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Burying the Commune:

Why China Abandoned its Rural Collectives

A dissertation submitted in partial satisfaction of the

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in Political Science

by

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ABSTRACT OF DISSERTATION

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Doctor of Philosophy in Political Science

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Professor Ronald Rogoswki, Chair

This study *rejects* the conventional wisdom that the Chinese commune was an economic failure remedied by decollectivization. Instead, it argues that over time improvements in the institution's remuneration and agricultural research and extension systems began a rural development process that substantially increased agricultural output over a sustained period. It uses national and provincial level data and applies basic insights from both the classical and neoclassical economic traditions to show how changes made to the commune beginning in 1970 contributed to increased rural economic development and improved agricultural output.

The commune's coercive extraction of household resources financed agricultural capital accumulation and the development of technological innovations, which increased output, thus generating the agricultural surpluses needed to kick-start a long-run cycle of productive investment and sustained output growth. Although the commune system kept rural households living in austere – often subsistence-level – conditions, it succeeded in increasing rural development and the rate of technical innovation in agriculture, and, in turn, agricultural

productivity per unit land and per unit labor. Simply put, it was under the commune that for the *first* time in history hundreds of millions of rural Chinese acquired the basic skills and capital necessary to get their foot on the first rung of the development ladder.

China's new leadership abandoned the commune for distinctly political reasons. An alliance of rightists and liberal reformers led by Deng Xiaoping destroyed the system to consolidate their newfound political power. The campaign to abandon the commune gained momentum throughout the late 1970s culminating with the system's gradual elimination between 1979 and 1983. Unified by anti-leftism and a desire to solidify their tenuous grip on power, Deng's coalition set out to boost rural household incomes, end Maoism, and modernize the military. Each of these three interrelated policy goals removed one "leg" of the commune's tripartite economic, political and military support structure: its mandate to extract household savings for capital investment, its cohesive collectivist ideology, and military political backing, respectively. Without these supports the system collapsed.

The dissertation of Joshua David Eisenman is approved.

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Dedicated to Professor Richard Baum (1940-2012)

my committee chair and mentor, 2006-2012

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Chapter 1: Introduction: Commune Abandonment and Economic Performance

CHAPTER OUTLINE

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The aim of every revolutionary struggle is the seizure and consolidation of political power.

- Mao Zedong[1]

Introduction

Experts and laymen, Chinese and non-Chinese alike, almost unanimously trace China's sustained upward economic growth and development trajectory to the expansion of free market-based incentives first introduced in 1979. Equally well accepted are the contentions that China's investments in productive capital and education were begun *after* its rural communes' collapsed, and that excessive egalitarianism and planned collective agriculture "smothered the masses' initiative for production."[2] Pulitzer Prize winning author Thomas Friedman, for one, noted in October 2013 "the payoff from China's 30 years of investment in infrastructure and education."[3] The conventional wisdom, in short, suggests China experienced a V-shaped economic recovery with collapse narrowly avoided by life-saving new rural reforms begun in the late 1970s and early 1980s. These reforms (collectively known as the Household Responsibility System- HRS, or *bao chan dao hu* in Chinese) reintroduced household-based farming and free markets, which provided the incentives the economy needed to triumph over centralized planning and rise from the ashes of commune failure, unceasingly, for more than three decades.

This study *rejects* the conventional wisdom that the Chinese commune was an economic failure remedied by decollectivization. Instead, it argues that over time improvements in the institution's remuneration and agricultural research and extension systems began a rural development process that substantially increased agricultural output over a sustained period. It uses national and provincial level data and applies basic insights from both the classical and neoclassical economic traditions to show how changes made to the commune beginning in 1970 contributed to increased rural economic development and improved agricultural output.

The commune's coercive extraction of household resources financed agricultural capital accumulation and the development of technological innovations, which increased output, thus generating the agricultural surpluses needed to kick-start a long-run cycle of productive investment and sustained output growth. Although the commune system kept rural households living in austere – often subsistence-level – conditions, it succeeded in increasing rural development and the rate of technical innovation in agriculture, and, in turn, agricultural productivity per unit land and per unit labor. Simply put, it was under the commune that for the *first* time in history hundreds of millions of rural Chinese acquired the basic skills and capital necessary to get their foot on the first rung of the development ladder.

