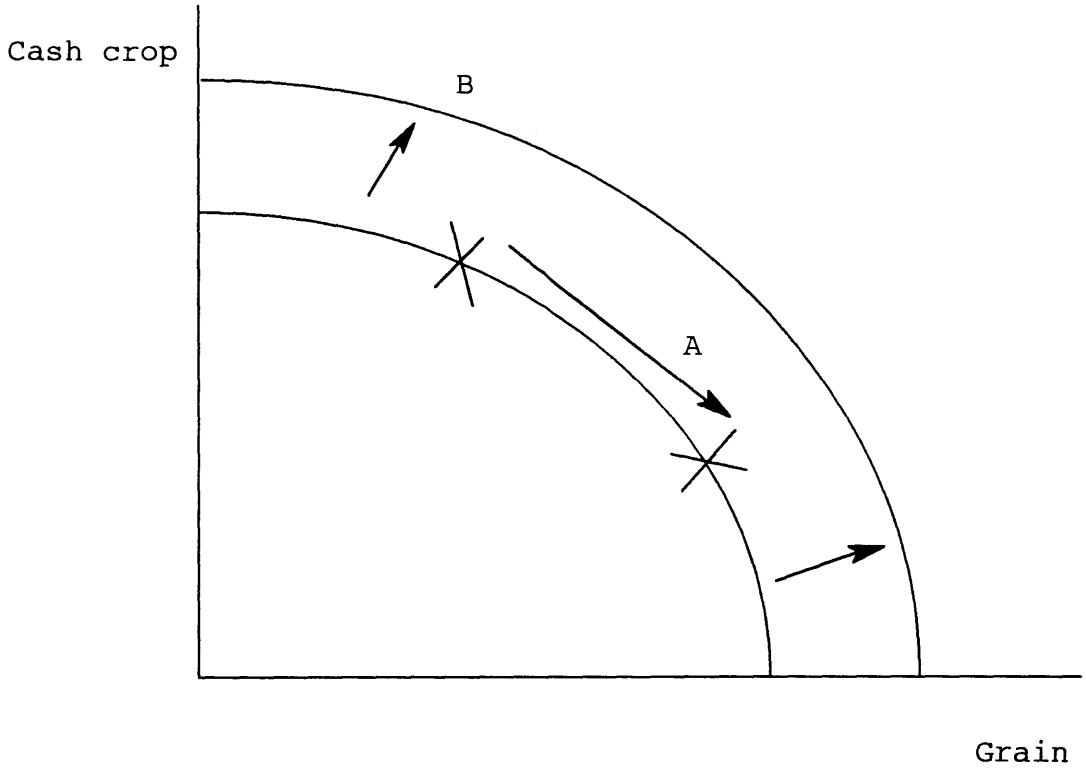
In this chapter, I argue that the Maoist strategy for

grain self-sufficiency was actually to increase the production of both cash and grain crops. As pointed out in Chapter 2, there was intense state pressure placed on suppressing certain cash crops that could be grown on private plots (Zweig, 1989, p. 126). However, private plots constitute only 5 to 7 percent of the land in a commune (Perkins and Yusuf, 1984, p. 83); therefore, Maoist pressure against cash crops affected only a small part of the crop production. The policy that affected collective production was to grow both cash and grain crops.

Specifically, in cash-crop producing areas, such as most of the North China Plain, the policy was not to change cropping patterns in order to substitute grain for cash crops; rather, it was to add the burden of grain self-sufficiency to existing cash-crop producers. In areas that primarily produced grain, such as Northern Anhui, the policy was to add cash crops to the production of grain. In areas that produced both crops, such as the fertile river valleys of Hubei Province, the goal was to increase the total output of both crops. As shown in Figure 2.1, critics of grain self-sufficiency argue that Maoists chose to move along the technical transformation curve A, opting for more grain and less cash-crop production. (See Figure 4.1.) My argument is that Maoists actually attempted to push the transformation curve outward to arc B, increasing output of both cash and grain crops.

Although the goal of expanding the production of both

Figure 4.1--Production Possibility Frontier and Maoist Goals



A. Chinese economists' position: A Maoist pro-grain policy opted for more grain and less crop.

B. The Maoist goal: Expand the output of both cash and grain crops.

crops at the same time might seem a bold step, the method of accomplishing that goal followed a strategy that the Chinese have used throughout the history of the PRC: intensifying the cropping cycle. This term refers to increasing the number of harvests per unit of cultivated land through multiple cropping or intercropping (Rawsky, 1979, p. 102). Multiple cropping means fitting additonal growing seasons into a year, and intercropping means growing two crops interspaced between each other. Wiens (1978, p. 700) has identified the intensification of the cropping cycle as an important Chinese strategy:

> A common strategic objective underlies the entire program of technological change in Chinese agriculture, specifically the increase in the extent of multiple cropping. In comparable environmental circumstances, where other countries are growing a single crop per year, the Chinese seek two; where others grow two, China seeks three. The impact of this goal on the forms and directions of technological change in Chinese agriculture can not be exaggerated.

Although allowing that this policy of intensification might have long-term benefits, Wiens (1978, pp. 700-701) argues that it has caused such serious problems as absorbing a large quantity of labor in low-productivity agricultural jobs and forcing investment in irrigation and fertilizer production to meet the heavy inputs needed. A micro analysis of multiple cropping is done by Weins in a later publication (1982). In this study, it is important to note a Maoist attempt to raise simultaneously the output of both cash and

grain crops does not appear so incredible in light of the long history of intensification of cropping patterns in China. Double cropping of rice was conducted as early as the 1920s (Rawski, 1979, p. 102). Since the founding of the PRC, the cropping index has been raised from 1.31 in 1949 to 1.55 in 1977 (National Agricultural Area Planning Committee, 1981, p. 65). Weins (1978, p. 627) estimates that 40% of the increase in rice output from 1949 to 1975 in China came from multiple cropping. This intensification strategy is especially important to the Chinese in light of the fact that total cultivated land for grain has decreased since the 1950s (National Statistical Bureau, 1984, pp. 136-139).

The intensification strategy that fitted the needs of Maoists to expand output of both cash and grain crops was intercropping. In the remainer of this chapter, we will examine how newspaper articles throughout the Cultural Revolution called for peasants to grow "double harvests" of cash crop and grain, and to submit a "double tribute" of crops to the State. We will also examine data that show that the intercropping strategy was put into effect in many regions of China. Intercropping was so prevalent that peasants in Yunnan had a saying "七套八套，套上纲要 " meaning "intercrop, intercrop--intercrop to meet the 'key link' targets." (Yunnan Agricultural Geography Group, 1981, p. 149).

Formulation of the Double-Harvest Strategy

One of the more remarkable documents on agricultural policy in the Cultural Revolution was a paper delivered at the Fifth National Conference on Cotton Production in 1966 by Zhu Zemin. The paper's title was "A Summary of the Scientific and Technical Experience of the Nation's Cotton Production," and Zhu Zemin was Deputy Director of the Chinese Academy of Social Sciences. As befitting its title and its author's position, the paper was professorial and authoritative in tone. As well, it was revolutionary, because it argued for a drastic change in China's pattern of agricultural production, specifically presenting that it was technically feasible to produce "double bumper harvests" of cotton and grain on the same land.

Traditionally cotton was planted by itself and harvested once a year. It was also rotated with maize, millet, or wheat in the next year, and then with maize intercropped with a legume in the following year. It was a system that left land idle at times, but maintained soil fertility and yielded high returns relative to input. In its stead, Zhu proposed an highly intensive method to raise total output. Wheat was to be planted as an early season crop and cotton the late season crop. Because the two seasons would overlap by 40 to 50 days, intercropping was necessary. Proponents of intercropping would later stress the complementary aspects of intercropping: that the taller wheat stems would protect the cotton bud from wind and frost, and that, in turn, insects

that generally existed on cotton would kill off insects that damaged wheat crop (Red Flag, 1972, p. 67). Based on such claims, the Double-Harvest Strategy was launched under the slogan, "grain protects cotton, cotton enhances grain." Zhu concluded that this "double bumper harvests" scheme was easily achievable and summarily announced on behalf of the Chinese Communist Party that "cotton producers must not depend on the state to supply grain to them; they must achieve a rich cotton/grain double harvest themselves" (Zhu Zemin, 1966, p. 5).

Zhu's paper and the entire Fifth National Conference on Cotton Production were important because they were a major component in the turn toward Maoist radicalism in agricultural policy. Since 1963, Mao had sought to reassert control of agricultural policy, which he had lost after the disastrous Great Leap Forward. Mao's primary instrument was the "Learn from Dazhai" Campaign, but that movement toward self-reliant growth in grain made little headway. For example, conferees at the Second Conference on Cotton Production in 1963 (New China Monthly, 1963, pp. 135-136) and the Fourth Conference on Cotton Production in 1965 (Agricultural Publication Society, 1982b, p. 120) advocated the standard planning approach to cotton production. They advocated greater concentration and specialization of cotton production, in direct contrast to the would-be Dazhai self-reliance strategy. The Fifth Conference, in a complete reversal, supported the Dazhai socialist spirit. The Double-

Harvest Strategy was part of the broad Dazhai revolutionary movement toward a classless, selfless, egalitarian rural society, but it also, on a programmatic level, introduced a technical cropping system.

With the outbreak of the Cultural Revolution in 1966, and the Maoists' gaining control until the fall of the Gang of Four in 1978, the Double-Harvest Strategy became an integral aspect of leftist agricultural development. To a large extent, traditional cotton-producing regions adopted the wheat-cotton intercropping system, sowing more wheat. From 1966 to 1978, wheat cultivation expanded from 358.78 million mu to 437.74 million mu, an increase of 22%, whereas total foodgrain cultivation remained about the same for that period (Chinese Yearbook Compilation Commission, 1981, p. 34). In particular, Hubei Province changed its planting system. Historically cotton growers there also planted barley, broadbeans, and wheat. Barley and broadbeans were then reduced in favor of the intercropping system to the extent that by the end of the Cultural Revolution, 60-70% of cotton regions in Hubei had adopted the new system (Hubei Agricultural Geography Group, 1980, p. 217). Similarly, major cotton-producing regions in Henan also made the transition. As a result, wheat, which traditionally had been the main foodgrain in Henan, became even more important to peasants' subsistence needs. In 1965, wheat comprised 30.7% of total foodgrain output; in 1979, it increased to 45.4% of output (Henan Province Academy of Sciences, Geographic

Research Institute, 1982, p. 2, t. 1).

This effort to increase cotton and wheat output has not received as much recognition in the West as the "Learn from Dazhai" campaign to raise socialist consciousness, nor was it "coined" and publicized to the extent that the term "Take grain as the key link" was taken as a slogan in China. However, the notion of intercropping and achieving double harvests was certainly disseminated in the countryside.

During the entire Cultural Revolution, newspaper accounts of localities achieving double harvests covered every major cotton-producing province. These articles assured that those areas not only surpassed their own grain needs and supplied surplus grain to the State, but also were continuing to supply cotton. For example, in one account in the press in 1970, all the major cotton-producing provinces in the North were claimed to have doubled or tripled their cotton output from 1970 to 1971 and advanced communes and counties in the South were said to be delivering "double bumper harvests" of cotton and grain to the State:

> In the major northern cotton regions of Shandong, Henan, Hebei, Beijing, and other provinces and municipalities, cotton output exceeded output for the previous year by more than one or two times. The southern major cotton regions fought off two disasters and yet still reached a double harvest. In some areas, advanced communes and counties also produced a high output of grain and cotton and contributed this double tribute to the state, putting cotton production to a new level (New China Monthly, 1972, p. 127).

In addition, there were articles announcing double harvests of grain and cash crops such as peanuts and sesame

(People's Daily, 1966b), as well as advocating the importance of growing grain and raising livestock (People's Daily, 1970, p. 2). Peasants were instructed that "it is wrong not to grow cotton. Criticize peasants who think that they can eat additional grain; they must sell additional cotton to the State" (People's Daily, 1972c). (Emphasis added).

Successes in the Double-Harvest Strategy were reported in many different locales. For example, increases in cotton and grain were claimed in Xinjiang Autonomous Region, where this Double-Harvest method and peasant's revolutionary heroics changed poor regions to rich areas (New China Monthly, 1970b); in Hubei Province, where three counties were cited for their special effort to "seize" a double bumper crop (New China Monthly, 1975, p. 125); and, in Sichuan Province and in Shanxi Province, where the same success was achieved by "learning from Dazhai" (People's Daily, 1972c). In addition, the Si Li People's Commune in New Village County, Henan Province, was reported to have transformed itself from a grain-deficit commune annually importing more than 2 million jins of grain from the State to a grain-surplus commune, which sold 4.89 million jins of cotton and 4 million jins of grain to the State, while even keeping 3.5 million jin of grain in stock. The success of this double-harvest/double-tribute commune again was attributed to the socialist spirit, which motivated the young and old to work in the fields to insure the proper timing for planting on the commune's 30,000 mu of cotton field (People's Daily, 1972b).

Finally, such claims were also made for Beijing and Shanghai. A brigade in Beijing outskirts was reported to have completely put the grain-cotton intercropping method into effect, and achieving great double harvests (New China Monthly, 1970a). The fact that Beijing, which as the capital was emulated by the backward regions of China, was used as an example is an indication of the importance of the Double-Harvest Strategy. The political message in that article, as in all messages to the masses in Chinese politics, was not subtle. In addition to attacks against revisionism, the article explained that success came because this self-reliant Beijing brigade did not depend on the State for investment or loans. The same claim was made in an article about Shanghai (People's Daily, 1972a), which was the base of power for the Gang of Four. That they put the prestige of their own base behind this Double-Harvest policy spoke to its importance.

The evidence from the propaganda machinery, an important method of disseminating and legitimizing policy, showed that the national agenda during the Cultural Revolution was not to concentrate on grain while de-emphasizing cash crops, but to accelerate the growth rate of both types of crops. The slogan "take grain as the key" is taken as evidence by Chinese economists today that the policy during the Cultural Revolution was to promote grain above all else. However, the full slogan was actually "take grain as the key; develop on all fronts."

The point to be considered is not whether the figures

reported were real or not. Few scholars today take those claims of high output seriously, considering them to be false or, at least, misleading; nonetheless, we can examine one example. The commune in New Village County cited earlier was reported during the Cultural Revolution to have raised grain yield per mu 400% from 1957 to 1972, to more than 800 jin per mu (People's Daily, 1972b). Data published after the Cultural Revolution--generally regarded by Western scholars as much more reliable--showed that grain output increased from 7.2 billion jin in 1957 to 10.5 billion jin in 1973, a growth of 46% (Henan Province Academy of Sciences, Geographic Research Institute, 1982, p. 45, graph 9). If yields had increased 400% in the entire county as implied, then the area planted in 1972 or 1973 would have been only 36% of what had been the planted area in 1957. It was highly unlikely that the land sown to grain would have decreased by that much under the policy of grain self-reliance. Moreover, 1972 was a relatively poor production year in North China. Therefore, the yield of 400% was a gross exaggeration. Even if that particular county had achieved such an incredible gain in yield above what the larger region had accomplished, the argument would still remain that such an unusually productive county was a misleading example of an entire region.

In any case, the numbers themselves are not important in this analysis. They were probably taken much less seriously by the peasants at the time than what the political leaders had expected the peasants to believe. The more significant

observation is that the political message, with its highly exaggerated figures added for effect, was clear to the farmers: Grow cotton and grain, not just grain, as most Chinese scholars now perceive.

Such a political message should not be surprising considering that leftist ideology actually embraced cotton production. Clothing was a basic need, which the CCP had always guaranteed to the masses. During the war for liberation, the CCP had proudly provided the basic blue and green "Maoist" uniforms, which remain the basic attire of many of the Chinese people today. If the image of the regimented socialist man and woman was one who produced and ate coarse grain, motivated only by the will to serve the State and the fellow members of the revolutionary class, that image also included their wearing heavy, cotton-padded clothing provided by the State. Another reason why cotton could not have been deliberately suppressed by the new regime was the importance of cotton to the Chinese economy. In the early 1960s, before the Cultural Revolution, income from cotton sold to the State composed 11-15% of the total amount of farm product sold in the entire country (New China News, 1963, p. 63). Textiles was the largest employer in the industrial sector (Chao, 1970, pp. 270-271). Moreover, domestic production of cotton was critical to the policy of national self-reliance pursued in the first four years of the Cultural Revolution. Import of cotton was reduced from 170 million metric tons in 1965, to 110 million metric tons in

1966, and further to 60 million metric tons in 1968 (Chao, 1977, p. 242, t. 28).

That the Double-Harvest policy on the national level did devolve to the commune, brigade, and team levels was also clear. During the Cultural Revolution, Mao used the mass media to reach those classes directly, and everyone in China looked toward the center to hear the words of Mao Tsetung. Cadres in the countryside, who must have been fearful of receiving the same fate that befell their urban counterparts during the Cultural Revolution, could not have been unaware of the Double-Harvest Strategy. Moreover, there were organized efforts to disseminate policy to the village level. For example, the State Council urged the cadres in 1973 to fulfill their quotas in cotton production (People's Daily, 1975a).

The propaganda machinery was not restricted to pronouncing double harvests in grain and cotton. Throughout the Cultural Revolution, articles appeared in newspapers announcing double harvests with grain and other economic crops. In 1975, the National Conference on the Production of Sesames and Peanuts stressed the importance of grain and oil seeds as complementary products (People's Daily, 1975b). Later, it was reported that Taojiang County in Hunan had successful harvests in tea, vegetables, and other cash crops along with foodgrain (New China Monthly, 1972, p. 170).

Three Technical Constraints of Double-Harvest Strategy

The Double-Harvest Strategy was based on a particular cropping pattern; in that sense, it offered a level of specifics that the "Learn from Dazhai" Campaign did not offer. However, the Double-Harvest Strategy was also too vague in terms of facing the many difficult technical problems that the new intensive method brought. Consequently, it created what Chinese peasants called "three contradictions" between grain and cash crops: a competition for water, labor, and fertilizer that posed serious technical constraints. The need of inputs increased tremendously and costs spiraled.

In order to resolve the three technical "contradictions", resources had to come from the State. However, even though the State had established ambitious goals for the Double-Harvest Strategy, it did not increase resources in concert. In terms of sectoral allocation of investment, the agricultural share actually decreased during the Cultural Revolution. Funds for capital construction in agriculture increased in absolute terms from 1.73 billion yuan to 3.72 billion yuan, but decreased in percentage terms from 13.7% to 11.5% (International Bank for Reconstruction and Development, 1983, p. 75). Moreover, much of this fixed capital formation was in large-scale projects of doubtful value to rural regions. For example, funds provided for hydroelectric projects or for water conservation and charged to the agriculture account were actually used for industrial

electric needs, urban flood control, or other projects generally unrelated to the average peasant (Lardy, 1983, pp. 132-136).

Lardy (1983, p. 135) has pointed out that state investment into agriculture was limited to a category in the accounts called "support to communes." This level of expenditure, however, was less than either the agricultural taxes paid by communes to the State or the after-tax commune and brigade reinvestment from their profits. For example, in 1979, while support to communes was 1.35 billion yuan, agricultural taxes were more than double that amount at 2.9 billion yuan. Moreover, the rural sector's own accumulation after taxes was even greater, at about 6 billion yuan, much of which was reinvestment for flood control and small-scale industries (International Bank for Reconstruction and Development, 1983, p. 75). For example, in Luancheng County in Hebei Province, the State's outlay was only 50% of the agricultural tax paid to it, and only 5.7% of the total investment into agricultural mechanization (Qin Keliang, 1980, p. 69). In this way, the Dazhai self-reliance spirit was very much the base of the Double-Harvest Strategy, where each locale had to support the investment needed from its own resources. The Maoists at the center of government did not deal technically and financially with the problems of the Double-Harvest Strategy. They continued to exhort a revolutionary spirit that would overcome all obstacles. Those who raised such problems were thought to be "deficient

in Maoist thinking" (Agricultural Publication Society, 1973, p. 28).