Why did China Abandoned the Commune?

I began by asking why – after over two decades – did China abandon the commune as its primary rural political, economic and military institution? The familiar – but, I argue, incorrect – answer has long been that the commune was unproductive: to wit, it failed to provide sufficient incentives for workers, leading them to shirk collective responsibilities and focus on their more profitable private sideline plots and ventures. The research reported here shows this grassroots-based economic failure argument for the commune's abandonment is almost entirely erroneous. Instead, I present a top-down political explanation that challenges the contentions that households abandoned the commune and that it was dismantled because it was unproductive. Households, I argue, simply did not have the power to opt out of the collective system. The commune succeeded in increasing China's agricultural output through coercive measures that increased savings rates and an agricultural research and extension system that made productive investments.

China did *not* experience a V-shaped growth line with economic collapse narrowly avoided by life-saving new reforms begun in 1979, as the common wisdom suggests. Conversely, post-1970 policies that increased household savings rates kick-started a continuing cycle of investment that produced sustained growth in agricultural output. Innovations that increased output per unit land also freed rural labor to move into urban-based capital and export sectors after decollectivization. China's economic success was not primarily the result of "big-bang" reforms begun in 1978; instead it was built on the previous decade of painful, forced household austerity that underwrote agricultural modernization.

China's new leadership abandoned the commune for distinctly political reasons. An alliance of rightists and liberal reformers led by Deng Xiaoping destroyed the system to consolidate their newfound political power. The campaign to abandon the commune gained momentum throughout the late 1970s culminating with the system's gradual elimination between 1979 and 1983. Unified by anti-leftism and a desire to solidify their tenuous grip on power, Deng's coalition set out to boost rural household incomes, end Maoism, and modernize the military. Each of these three interrelated policy goals removed one "leg" of the commune's tripartite economic, political and military support structure: its mandate to extract household savings for capital investment, its cohesive collectivist ideology, and military political backing, respectively. Without these supports, which are further explained below, the system quickly collapsed.

Whether it was distributed to households (e.g. farm machines) or remained as in-field infrastructure (e.g. irrigation works), the commune's capital remained productive years after decollectivization. Moreover, the system's dissolution crippled the localities' ability to extract households' resources at the same time Beijing increased the state procurement price for

agricultural products for the first time in nearly a decade. Taken together these vastly reduced extraction rates delivered a sizeable consumption boost to previously deprived rural households. In this way the liberal-right coalition succeeded in persuading farmers to remain in rural areas and won grassroots support. China's new leaders, in short, eliminated the commune to consolidate their political power, not because the system failed to produce.

This study is based primarily on fieldwork and archival research conducted in a dozen Chinese provinces between 2011 and 2014. These research trips uncovered a trove of heretofore-unexploited agricultural statistics on the national, provincial, and, in some cases, county levels, covering 1958-83. It includes official data for China as a whole and detailed data for seven of its largest agricultural provinces – Henan, Hubei, Hunan, Jiangsu, Jiangxi, Jilin, and Liaoning. When possible non-Chinese data sources are also used to buttress official data. These records allow for the operationalization of key explanatory variables identified in previous studies, which helps shed light on the causal relationships among commune institutional reforms, increased speed of agricultural capital accumulation and technological innovation, and sustained increases in agricultural output.

(A) Institutional Overview: The People's Commune

Between 1958 and 1983 the commune was rural China's foremost economic, political and military institution.[4] At its peak size in 1980, there were about 811,000,000 commune members representing 82% of all Chinese or 1 out of every 5.5 people on earth. Between 1970 and 1983 the average commune had an organizational apparatus that included twelve production brigades, ninety production teams, twenty-five households, and about 15,000 people. Although these averages disguise substantial regional disparities in commune size, all communes in Maoist

China shared the same three-tiered administrative structure and were coercive institutions, that is, *members were not free to leave*.