I will examine the "three contradictions" of the Double-Harvest cropping pattern in the next chapter. These three technical constraints had major effects on cotton output, leading to a North-South shift in production. They also were major factors and integral parts of the context in the peasants' decision-making process regarding what to grow and how much input to allocate to each crop.

A huge rainfall means a huge disaster, a light rainfall means a light disaster, and no rainfall means disaster by drought.

An old village saying in Anhui

CHAPTER 5

COTTON PRODUCTION UNDER THE DOUBLE-HARVEST STRATEGY

The major region for cotton production in the North is the North China Plain, located in Southern Hebei, Eastern Henan, Western Shangdong, and Northern Anhui. Historically it has been a poor region. This region comprised 30% of the 283 counties in China that had an annual per capita income of less than 50 yuan (less than $20 per year) in 1979 (New China Monthly, 1981, pp. 117-121). Even though this region has seen tremendous growth during the Deng regime, it is still extremely poor. In 1985, an Overseas Chinese traveller reported that she had seen children with bloated bellies, indicative of malnutrition there (Chan, 1986). In 1989, it was reported that the regular diet in Taijain County in Northeast Henan Province still consisted mainly of noodles and salted vegetables, and the meat provided through the State supply system consisted of two pigs a day for an entire county. Even so, the peasants in Taijain County have described this diet as a great improvement over what had been available during the Cultural Revolution (Hu Yafei, 1986). During those fateful times, these peasants, perhaps more than any others in China, fitted Scott's description of a

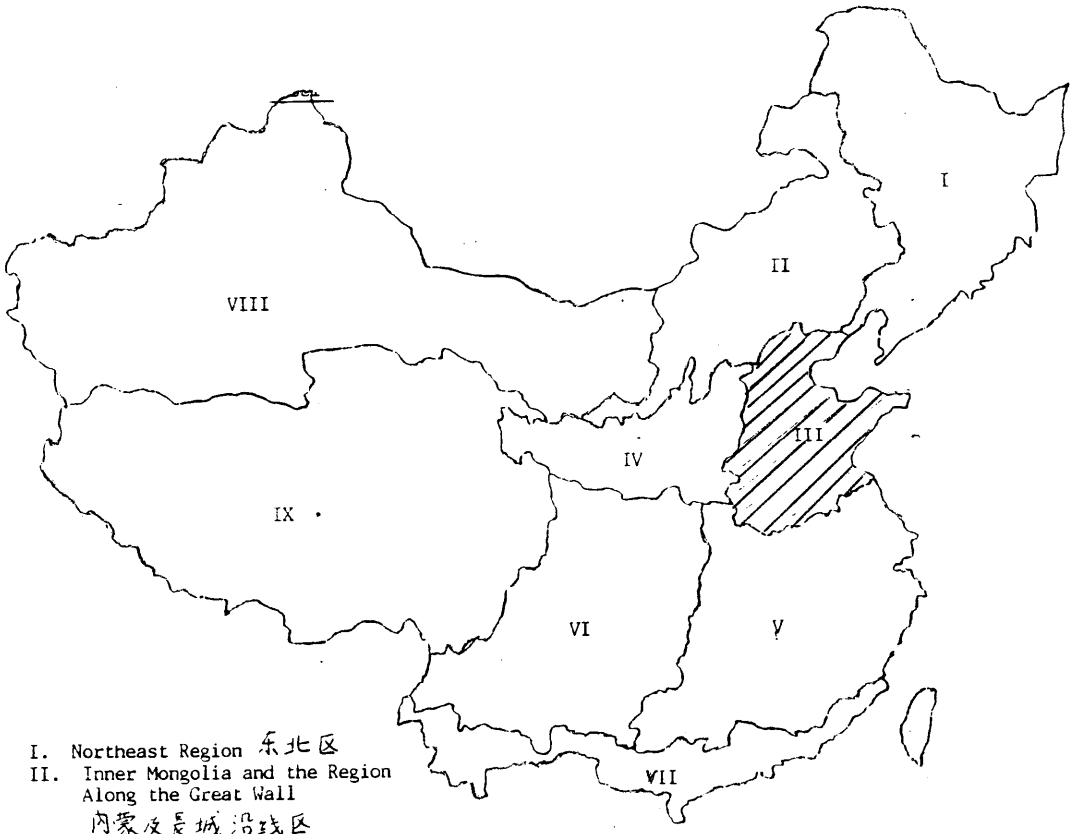
subsistence farmer "up to the neck in water, so that a ripple is sufficient to drown him" (Scott, 1976, p. vii). That the subsistence of peasants in this region depended on a very frail agricultural base was epitomized by a general pessimistic outlook among the peasantry. For example, in the Huaibei region in Northern Anhui, there was a popular village saying: "A huge rainfall means a huge disaster, a light rainfall means a light disaster, and no rainfall means disaster by drought." These peasants were especially vulnerable during the Cultural Revolution because the climate and soil conditions made it impossible to meet the demands of the State to produce a double harvest of cotton and wheat.

The North-South Shift in Cotton Production

The North China Plain, or what the Chinese more specifically call the Yellow River and Huai River Plain, has a 300-400 year history of cotton production. (See Map 5.1). Traditionally it was the nation's largest cotton-producing area. In the early years after the Liberation, it comprised about two-thirds of the nation's cotton area and output, and generally achieved yields one-third higher than the South (Chinese Academy of Sciences, Geographic Research Institute, Economic Geographic Research Group, 1983, p. 217).

In the 1950s, yields in both the North and South were little better than 20 jin per mu and increased to about 40 jin per mu in the 1960s. Under the Double-Harvest Strategy, however, the patterns diverged. During the Cultural

Map 5.1--The North China Plain (The Yellow and Huai River Region)



Source: National Agricultural Area Planning Committee. 1981. Chinese Comprehensive Agricultural Area Plan. Beijing: Agricultural Publication Society. Enclosed map.

Revolution, yields in the North China Plain fell to 43% of that in the South (National Agricultural Area Planning Committee, 1981, p. 72). In the late 1960s and 1970s, yields in the South increased very quickly; in particular, the rate in Hubei and Jiangsu increased to 60 - 80 jin per mu (National Agricultural Area Planning Committee, 1981, p. 72). Yields in the North, on the other hand, stagnated and even decreased. Yields in Henan Province in the 1970s remained at the level of the 1960s, and yields in Shandong and Hebei actually reverted back to the level of the 1950s.

One of the least productive areas was Eastern Henan's Shangqiu region, where four of eight counties had per capita annual incomes of less than 50 yuan (less than $20 per year) in 1979. Cotton yields there averaged 17.9 jin per mu from 1960 to 1962 and declined to an incredibly low 10.3 jin per mu in 1965. Yields remained generally in the 30-40 jin per mu range in the 1970s. Yields were 32.0 jin per mu in 1979, an increase of only 12% over the rate of 28.5 jin per mu in 1955-1957 (Henan Province Academy of Sciences, Geographic Research Institute, 1982, p. 123, t. 18). Cotton yields were also low everywhere else in the North: 32.6 jin per mu in the lower plain region of Hebei Province in 1975 (Hebei Province Academy of Sciences, Geographic Research Institute, 1982, p. 148, t. 39), 44 jin per mu in northern Anhui in 1979 (Yao Junze, 1984, p. 10, t. 1), and 41 jin per mu in Shandong in 1979 (National Agricultural Area Planning Committee, 1981, p. 72).

As yields stagnated in the North China Plain, the amount of land sown to cotton was also reduced considerably from 1957 to 1979. As Lardy (1983, p. 224, Appendix 2) points out, the sown area between those two years decreased by 74% in Hebei, by 41% in Shangdong, and by 58% in Henan. The natural result of stagnant yields and decreased land sown was significant decreases in output. For instance, gross annual output in Shandong declined from 434 million jin in 1956 to 300 million jin in 1976-1978 (Shandong Province Agricultural Area Planning Committee, 1982, p. 60). In Hebei, output dropped from about 600 million jin in 1957 to less than 250 million jin in 1979. (Deng Shoulin, et al., 1983, p. 380, graph 9-6).

To investigate further how far production had declined during the Cultural Revolution in the North China Plain, I will concentrate on Henan Province. There were 26 counties in Henan that had annual per capita incomes less than 50 yuan; 21 of them were concentrated on the North China Plain in the eastern part of the province. (See Map 5.2). Table 5.1 shows production data for those 21 counties.

The data show that the damage done by the Great Leap Forward (GLF) was overwhelming, and that reconstruction efforts from 1962-65 did not reestablish cotton output in Henan. From 1957 to 1965, cotton production was reduced from 51.4 million jin to 27.6 million jin--a reduction of 86%--even though foodgrain production in 1965-1966 returned to the level of 1957-1958.

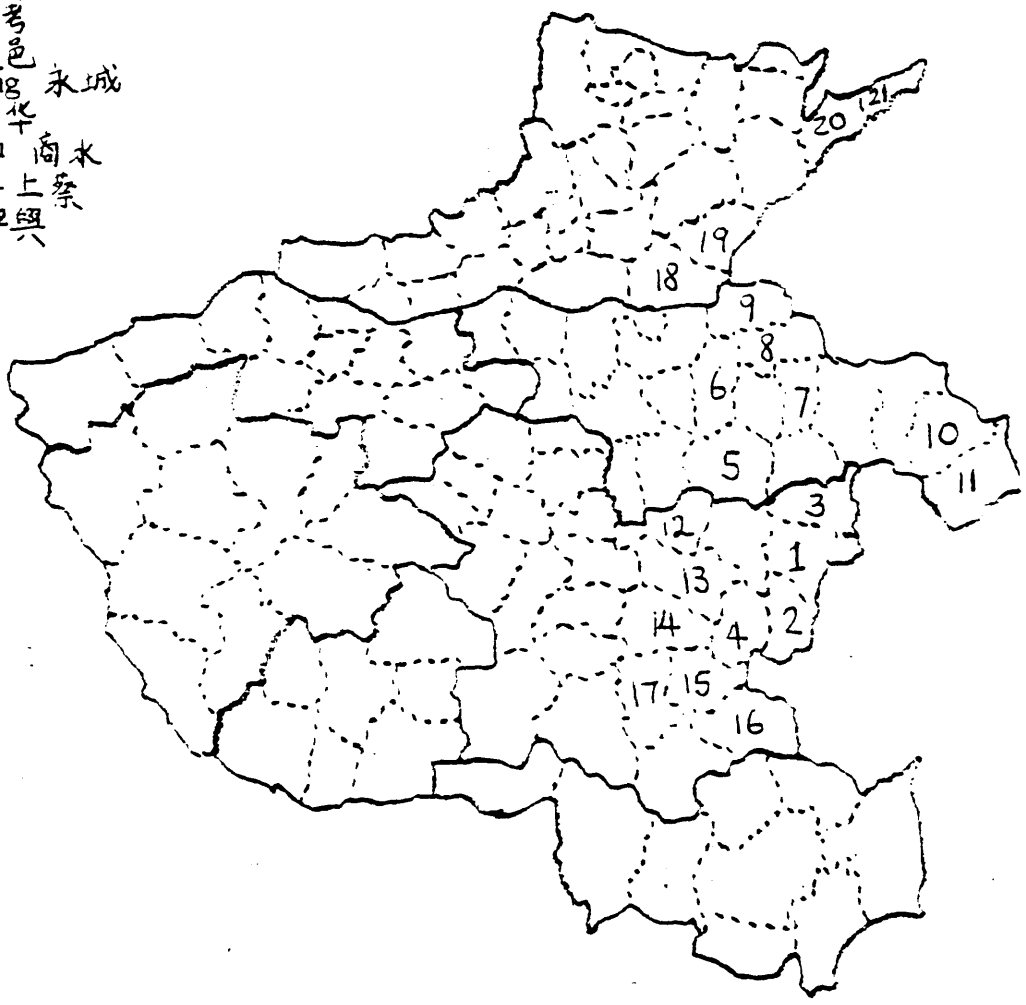
Table 5.1--Cotton Output of Counties in Eastern Henan with Per Capita Income of Less than 50 Yuan (10,000 Jin)

counties	1950	1957	1965	1979
Dancheng	140	200	60	380
Shenqiu	80	120	100	600
Luyi	140	200	40	740
Xiangcheng	180	120	60	120
Daikang	620	760	380	780
Qixian	260	380	320	600
Ningling	140	120	20	40
Minqi	120	140	120	360
Lankao	100	160	100	140
Xiayi	100	320	80	240
Yongcheng	280	280	20	300
Yihua	340	240	140	340
Shangqiu	160	220	80	340
Shangcai	140	320	120	540
Pingyu	60	100	140	160
Xingcai	140	320	120	540
Runan	80	200	100	120
Fengqui	40	140	60	60
Changyuan	60	100	140	60
Fanxian	260	740	180	260
Taijian	80	100	60	20
Total	3520	5280	2440	6740

Sources: Henan Province Academy of Sciences, Geographic Research Institute. 1982. Henan Agricultural Geography. Henan: Henan Science and Technology Press. These numbers were obtained by counting the dots on the maps on pp 66-67.

Map 5.2--Counties in Eastern Henan with Per Capita Income of Less than 50 Yuan

1. Dancheng 鄲城
2. Shenqiu 沈丘
3. Luyi 鹿邑
4. Xiangcheng 項城
5. Daikang 太康
6. Qixian 杞县
7. Ningling 宁陵
8. Minqi 民权
9. Lankao 兰考
10. Xiayi 夏邑
11. Yongcheng 永城
12. Yihua 西华
13. Shangqiu 商水
14. Shangcai 上蔡
15. Pingyu 平與
16. Xingcai 新蔡
17. Runan 汝南
18. Fengqui 封丘
19. Changyuan 長垣
20. Fanxian 范县
21. Taijian 台前



Source: Ministry of Agriculture, Commune Management Bureau. 1981. "In 1980, One-Third of the Country's Poor Counties Changed Noticably." Commune Finance. August, pp. 24-27.

One reason for the slow recovery of cotton production was the State's priority in the early 1960s to restore grain production in the North China Plain. Cotton farmers were guaranteed a fixed ration of grain, because of the natural reluctance among farmers to grow anything other than subsistence crops. The Reconstruction effort was hindered by flooding in the late summer of 1963, one of the most devastating to hit the North China Plain in history. This major flooding and silting not only damaged cotton production directly, but also eroded the willingness of peasants to grow cotton as grain might not be forthcoming from the government. Peasants naturally opted to grow more grain when flooding raised the level of risk in obtaining enough grain to eat.

The data show that the damage done by the Great Leap Forward (GLF) was overwhelming, and that reconstruction efforts from 1962-65 did not reestablish cotton output in Henan. From 1957 to 1965, cotton production was reduced from 51.4 million jin to 27.6 million jin--a reduction of 86%.

Strictly speaking, the data also showed that in these 21 counties cotton output increased, rather than decreased, during the Cultural Revolution. It increased by almost 2.5 times from 1965 to 1979, at an average annual growth rate of 6.5%. This number, however, is deceptive. The high rate was due to the low base year caused by the tremendous drop in production during the GLF and the slow recovery in the early 1960s. It is more accurate to say that cotton production grew from 51.4 million jin in 1957 to 67.0 million jin in

1979, a slow average annual growth rate of 1.2%, with a drop in production in the GLF and an upswing that probably did not begin until 1973.

Whichever view we take, however, we would tend to conclude that production in these poor counties in Eastern Henan was extremely low. The average annual growth rate from 1950 to 1957 was 5.5%. In contrast, the periods under Mao--the GLF and the Cultural Revolution--interrupted by three years of liberal policies in the early 1960s, resulted in stagnancy. Cotton production increased by only 30% in 22 years from 1957 to 1979, an average annual growth of 1.2%.

Other parts of the North China Plain, such as the southwest part of Shandong and the northern part of Anhui on the southern banks of the Yellow River, were also doing very poorly. Data show that these areas were also stagnant. Almost 90% of 106 counties surveyed there during the Cultural Revolution had less than 50 jin per mu of yield and did not exhibit any growth (Chinese Academy of Sciences, Geographic Research Institute, Economic Geographic Research Group, 1983, p. 197, t. 5-3). In Hebei Province, cotton production was also low. The southern region, which included six of the poorest counties in the entire nation, had average yields of 32.6 jin per mu in 1975 (Hebei Agricultural Geography Committee, 1982, p. 148, t. 39).

Although cotton yield in the North stagnated at an average of less than 25 jin per mu in the 1960s and 1970s, it rose sharply in the South during that time. From 1957 to

1979 yields just about doubled in Hubei Province and more than tripled in Jiangsu (Lardy, 1983, Appendix 2). Consequently the highest yields could be found in the South. For example, yields in the Shanghai region reached an average of 167 jin per mu from 1973 to 1977 (Shanghai Agricultural Geography Committee, n.d., p. 48). The average yield in Hubei Province was 105 jin per mu in 1978 (Hubei Agricultural Geography Group, 1980, p. 66). The fertile River Bank region along the Long River in Anhui had relatively high average yields of 68 jin per mu in the 1960s and 75 jin per mu in the 1970s (Yao Junze, 1984, p. 10, t. 1).

Area sown in the South also presented a different picture than in the North. Rather than decreasing, it remained about the same in Jiangsu, Hubei, and Shanghai, three principle cotton-growing regions. In Hubei, the area sown to cotton remained around 8 to 9 million mu from the late 1950s to the late 1970s, with the exception of a drop to a low of 6.4 million mu during the GLF (Hubei Agricultural Geography Group, 1980, p. 66, graph 13). In Hunan, cotton land actually increased. In the late 1950s and early 1960s, the area sown to cotton hovered around 1.2 million mu. During the Cultural Revolution, the area sown was raised above 2 million mu and remained above 2 million throughout the Cultural Revolution (Hunan Agricultural Geography Group, n.d., p. 55, graph 14). In Anhui, cotton cultivation was no longer limited to two counties on its northern border, but spread throughout the province, particularly to the more

fertile regions in central and southern regions. Anhui's cotton cultivation land jumped from 2.395 million mu in 1965 to 4.706 million mu in 1970, and remained higher than 5 million mu after 1974 (Anhui Agricultural Geography Group, n.d., p. 46, t. 17).

With area sown remaining high, and yields improving, output increased dramatically. For example, Hubei became a major producer during the Cultural Revolution, though it was not a major cotton-producing province traditionally. In the late 1970s, Hubei became the second or third ranked province in cotton output, accounting for one-fifth of the national production. Its output had been 400 to 500 million jin after the First Five Year Plan (FFYP) and increased to nearly 900 million jin in the late 1970s. From 1957 to 1977, output increased from 400 million jin to 875 million jin, an average annual increase of more than 4%. Similarly, cotton output in Hunan increased from 82 million jin in 1957 to 230 million jin in 1979, an average annual increase of about 5%. These two Southern provinces showed remarkable growth in cotton yields and output relative to their tradition and to the purported suppression of cash-crop production under Mao. (See Table 5.2 and Figure 5.1.)

Still another region that made a significant increase in cotton output was the Nanyang Region in southwestern Henan. Its geography differed from the rest of Henan. It had a warmer climate, higher rainfall, and the more fertile soil of the lower valley along the northern bank of the Long River.

Table 5.2--Cotton Production in Hubei Province, Hunan Province and all China (million jin).

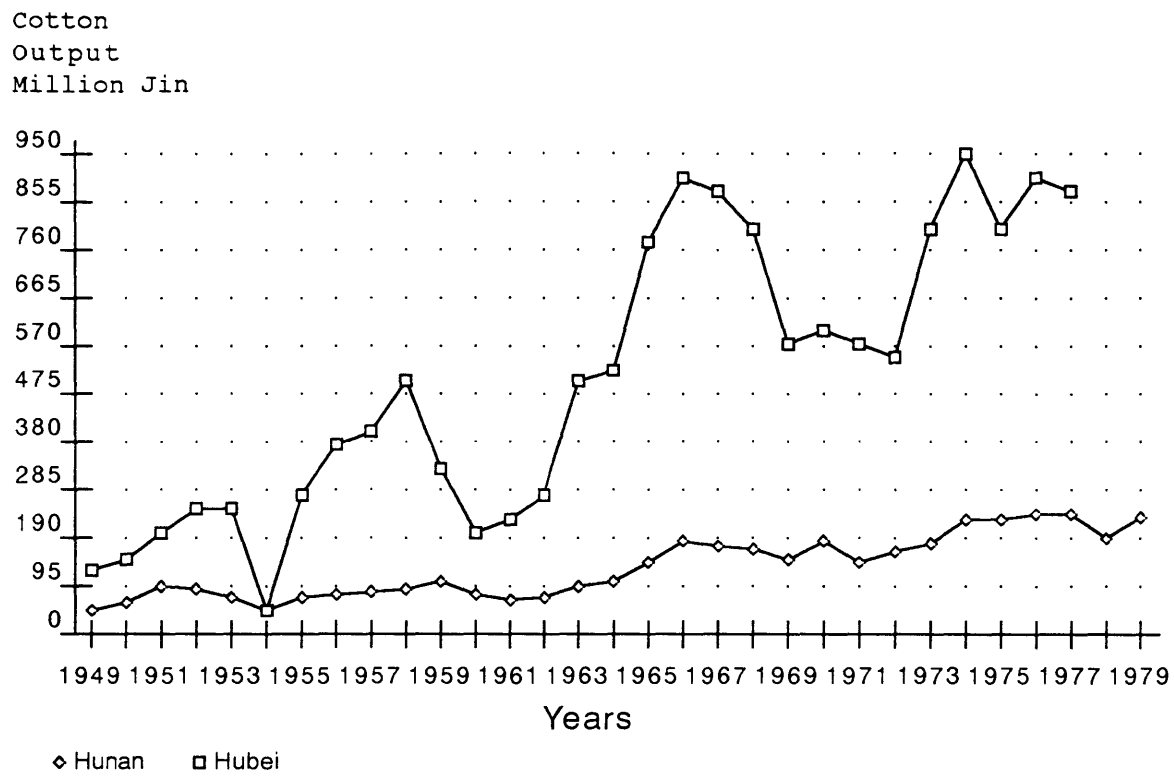
Year	Hubei	Hunan	China
1949	125	50	888.8
1950	150	61	1384.9
1951	200	95	2061.1
1952	250	91	2607.4
1953	250	75	2349.5
1954	50	50	2129.8
1955	275	75	3036.9
1956	375	80	2890.3
1957	400	82	3280.0
1958	500	89	3937.5
1959	325	105	3417.6
1960	200	80	2125.8
1961	225	70	1600.0
1962	275	75	1500.0
1963	500	95	2400.0
1964	525	108	3325.4
1965	775	140	4195.5
1966	900	185	4673.5
1967	875	175	4707.9
1968	800	170	4708.6
1969	575	150	4158.6
1970	600	185	4554.0
1971	575	140	4209.5
1972	550	162	3916.3
1973	800	180	5123.5
1974	950	225	4921.5
1975	800	225	4761.6
1976	900	235	4110.9
1977	875	235	4097.5
1978	na	190	4334.0
1979	na	230	4414.7

Sources: The Hubei data are from Hubei Agricultural Geography Group 1980. Hubei Agricultural Geography. Hubei: Hubei People's Publication Society. p. 66, graph 13.

The Hunan data are from Hunan Agricultural Geography Group. n.d. Hunan Agricultural Geography. n.p. p. 55, graph 14.

The National data are from Chinese Agricultural Yearbook Compilation Committee. 1981. Chinese Agricultural Yearbook 1982. Beijing: Agricultural Publication Society. p. 36.

Figure 5.1--Cotton Output in Hunan, 1949-1979 and in Hubei, 1949-1977 (million jin)



Sources: The Hubei data are from Hubei Agricultural Geography Group 1980. Hubei Agricultural Geography. Hubei: Hubei People's Publication Society. p. 66, graph 13.

The Hunan data are from Hunan Agricultural Geography Group. n.d. Hunan Agricultural Geography. n.p. p. 55, graph 14.

Due to these and other factors, it increased cotton output by 2.6 times from 1957 to 1979, a rate of growth equivalent to an average annual growth rate of more than 4%. Cotton output share in that region grew from 11.1% of Henan Province in 1957 to 24.2% in 1979 (Henan Province Academy of Sciences, Geographic Research Institute, 1982, pp. 66-67, map 19). In contrast to the traditional cotton-growing Eastern Henan plain section, Nanyang achieved respectable yields in cotton production. During the Cultural Revolution, its cotton cultivation surpassed that of Eastern Henan, accounting for a greater share of provincial output. As shown in Table 4, its yield at the end of the Cultural Revolution was a very respectable 70.1 jin per mu, 91% above that of the traditional cotton region on the Eastern Plain.

Table 5.3--Regional Cotton Output in Henan Province, 1978

Region	Sown Area (1,000 mu)	Yields (jin/mu)	Output (million jin)
Eastern Plain	3,540	36.7	118
Nanyang (Southern)	1,640	70.1	130
Henan Province	9,180	49.0	448.5

Source: Du Xindian, 1981. "A View on an Investigation of the Distribution of Cotton Production in Henan Province." in Selections from the Conference on Henan Province Agricultural Regional Planning. n.p., pp. 48-53.

In sum, the overall trend in the South was that cotton production increased dramatically, compensating for the decline in the North. The national aggregate data indicate that cotton output had an annual growth rate of 1.3% from 1965 to 1975, a decline from the growth rate of 3.1% achieved from 1957 to 1965 (Perkins and Yusuf, 1984, p. 35, t. 3-5), but hardly the collapse that is being claimed by Chinese scholars and the Deng government against Maoist policies. (See Table 5.2 and Figure 5.2.)

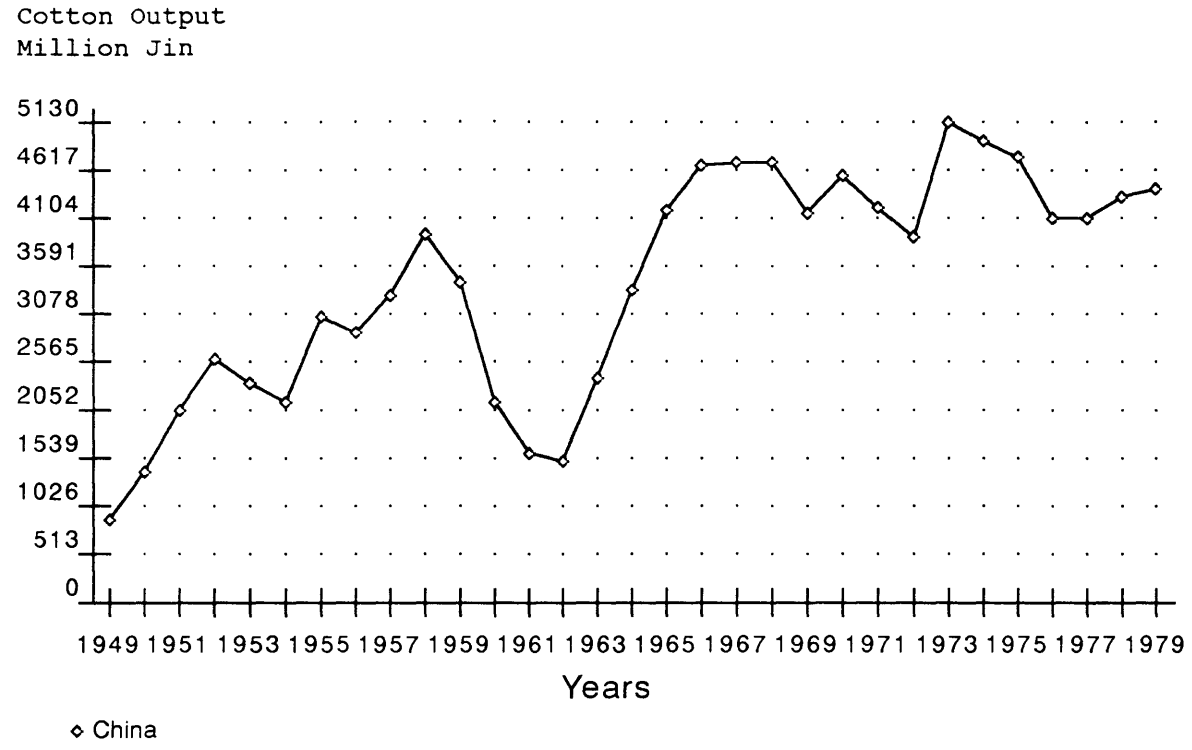
The Technical Constraints of Cotton Production under the Double-Harvest Strategy

There were two major reasons for the shift in cotton production from the North to the South. The first related to suitability of the natural conditions of the two regions to the Double-Harvest Strategy. The second related to peasant economic behavior, to be discussed in the next chapter.

The cultivation system in the North China Plain used by cotton producers had traditionally been one crop per year. Cotton was rotated, with maize, millet, or wheat in one year, and then with maize intercropped with a legume in the following year. It was a system that left land idle and achieved low gross output, but maintained soil fertility. Improved over a 300-400 year history, this system was a triumph of people's ingenuity over marginal farming conditions.

During the Cultural Revolution, Chinese leaders were

Figure 5.2--Cotton Output in China, 1949-1979 (million jin)



Source: Chinese Agricultural Yearbook Compilation Committee. 1981. Chinese Agricultural Yearbook 1982. Beijing: Agricultural Publication Society. p. 36.

concerned with raising total output. In regard to the North, they were especially concerned that traditional cropping methods would not raise wheat output consistently beyond 100 jin per mu. Therefore, a highly intensive method of cultivation was introduced. Wheat was planted as an early-season crop, and cotton was intercropped as the late season crop. Cotton/wheat was rotated with cotton/green manure. It was thought that cotton and wheat would be complementary and that output for both crops would be raised. Introduced as part of the Double-Harvest Strategy, and supported by a propaganda campaign that emphasized the complementary aspects of wheat/cotton intercropping, this technique became the major cropping reform in the North China Plain in the Cultural Revolution.

This new intensive cropping method, however, faced severe problems in implementation. The most important was water availability. The North China Plain had always been famous for its droughts. The peasants in Henan acknowledged that "nine out of ten years are dry." Precipitation in the North China Plain was low, at 400-750 mm per year, with 300-650 mm occurring between April and October (Henan Province Academy of Sciences, Geographic Research Institute, 1982, p. 5, Map 5). This amount of rainfall was barely sufficient for cotton production. The dryness of the land, strong winds, and dearth of rain during April and May when cotton seeds were planted and buds began to open actually provided a poor condition for cotton cultivation. For example, in the Dezhou

region in Shandong, a famous cotton region, rainfall in March and April from 1960 to 1980 averaged only 38 mm (Shandong Province Agricultural Area Planning Committee, n.d., p. 34). The sources of groundwater were also too few. Irrigation was not widespread. As a result, the management of the summer cotton crop was affected adversely (Yan Ruiyen, 1980, pp. 19-25). Similarly, there was a bottleneck later in the cycle when the winter wheat crop had to be planted. The grain crop had to be planted before October 15. Each day of delay could reduce yields by 20 jin. Because of the labor shortage, planting often continued to October 20, and every year, there were 60,000-70,000 mu that were not planted on time. Moreover, labor was needed also for the application of fertilizer, which increased tremendously with intensive cropping. One estimate was that the process of fertilizer application took 30% to 40% of the total labor expended (Yan Ruiyen, 1980, pp. 19-25). As labor availability was much lower in the North China Plain than in the fertile river valleys of the South, the "contradiction" of labor was more keenly felt there than elsewhere.

The major cotton-producing area in the South during the Cultural Revolution was the Long River Valley. To the south of the Huai River and the Funui Mountains, this valley essentially comprised the southern part of Henan; central and southern parts of Jiangsu and Anhui; Hubei, Hunan, Shanghai Municipality, and Zhejiang. The pattern of cotton production there was significantly different from that in North China in

many respects. Just as in the North, wheat was grown as the winter crop, while cotton was planted as the summer crop, but the differences essentially ended there. For example, in the middle and lower regions of the Long River, it was common to grow the wheat with peas, broadbeans, or oil crops in the winter rather than by itself; then right before planting cotton seeds, the peasants compressed those young stems of those crops into the ground to form a foundation of fertilizer. In the Nantong Region along the Long River and in the Long River valley of Hubei Province, such a practice occurred on 70% and 50% of the cotton sown area, respectively. Such a technique produced 7.5 jin of nitrogen per mu, enriching the soil for the cotton crop. Land that used such a system, when compared to one in which wheat was grown by itself, was 0.04% higher in nitrogen, and 20% higher in water holding capacity (Chinese Academy of Sciences, Geographic Research Institute, Economic Geographic Research Group, 1983, p. 203). In addition, peasants in Jiangsu and Hubei advanced a summer green manure crop. That is, after the winter crop wheat was harvested, a crop such as sesbania was intercropped with cotton, and young sesbania stems were compressed to serve as fertilizer for cotton. The Chinese attributed the high cotton yield along the Long River delta to this cropping pattern (Chinese Academy of Sciences, Geographic Research Institute, Economic Geographic Research Group, 1983, p. 203).

The second difference was the climate, most noticeably

rainfall. The primary cotton region in Hubei, for example, received 1,000 mm to 1,300 mm of rain per year, almost double the amount in the North China Plain (Hubei Agricultural Geography Group, n.d., p. 14, graph 5). The cotton region in Anhui Province received even more precipitation, specifically, 1,200 mm to 1,600 mm (Anhui Agricultural Geography Group, n.d., p. 26, graph 18). More importantly, rainfall was not restricted to the autumn as in the North. The heavy and consistent spring rain in those regions was especially beneficial to cotton cultivation. Quite naturally, this region had higher temperatures, apt for cotton cultivation. It had 5,000 to 6,000 hours of temperatures above 10 degrees Centigrade annually, as compared to only 4,000 hours in the North China Plain (National Agricultural Area Planning Committee, 1984, p. 10, map 6).

Another reason was that this region had the capacity to supply the inputs needed for intensive farming. Its irrigation system was as extensive as it was well controlled. The Chinese claim that, through irrigation control, they have uniformly resolved the problem of waterlogging and other "contradictions." In addition, fertilizers were more abundant. For example, Hubei Province produced natural plant fertilizer on 23.16 million mu of crop land in 1978, such that 40% of the cultivated land benefitted from this enriching technique (Hubei Agricultural Geography Group, 1980, p. 36). Finally, peasants in the South generally had

greater access to chemical fertilizers than their counterparts in the North. As an illustration, the average chemical fertilizer application in Henan Province in 1979 was approximately 60 jin per mu (Henan Province Academy of Sciences, Geographic Research Institute, 1982), as compared to applications of over 100 jin per mu in the southern provinces of Hunan and Jiangsu (Hubei Agricultural Geography Group, 1980, p. 59).

Still another advantage was labor. As in the North, intensive farming required tremendous amounts of labor, especially during harvests, from the end of May to the beginning of June, and from the end of July to the beginning of August. The Long River Valley had a high population-to-land ratio. Throughout the cotton regions in Jiangsu, Anhui, and Zhejiang Provinces and in Shanghai Municipality, the labor to mu index was 0.7 - 1.0 (Chinese Academy of Sciences, Geographic Research Institute, Economic Geographic Research Group, 1983, p. 200). In North China, the index during the Cultural Revolution was much lower. For example, there were only 0.41 and 0.52 rural residents for each mu of cultivated land in 1965 and 1973, respectively, in Henan Province (Henan Province Academy of Sciences, Geographic Research Institute, p. 2, t. 1). Such figures would be even lower in the low-income plain regions.

In sum, one of the basic reasons why the Double-Harvest Strategy failed in North China was that natural conditions could not support the intercropping method needed even to

come close to achieving the ideologically inspired goals. In contrast, the three contradictions (water, labor, and fertilizer) discussed earlier were not factors in the South, as rich soil and favorable weather allowed peasants to come closer to reaching the fanatical goals for cotton and for subsistence grain. Hence, the reason why cotton growth occurred slowly in the North was not so much because the State was forcing the peasants there to grow just grain, but because peasants did not possess the resources to follow the State's policy. On the other hand, cotton production increased in the better-endowed South, invalidating the sweeping allegation commonly made in Chinese publications today that "grain suppressed cotton" was a deliberate plan during the Cultural Revolution.

In reality, the leaders of the Cultural Revolution used ideological persuasion, not planning. Peasants were exhorted to intensify cropping patterns in order to produce both cotton and grain. This politics of exhortation was relentless, but the problem of insufficient resources was real. The peasants in the North China Plain required more water and fertilizer, but they only received in return explanations that the new intercropping system would take full advantage of the complementary aspects of wheat and cotton cultivation, as in the following:

> Because cotton is a crop that likes the warm sun, wheat can give cotton during its flowering period protection from the wind and help it to maintain warmth. Wheat can also help the cotton bud to open

> earlier. The 'seven star' worm that climbs on wheat likes to eat the cotton aphid, and therefore can reduce insect damage to the cotton. After the wheat is harvested, it provides the opening so that the cotton plant can get the sunlight it needs. Wheat can develop the potential of cotton. When the wheat is planted, the cotton will similarly protect it from the wind and help it keep warm (Agricultural Publication Society, 1973, p. 35).

While these words may have been inspiring to some peasants, they were hardly a substitute for water, fertilizer, and extra hands. Ideological revolution was to be the foundation of technological breakthroughs and successes (Red Flag, 1970); however, in the case of the Double-Harvest schemes, the peasants could not bridge the gap between idealistic goal and real dilemmas.

Thus far, I have developed a story about agricultural development during the Cultural Revolution. Considerable criticism has appeared in the Chinese literature that the leftist policy of "taking grain as the key link" had a nation-wide, adverse effect on cash-crop production. In actuality, the goal of the leftists was to raise the production of both cash crops and foodgrains, through ideological persuasion and through poorly devised intercropping schemes that were supposed to lead to abundant double harvests. One major problem in this strategy was that the State did not have control of the countryside. Peasants were able to circumvent state policies and act outside of the State's control. The second major problem was that the State did not allocate any resources to peasants to meet the tremendous increase in inputs needed to implement the Double-Harvest Strategy. I have presented data in this chapter that the lack of

resources led to three basic technical constraints, and that regions in the South generally were better endowed to cope with these contraints than regions in the North. Hence there was a North to South shift in cotton production during the Cultural Revolution. In the next chapter, I will examine the peasants' decision-making process and argue that rational, economic choices on their part led to the shift in cotton production and to specific patterns of grain output.

> If we let the price of one jin of cotton equal the price of eight jin of grain, the result will be an huge increase in cotton output.
>
> Chen Yun, "The Problem of Planning and Markets"

CHAPTER 6

SUBSISTENCE AND ECONOMIC BEHAVIOR OF PEASANTS

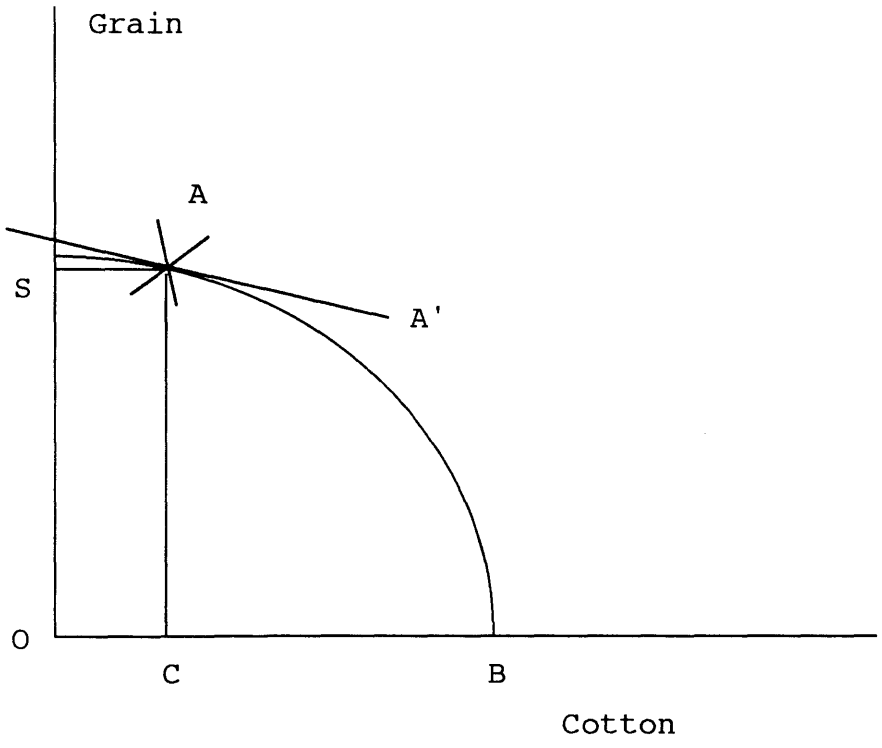
In the previous chapters, I have outlined the goals of the Double-Harvest Strategy and the relative capacities of various regions to meet the State's demand for cotton and grain output; however, there were other factors that accounted for the North-South shift in cotton production. The most essential was the response of the peasants to the dilemma posed by the strategy: the unattainable goals of increasing both grain and cotton output, on the one hand, and the absence of workable plans and the unavailability of resources, on the other. My premise is that, in response, peasants followed their own survival and economic instincts, tempered by the political risk. Specific regional patterns developed not so much as a result of the directives supposedly devolved from a pro-grain policy, but as a result of the peasants' self-interest.