The household formed a fourth administrative subunit under the commune and controlled the rural private sector. This served to constrain the scale of the private production, gave households the ability to supplement their collective income with private income from their home-adjacent sideline plots (*ziliudi*), and, most importantly, ensured that any resources left over from collective production would not go to waste.

In 1958 China initiated the commune as the institutional framework for a Great Leap Forward (GLF) in agricultural productivity. Over the next two years this program's failure resulted in the loss of between 15-30 million lives and the construction of vast quantities of poor quality capital and infrastructure, which either depreciated quickly or collapsed completely. Under the infamous "Red over Expert" policies pursued during this time human capital (i.e. skilled labor) was also underutilized and demoralized. In the aftermath of the GLF calamity in 1961-62 income incentives were reintroduced into the remuneration system and in some areas commune were reduced in their size and institutional scope. Throughout the 1960s quickly depreciating rural capital stocks, unprecedented increases in population growth rates, and a steady fall in arable land, inhibited China's ability to generate substantial increases in agricultural output per capita and per unit land. The influence of the exogenous economic changes is detailed in Chapter 3.

In 1969, Premier Zhou Enlai was placed in charge of agriculture, and provincial level meetings were held to cull together the lessons of the commune's first decade. That year many including Gansu, Inner Mongolia, Anhui, Shandong, Hunan, and Guangdong held province-wide conferences on the topic.[5] Zhou's agricultural policy review culminated with the month-long

Northern Agricultural Conference held in Shaanxi and Beijing in August 1970, at which he announced a nationwide reform agenda that promised to change the institution in ways that improved its economic performance.

After 1970 the commune's institutional structure and functions remained stable for a decade or more. With political control, economic management, and public security unified under a single institution there was virtually no dimension outside its purview. Communes administered schools, hospitals, banks, shops, police and fire departments, telephone services, post offices, radio broadcasting, and organized local cultural and sports activities and propaganda activities, etc. Each administrative level was charged not only with modernizing agriculture to increase output, but also with gradually building a new socialist political consciousness based on equity, self-reliance, and placing collective before individual interests; a combination that gave cadre nearly unlimited discretionary power over members' lives.

Communes implemented population control measures such as job allocation, the household registration (*hukuo*) system, and family planning, but above all, were mandated to improve their subunits agricultural output with an emphasis on grain productivity. At each administrative level the commune's planting and investment plan was generally risk-adverse and gradualist, aiming for slow and steady increases in grain output, rather than intermittent surges in production followed by stagnation. Although commune leaders were under pressure to increase yields using modern agricultural techniques, they enjoyed wide autonomy in choosing their approach. Commune cadre would draw up a preliminary production plan and budget that apportioned quotas and agricultural inputs to each brigade. Each brigade would then conduct a similar process among its subordinate teams, which, in turn, would transmit instructions to those households under their jurisdiction. During this process team leaders selected from among those

approved work point remuneration methodologies the one that they believed would best incentivized workers.

Households were informed of relevant agricultural modernization plans and remuneration schemes during team meetings and were obliged to "vote" for them unanimously. During meetings leaders also transmitted the Chairman's vision of selfless collectivism via propaganda materials, songs, and dramatic reenactments of proper Maoist behavior. Cadre were repeatedly encouraged to take local conditions into account, avoid waste and over consumption, and rewarded, above all else, for delivering long-run productivity increases in grain output.

(B) Literature Review

Conventional Explanation: "Reform and Opening Up"[6]

This section summarizes the mainstream explanation for commune abandonment, which depicts the insitution as an impediment to economic development and growth: unable to sufficiently capitalize the rural economy, foster technical innovation *or* increase agricultural output. John King Fairbank and Merle Goldman described life under the commune as "a modern type of serfdom under party control."[7] Both official and academic accounts generally juxtapose the commune's economic shortcomings with the subsequent successful introduction of markets and incentives via the Household Responsibility System (HRS), which, they argue, brought China's unproductive rural economy to life.[8]

There are, of course, dissimilarities among different authors' explanations for commune economic failure, but the essence remains consistent: Chinese communes' lack of market-driven incentives caused collective action problems (i.e. shirking and slacking) that retarded development and reduced productivity. Members simply lacked the motivation to work hard or

monitor each other's work. As a result, 'free-riders' neglected their collective duties, thus dragging down commune productivity, yet all the while reaping nearly the same rewards as actual contributors thanks to the system's overly egalitarian remuneration policies. Over time lackluster collective production lead initially hard-working members to also begin shirking collective responsibilities in favor of their more profitable private ventures.

Poor commune productivity caused rural Chinese families to go hungry, which only served to further reduce agricultural output. Sometimes rural workers would show up for collective work exhausted, sometimes they worked slowly, sometimes they did not show at all, and as a result tensions emerged between the increasingly unproductive collective and its households. Despite rural residents' strong desire to return to market-based household farming, "highhanded but ignorant cadre intervened destructively" stifling their pleas, noted John K. Fairbank.[9] Kenneth Leiberthal writes that the economy was entirely government administered and "market forces and personal incentives played virtually no role in the system." He observed that:

> No noticeable attention [was paid] to issues of efficiency or to effective use of capital. The result was lackluster economic growth, with nearly all real gains stemming from bringing more resources to bear rather than from improvements in productivity based on technological and systems. There were no private property rights and virtually no private property at all (with the exception of peasant housing)."[10] [Parenthesis in original text.]

Officially, from 1966-76 extreme leftist policies that "disregarded the low productivity of the countryside"[11] unleashed "ten years of turmoil [that] caused serious damage in the rural economy."[12] One mid-1980s official Chinese publication describing economic stagnation under the institution's "feudal-fascist regime" said "commune members were forbidden to engage in sideline production [and] private plots were eradicated, seriously damaging normal economic life in the countryside."[13] Fairbank and Goldman agree with the official account, explaining that: "In the 1970s the Cultural Revolution spread its coercion into the countryside, where, for example,

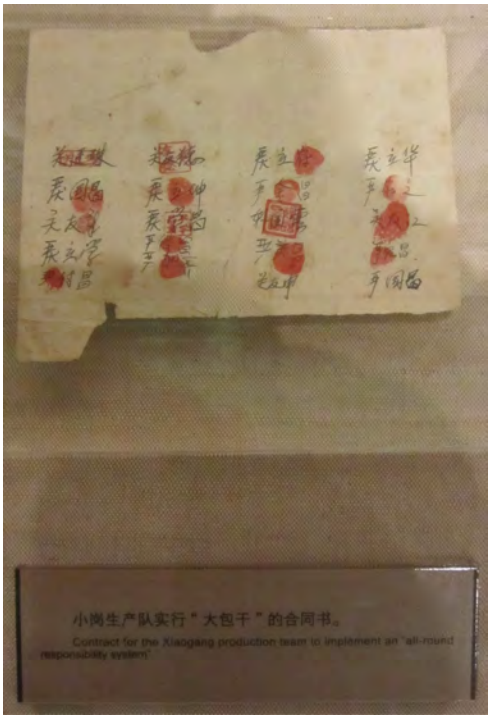
peasants were required to abandon all sideline occupations such as raising pigs, chickens and ducks. For many peasants this meant starvation."[14] Carl Riskin explained that "state dictated cropping plans" and "caps on team income" created a "weakening of work incentives and a palsy of creative effort," such that "collective agriculture in many places turned passive and uninspired."[15]

Then, in 1978, 18 brave households from the Xiaogang production team in Fengyang, Anhui "risked their lives to sign a secret agreement to divide communally owned farmland into individual pieces called household contracts, thus inadvertently lighting the torch for China's rural revolution." Household farming increased Xiaogang's food grain output massively from 15,000 kg in 1978 to 90,000 kg in 1979. Yan Junchang, one of the 18 signatories, was the leader of the Xiaogang production team. In a 2008 interview with the official *People's Daily* he explained:

> Villagers tended collective fields in exchange for 'work points' that could be redeemed for food. But we had no strength and enthusiasm to work in collective fields due to hunger. We even didn't have time because we were always being organized by governmental work teams who taught us politics. It was then that I began to consider contracting land into individual households.[16]