There were two levels of economic behavior that governed the actions of the peasants. The peasants primarily responded to their risk-adverse, survival instincts; and once subsistence was met, they responded to the relative prices and costs of cash crops versus foodgrains. The standard

transformation curve can be used to show these two levels of decision-making.

The transformation curve in Figure 6.1 indicates the trade-off between growing cotton and grain in the North China Plain, given the technology imposed upon the peasants by the Double-Harvest Strategy. As shown in the previous chapter,

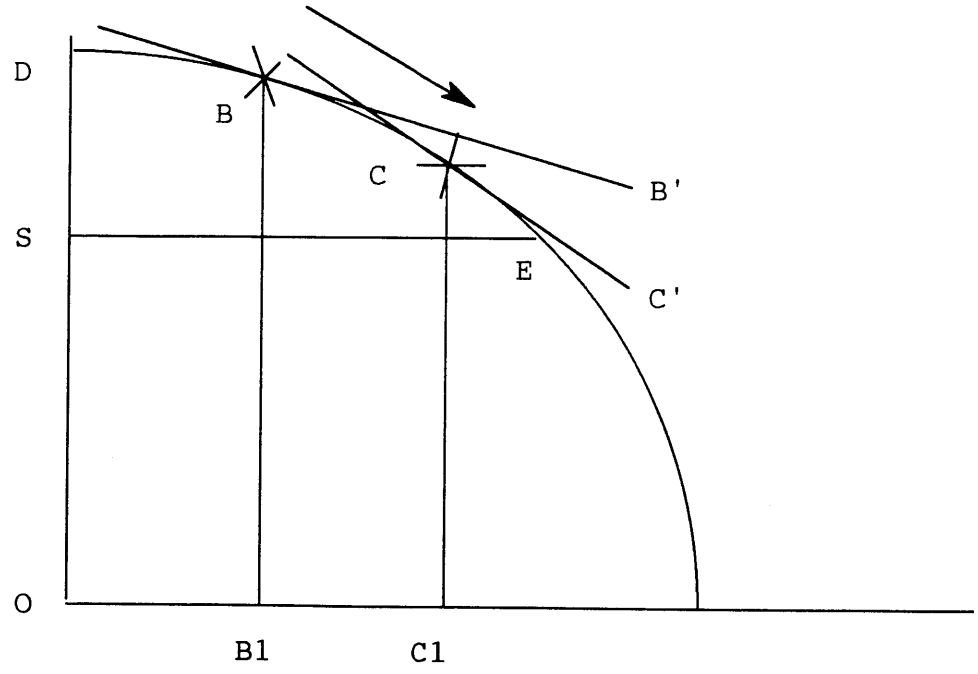
Figure 6.1--Production Possibility Frontier, North China Plain.



production of cotton decreased significantly, while the output of grain increased in this traditionally cotton-producing region. In this section, I will argue that peasants in the North China Plain chose point A, opting to produce enough grain to meet their subsistence level OS. Peasants would not produce more cotton--move along the arc AB toward the right--because that would mean producing grain at lower than subsistence level.

The transformation curve in Figure 6.2 shows the trade-off that peasants in South China faced. The production

Figure 6.2--Production Possibility Frontier, South China



possibility frontier in this model extends further out than the frontier in the model for the North China Plain, because the South had more resources to meet the goals of the Double-Harvest Strategy.

Peasants in South China had the choice of producing anywhere along the transformation curve above line SE, which indicates the level where grain subsistence is met. The peasants' choice as to where along the arc DE they would produce is determined by the relative price of cotton and foodgrain. The slope of a tangent line indicates the relative price, and the point of tangency determines the peasants' choice of production.

In this section, I will show that peasants in South China were not enthusiastic about growing cotton in the first half of the Cultural Revolution even through they were told by the State to increase cotton output significantly and had the resources to do so. During that period, the relative price of cotton to grain, as indicated by tangent B' was low; hence, they chose to produce at Point B. In 1972, the price of cotton relative to grain increased significantly, as shown by the slope of tangent C'. As a result, peasants chose point C, increasing their cotton output from OB1 to OC1.

Subsistence First and Risk-Adverse Behavior

A socialist system, ordinarily, tries to minimize risk in agriculture. A farmer does not need to be overly worried about changing prices, because they are kept stable by the

State. Nor does he have the heavy burden of individual decision-making, as investment choices are made at the commune level or higher. The state procurement and marketing system provides a ready outlet for crops. Moreover, the State provides basic medical, educational, and other basic needs in addition to disaster assistance.

However, the Cultural Revolution was anything but an ordinary time. Within agriculture, rather than reducing risk, the State forced a new intercropping technique upon the peasants. Free markets and private plots, the two traditional outlets where cash-crop farmers could obtain foodgrain, were suppressed. Trading for foodgrain across regions was substantially reduced (Lardy, 1983, p. 51). Of more severe consequence, the State rescinded the grain ration guarantee for cotton growers established during the Reconstruction of 1962-65 until 1972, when Chou Enlai rallied moderate forces to re-institute a similar policy in addition to raising the price of cotton and other cash crops. Therefore, for most of the Cultural Revolution, the safety net for cash-crop farmers no longer existed in case of failure in foodgrain production; this led to a natural reluctance to cultivate cash crops, even in traditional cash-crop producing areas.

Given this recent background, the peasants could not have viewed the new intercropping scheme and the Double-Harvest goals as anything but dangerously risky ventures. Under "the National Agricultural Development Plan Targets,"

the North China Plain region was to produce cotton yields of 80 jin per mu, double the normal yields, in addition to producing a new wheat crop to meet their own subsistence (Chinese Academy of Sciences, Geographic Research Institute, Economic Geographic Research Group, 1983, p. 193). Their own knowledge about the conditions of the land and the climate must have forewarned them of the dubious chances of successful double harvests in the North China Plain.

As already noted, precipitation in the eastern part of Henan Province, covering a large share of the North China Plain, averaged 600-700 mm per year (Henan Province Academy of Sciences, Geographic Research Institute, 1982, p. 25), a level of rainfall that was barely sufficient to meet the demands of one crop, let alone two crops intercropped. Although the average amount of annual rainfall was important in this respect, the risk of drought was critical to the peasants. Historically, this region had been drought prone. For example, in a span of 654 years in the Ching Dynasty, 395 years, 60%, were declared as disastrous drought years (Henan Province Academy of Sciences, Geographic Research Institute, 1982, p. 28). The variation in precipitation from year to year was also a chronic problem in the North China Plain. In Wingcheng County in Henan, for example, the highest rate of rainfall during one year was 9.3 times greater than the lowest during a particular 32-year span (Henan Province Academy of Sciences, Geographic Research Institute, 1982, p. 26). No one was more aware of these historical trends than

the peasants; at no other time were they more aware of the portends of these trends than when they were confronted with decisions about whether to grow subsistence or cash crops.

The risks were even more serious if variation in rainfall during specific seasons from year to year are considered. For example, while rainfall in July was steady from year to year in Henan, it varied greatly in April and October. Precipitation in April was vital as cotton seeds were planted then, and October was also a critical month for the winter wheat crop in the Double-Harvest scheme. The change in planting scheme meant that the critical stages of cultivation fell on months when precipitation was especially unreliable. This problem was more severe in the North China Plain than in other areas. For example, in the northern part of Anhui on the North China Plain, the difference between the highest rate of rainfall and the lowest was 2.5 to 3.5 times, compared to the corresponding figure for the fertile central and southern parts of Anhui of only 2 to 2.5 times (Anhui Agricultural Geography Group, n.d., p. 26). In all, Chinese peasants must have viewed the Double-Harvest Strategy in North China as a highly risky innovation because of the threat of low rainfall in crucial months and for an entire year.

One of the models that precipitated the launching of the Double-Harvest Strategy was the Liuzhuang Brigade in Xingzhou County, which reportedly achieved a yield of 150 jin of cotton per mu and more than 700 jin of grain per mu (People's

Daily, 1966a, p. 5). It is difficult to trace how favorable the weather condition was and how much fertilizer and other inputs were available at that time to have achieved such successes, but data from other regions show that weather conditions much more favorable than those in the North China Plain were associated with this high yield. For example, during the 1970s, the fertile regions of the Long River Valley in Anhui produced 80 jin of cotton per mu and more than 700 jin of grain per mu (Anhui Agricultural Geography Group, n.d., p. 112). These production levels equalled the grain yield of Liuzhuang, but reached only half the cotton yield. The rainfall that led to this success in the Long River Valley in Anhui was about 1,200-1,600 mm--three to four times the precipitation of the North China Plain (Anhui Agricultural Geography Group, n.d., p. 42, Graph 26). Moreover, that region's supply of fertilizer was ample. The peasants in the sandy North China Plain could not possibly have viewed the Liuzhang model as applicable to their own situation. In fact, considerable concern was expressed in local newspapers regarding the management of wheat production under the Double-Harvest scheme in light of the expected shortages of water and fertilizer (Henan Daily, 1966a). One paper in Henan Province questioned the feasibility of a winter wheat crop, stating that "the air is cold, the ground frozen; we cannot plant and irrigate again" (Henan Daily, 1966b).

In this sense, the peasants were certainly facing a

dilemma. They knew that the goals of the campaign were unattainable and therefore took that in stride. The problem that they faced was whether to fall short of state quota in cotton, grain, or both. Here I hypothesize that the peasants acted according to their natural "Scottian" state. The greater danger laid in producing an insufficient amount of grain, as opposed to an insufficient amount of cotton. Given the disaster of the GLF and the massive flooding in the North China Plain in 1963, the risk of hunger weighed heavily. Consequently, cadres had to urge peasants in North China to plant "patriotic cotton" during the Cultural Revolution; that is, to grow cotton for the State. Instead the peasants planted "perfunctory cotton," cotton on the worst land with little or deficient inputs devoted to it (Yang Derou, 1980, pp. 53-55). The risk of political retribution was great for something as obvious and easily detectable as not fulfilling the quota on sown area, but limiting the amount of labor and fertilizer would be harder to identify, and would not be discovered until after the harvest, if at all. This approach was widespread during the Cultural Revolution, such that newspaper articles warned readers that it was wrong to plant cotton on infertile and dry land, and to devote no attention to cultivating it, even as they were announcing double harvests in Henan, Hebei, and other regions in the North (People's Daily, 1972c, p. 1).

In the South, with warmer climate and the fertile soils of the Long River delta, the three contradictions were not as

serious a problem. Peasants there could satisfy their own grain needs and still produce cotton; hence, they did so, particularly after economic incentives were put into effect in 1972. What made it possible for Southern peasants not to intercrop cotton with a major grain crop, as it was done in the North, was that they had another cropping system designed for subsistence. Peasants in cotton regions used "two wet-one dry", "two dry-one wet", or "three-dry" triple cropping systems. The most popular was a crop of barley, wheat, or early season oil seed (one dry crop) used with a double season of rice (two wet crops). Some cultivators substituted early season maize for the first rice crop (one dry crop taking place of a wet crop; hence two dry-one wet). Still others used barley or wheat, early maize, and sorghum or sweet potato as three dry crops (Chinese Academy of Sciences, Geographic Research Institute, Economic Geographic Research Group, 1983, p. 203). In cotton regions of Jiangsu and Shanghai, triple cropping comprised more than 60% of the area sown with foodgrain (Chinese Academy of Sciences, Geographic Research Institute, Economic Geographic Research Group, 1983, p. 202). In addition, grain and cotton were rotated once every two or three years to maintain soil fertility. That is, plot A cultivated a triple crop of grain, and plot B in the same area cultivated cotton and green manure. After two or three years, plot B would grow grain, while plot A cultivated the cash crop. This "subsistence first" behavior was similar to the examples in other parts of the world used

by Scott (1976). In Buganda, reliable rainfall made it a low-risk proposition for farmers to grow their food crop and cotton; therefore, they adopted cotton cultivation. Also, in Ghana and Nigeria, cocoa production spread rapidly because there was little threat to the subsistence crop (Scott, 1976, p. 21).

The reluctance of peasants in the North China Plain to grow cotton is reflected to some degree by the relative yields of wheat and cotton. That is, cropping patterns and the amount of land sown by crop, to a large extent, were set by governmental policy and controlled administratively. The proliferation of cotton land in the North China Plain and in the South could therefore be explained by the Double-Harvest policy. However, the amount of input for a particular crop, especially the enthusiasm of labor, could not be controlled administratively. As a result, relative crop yields could be used as an measure of peasants' interest in particular crops. Lardy (1983, p. 75, t. 2.7) used this technique in measuring the comparative advantage of cotton vis-a-vis grain of various provinces, as did a Chinese economist (Chen Yaobang, 1981, pp. 27-31). Table 6.1 is constructed from their data, comprising ratios of grain yields to cotton yields in 1957 and from 1971 to 1975.

The data showed a drop in the relative yields of cotton to grain in favor of grain as a result of the Cultural Revolution. That is, the trade-off between cotton and grain in 1957 was 1 jin per mu to 3.4 jin per mu in Hebei Province,

Table 6.1--Ratio of Grain Yield to Cotton Yield

	1957	1971-1975
Henan	5.0	6.5
Hebei	3.4	6.8
Shandong	4.8	8.4

Sources: The 1957 data is from Lardy, Nicholas. 1983. Agriculture in China's Economic Development. New York: Cambridge University Press, p. 75, Table 2.7. The 1971-75 data is from Chen Yaobang. 1981. "Advance the Comparative Advantage of Cotton Production in the Three Provinces of Hebei, Henan, and Shandong." in Problems in Agricultural Economics. June 1981. pp. 27-31.

1 jin per mu to 4.8 jin per mu in Shandong Province, and 1 jin per mu to 5.0 jin per mu in Henan Province. Cotton's worth dropped considerably thereafter. In the early 1970s, the ratio of cotton yield to grain yield was 1:6.5 in Henan Province, 1:6.8 Hebei Province, and 1:8.4 in Shandong Province. Local data showed that some counties had an even greater preference for grain. For example, this ratio reached 1:9.4 in Shijiazhuang County in Hebei in the early 1970s. Even the ratios in Anyang, Xinxiang, Dezhou, and Xingtao, four famous cotton producers, reached 7.2 to 8.6 (Chen Yaobang, 1981, pp. 27-31). This decline in productivity of cotton relative to grain was due in large measure to the concentration of inputs into subsistence production.

Table 6.2 lists the relative yields of cotton to wheat

in specific areas in North China and in South China. There are two reasons why wheat yield is used for this measure instead of grain yield, even though the data for the latter are more readily available. The first is that wheat, in most regions, was in direct competition with cotton for inputs, and therefore the relative yields of these two crops was a more exact measurement of preference. The second is that foodgrain yield was a function of not only input, but also the type and number of foodgrain crops plotted on each mu of land. Specifically, foodgrain yield was calculated as the sum of gross output of all grains on a given mu of land. For example, foodgrain yield per unit of land would rise if barley was substituted by wheat or if a triple-cropping scheme replaced a double-cropping system. Yield for a particular crop was a more accurate measure of the amount of material and labor input into the land.

The table shows that the relative yield of wheat to cotton was generally higher in the South than in the North. The ratios for the North tend to be more than 5.5, whereas the ratios for the South tended to be below 5.5, suggesting the importance of wheat as a subsistence crop in the North relative to cotton as an economic crop. More specifically, there are three regions in the North where the importance of wheat as a subsistence crop stands out. They are Eastern Henan, Northern Anhui, and Shanxi Province. Henan Province registers a ratio of 6.92, indicating the importance of wheat

Table 6.2--Relative Yields of Cotton and Wheat

Areas	Cotton jin/mu	Wheat jin/mu	Ratio (2)/(1)
North China			
Hebei Province, 1979	28	298	10.6
Binxian County, N. Shanxi, 1971	22	226	10.3
Northern Henan, 1979	52	444	8.5
Shandong Province, 1979	41	343	8.4
Longxian County, N. Shanxi, 1971	30	208	6.9
Henan Province, 1979	48	332	6.9
Anhui Province, 1979	43	267	6.2
Baishui County, N. Shanxi, 1971	29	174	6.0
Shanxi Province, 1979	55	300	5.5
South China			
Xiangyan County, N. Hubei, 1978	52.6	292	5.6
Shanghai, 1979	127	587	4.6
Central Hunan Region, 1975	42.7	177	4.1
Jiangsu Province, 1979	120	476	4.0
Central Hunan Region, 1979	52.5	191	3.6
Jianghuai Reg., Anhui, 1977	51	163	3.2
Hubei Province, 1979	103	301	2.9
Hunan Province, 1979	78	174	2.2
All China, 1979	65	285	4.4

Sources: The 1979 data for the provinces, Shanghai, and China are from the Chinese Agricultural Yearbook Compilation Committee. 1981. Chinese Agricultural Yearbook, 1980. Beijing; Agricultural Publication Society. pp. 105 and 107.

The data for counties in Shanxi Province are from Shanxi University Geography Department. 1979. Shanxi Agricultural Geograph. n.p. p, 155, t. 35.

The Anhui '77 data are from Anhui Agricultural Geography Group. n.d. Anhui Agricultural Geography. n.p., p. 93.

The Hunan '75 data are from Hunan Agricultural Geography Group. n.d. Hunan Agricultural Geography. n.p. p. 136.

as a subsistence crop, even though cotton had been the major economic crop traditionally. From 1950 to 1977, wheat, the main foodgrain, comprised 30% to 33% of the grain crop in Henan (Henan Province Academy of Sciences, Geographic Research Institute, 1982, p. 46, t. 10). Wheat was essential to the 22 impoverished counties in Eastern Henan.

During the Cultural Revolution, the Chinese viewed Henan and the North China Plain region as prime examples of provinces requiring importation of grain from the South. Writing about the cotton-producing region of Western Shandong, a Chinese economist noted that "from the perspective of the procurement-supply situation, in the 26 years after Liberation (1949 - 1975), this region supplied grain to the state in 10 years, but there were 16 years in which grain was inadequate. Therefore, it is one of the targets under our country's campaign to equalize grain production between North and South" (Chinese Academy of Sciences, Geographic Research Institute, Economic Geographic Research Group, 1983, p. 181). This assessment was certainly applicable to Eastern Henan Province as well as any other part of the North China Plain, which had long suffered what the Chinese referred to as the tri-disasters of drought, flooding, and salinity. They estimated that in the 22 years from 1949 to 1970, there were major disasters in 12 years, and that one-third to one-half of the cultivated land was adversely affected to some degree in any one year (Chinese

Academy of Sciences, Geographic Research Institute, Economic Geographic Research Group, 1983, pp. 181-182).

During the Cultural Revolution, wheat yields in Henan Province increased. The yield was 85 jin per mu in 1950, 110.6 jin in 1957, and 332 jin per mu in 1979 (Henan Province Academy of Sciences, Geographic Research Institute, 1982, p. 47). Its average annual growth in output was about 4% from 1950 to 1957 and 5% from 1957 to 1979 (Henan Province Academy of Sciences, Geographic Research Institute, 1982, pp. 50-51).