Extrapolating from the Fengyang case, Anne Thurston sought to explain why commune members continued laboring under the system despite its lack of productivity. She argued that peasants were unable to "rebel" or "fight back" due to malnourishment:

> One of the great mysteries of rural China during the Maoist era is why the peasants, who provided the major support for the communist revolution, did not rebel, or even fight back, when the revolution first betrayed and then began devouring them. The answer from Fengyang in famine seems obvious. Starving people do not rebel. To the extent they move at all, it is to search for food.[17]



1.1

Picture taken by author on May 28, 2013
at the PRC History Museum in Beijing)

1.2

Picture from *People's Daily*
article dated November 11, 2008

([18])

Based on their unprecedented grain productivity increases Xiaogang's households received powerful public support; first from Anhui Provincial Party Secretary Wan Li, and then from other top leaders, including leading liberal, Zhao Ziyang. Deng Xiaoping, according to Tony Saich, "remained agnostic" about decollectivization until 1981. Indeed, it was not until 1982 that contracting down to the household was officially declared "socialist."[19] In his memoirs Zhao – a principle proponent of decollectivization who as party boss of Sichuan had permitted experiments with contract farming in 1977– described the surprising success of the Rural Household Land Contract system (RHLC) or HRS:

> The transformation of the nationwide system of three-tiered ownership of people's communes into the RHLC schemes was a major policy change and a profound revolution. It took less than three years to accomplish this smoothly. I believe it was the healthiest major policy shift in our nation's history. As the implementation of the RHLC scheme expanded, starting from the grassroots and spreading upward, its superiority as a system became increasingly obvious.[20]

Here it is worth noting the similarity between Zhao's account and that of Saich, who also stressed the successful upward spread of economic reforms begun at the "grassroots" level. According to Saich:

> In 1979 poor farmers were beginning to abandon the collective structures and grass roots experimentation took place in contracting output to the household. Gradually this practice spread throughout other areas of rural China. As late as 1981 Deng remained agnostic as to whether this was a good thing. As practice at the grass roots radicalized, the centre could do nothing but stand by and make policy pronouncements to try and catch up with reality. In this initial stage of reform it is clear that the central authorities were being led by developments at the grass roots level.[21]

Not all agree, however, that farmers themselves began the movement to abandon the commune. Ezra Vogel argued that when officials gave "peasants a choice between collective or household farming, they overwhelmingly chose the household. Gradually officials who had doubts about household agriculture were won over."[22] Jonathan Unger, disagrees with both Vogel and Saich. He observed that localities were "channeled" from communes into HRS "irrespective of the types of crops grown or the level of local economic development." "Contrary to repeated claims of the Chinese news media and top political leaders alike," Unger wrote, "very few villages were offered any choice."[23]

Despite disagreements on the origins of HRS there is broad consensus that it was more productive than the commune. According to Fei Hsiao-tung it was only after "land was contracted to the peasant households for independent management [that the rural economy] overcame the ill effects of the commune system, which had constrained the productive forces."[24] Kate Zhou identified HRS as the cure for economic stagnation under the commune:

> Farmers… were left with little or no incentive to increase or even maintain collective productivity. Soon after the Communists took power, after a few sunny moments the lot of farmers worsened. Not only did the state set family autonomy aside, but it put people who were good at politics, but not necessarily at farming, in charge of farming. Cadres organized farming on a commune, brigade and team basis, regardless of the implications for productivity. They gave farmers no individual incentives to work hard to increase the level of productivity.[25]

Fairbank agreed, systemic changes "moved responsibility down to the individual farm family provided a great incentive." He wrote:

> The earlier Maoist system had used moral exhortation as an incentive, had demanded grain production only, and had banned sideline production and incipient "capitalism" – a triumph of blueprint ideology over reality. This change of system now made a big difference. Now the whole community could join in planning to maximize production and income. The result was a massive increase in both, a triumph for Deng's reforms. This was due to new motives of personal profit.[26]

According to both the official account and most prominent western sinologists, it was only after decollectivization beginning in 1979 that substantial increases in rural productivity were observed; a process Kate Zhou described as "spontaneous, unorganized, leaderless, non-ideological, and a political."[27] Draught animals, tools and equipment were divided among households, which contracted land, farmed it as they liked, and sold their crops at local free markets. According to Huang Yasheng, rural China became a "socialist market economy" that permitted the use of incentives and markets, resulting in the emergence of "10 million *completely and manifestly* private" local businesses known as town and village enterprises by 1985.[28] The commune's economic failure, according to the mainstream literature, prompted Chinese families to forsake it in favor of free market-based production incentives under HRS, which invigorated the rural economy, and moved hundreds of millions out of poverty.