As shown in Table 6.3, wheat output in the depressed counties of Eastern Henan Province grew at more than 4% annually from 1950 to 1957, from 1,295 billion jin to 1,750 billion jin. From 1957 to 1979, wheat output increased from 1,750 billion jin to 3.765 billion jin, an average annual growth rate of 3.5%. As seen earlier in Table 5.1, average annual growth of cotton output in these same counties was high from 1950 to 1957, at 5.5%, but dropped to 1.2% from 1957 to 1979.

Comparatively, cotton achieved an higher growth rate than wheat during the First Five-Year Plan (FFYP, 1952-1957). However, from 1957-1979 their positions reversed; wheat output growth maintained a rate best described as moderate, but which was significantly higher than the growth rate of cotton, which had plunged to 1.2%. These data, if taken by themselves, support the claim by Chinese economists that leftist policy suppressed cotton in favor of grain, against the background of historical comparative advantage that

Table 6.3--Wheat Output of Counties in Henan with Per Capita Income of Less than 50 Yuan (10,000 Jin)

Counties	1950	1957	1965	1979
Dancheng	9,500	10,000	11,500	21,000
Shenqiu	7,000	7,500	11,000	18,000
Luyi	4,500	8,500	8,500	20,000
Xiangcheng	5,500	5,500	11,000	19,000
Daikang	7,000	14,000	10,000	25,500
Qixian	6,500	8,500	4,500	16,000
Ningling	2,500	4,000	3,000	9,500
Minqi	4,000	6,000	4,000	15,000
Lankao	3,000	5,506	3,000	11,040
Xiayi	4,000	9,000	7,000	17,500
Yongcheng	15,000	14,000	10,000	19,500
Xihua	14,500	13,000	7,000	22,500
Shangqiu	11,000	9,500	13,000	26,000
Shangcai	6,000	12,000	12,000	23,500
Pingyu	5,000	7,500	8,000	13,500
Xingcai	4,500	9,500	10,000	18,500
Runan	6,500	9,500	9,000	21,500
Fengqui	4,000	6,500	3,000	12,500
Changyuan	4,000	7,500	4,000	9,500
Fanxian	10,000	10,000	7,000	25,000
Taijian	5,500	7,000	4,500	12,000
Total	139,500	184,506	161,000	376,540

Source: Henan Academy of Sciences, Geographic Research Group. 1982. Henan Agricultural Geography. Henan: Henan Science and Technology Press. These numbers were obtained by counting the dots on the maps on pp. 66-67.

northern regions in particular had enjoyed in cotton. However, the more plausible interpretation is that peasants grew grain instead of cotton simply in order to survive, even as the state policy was to grow both cotton and grain. Per capita output of grain in Henan Province on the whole was 292 kg per head in the 1970s, barely above the 280 kg per head officially classified by the Chinese as the acceptable level of subsistence. Peasants themselves considered 300 kg per head to be the level where their subsistence was assured and their attention could turn to cash crops. Moreover, grain output per head was not even that high in the low-income counties of Eastern Henan Province, because high grain output was concentrated in Southern and Northern Henan Province. For example, per capita output in Shangqiu County on the North China Plain was only 274 kg per person in 1973 and 291 kg per person in 1979 (Henan Province Academy of Sciences, Geographic Research Institute, 1982, p. 123, t. 19).

In sum, the peasants' view of the North China Plain during the Cultural Revolution was "two highs and two lows: summer high, fall low; grain high, cotton low." That is, the summer grain crop outcompeted the fall cotton crop for scarce resources.

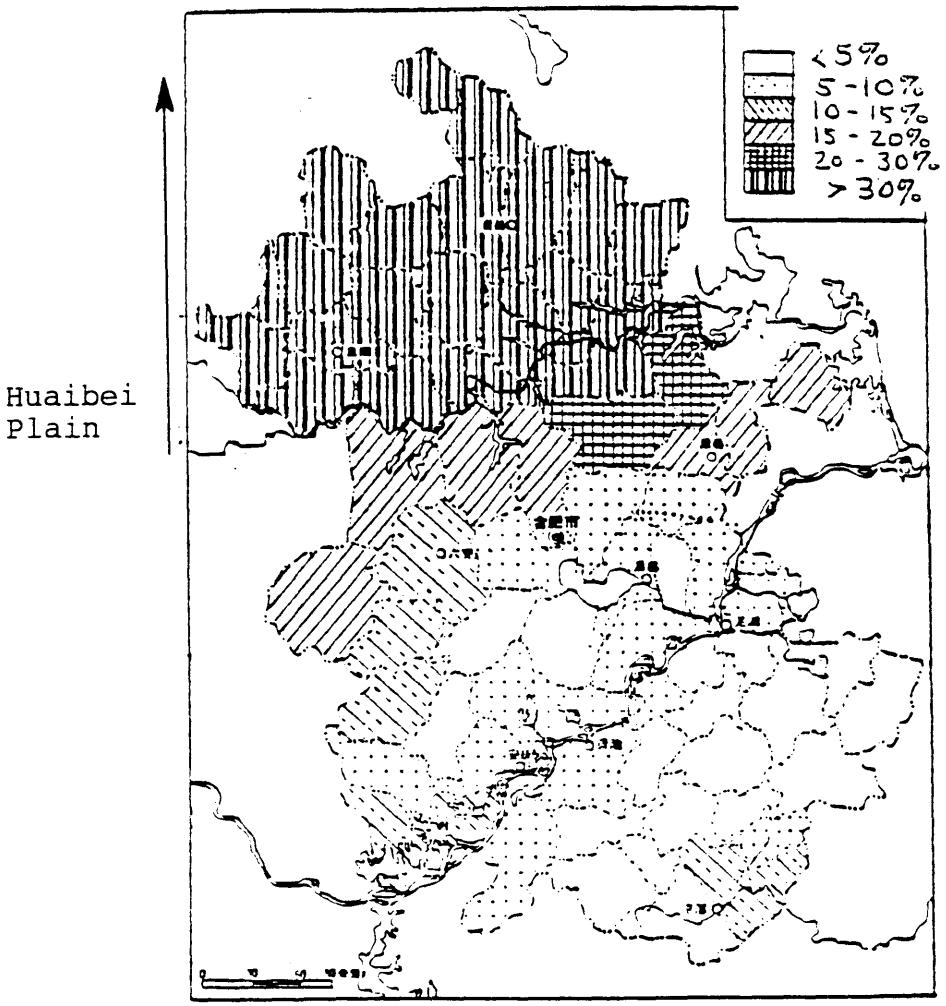
Another region on the North China Plain in which the peasants depended on wheat as a subsistence crop was the Huaibei Plain in Northern Anhui Province. As seen in Table 6.2, Anhui Province had a high ratio of wheat yield to cotton yield. Although these provincial statistics encompassed the

rich agricultural regions south of the Huai River in Central and Southern Anhui, for all practical purposes, it applied solely to the Huaibei Plain, which was the dominant wheat-growing region of the province. (See Figure 6.3). Historically wheat was sown on more than 60% of the cultivated land in the Huaibei Plain (Anhui Agricultural Geography Group, n.d., p. 87). This high ratio of wheat yield relative to cotton yield reflected the importance of wheat to the peasants' survival instinct in this region of the North China Plain.

To the peasants in Northern Anhui Province, wheat was not only the main crop, but the base of the year-round farming system, affecting the entire year's harvest. The peasants had a popular saying: "If the summer pushes back the fall (i.e., if the summer wheat crop were abundant), the whole year will have abundant harvests; if the fall compensated for the summer (i.e., if the wheat crop failed), there is not much hope." Wheat was particularly important in the lower plains where flooding was prevalent, because the tall wheat crop made a wheat-soybean, maize, or sorghum rotation possible (Anhui Agricultural Geography Group, n.d., p. 87).

Traditionally cotton production in Anhui Province was concentrated in Xiao County and Dangshan County, both on the northern border of Anhui Province. These two counties accounted for 22.8% of provincial output (Anhui Agricultural Geography Group, n.d., p. 87). As part of the Double-Harvest

Figure 6.3--Percentage of Sown Land in Anhui Province Cultivated with Wheat



Source: Anhui Agricultural Geography Group. n.d. Anhui Agricultural Geography. n.p. p. 39, figure 23.

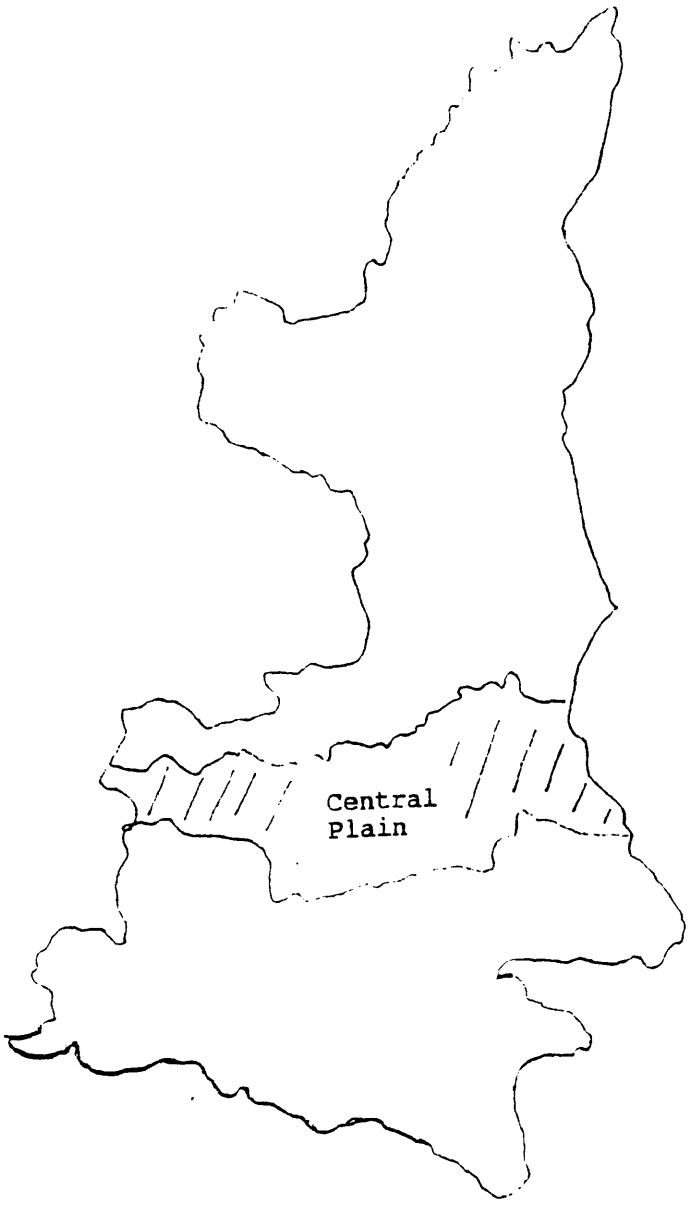
Strategy, cotton production extended into wheat producing counties throughout the Huaibei region. In the 1960s, the average cotton cultivation was 1.34 million mu. In the 1970s, cotton land expanded by 54% to 2.07 million mu. Cotton planting was so pervasive that peasants there had a saying: "every family plants cotton, each person has one plant." The Double-Harvest Strategy was to make the Huaibei region a major cotton-producing area, but production actually fell far short of the "key link" target. The target for that region was 80 jin per mu; the actual yield was only 27 jin per mu in the 1960s and 44 jin per mu in the 1970s (Yao Junze, 1984, pp. 9-10).

The reason why peasants planted cotton but did not allocate sufficient resources to that land was the primacy of wheat as a subsistence crop. Although cotton and wheat were generally not intercropped in this region, they were competitors for the very limited resources of that region. Rainfall was only 750-900 mm annually (Anhui Agricultural Geography Group, n.d., p. 77); irrigation was limited; and fertilizer was deficient. Consequently, wheat was grown by itself, while upturned land was left fallow instead of being used to grow cotton. This traditional method allowed the crop to gain the highest possible yield from poor soil and weather. In contrast, cotton yields achieved a level of only 34 jin per mu, less than half the yield of regions in the Changjiang region in Central Anhui just to the south of Huaibei (Anhui Agricultural Geography Group, n.d., p. 77).

Still another region in which peasants concentrated inputs into their subsistence crop during the Cultural Revolution was the Central Plain in Shanxi Province. (See Map 6.1). The Central Plain was one of China's oldest agricultural regions. Its fertility came from the Yellow River and the literally hundreds of branches flowing into it, and from an extensive irrigation system that had a 2,000 year history. During the Cultural Revolution, precipitation in this region was at a low 500-800 mm, the same level as the North China Plain (Xibei University Geography Department, 1979, p. 66, t. 5). Often the springs were cold and dry, providing at best marginal conditions for farming. Despite the fact that cotton and wheat were this region's traditional main crops, due to the adoptation of the intercropping system of the Double-Harvest Strategy cotton output dropped by 12% from 229 million jin in 1965 to 204.9 million jin in 1979 (Xibei University Geography Department, 1979, p. 8, t. 1).

Failure of cotton was not due to a policy that suppressed cotton, but due to the fact that peasants devoted the scarcest resource in this region to their subsistence grain. The irrigation system was the lifeline of agriculture in this region. As such, peasants kept one mu of land per person to maintain subsistence foodgrain, which, at the provincial average of 293 kg per head in the late 1970s, was near the margin of subsistence (Chinese Agricultural Yearbook Compilation Committee, 1981, pp. 31-32). Concentrating on subsistence farming, the peasants there gave priority to

Map 6.1--The Central Plain in Shanxi Province



Source: Xibei University Geography Department. 1979. Shanxi Agricultural Geography. Shanxi: Shanxi People's Publication Society. p. 121, figure 11.

wheat over cotton in their irrigation system. As a result, 30% of cotton cultivation was planted on unirrigated land, lowering yields by more than half (Xibei University Geography Department, 1979, p. 39).

Economic Factors Affecting Cotton and Grain Production

Beyond the basic level of survival, economic self-interest also played an important role in determining the pattern of cotton production; that is, prices and production costs moved in such a way that they shaped the regional and temporal patterns of cotton and grain production.

Procurement prices and rising costs were significant factors that affected cotton production in the North China Plain. During the first half of the Cultural Revolution, it was not economically viable for cultivators there to grow cotton. Even if their foodgrain subsistence had been assured, they still would have been reluctant to grow cotton instead of foodgrain, and the cotton growth rate would still have declined.

At the beginning of the Cultural Revolution in 1966, price planning was abandoned and planning bureaucracies were dismantled. Prices were frozen at the relative levels that had been established in 1965 after the disastrous GLF to raise grain output. As a result, from 1966 to 1972, the price of cotton was held at 89 yuan per 100 jin, and the price of wheat was maintained at 13.65 yuan per 100 jin, giving a cotton-to-wheat price ratio of 6.5:1, the most

unfavorable ratio for cotton in the history of the PRC (Zheng Guanbing 1983, 163, Table 3). The rule of thumb among Chinese economists was that this ratio had to be 7:1 or 8:1 for peasants to favor cotton over wheat (Li Debin, 1980, p. 49). Earlier in the 1950s when cotton production flourished, the cotton-to-wheat price ratio ranged from 8.1:1 to 8.6:1. It remained woefully low during the Cultural Revolution until the cotton price hike of 1972, when the ratio moved to 7.6:1 and remained at that level until 1979 (Zheng Guanbing, 1983, p. 163, t. 3).

If cotton cultivators were not enthusiastic about the price ratio of cotton with other crops during the Cultural Revolution, then they were certainly disheartened by the cost of production, which increased dramatically during the Cultural Revolution, at a rate significantly higher than the increase for foodgrains.

Table 6.4 shows the material, labor, and total costs for the major grains and cash crops from a survey of more than 3,000 production teams throughout China for 1965 and 1976. These costs, practically speaking, were based on real prices since the government's price index for agricultural producers' goods declined by only 14% from 1965 to 1978 (National Statistical Bureau, 1984, p. 429). As seen in Table 6.4, cotton material costs increased by 91.6%, considerably higher than the next highest growth rate of 33.3% for rapeseed, and much higher than the average rate of 17% for rice, wheat, millet, maize, sorghum, and soybeans.

Table 6.4--Material, Labor, and Total Costs per 100 Jin of Output, National Sample (yuan)

Crop	1965	1976	Gain	% increase
Material Costs:				
rice	3.88	4.41	0.53	30.4
wheat	5.81	6.86	1.05	18.1
millet	3.63	3.96	0.33	9.1
maize	3.52	4.34	0.82	23.3
sorghum	3.81	4.38	0.57	15.0
soybean	4.82	6.12	1.30	30.0
rapeseed	9.57	12.76	3.19	33.3
sesame	13.78	10.27	-3.51	-34.2
peanut	7.34	11.50	4.16	15.0
cotton	24.70	47.32	22.62	91.6
Labor Costs				
rice	8.24	7.55	-0.69	-9.1
wheat	9.22	9.97	0.75	8.1
millet	7.83	10.57	0.74	35.0
maize	6.76	7.03	0.27	4.0
sorghum	7.95	9.41	1.46	18.4
soybean	8.19	13.39	5.20	63.5
rapeseed	24.65	23.24	-1.41	-6.1
sesame	14.24	21.32	7.08	49.7
peanut	15.74	15.98	0.24	1.5
cotton	54.60	84.74	30.14	55.2
Total Costs:				
rice	9.68	9.82	0.14	1.4
wheat	12.36	14.02	1.66	13.4
millet	7.89	9.37	1.48	18.8
maize	8.33	9.33	1.00	12.0
sorghum	8.61	10.25	1.64	19.0
soybean	10.69	15.88	5.19	49.0
rapeseed	27.83	30.42	2.59	9.3
sesame	24.68	26.42	1.74	7.1
peanut	18.79	23.39	4.60	24.5
cotton	62.44	108.10	45.70	73.1

Sources: Agricultural Publication Society. 1982. Investigations and Analyses of Questions in Agricultural Economics. Beijing: Agricultural Publication Society. Material costs are from p. 109; labor costs, p. 111; and total costs, p. 112.

The increase in labor was also significant. At a 55.2% rate increase, cotton was only behind soybeans, and exceeded the increase for the other five grains: rice, wheat, millet, maize, and sorghum. Cotton production during the Cultural Revolution, then, required an increasing amount of labor and material, far above the norm. The total cost increase was 73.1%, far above the average of 14% for the six main grains.

A more important comparison was between cotton and wheat, which were direct competitors for input in the intercropping scheme carried out in the North China Plain. Wheat material costs increased only 18.1%, compared to 91.6% for cotton. Wheat labor costs increased 8.1%, compared to 55.2% for cotton. In terms of total costs, wheat increased 13.4%, less than one-fifth of the percentage increase of 73.1% for cotton.

These national data generally reflected the cost rise in the North. In Hebei Province, total costs for cotton production increased 75%, from 64 yuan per 100 jin of output in 1969 to 112 yuan in 1976. At the same time, the cost of wheat per 100 jin of output increased only 15% from 13 yuan to 15 yuan (Xu Dixin, 1978).

Traditionally, cotton production required more labor and material inputs than foodgrains. Its cultivation period, over six months, was relatively long, necessitating more management. In addition, cotton required a tremendous amount of water, necessitating irrigation. The intercropping system of the Double-Harvest Strategy made cotton an even more

costly crop to grow. This rise was due to diminishing returns to scale that is associated with intensifying cropping patterns. This phenomenon is particularly applicable to the use of chemical fertilizers (Yang Dechun, 1980, p. 51). All Chinese peasants were caught in a bind where costs rose faster than income during the Cultural Revolution, but such a problem affected cotton producers more severely than other growers. Consequently, peasants had a clear-cut economic interest in eschewing cotton in favor of foodgrains during the early part of Cultural Revolution.

Two other factors made it even more economically unattractive to farmers to grow cotton. In the North China Plain, the grain ration allowed cotton producers was unsettled and low. Therefore, as noted in earlier chapters, there was little security in producing cotton. Also the price of grain resold to peasants by the State was much higher than the price at which the grain was procured by the State. Table 6.5 compares the procurement prices and the retail prices of the state marketing agency.

From the data, it is clear that during the Cultural Revolution, the price that farmers had to pay for grain from the State was increasing at a faster rate than what the State was paying to the peasants. From 1965 to 1968, the procurement price increased 5%, while the retail price increased 10%. Hence, it became more unattractive for peasants to grow cash crops and then to purchase grain from the State. This was reflected in data on purchasing and

reselling by the state system. During the Cultural Revolution, the State resold from 22% to 30% of the procured grain each year in the countryside. During the years under liberal planners, the State typically sold around 35% of the procured grain in rural areas, even though the State in those times also allowed free markets where grain could be sold directly from one peasant to another (Chinese Agricultural Yearbook Compilation Committee, 1985, p. 171).

In comparison to the North, the South had higher cotton yields. While cotton production stagnated during the Cultural Revolution, it flourished in the South. Natural conditions in the South favored cotton production within the Double-Harvest framework, and the political atmosphere incited acceleration of cotton production during the Cultural Revolution to an extent. However, the main reason that such a significant pattern of cotton production took place there during the Cultural Revolution was that peasants in the South had the economic incentive to grow cotton.

Two examples of how Southern peasants responded to economic gains even during the Cultural Revolution were Hunan and Hubei Provinces. The Hunan Province data in Table 5.2 of Chapter 5 show that cotton production decreased in the first half of the Cultural Revolution. In 1966, cotton output reached about 185 million jin. Six years later, it had dropped to about 145 million jin. Similarly, cotton output in Hubei steadily decreased from 900 million jin in 1966 to 550 million jin in 1972. The official explanation in Hubei

Table 6.5--Procurement and Retail Prices of Grain by Year (yuan per metric ton).

Year	Procurement Price	Retail Price	Ratio of Retail to Procurement Prices
1965	229.2	237.4	1.04
1966	236.2	245.6	1.04
1967	243.2	257.0	1.06
1968	241.2	260.0	1.08
1969	240.8	260.0	1.11
1970	241.2	260.0	1.08
1971	252.2	260.0	1.03
1972	256.0	277.6	1.11
1973	253.8	277.6	1.09
1974	252.0	287.2	1.14
1975	254.4	288.0	1.13
1976	255.6	288.2	1.13
1977	263.4	292.0	1.11
1978	263.4	294.8	1.12

Source: Procurement and retail prices were from National Statistical Bureau. 1984. Chinese Statistical Yearbook, 1984. Beijing: Chinese Statistical Publication Society. pp. 448 and 440.

Province is that disastrous climatic conditions had forced cotton output to drop in those years (Hubei Agricultural Geography Group, n.d., p. 17). Although there were indeed droughts in 1966 and 1972 and floods in 1969 and 1970, these natural calamities could not fully explain Hubei's drop in cotton output. That is, drought or flooding also existed in 1955, 1958, 1963, and 1964, when cotton yields and output were high.

The actual reason was the price and cost of production of cotton relative to other crops. In the South, the main foodgrain was rice, hence the price of cotton relative to that of rice was especially significant. The price of rice in yuan per 100 jin was 8.25 in 1964, 8.47 in 1965, and 9.81 in 1966; that is, it increased 20% in two years. The price of wheat was 11.06 yuan per 100 jin in 1965 and increased by 21% to 13.43 the next year. The price of maize increased from 7.58 to 9.09 yuan per 100 jin, also by 20%. On the other hand, the price of cotton increased by only 0.8% (Zheng Guanbing, p. 163, t. 3). Clearly, peasants received a greater incentive on the income side to grow grains, especially rice, instead of cotton.

These prices were maintained throughout the Cultural Revolution, except for a 15% hike in cotton prices in 1972. Moreover, a bonus system used successfully during the Reconstruction and abandoned in the first half of Cultural Revolution was reinstated. Each 100 jin of cotton sold to the State was rewarded with a ration to purchase 70 jin of

fertilizer (Liu Huanyang and Xie Hongli, 1982, p. 53). The price change in 1972 reversed the economic viability of cotton and grain. It became more advantageous to grow cotton than before, and cotton production increased dramatically in the latter half of the Cultural Revolution. From a low of 140 million jin in 1971, cotton output jumped to and maintained a level of around 230 million jin in the mid-1970s in Hunan Province. Similarly in Hubei Province, output jumped from 575 million jin in 1972 to the around 900 million jin. Nationally, cotton output jumped 31% from 19.6 billion jin to 25.6 billion jin from 1972 to 1973.

Although the southern provinces made tremendous strides in cotton output, the North China Plain also responded but to a lesser degree than the South. For one, peasants in the northern provinces were still concerned about reaching the grain subsistence threshold. In addition, the change in the economic incentives affected the Southern peasant more favorably than his counterpart in the North China Plain. The change in procurement prices of wheat and rice were about the same, but the cost of production for wheat increased faster than that of rice. The cost of wheat production increased 13.4% during the Cultural Revolution, while the cost of rice production increased only 1.4%. Moreover, the cost of cotton production, which according to the national sample, escalated by 73.1% during the Cultural Revolution, affected the North more so than the South. As mentioned earlier, production costs in Hebei Province increased by 75%. On the other hand,

in four counties in the South--Fuluo in Guangzhou Province, Guanghan in Sichuan Province, Jiading in Shanghai Municipality, and Taoyuan in Hunan Province--cost per 100 jin of cotton output increased only 29.4% from 81.97 yuan to 106.08 yuan (Agricultural Publication Society, 1982c, pp. 110 and 117). Specifically in Jiading County in Shanghai Municipality, the cost of producing one hundred jin of cotton decreased by 3%, from 93.70 yuan in 1957 to 90.48% in 1979 (Chinese Academy of Social Sciences, Finance and Economics Research Center, 1983).

The combination of grain security and economic incentives, as well as the favorable climatical conditions, led to the higher relative cotton yields in the South. In Hubei and Hunan Provinces, even though 60-70% of the cotton land was intercropped with wheat, the competition for inputs between wheat and grain did not become a major problem for the peasants. Unlike their counterparts in the North, peasants there did not perceive cotton as competition and a threat to their foodgrain security.

There were two bases from which cotton peasants in Hubei Province derived foodgrain security. First, the counties in Hubei Province that produced cotton were also grain surplus counties. Of the 30 counties in Hubei Province that had sown more than 100,000 mu of cotton land, 27 had surpluses in foodgrain (Hubei Agricultural Geography Group, n.d., p. 65). For example, the following cotton producers in central Hubei Province had such surpluses that they sold foodgrain to the

state at much higher rates than the province as a whole: Yincheng (25.59%), Jinmen (40.72%), Chongyang (23.67%), Jingshan (39.14%), and Yicheng (28.75%). In comparison, the rate for the entire province was 15.64% (Hubei Agricultural Geography Group, n.d., p. 108).

The second source of security was that these counties did not depend on wheat as the main source of subsistence. Cotton did not have to compete with the main stable of rice, which comprised 70% to 90% of foodgrain. Since 1964, peasants in these counties, as well as those in most other counties in Hubei Province, had adopted a triple-cropping scheme, involving rice as the main summer crop, changing from a rice-wheat or oilseed one year/two harvests system to a rice-rice-green manure, triple-cropping system. Later in the Cultural Revolution, there was a further conversion to rotating two crops of rice with barley, wheat, rapeseed, and green manure, in order to raise total foodgrain output. As a result, Hubei Province maintained its status as a major grain province, producing 368 kg per head of foodgrain in 1978-1980 (Walker, 1984, p. 169). Moreover, Hubei Province initially had more resources than the North China Plain in order to make the cotton/wheat intercropping scheme more successful. The cotton-growing counties in Hubei Province, located on the Long and Han River beds, were extensively irrigated. Rainfall there was higher, at 1,000 to 1,300 mm annually, and more equally distributed throughout the four seasons than elsewhere, therefore better suited to the year-round

intensive intercropping scheme (Hubei Agricultural Geography Group 1980, p. 14, Graph 5).

Another prominent grain producer that became a major cotton producer was Hunan Province. Its primary cotton producing area was in the north, near Dongting Lake, which fed into the Long River. This region produced 72.8% of the provincial output in cotton and supplied more than 130 million jin of cotton to the state one year in the late 1970s (Hubei Agricultural Geography Group, 1980, p. 95).

Just as in Hubei Province to its north, this region also adopted the wheat/cotton intercropping scheme. Taoyuan County was one of its major cotton producers during the Cultural Revolution; cotton/wheat intercropping was adopted in 52-60% of its cotton land (Chinese Academy of Sciences, n.d., p. 248). From the 1960s to the 1970s, cotton cultivation increased from 100,923 mu to 179,999 mu; yields increased from 45.9 jin per mu to 62.98 jin per mu; and output more than doubled, from 4.199 million jin to 9.770 million jin (Chinese Academy of Sciences, n.d., p. 258). Cotton cultivation led to decreases in broadbeans and rapeseed, Taoyuan's two secondary crops, but did not adversely affect its main subsistence crop, rice (Chinese Academy of Sciences, n.d., p. 248).

Peasants in Taoyuan and throughout Hunan Province achieved grain security through rice production, as rice accounted for 86% of the sown area in Northern Hunan Province and 94% of total foodgrain output in 1971 (Hunan Agricultural

Geography Group, n.d., p. 97, t. 46). As a major foodgrain producer, this region had a high marketing rate at 27%, significantly higher than the provincial rate of 21% (Hunan Agricultural Geography Group, n.d., p. 64, t. 33). It contributed approximately 36% of Hunan's grain surplus supplied to the state during the late 1970s (Hunan Agricultural Geography Group, n.d., p. 64, t. 33). As seen in Table 6.6, grain output increased at very respectable annual rates near the 5-9% range in the early 1970s.

Any competition for inputs between wheat and cotton in Hunan Province was therefore not a critical matter. Wheat, in fact, was a minor grain crop. As a result, cotton cultivation increased in northern Hunan Province. From 1971 to 1974, cultivation increased 6.8% annually. Cotton yield in this region was high, achieving a yield of 88 jin per mu in the late 1970s (Hunan Agricultural Geography Group, n.d., p. 79).

In addition, cotton cultivation also expanded to Central Hunan Province, historically not a significant cotton-producing region. In 1965, that region cultivated only 395,000 mu of cotton; in 1971, it expanded to 464,000 mu; in 1975, it further increased to 569,000 mu. Yields also showed respectable gains: from 39.8 jin per mu in 1965, to 36.7 jin per mu in 1971, to 42.7 jin per mu in 1975. Output accordingly increased: from 15.73 million jin, to 17.05 million jin, to 24.3 million jin, in those years respectively (Hunan Agricultural Geography Group, n.d., p. 136, t. 71).

Table 6.6--Grain Output Growth in Northern Hunan.

Counties	1970 (10,000 jin)	1974 (10,000 jin)	Ave. Annual Gain (%)
Anxiang	4,241.4	5,888.2	8.5%
Taoyuan	6,344.5	8,855.7	8.7%
Hanshou	4,594.8	6,151.3	7.6%
Shangde	6,709.3	9,163.9	8.1%
Huayong	4,815.0	5,980.5	5.6%
Nanxiang	4,387.1	5,387.5	5.3%

Source: Hunan Agricultural Geography Group. n.d. Hunan Agricultural Geography. n.p. p.79.

In terms of Hunan Province as a whole, cotton production increased fairly dramatically during the Cultural Revolution. As seen in Table 5.2, cotton increased from around 170 million jin in the late 1960s to about 225 million jin from the mid- to late-1970s.

In conclusion, several patterns developed during the Cultural Revolution. Technically, the North China Plain may have lost its comparative advantage in cotton production in the first half of the Cultural Revolution, because it became very costly to produce cotton there. The loss of this traditional comparative advantage was caused by a radical regime that forced an unrealistic cropping pattern on the peasants without any resource planning. Because cotton was intercropped with a major subsistence crop in the North, it lost out in the competition for limited inputs. In contrast,

in South China, intensification indirectly allowed cotton production to increase. In southern cotton regions, peasants used a triple-cropping system separate from cotton production to provide their subsistence crop, leaving cotton to intercrop with minor grain crops and green manure that enhanced cotton output. In part due to the different cropping systems, the cost of cotton production increased more rapidly in the North than in the South. When cotton prices increased in 1972, it was the Southern cultivators, whose subsistence was already met, who responded and took advantage of the economic incentives.

As to the peasants in the North China Plain, they took the only reasonable course open to them. First, they adopted the intensive cropping pattern set down by the State. Specified communes had to plant cotton and did so. The political risk was high because noncompliance could be easily identified. This was why cotton land was dispersed, as every county had to grow "patriotic cotton." Second, they apportioned the inputs so as to favor a relatively high growth of grain. Consequently, dispersed cotton land often had low yields. Opting toward grain instead of cotton was logical for two reasons. The most basic was survival. Secondly, the price and cost of cotton prior to 1972 made it economically unfeasible.

> the relationship between grain and cash crop is as follows: when grain per rural person was below 600 jin, cash crop sown area decreased the next year. When grain per capita was above 600 jin, cash crop sown area then increased in the following year.
>
> A view of cash crop production in Yunnan.

CHAPTER 7

PRODUCTION OF OILSEEDS

In the previous sections, I set forth the thesis that economists in China today erroneously attribute a decline in cotton production during the Cultural Revolution to a leftist priority of grain over cotton. I have argued that this priority was never clearly defined into a workable plan. Rather, leftist rhetoric exhorted peasants to be self-sufficient in grain in addition to increasing cash-crop output. Such broad and vague ideology was, in fact, not a policy to the pragmatic peasants who followed their self-interests in growing grain or cotton according to the particular economic conditions of their region. In this section I will underscore this point by applying the same analysis to the case of oil crops.

Just as they have argued that "grain suppressed cotton," Chinese economists state that cotton and grain production suppressed oil crops, particularly the three major oil seeds of peanut, sesame, and rape. Describing the cropping priority of the Cultural Revolution as "grain over cotton and cotton over oil crops," they argue that a radical policy

favoring grain over oil crops ignored edible oil as a basic need among peasants, and that oil crop production decreased significantly as a result. For example, the National Agricultural Area Planning Committee (1981, p. 76) argues that such a policy decreased area sown and output of oil seeds during the Cultural Revolution:

> From 1949 to 1956, the area sown (with oil crops) increased greatly from 63.416 million mu to 102.40 million mu, and output increased from 5.127 billion jin to 10.171 billion jin, up 61.5% and 98.4% respectively. But for 20 years thereafter, due to the priority on grain, oil crop production was unsteady but clearly showed an overall decrease. In 1977, land cultivated was 84.59.2 million mu, and output was 80.34.8 million jin, respective decreases of 17.4% and 21.0% from 1956.

Chinese economists have especially been critical of the decline of peanut and sesame production in North China and stagnancy in the total yield of the three oil seed crops. After the FFYP, the North China Plain was the largest producer of peanuts in China. Slightly greater than half of the sown area in 1956 and 1957 in the nation were concentrated in three northern provinces of Henan, Hebei, and Shandong. In particular, the peninsula region in Eastern Shandong Province had a comparative advantage in peanut production.

From 1956 to 1977, however, the peanut-sown area and output in the regions north of the Hui River declined by 48% and 62% respectively (National Agricultural Area Planning Committee, 1981, p. 76). In Henan Province, peanut output dropped from 466.40 million jin in 1957 to 267.81 million jin

in 1979, a decline of 74% (Henan Province Academy of Sciences, Geographic Research Institute 1982, p. 76, t. 10). Sown area declined by 40% in Shangdong (Lardy, 1983, p. 77).

In addition, area allocated to sesame seed production suffered the largest decline of all oil seeds. During the FFYP, sesame was sown on over 15 million mu, but decreased steadily since that time. In 1975, national sown area was only 46.6% of what it had been in 1955 (Nationa Statistical Bureau, 1984, p. 139). Henan and Hubei, two provinces generally accounting for over half the sown area in the country, respectively cultivated only 44.9% and 39.3% of what had been sown in 1955 (Chinese Academy of Sciences, Geographic Research Institute, Economic Geographic Research Group, 1983, p. 217).

The official explanation of why such a drastic decline in output took place was a blind adoption of the leftist policy of "taking grain as the key" suppressed oil seed cultivation by branding cash-crop production as capitalistic, but this standard explanation could not account for many other facts. Specifically it could not explain why, while the production of the three prime oil seeds declined in the traditional areas, peanuts and rapeseed emerged in many new regions throughout China. From the end of the FFYP to the end of the 1970s, the peanut-sown area and output increased by 14% and 35%, respectively, in the South (National Agricultural Area Planning Committee, 1981, p. 76). Coupled with the decline of the North, this moderate growth made the

South as productive an area as the North. Moreover, peanut production spread into every region except the hinterland provinces of Tibet, Inner Mongolia, Dingshia, and Qinghai. In the late 1970s, the ten major peanut producers included not only Shandong, Henan, Hebei, Liaoning in the North, but also Anhui, Guangdong, Guangxi, Sichuan, Fujian, and Jiangsu in South and Central China (Chinese Academy of Sciences, Geographic Research Institute, Economic Geographic Research Group, 1983, p. 211).

The second important trend that could not be explained by the "policy-priority" theory was the growth of rapeseed throughout the country during the Cultural Revolution. Official statistics generally subsumed rapeseed under oil seeds; therefore, the success of rapeseed has generally been ignored. From 1956 to 1979, while cotton, sesame, and peanut sown area declined, rapeseed-sown area increased from 32.5 million mu to 41.4 million mu. Because yields also increased, from 57 jin per mu to 116 jin per mu, output rose significantly, from 1.8 billion jin to 4.8 billion jin--a respectable average annual growth of more than 4% (National Agricultural Area Planning Committee, 1981, p. 77). By 1979, the area sown with rapeseed had surpassed the amount of land sown with peanut. Significantly, the major cause of the growth of rapeseed was its penetration into the North. Traditionally grown in the South, rapeseed spread to the north of the Hui River into the North China Plain, even as a anti-cash crop policy was supposed to be in existence there.

In sum, the "grain-suppressing-cash-crop" policy theory could explain the demises of peanuts, sesame, and oil seeds in specific locales, but it could not explain why the production of peanuts spread in the South, and the cultivation of rapeseed spread everywhere. Indeed, such a simple formula could not explain the case of Henan Province, where during the Cultural Revolution peanut output declined tremendously, sesame output remained about the same, and rapeseed increased precipitously. The answers laid in an analysis of the natural conditions needed for cultivating each crop and the way in which peasants reacted to the Double-Harvest Strategy.

The Technical Constraints of Growing Oilseeds under the Double-Harvest Strategy

Peanut production in the North China Plain was traditionally part of a single crop per year system. Peanuts were the main crop, usually rotated with maize or sweet potato. This peanut variety--called the "large peanut"--was slow in maturing, taking 160 days or so. During the Cultural Revolution, under the pressure to increase the cropping index for a summer grain crop, a new seed variety--the small peanut--was introduced. The new seed took only 120-130 days to mature; it was intercropped with wheat in a double-cropping system or in a three-crops-in-two-years system.

This new intensified cropping pattern led to serious problems. Just as the cotton/wheat intercropping led to "the

three contradictions," the new peanut/wheat intercropping produced land with the serious problems peasants called the "three 'runs'": the land became weak in fighting natural calamity; soil erosion was high; and water run-off was great. Still another problem was that peanut production took up too much land. Brigades complained that peanut cultivation could take up to 60% of their sown area. Cultivation was labor and time consuming, and diseases affecting the new peanut seed were serious (Chinese Academy of Sciences, Geographic Research Institute, Economic Geographic Research Group, 1983, p. 212).

To overcome these problems, peasants would have had to supply ample water, especially when the buds opened, and improve the quantity and quality of fertilizer, but traditionally in North China, peanuts were grown in the hilly and sandy plains with very weak red and yellow soil. Sufficient capital was not forthcoming from the State to build the necessary infrastructure needed in conjunction with these soils. There was political exhortation that self-reliant socialist spirit was enough to overcome the problems.