Throughout the 1980s – aided by Deng Xiaoping's stewardship of China, the triumph of Ronald Regan's conservatism in the U.S., and the Soviet Union's decline and fall – the "Reform and Opening up" narrative, begun in 1979 and officially accepted by the CPC in 1981, became the mainstream interpretation in both Chinese and American academic and policy circles. Today "Reform and Opening up" remains the only explanation for China's unprecedented economic growth taught in most American and Chinese classrooms.[29]

Minority View: "China's Green Revolution"

Meanwhile, a handful of researchers have offered a little-known rival evaluation of rural economic performance during the 1970s. Lynn T. White III, the most prominent critic, challenges the contention that "incentives from markets alone" can explain China's growth rates in the 1980s, concluding "the liberation of agricultural labor beginning in the early 1970s conjured reforms more surely than did 1978 pronouncements by CCP politicians in Beijing."[30] According to White, various agricultural advances in mechanization, seeds, fertilizer, etc. freed up surplus rural labor and increased factor mobility.[31] He explains that agriculture modernization quietly changed China's political structure by increasing food and capital production, which freed up labor, supported rural industry and, ultimately, altered local political networks and organizational structures:

> Field mechanization in the late 1960s and early 1970s offered technologies that could free large amounts of labor from land near Shanghai. Some local leaders established rural factories at this time, using raw materials that had previously gone to urban state industries that had been the central government's main tax base. More than any other event, this was the seed of China's reform and the end of the revolutionary state that had been run in many crucial respects from Beijing. This industrial and "green revolution" of the late 1960s and early 1970s came from various kinds of agricultural extension.[32]

Writing in 2007, Chris Bramall, agreed with White, asserting that:

> The conventional wisdom….ignores the evidence pointing to trend acceleration in the growth of agricultural production in that decade [the 1970s] driven by the trinity of irrigation, chemical fertilizer inputs and the growing availability of new high yielding crop varieties. Maoist attempts to expand the irrigation network were very real, and brought lasting benefits. All this continues to distinguish Maoism from the strategies adopted across most of the developing world.[33]

While both White and Bramall's singular contributions are the exception among contemporary American publications on China's commune era, they are also the vestiges of a once-prominent academic literature on China's agricultural modernization. This minority view, which I call "China's Green Revolution," holds that the commune was *successful* in increasing agricultural development and output. It originated in the mid 1970s when American and European agricultural experts began noticing changes in the institutional structures and investment patterns

of Chinese agriculture. They noted reforms in China's agricultural research and extension system and documented (as best they could based on the limited data they could attain) the expansion and improvement of China's agricultural labor, capital and infrastructure stocks, important advancements in hybrid seeds varieties and fertilizer technology, and changes in Chinese agricultural output.

After the U.S.-China rapprochement of 1972 Sino-American agricultural exchanges resumed for the first time since 1949. American agricultural scientists were again allowed to visit select Chinese regions, albeit under close Chinese supervision. One delegation focusing on plant studies, which included George Sprague, a professor of agronomy at the University of Illinois-Urbana, visited Jilin, Beijing, Guangdong, Shanghai and Shaanxi. Between August 26 and September 23, 1974 the delegation called on twenty research institutions or agricultural universities and seven communes. Upon their return they published an extensive report on their trip for the U.S. National Academy of Sciences.[34] Sprague summarized their conclusions in an article in *Science* magazine published in May 1975 that began:

> The current ability of the Chinese people to produce enough food for over 800 million people on 11 percent of their total available land is an impressive accomplishment. This has been achieved, in large part, through the expansion and intensification of traditional practices. Water control practice irrigation, drainage, and land leveling now include nearly 40 percent of the cultivated area. The intensity of cropping has been greatly increased. China has probably the world's most efficient system for the utilization of human and animal wastes and of crop residues. The development of "backyard" fertilizer plants and the utilization of hybrid corn and kaoliang (sorghum) are new elements contributing to agricultural progress.