The low-income counties in Eastern Henan Province found it especially difficult to adapt to the new peanut production process. This region reduced peanut output to a much greater extent than Henan Province did as a whole. While total provincial output dropped by 84% from 466.4 million jin in 1957 to 86 million jin in 1977 (Henan Province Academy of Sciecnes, Geographic Research Institute, 1982, p. 2, t. 1),

eight counties in Eastern Henan historically famous for their peanut output reduced production by over 90% from 112.3 million jin in 1957 to 11.1 million jin in 1977. (See Table 7.1). In 1957, the "eight" produced 24% of the province's peanuts; after the Cultural Revolution, they produced only 13% (Henan Province Academy of Sciences, Geographic Research Institute, 1982, p. 76, t. 10). Of the eight, three counties were particularly hurt by this reduction. Kaifeng, Zhongmou, and Lankao produced a total of 68.32 million jin in 1957.

Table 7.1--Peanut Production in Eastern Henan

County	Sown Area (1,000 jin)	Percentage of Total Sown Area (percent)	Yield (Jin/mu)	Output (1,000 jin)
Kaifeng County				
1957	507	25.7%	45.3	22,990
1977	85	6.9%	33.0	2,750
growth	-13%	-73%	-23%	-88%
Zhongmou County				
1957	366	31.7%	83.4	30,550
1977	33	3.3%	38.0	1,240
growth	-89%	-90%	-54%	-96%
Lankao County				
1957	197	17.7%	74.9	14,780
1977	10	1.0%	80.0	810
growth	-95%	-94%	7%	-95%
"Eight Counties"				
1957	1,645	16.6%	81.4	112,310
1977	205	2.5%	54.2	11,120
growth	-88%	-85%	34-%	-90%

Source: Henan Province Academy of Sciences, Geographic Research Institute 1982. Henan Agricultural Geography. Henan: Henan Science and Technology Press, p. 126, table 21.

Twenty years later, they produced only 4.8 million jin, only 7% of what it previously produced.

As in the case of cotton, the policy using intercropping to maintain cash-crop production as well as to increase grain output exposed the weakness of the North China Plain. The traditional comparative advantage in peanut production rested in the peasants' ability to nurture marginal sandy and hilly land. Faced with the prospects of failure in both grains and cash crops due to inadequate resources for intercropping, peasants in poor counties in the North rationally chose to grow grain to ensure their subsistence. Hence subsistence output was moderately successful in the three primary peanut producing counties of Kaifeng, Zhongmou, and Lankao. They produced 200 million jin of wheat at the end of the FFYP, and

Table 7.2--Wheat Output in Kaifend, Zhongmou, and Lankao Counties (million Jin)

Counties	1950	1957	1965	1979
Kaifeng	40	80	30	135
Zhongmou	25	65	40	135
Lankao	30	55	30	110.4
Total	95	200	100	380.4

Source: Henan Province Academy of Sciences, Geographic Research Institute 1982. Henan Agricultural Geography. Henan: Henan Science and Technology Press, pp 50-51.

380.4 million jin in 1979, at an average annual growth rate of about 3%. This was a respectable rate, given that this period included the counties' decline from 200 million jin in 1957 to 100 million jin in 1965.

In contrast to the decline in the North, peanut production grew in the South, where the problems caused by the wheat-peanut intercropping did not surface. There, peasants separated peanut production from grain production, as 70-80% of peanut output in the South was grown on originally barren, dry, and unproductive land (Chinese Academy of Sciences, Geographic Research Institute, Economic Geographic Research Group, 1983, p. 212). There the peanut's basic adaptability became instrumental. It could grow on any land except that with saline and alkline soil, but it required a considerable amount of fertilizer. As a result, land sown to peanuts increased. For example, the area with peanuts in Guangxi Province in Southern China increased from 1.032 million mu in 1950 to 2.288 million mu in 1976 (Guangxi Agricultural Geography Group, 1980, p. 90). The sown area in Guangdong Province in Southeastern China increased by 70% from 1957 to 1975 (Chinese Academy of Sciences, Geographic Research Institute, Economic Geographic Research Group, 1983, p. 212). In contrast, the area of peanut cultivation in Henan Province was reduced by 62% from 1,849,000 mu in 1950 to 705,000 mu in 1977 (Henan Province Academy of Sciences, Geographic Research Institute, 1982, p. 2, t. 1). Compared to the peanut, rapeseed was even more adaptable. Its need

for warm weather was not high and it even favored cool weather; it could germinate as long as the temperature was above 5 degrees Centigrade and survive a short period of temperatures as low as -10 degrees Centigrade. Therefore, it could be grown across the entire reaches of China, even on the 4,200-meter plateau in the Northwest.

Peasants liked to grow rapeseed because it helped to enrich the land. The flowers, leaves, and stems of the rapeseed, as well as the cake that remained after the oil had been extracted, provided potassium sulphate, calcium phosphate, and ammonium sulfate--three chemicals used for fertilizer. Regardless of the climate and soil condition, rapeseed was known as a good "conditioner" for the major crop. It could also be easily intercropped without competing with other crops for resources.

Interestingly, the case of rapeseed was, in one respect, the mirror image of the case of cotton. Traditionally rapeseed was grown primary in the Southwest of China, whereas cotton traditionally grew in the North China Plain in the Northeast. Yunnan was a province that had enjoyed a comparative advantage in rapeseed production. In 1949, it produced 3.54 million jin of rapeseed on 608,000 mu of land, at an average yield of 58.2 jin per mu. In the FFYP, output and sown area increased dramatically, but both decreased drastically during the GLF. After a slow recovery in the Reconstruction period, area sown and output was reduced once again during the first half of the Cultural Revolution.

Output fluctuated in the 1970s without any overall progress. By 1978, Yunnan Province had to import vegetable oils, primarily to feed its urban population (Yunnan Agricultural Geography Group, 1981, pp. 157-158).

What happened to Yunnan Province in oil production was similar to what happened in North China in cotton production. During the Cultural Revolution, Yunnan Province was a poor hilly province with little cultivable land and resources. The primary rapeseed regions were also primary grain and tobacco growing regions. Half the rapeseed sown land and two-thirds of the production were in the high central lake region and other fertile regions in the Northeast and the West. Peasants were described as enthusiastic about growing rapeseed, but rapeseed, as a winter crop, became a competitor for limited inputs under the triple cropping scheme for subsistence rice (Chinese Academy of Sciences, Geographic Research Institute, Economic Geographic Research Group, 1983, p. 215). It was a competition that rapeseed was certain to lose, as the trend for per capita grain production in Yunnan Province showed a steady decline. (See Figure 7.1). Ironically, triple cropping of rice afforded South China the opportunity to grow cotton (as discussed in Chapter 6). In Yunnan Province, however, the system caused the collapse of rapeseed.

In China as a whole, however, rapeseed output escalated. In 1965, rapeseed was sown on 27.33 million mu. From 1968 to 1970, it was sown on a little more than 21 million mu each

year. After 1970, rapeseed cultivation increased by around 3.00 million mu per year. By 1975, the sown area exceeded the 1970 figure by 59%. (See Table 7.3). Significantly, new regions of rapeseed production came into existence. In the North, peasants cultivated rapeseed in the spring. Most noticeably, the area cultivated in the Yellow and Huai River Plain increased 3 to 5 fold, and as high as 10 - 20 fold in some places (Chinese Academy of Sciences, Geographic Research Institute, Economic Geographic Research Group, 1983, p. 212). In the extreme southern part of China, rapeseed production spread into many regions that traditionally had not grown this crop.

Even though the area sown first dropped and then rose during the Cultural Revolution, rapeseed yields remained high throughout that entire period. As seen in Table 7-3, yields jumped 46% from 47.84 jin per mu in 1963 to 69.98 jin per mu in 1964. In the next year, yields jumped by 14% to 79.66 jin per mu. After a decline in 1966, yields stayed at the 80-90 jin per mu level from 1967 to 1970. Yields averaged 90 jin per mu for the second half of the Cultural Revolution.

This high yield marked a significant difference between production in the GLF and in the first part of the Cultural Revolution, the two most radical periods of China's development history. During the GLF, yields dropped significantly, from around 60 jin per mu to near 40 jin per mu. During that period, labor was diverted to industrial projects throughout the countryside, and rapeseed, which

Table 7.3--National Rapeseed Production.

Year	Sown Area (million mu)	Yields (jin/mu)	Output (million jin)
1952	27.95	66.69	1,864.1
1953	25.01	70.26	1,757.3
1954	25.60	68.59	1,756.0
1955	35.07	55.28	1,938.8
1956	32.48	56.81	1,845.2
1957	34.62	51.27	1.775.0
1958	34.32	58.22	1,998.2
1959	30.46	61.46	1,872.2
1960	36.23	41.20	1,492.8
1961	22.01	34.48	759.0
1962	20.42	47.79	975.8
1963	21.65	47.84	1,035.8
1964	26.84	69.98	1,878.3
1965	27.33	79.66	2,177.1
1966	26.22	69.11	1,812.6
1967	24.97	80.69	2,014.8
1968	21.07	85.89	1,809.8
1969	21.41	81.98	1,755.2
1970	21.80	88.57	1,930.8
1971	24.24	101.74	2,466.3
1972	29.50	94.73	2,794.6
1973	31.44	86.06	2,705.4
1974	30.95	89.31	2,764.2
1975	34.70	88.49	3,070.5
1976	35.19	76.57	2,695.4
1977	33.26	70.34	2,339.6
1978	38.99	95.81	3,735.7
1979	41.41	116.01	4,804.1

Source: National Statistics Bureau. 1984. Chinese Statistical Yearbook, 1984. Beijing: Chinese Statistical Publication Society. The figures for sown area are from p. 139; outputs are from p. 146; and yield was calculated by dividing the former by the latter.

required relatively high labor input, declined in yield as a result. In contrast, yields increased from 1967 to 1970 to the highest levels in history, at 20 jins per mu higher than in the Reconstruction and the FFYP, two periods under liberal planners who favored cash crop production. Furthermore, this high yield was attained even as rapeseed production was dispersed throughout China and was no longer concentrated in high-yielding areas.

This pattern also appeared on the regional level. Rapeseed sown area also decreased and then increased in Hunan Province during the Cultural Revolution. (See Table 7.4). From 1967 to 1968, the sown area declined by 37% from 2.8 million mu to 1.9 million mu, but yields increased from 62 jin per mu to 70 jin per mu. Through the remainder of the Cultural Revolution, yields hovered near the 70.0 jin per mu level, about 15 jin per mu greater than the yields achieved just prior to the Cultural Revolution (Hunan Agricultural Geography Group, n.d., p. 55, Graph 13).

Elsewhere, peasant enthusiasm for achieving higher yields was also evident. In Hubei Province, cultivation area dropped by 22% from 1957 to 1966, but output declined by only 13% because yields increased from 45.7 jin/mu to 50.6 jin/mu during that period (Hubei Agricultural Geography Group, 1980, p. 67, t. 2-7). In Henan Province, output increased from 11.4 million jin in 1957 to 257.1 million jin in 1979, an average annual growth rate of over 15% (Henan Province Academy of Sciences, Geographic Research Institute, 1982, p.

Table 7.4--Rapeseed Production in Hunan Province

Year	Sown Area (1,000 mu)	Yields (jin per mu)	Output (million jin)
1949	1,450	51.7	75
1950	2,000	67.5	135
1951	1,500	73.3	110
1952	2,350	76.6	180
1953	2,300	80.4	185
1954	2,000	52.5	105
1955	3,200	34.4	110
1956	3,100	40.3	125
1957	2,950	40.0	115
1958	3,500	87.1	305
1959	3,000	41.7	125
1960	3,200	46.9	150
1961	1,650	39.4	65
1962	1,850	43.2	80
1963	2,100	57.1	120
1964	2,550	46.3	118
1965	2,650	64.2	170
1966	2,900	55.1	160
1967	2,800	62.5	175
1968	1,900	70.0	133
1969	1,800	71.1	128
1970	1,800	66.7	120
1971	2,200	72.7	160
1972	3,000	71.7	215
1973	2,800	69.6	195
1974	2,500	70.0	175
1975	2,200	70.5	155
1976	2,350	77.9	183
1977	2,500	72.0	180
1978	2,400	57.5	138
1979	3,500	85.7	300

Source: Hunan Agricultural Geography Group. n.d. Hunan Agricultural Geography. n.p. Sown area and output were read from graph 15, p. 56. Yields were calculated by dividing output by sown area.

2, t. 1). This tremendous growth could be traced to an increase in land sown, which increased from 560,000 mu to 2.8 million mu, but a much larger share of the increase came from a significant jump in yields, from 20.4 jin/mu to 92 jin/mu (Henan Province Academy of Sciences, Geographic Research Institute, 1982, p. 76, t 10). As in the case of Hunan Province, a large increase in cultivated land in Henan took place in the later and less radical period of the Cultural Revolution, increasing by fourfold in the sandy plains of Eastern Henan and the rice growing area in Southeastern Henan. Still another emergent region in rapeseed was Qinghai Province in the northwestern hinterlands. In 1973, 8% of the cultivated land was used to grow rapeseed, a high share for an economic crop and an especially high share for a new crop (Qinghai Agricultural Geography Group, n.d., p. 48). In all, rapeseed became the peasants' most popular oilseed, widely distributed throughout China.

Unlike rapeseed, sesame seed had very specific cropping requirements: warm weather, rich soil, and careful management. It did not grow to full bloom on less fertile hilly land, and was much more susceptible to flooding than cotton and grain on flat land. Historically, it suffered greatly from waterlogging, particularly in the plain north of the Hui River. For example, flooding in 1954, 1963, and 1975 gravely affected yield in Hubei, Henan, and Anhui Provinces (Chinese Academy of Sciences, Geographic Research Institute, Economic Geographic Research Group, 1983, p. 218). Because

of its particular requirement for hot weather, sesame had been traditionally grown on a one harvest per year system. Sowing was done by broadcasting it in early May, and it was grown with barley, broadbeans, and peas. As was the traditional system for cotton in this region, this system for sesame earned low yields but suited the natural constraints of this dry and sandy environment.

The State's effort to intensify summer cropping during the Cultural Revolution affected this traditional cultivation system. Given the marginal conditions of the North China Plain, even a small change had a large effect on yields and output. Under the Double-Harvest Strategy, the sesame-barley-broadbean system was changed to wheat-sesame. Wheat had to be harvested later than barley and broadbean by 10-15 days, and therefore delayed the sowing of sesame. Unfortunately for sesame producers, even a few days' delay could reduce output considerably because it limited the period of time that sesame would grow in the hot summer months. Sesame sowing postponed from the end of May to early June resulted in a loss of output of about 20%; and of almost 35% when postponed to the middle of June (Chinese Academy of Sciences, Geographic Research Institute, Economic Geographic Research Group, 1983, p. 218). The shift to wheat affected the delicate cycle of sesame production and considerably lowered its already low yield.

In 1953, the national average yield for sesame was 64 jin per mu. It dropped to 29 jin per mu in the next year

because of a great flood, and remained low during the GLF. During the Reconstruction and the GLF, yields hovered in the 50-60 jin per mu range, failing to surpass the 1953 level until 1977. (See Table 7.5). Such low yields were brought about by the limitations of the traditional broadcast method. To improve yields, sesame would have to be sown intensively on fertile land and managed attentively.

The story of oilseeds was not a simple problem of being the third priority behind grain and cotton. In actuality, the patterns of production of the three cash crops were testimonies to the opportunism of the Chinese peasant. Generally, the peasants wanted to grow oilseeds because of high economic returns. According to 1978 figures, the three oil seeds brought in more than three times higher returns per unit of land, and 15% higher returns per unit of labor than the six major grain crops (Zhu Pingrang, 1983, p. 75). Hence, peasants wanted to grow oil seeds, but were constrained by their subsistence needs and by the natural limitations of the crop.

The intensified cropping patterns imposed by the Double-Harvest Strategy brought clearly to light the different natural constraints of each crop. Intercropping a new variety of peanuts with wheat proved to be damaging to the land, and double-cropping sesame seed with wheat reduced sesame yield considerably. Consequently, peasants in traditional cash-crop regions, particularly those in the North, reduced the sown area and output of peanuts and sesame

Table 7.5--National Sesame Production

Year	Sown Area (million mu)	Yields (jin per mu)	Output (million jin)
1952	15.85	60.63	961.1
1953	16.33	63.77	1,041.7
1954	15.66	29.23	457.8
1955	17.20	53.90	927.0
1956	14.17	41.91	593.8
1957	14.13	44.20	624.6
1958	10.59	60.98	645.8
1959	12.46	52.25	651.0
1960	11.44	26.47	302.8
1961	9.83	38.81	381.5
1962	10.74	47.42	509.3
1963	12.38	43.30	536.0
1964	11.91	51.83	617.3
1965	9.95	51.41	511.5
1966	10.20	56.80	579.4
1967	9.89	59.84	591.8
1968	9.33	52.37	488.6
1969	8.99	57.00	512.4
1970	8.32	63.23	526.1
1971	8.87	63.14	560.1
1972	8.99	57.62	518.0
1973	8.73	58.90	514.2
1974	8.04	56.26	452.3
1975	8.01	52.03	416.4
1976	8.42	54.42	458.2
1977	8.35	57.83	482.9
1978	8.57	75.24	644.8
1979	12.65	65.95	834.3

Source: National Statistics Bureau. 1984. Chinese Statistical Yearbook, 1984. Beijing: Chinese Statistical Publication Society. Area sown figures are from p. 139; outputs are from p. 146; and yields are calculated by dividing the former by the latter.

seed, in favor of foodgrains needed for subsistence. As a result, the production of peanuts and sesame seed collapsed in the North China Plain.

Of the two, peanut cultivation spread to new regions because of its basic adaptability to a warm climate and to all soils except those that were saline and alkline. Southern farmers were able to take advantage of the situation because peanut cultivation could be done into the fall and even the winter there. Sesame seeds, however, failed to penetrate into other regions because in order to raise yields it would have required rich soil, fertilizer, and a change from the traditional broadcast method to a more concentrated sowing pattern. It would have required a significant investment.

Economic Factors Affecting Cash Crop and Grain Production

The price and cost of producing each type of oilseed also affected output. In particular, southern peasants were affected by the change in peanut prices. The price of peanuts was maintained at 30.39 yuan per 100 jin after it had been raised during the Reconstruction period. Between 1971 and 1975, the price of peanuts rose by 25%. Although there were no data available as to exactly when the price change took place, it was likely that the price of peanuts was raised in 1971 and again in 1975 because important national conferences on cash-crop production were held in 1970 and again in 1974, and any price rise would have been the result

of those meetings. Moreover, the average price of edible oil rose by 14% in 1971; therefore, it is safe to assume that a major price jump took place for peanut growers in 1971. Significantly, the price of peanuts relative to grain changed by 24% in favor of peanuts beginning that year. (See Table 7.6).

As a result, peanut output jumped considerably in the South. In 1956, the South accounted for 30% and 20% of China's peanut land and production, respectively; that is, the South produced 667,000 ton of peanut on 11.61 million mu of land. In 1977, the South equalled the North in both land and output. It produced approximately 1 million ton on 12.7 million mu of land. On the other hand, output in the North actually declined from 2.668 million ton 1956 to about one million ton in 1977 (National Agricultural Area Planning Committee, 1981. p.76).

Another manifestation of the economic behavior of peasants was the production pattern of rapeseed, which achieved significant growth across many reaches of China. Rapeseed brought generally high economic return, enriched the soil, and adapted well to both warm and cool climate. Therefore, peasants in new regions enthusiastically took up this new crop once their subsistence needs were met.

The cultivation of rapeseed in provinces that had sufficient resources moved with the change in the relative price of rapeseed to foodgrain. (See Table 7.7). In 1952, the price of rapeseed relative to the average price of the

Table 7.6--Relative Prices of Peanuts and Grains

Year	Peanut Price (Yuan per 100 jin)	Price Ratio Peanut: Grain
1952	16.35	2.74: 1
1957	19.36	2.91: 1
1962	30.39	3.37: 1
1965	30.39	3.29: 1
1970	30.39	2.81: 1
1975	38.00	3.49: 1
1977	38.00	3.49: 1
1978	38.00	3.57: 1
1979	48.29	3.76: 1

Source: Agricultural Yearbook Compilation Commission. 1981. Chinese Agricultural Yearbook, 1980. Beijing: Agricultural Publication Society. Table 8, page 381.

Table 7.7--Price and Relative Price of Rapeseed

Year	Rapeseed Price (yuan per 100 jin)	Price Ratio Rapeseed : Grain
1952	10.93	1.83: 1
1957	15.94	2.39: 1
1962	22.74	2.52: 1
1965	22.74	2.46: 1
1970	22.74	2.10: 1
1975	28.00	2.57: 1
1977	28.00	2.57: 1
1978	28.00	2.63: 1
1979	35.73	2.79: 1

Source: Chinese Agricultural Yearbook Compilation Commission. 1981, Chinese Agricultural Yearbook, 1980. Beijing: Agricultural Publication Society. p. 381, t. 8.

six main foodgrains was 1.83:1. By 1957, it had risen to 2.39:1. The price of rapeseed was again raised at the beginning of the Reconstruction period, but remained at 22.74 yuan per hundred jin from 1962 to the early part of the 1970s. Due to the movement of grain prices, the exchange ratio of rapeseed to grain was 2.46:1 in 1965, and dropped to 2.10: during the first half of the Cultural Revolution. In 1971, the price of rapeseed jumped by 23%, and its relative price to grain rose to 2.57:1. The result was a steady increase of production in the 1970s.

In conclusion, the regional and temporal patterns of oilseeds production defy the simple explanation used in China that an ideologically inspired pro-grain policy suppressed cash crops. Those diverse patterns showed that peasants were actually adaptable and opportunistic once their subsistence was met. In particular, they responded to economic conditions, even within a radical socialist system.

The land is the base, water is life, and fertilizer is the strength.

A saying in Guangdong

CHAPTER 8

REGIONAL INEQUALITY DURING THE CULTURAL REVOLUTION

The finding in the previous chapters that there were major shifts in production patterns of cash crops during the Cultural Revolution conjures up questions about egalitarian regional income distribution, one of the purported successes of Maoist agricultural policy. As pointed out by Lardy, the shift of specialized cash-crop production out of the North China Plain during the 1960s and early 1970s caused a drastic reduction in income in many counties there (Lardy, 1983, pp. 175-180). By forcing peasants to raise output of both cash crops and foodgrains by unworkable intercropping schemes, the Chinese government actually left peasants with no choice but to grow basically just a subsistence crop, reducing them to poverty. In comparison, the emergence of cotton and peanuts in the South must have caused a subsequent change in the income status of many counties in the direction of higher income. At least in the case of cotton, it appeared that Maoist policy actually led to the rich getting richer and the poor getting poorer. Similarly, the complete collapse of sesame-seed production in North China and the dispersion of rapeseed production throughout China would have effects on

income distribution.

The Double-Harvest Strategy, with its unrealistic goals and technical schemes that had gaping problems in resource allocation, left peasants to struggle with their own region's natural endowments. Under this policy, regions with more water, fertilizer, and labor were able to take advantage of the high cash crop prices of the early 1970s, while peasants making inventive use of marginal conditions to specialize had to abandon their traditional cash crops to grow subsistence crops. As a result, I hypothesize that income inequality across rural regions actually worsened during the Cultural Revolution as a direct result of the Double-Harvest Strategy, even though egalitarianism was one of the main goals of Maoist development.

The literature is far from conclusive as to whether regional inequality in China has increased or diminished during the Cultural Revolution. The Chinese government has placed a high priority on investing into industrial production outside of coastal cities and into remote interior regions (Solinger, 1978). In particular, there is startling new information that, from 1964 to 1971, the Chinese implemented an immense, capital construction program--called the "Third Front"--in the remote regions of southwestern and southern China (Naughton, 1988). Under a perceived military threat from the United States, the Chinese leadership sought to develop heavy industries in the interior in order to make China less vulnerable to coastal attacks.

In agriculture, given the policy of self-sufficiency and the small outlay by the central government into agriculture relative to other sectors, there is little reason, other than a belief in the Maoist ideological commitment to egalitarianism, to assume that agricultural policy reduced inequality during the Cultural Revolution. Regional income disparities were widespread during the 1950s. Since then, the differences within rural regions have barely changed, and the difference between rural and urban areas have actually increased (Perkins, 1987, pp. 77-83). Moreover, one analyst has warned that regional imbalances will intensify in the future (Wang Tuoyu, 1990, p. 270).

A full examination of the complex issue of regional inequality is beyond the scope of this study. The discussion and finding in this chapter are a preliminary analysis of the effects of the Double-Harvest Strategy on regional inequality.

The Effect of the Double Harvest Strategy on Inter-Provincial Inequality

Given the lack of income data during the Cultural Revolution, average foodgrain output per rural person is used as a rough proxy for rural income. Walker (1984, p. 168) compiled the following 1955-1957 statistics on grain output per head of rural population by provinces: Hebei, 197 kg; Shandong, 247 kg; Henan, 258 kg; Shanxi, 272 kg; Anhui, 341 kg; Hubei, 347 kg; and Hunan, 305 kg. The national average was 296 kg. According to these statistics, Hubei and Anhui

were very rich provinces, and Hunan was moderately rich in the late 1950s. On the other hand, Shandong, Henan, Hebei, and Shanxi were relatively poor.

Did the Double-Harvest Strategy lead these poor provinces to greater gains than the rich provinces, thereby reducing inequality? The goal of the Double-Harvest Strategy was to raise the outputs of both cash crops and grains everywhere. To what extent did equalized production for each crop take place during the Cultural Revolution?

In terms of grain output, Walker analyzed data from 1955-57 and 1977-79 and concluded that there was less inequality of output per head between provinces in the 1970s than in the 1950s (Walker, 1984, pp. 167-186). More specifically, the rich provinces of Hubei and Anhui remained rich in output per rural head, and the moderately rich province of Hunan became rich. However, some poor provinces made astonishing gains. Hebei Province and Shandong Province changed their status from poor to rich, while Shanxi Province changed from poor to adequate. In all, peasants produced 11% more grain, and more importantly, retained 12.7% more of their grain output over this period of time. Retained grain per capita in the rural areas increased from 290 kg in 1953-1955 to 327 kg in 1977-1979, and, very plausibly, the poor provinces enjoyed a greater gain in retaining grain for consumption than the rich provinces did (Walker, 1984, p. 176).

The second half of the question concerns the performance of poor provinces as opposed to rich provinces in cash-crop

production. National cotton output increased by 1.2 billion jin from 3.3 billion jin in 1957 to 4.4 billion jin in 1979 (Chinese Agricultural Yearbook Compilation Committee, 1981, p. 36). Was this increase in income distributed in such a way so as to increase or diminish inequality? Unlike foodgrains, a large share of cotton (more than 90% in most regions) was procured by the State. A region that was self-sufficient in grain would be able to turn the income from cotton into local investment or welfare.

Table 8.1 lists the cotton output of major provinces and regions, classified as poor or rich according to their grain output per rural capita in 1955-57. As seen in the table, poor provinces regressed considerably as the result of Cultural Revolution. In sum, these five provinces and regions reduced cotton output by 25%. In contrast, rich provinces and regions increased output by 250%. The five rich regions shown in the table accounted for close to 930 million jin, a disproportionate share of the 1.1 billion jin gained by China as a whole.

The Double-Harvest Strategy therefore appears to have caused greater inequality when it came to cotton production. Only those provinces and regions that had the resources to subsist as well as grow cash crops were able to take advantage of the high cotton prices of the 1970s. Specifically, Hubei Province maintained its status as a rich grain producer as well as more than doubling its cotton crop. Similarly, Hunan Province improved its grain production and

Table 8.1--Cotton Output In Poor and Rich Regions, 1957 and 1979 (million jin)

	1957	1979	Gain
Poor provinces or regions			
Shandong	360.0	336.0	-24.0
Hebei	600.0	250.0	-350.0
Henan, N. China Plain region	51.4	67.0	15.6
Shanxi	232.0	205.0	-27.0
Anhui, Huai-Bei Plain region	31.4	91.9	60.5
Sub-total	1274.8	949.9	-324.9
Rich provinces or regions			
Henan, Nanyang region	39.0	95.8	56.8
Hubei	400.0	895.0	495.0
Hunan	82.0	230.0	148.0
Shanghai	70.0	179.0	109.0
Anhui, Central and South	31.0	152.0	121.0
Subtotal	622.0	1551.8	929.8

Sources: The 1979 provincial data are from Chinese Agricultural Yearbook Compilation Commission 1982, Chinese Agricultural Yearbook, 1981. Beijing: Agricultural Publication Society. pp. 31-32. The 1957 provincial data are from Lardy, Nicholas. 1983. Agriculture in China's Economic Development. New York: Cambridge University Press. Appendix 2.

almost tripled its cotton output. In contrast, Hebei, a grain-poor province, suffered a tremendous drop in cotton output. Nor could it be argued that this decline was sufficiently offset by the increase in grain output. As a result of the Cultural Revolution, Hebei's grain output per rural capita did increase from 197 kg to 325 kg. But this gain was deceiving as a measure of rural welfare. In the early 1970s, Hebei Province became a consistent exporter of grain. Although there was little data on how much grain was retained in the rural areas for consumption, a large share of grain was exported to the major municipalities of Beijing and Tianjin (which were geographically subsumed by Hebei Province), in order to reduce foreign grain imports at the expense of rural consumption. That Hebei Province did not enjoy the fruits of the Double-Harvest Strategy was borne out by the fact that eleven counties in Hebei (out of a national count of 221 counties) had income of less than 50 yuan per year in each of the three years from 1977 to 1979 (New China Monthly, 1981, p. 117).

The Effect of the Double-Harvest Strategy on Intra-Provincial Inequality

While the Double-Harvest Strategy appears to have caused greater inequality between provinces, there are also preliminary indications that it caused intra-provincial inequality as well. Henan Province has four distinctly different regions: East, Southeast, North, and Southwest.

Each region responded differently to the Double-Harvest Strategy.

Tables 8.2 and 8.3 help to highlight how the Double-Harvest Strategy led to greater inequality between two major regions within Henan Province: East and Southwest. As discussed in Chapter 4, East Henan, located on the North China Plain, suffered a loss of income because it had to eschew its traditional cotton crop in order to meet their grain subsistence. Income there was generally less than 124 yuan, with many provinces having incomes of less than 100 yuan. The Nanyang Region in the southwest had higher income than Eastern Henan. Particularly, three counties that made remarkable progress in cotton production had incomes in the 175-199 yuan per person range. As summarized in Table 8.2, the growth rates of wheat output from 1957 to 1979 were practically the same in those two regions. Wheat output in Nanyang grew 260%, not significantly higher than wheat output in the much poorer counties in Eastern Henan Province, which grew 200%. Cotton output, however, flourished in the former, increasing by 240%, while it stagnated in the latter, growing by only 30% in those 22 years. (See Table 8.3). The additional income derived from cotton production in the Nanyang Region made a significant difference in comparison to Eastern Henan Province. That region contained many more resources, particularly rain and soil fertility, and peasants there were able to take advantage of the Double-Harvest Strategy.

Table 8.2--Wheat Output of Counties in Nanyang Region, as compared to Eastern Henan (million jin)

Counties	1950	1957	1965	1979
Xinye	50	80	60	200
NanYang	110	80	95	300
Zhenping	30	55	45	135
Dengxian	95	160	125	375
Tanghe	120	135	125	260
Neixiang	35	45	60	135
Xizhou	50	50	60	135
Nanzhao	40	35	40	90
Fangcheng	65	65	85	225
Sheqi	45	45	60	145
Tongbai	20	35	35	70
Xixia	20	35	45	80
Total	680	820	835	2,150
22 Counties in Eastern Henan	1,395	1,845	1,610	3,765

Sources: Henan Academy of Sciences, Geographical Research Group. 1982. Henan Agricultural Geography. Henan: Henan Science and Technology Press. These numbers were obtained by counting the dots on the maps on pp. 50-51. See Table 6.3 for figures of individual Eastern Henan Counties.

Table 8.3--Cotton Output of Counties in Nanyang Region, as Compared to Eastern Henan (1,000 jin)

Counties in Nanyang	1950	1957	1965	1979
Xinye, NanYang, & Zhenping	2200	14400	1,4000	5,2001
Dengxian	2200	1,1200	7400	1,1000
Tanghe	600	6000	4400	1,1000
Neixiang	400	1600	800	2600
Xizhou	1200	1600	200	200
Nanzhao	400	400	200	0
Fangcheng	400	1200	2600	5600
Sheqi	400	1800	400	1,2000
Tongbai	600	1000	200	1200
Xixia	400	400	00	200
Total	8,800	39,600	30,200	95,810
22 Counties in Eastern Henan	35,200	52,800	24,400	67,400

Sources: Henan Academy of Sciences, Geographical Research Group. 1982. Henan Agricultural Geography. Henan: Henan Science and Technology Press. These numbers were obtained by counting the dots on the maps on pp. 66-67. See Table 5.1 for figures of individual Eastern Henan Counties.

Moreover, several counties in the southeastern tip of the province, also became relatively affluent. Primarily a rice-growing region, these counties met their subsistence needs without having to concentrate resources into the wheat-cotton intercropping scheme. Their subsistence assured, these counties produced cotton and tea to earn higher incomes.

The richest section of Henan Province was the Xinxiang Region and the Kaifeng Region on the banks of the Yellow River in the North. Annual income in this region was typically above 250 yuan per rural person. Site of Zhengzhou City, the provincial capital and cultural center, this region had ample resources. While precipitation in this region was only 600-650 mm, as low as that in Eastern Henan, Xinxiang was well irrigated (Henan Province Academy of Sciences, Geographic Research Institute, 1982, p. 25). In 1973, counties there generally had more than 60% of their farm land irrigated, with six counties exceeding the 85% rate, as compared to the poorer regions in Eastern Henan, which had irrigation levels of 30% to 50% of farm land. Rich in coal, this region was advanced in fertilizer production, as every county had its own fertilizer plant. The average fertilizer application in 1979 was 104 jin per mu, far above the provincial average of 62 jin. Moreover, several counties had the resources to apply more than 200 jin per mu (Henan Province Academy of Sciences, Geographic Research Institute, 1982, p. 106). The new intercropping scheme of the Double-

Harvest Strategy forced cotton farmers to reduce land sown to natural fertilizer. In Xinxiang, such cultivation was reduced from 700,000 mu in 1966 to 117,000 mu in 1971 (Henan Province Academy of Sciecnces, Geographic Research Institute, 1982, p. 107). Peasants elsewhere had to do the same. Peasants in Xinxiang, however, were able to apply much more chemical fertilizer than their counterparts in poorer regions. In addition, although the Xinxiang had only 19.3% of the farm land in the province, it used 42.2% of the rural electrical output (Henan Province Academy of Sciences, Geographic Research Institute, 1982, p. 109, t. 13).

Because of these advantages, Xinxiang achieved a high output. Its wheat yield was 444 jin per mu, 22% above the provincial average. Reportedly, cotton yields of 150 jin per mu and grain yields of 700 jin per mu were achieved in the some brigades (Henan Province Academy of Sciences, Geographic Research Institute, 1982, p. 107). Its cotton yields were exceptional compared to the rest of the province.

A preliminary finding that can be drawn from the data on Henan Province is that the Double-Harvest Strategy had a regressive effect on rural regional equality. From the outset, it forced goals and specific techniques upon the peasants without any investment help. Economic success was related directly to the level of endowment. Henan was a diverse province. As a result, four different regions achieved distinct levels of income.

Those peasants who did not have the resources,

particularly those in Eastern Henan Province, had to eschew their traditional cash crop, while struggling to grow their own subsistence grain. The Nanyang Region, better endowed with more rainfall and the fertile soil of the Long River, was able to become moderately rich growing cotton. A third region, Southeastern Henan Province, had warmer climate than the North China Plain and nearly double the precipitation. There, peasants were able to develop separate cropping patterns for subsistence and cotton. They grew a rice crop, and then cultivated cotton and tea for cash. Finally, New Village had the most natural and industrial resources. As a result, it reached incomes significantly higher than those in its neighboring counties on the North China Plain less than 300 miles away.

In summary, the preliminary finding of this chapter is that the regional shifts in cash-crop production had an adverse effect on regional equality.

(The State) should not stop the peasants from freely choosing to act according to their own self-interest.

Chen Yun, "A Few Ideas on the Workings of Economics"

CHAPTER 9

CONCLUSION

The Chinese believe that change should be viewed as an interaction of two forces, the yin and the yang. There is action and reaction, the result of which can be harmony or conflict. It is therefore ironic that when Chinese policy makers and scholars think about the effects of Maoist actions on agricultural development during the Cultural Revolution, they assume that peasants followed policy and do not analyze any other reaction peasants might have taken. More importantly, they ignore the possibility that peasant response to policies could lead to substantial changes in the patterns of agricultural development.

Certainly the Double-Harvest Strategy, enacted by Maoists to raise the output of both cash crop and foodgrain, was a major state action. That campaign was a failure because it did not consider the tremendous resources needed to accomplish very broad ideological goals. Specifically, in the North China Plain, the peasants encountered the "three contradictions" of inadequate water, labor, and fertilizer. Rather than planning to provide resources, the State exhorted peasants to be self-sufficient, believing that the collective

force of the masses, inspired by ideological indoctrination, was all that was needed. The gap between idealistic goals and real agronomical problems was never bridged.

The three contradictions of inadequate water, fertilizer, and labor were as important as the state policy in determining the collapse of cotton in the North. It also helped to explain the peculiar and complex growth patterns of the three important oilseeds--why peanut productivity shifted from the North China Plain to South China, why rapeseed spread practically everywhere, and why sesame collapsed altogether.

Another state action that affected regional development was the dismantling of the pricing system. In changing from a price-planning system to a quantity-planning structure, the leftist government froze prices at the 1966 level and at price ratios highly in favor of foodgrains. There was only one price adjustment during the Cultural Revolution, and that increase was a 15% to 25% rise in the price of cash crops, grudgingly permitted because of the failure of cash crops in the late 1960s. As a result, cash-crop production increased in the latter part of the Cultural Revolution. Relative prices and their effects were ignored disdainfully on ideological grounds, but they had significant effects on the pattern of crop production, perhaps even more so than any ideological exhortation used in the Double-Harvest Campaign. Because prices of agricultural goods remained essentially the same while costs of agricultural inputs increased

significantly, peasants were confronted with a second gap that the State did not overcome. Rather than affecting choices of cropping patterns and growth rates through relative prices and resource allocation, leftists set lofty goals and exhorted the peasants to reach all of them.

These actions and constraints led to significant peasant reaction. The motivation of the peasantry in reacting to the State had significant effects on agricultural development during the Cultural Revolution. Peasants did not abandon personal interests in favor of the moral socialist road. In North China, they planted "patriotic cotton" on poor land and assigned few inputs to it, following their risk-adverse instincts and concentrating resources on their own survival needs; hence, grain production surpassed cash-crop production. In South China, where subsistence was met primarily through rice cultivation, they chose the higher material returns of cash crops over wheat and other foodgrains. One consequence of these patterns was greater inequality at the provincial level and, in the case of Henan Province, greater intra-provincial disparities.

While appearing to obey the CCP's agricultural policy, peasants actually acted according to their own needs. Chinese agricultural development is not a matter of the leaders having pushed "a few buttons." Independent peasant behavior, not just government policy, is crucial to understanding the patterns of development in agriculture during the Cultural Revolution. In as much that such broad

factors as Maoist ideology, prices, and resource constraints set parameters that affected regional development, the economic culture of the peasants was paramount in reconciling the regional data.

That Chinese peasants acted in an independent, price-responsive, and utilitarian manner should not be surprising, given the classical capitalist literature. However, such a notion runs counter to how the Chinese leadership has viewed those they govern.

In the final analysis, Chinese peasants are like the crops that they grow: they bend with the (political) wind, while their roots are firmly planted into the ground, foremost drawing upon what they need to survive. They have proven that they are durable, creative, and resourceful. In many ways, the common people of China's vast countryside are more worthy of our attention than all the elites who have tried to govern them.

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