Between August 27 and September 30, 1976, the National Academy of Sciences with help from the American Society of Agricultural Engineers (ASAE) hosted the reciprocal visit of the Chinese Society for Agricultural Mechanization to the U.S. The Society's Vice President Xiang Nan, who would later become Vice-Minster of Agriculture in charge of mechanization from 1979-1981, led the 15-member Chinese delegation. The delegation toured ten states visiting colleges, USDA research stations, farm equipment manufacturers and farms.[35]

In 1978 the Chinese Society for Agricultural Mechanization invited Merle Esmay, a professor of agricultural engineering at Michigan State University, and 14 other ASAE delegates to visit China for talks on agricultural mechanization. From August 18 to September 8, 1979 the delegation of American experts travelled to Jilin, Heilongjiang, Beijing, Henan, Jiangsu, Zhejiang, Shanghai, and Guangdong.[36]

U.S. and other western countries scientists' and agricultural economists first-hand observations and the new data and interviews they collected in China helped supply a small group of scholars writing about China's agricultural sector in the mid 1970s and late 1970s.[37] This literature stands in contrast to most contemporary political science works on the 1970s, which either analyze Chinese leadership politics or violent and disruptive political campaigns in urban areas.[38] By contrast, scientists and economists studying China's agricultural sector in the 1970s and 1980s were most interested in two closely related topics essential to determining if poor economic performance was, as the conventional wisdom suggests, the cause of commune abandonment: (1) measuring the quantity and quality of agricultural output; (2) analyzing policies and agricultural inputs that influence changes in agricultural output.

After 1980 and the triumph of the right-leaning leaders in both China and the U.S some scholars seeming apolitical examination of Chinese agricultural inputs and output took on political overtones. The debate about the origins of China's growth became politically charged such that an American academic who suggested Mao's communes were economically productive risked being identified as a communist sympathizer, or worse, an apologist for the Cultural Revolution. It was worse in China, where Deng's emergence heralded both the expansion of markets and a purge of party leftists whose rural policies had, according to one official account in 1985, "scorned all economic laws and denied the law of value."[39] After 1980, "liberating the

productive factors" became Beijing's new mantra and few dared to defend the austerity and investment-first policies pursued for over two decades under the commune.

"By the 1990s," Bramall observed, "the academic consensus was that the Maoist commitment to rural development had been more notional than real."[40] In 1997, in response to the "exceptionally large" number of researchers that were attributing Chinese agricultural output increases to decollectivization, Fan and Pardey developed a statistical model designed to quantify the actual drivers of changes in agricultural output. They concluded that, "the direct growth promoting consequence of institutional change and market reforms have been overstated by earlier studies," and that institutional change and market reforms "may not constitute the overriding source of longer run growth as suggested by others who have empirically studied this issue." Specifically, their study found that between 1965-1993 conventional inputs including labor, land, fertilizer, power, and irrigation accounted for 45.7%, technological research accounted for 19.5%, and institutional and market reforms account for 18% of the nation's growth in agricultural output.[41]

Bruce Stone also argued that both western and Chinese observers had moved too quickly to attribute increases in agricultural productivity to the success of household farming – rather than capital accumulation and technological innovation. As a researcher at the International Food Policy Research Institute Stone did some of the most extensive work tracing the causes of China's impressive agricultural output in the 1970s and 1980s. One of the contributions of Stone's methodology was his disaggregation of China's Green Revolution by inputs, first analyzing each variable's particular contribution to agricultural growth and then examining their combined effects. Using this approach he argued that when applied together and in their proper amounts three indicators were largely responsible for rapid increases in China's agricultural

output: "improved water control, abundant supplies of fertilizers, and high-yielding seed varieties responsive to these inputs."[42] Stone observed that the use of one or more of these three produces some growth in yields but returns are greatest when all three are applied together in appropriate qualities. His approach to measuring the relative contributions of different technical inputs in agriculture was simple and apolitical:

> The principal criteria for judging technical change at the initial stage of modern agricultural development in a large but land-scarce peasant economy include yield growth of principal staple food crops. Should yield growth greatly exceed the growth in these input indicators, it might be concluded that factors other than technical change were at work. Should yield growth fall short of what might be expected from the evident pace of technical progress, the quality of the inputs, the efficiency of their use, the strength of the back up systems and other factors may be examined to explain the deficiency.[43]

Stone and Anthony Tang found that in the early 1970s China began a new agricultural policy that was committed to the technical transformation of agriculture and included improved input quality as "a major plank." In 1980 they documented components of this transformation including tractors, irrigation, hybrid seed varieties, and agricultural chemicals. Despite "the paucity of hard data and the controversial nature of the political system," they concluded that between 1972 and 1975 foodgrain output enjoyed rapid growth.[44]

Between 1974 and 1978, Benedict Stavis, an assistant professor of agricultural economics at Michigan State University who would later become a professor of political science at Temple University, published four important works on the politics of the China's Green Revolution.[45] Although his analysis covers a range of Green Revolution technologies Stavis concluded that agricultural mechanization had the greatest influence on politics and society:

> Of all changes in agricultural technology, mechanization has had the greatest direct social impact. Chemical fertilizers and new seeds may raise yield and income, affect income distribution, and increase the role of technically trained people. Improved irrigation may require new patterns of bureaucratic management and social integration. But mechanization has a far broader social impact. It affects income, income distribution, and the manner in which people relate to their work and to each other.[46]

Stavis' work combined an assessment of China's agricultural modernization under the commune with an account of the politics and policies responsible for advocating, implementing,

reinforcing, collecting feedback, and modifying agricultural policies. He also highlights the importance of information about farm conditions and test plot results to scientists in research institutions. Stavis' 1978 book, published on the eve of decollectivization, breaks much new ground by explaining how the leftist politics of the 1970s influenced the policies of agricultural capital accumulation.[47] His examination of institutional structures' and their effect on China's agricultural technology development and extension systems is also a valuable contribution.[48] Stavis, like White, believed that the agricultural mechanization not only increased agricultural output, but also had other important political and economic consequences. It caused the expansion of localized rural industry, changes in the structure of rural employment, a reduction in rural urban income inequality, and the potential for large-scale urbanization:

> Mechanizing farm work – including plowing, harvesting and irrigation, and grain processing – can contribute in a major way to reducing the toil and exposure to the elements of farm labor. At the same time, the policy of intermediate technology with rural factories generates increased non-traditional employment in the countryside. Together these elements are changing the character of employment in the countryside and making it more like that in the cities. The differences are still great, but a trend toward reduction of those differences has been established.[49]

He also observed with foresight in 1978, the causal relationship between rural development and urban migration:

> Where agricultural mechanization has taken place in densely populated regions, many people who were agricultural laborers find themselves unemployed and consider migrating to urban areas in search of industrial employment. If the industrial sector is expanding and can absorb the labor freed by agricultural mechanization (as in Taiwan and Japan), agricultural mechanization seems beneficial to everyone.[50]

In addition to White, Bramall, Stone and Stavis, several other scholars have also stressed the political importance of China's Green Revolution. One of these, John Wong of the National University of Singapore, authored a handful of scholarly publications on the subject in the mid 1970s. Wong argued that capital accumulation and technology, not institutional or organizational change, were responsible for agricultural growth. "The mainspring of China's agricultural growth today does not lie in social organization but in technological change," he wrote in 1976.[51]

Leslie T.C Kuo sought to determine, "the extent to which institutional changes and technical innovation have helped agricultural productivity in the PRC and the prospects for the next few decades."[52] In 1976, Kuo, like Stavis, White and Bramall, recognized that the promotion of small-scale rural industries (e.g. small factories producing chemical fertilizers, vehicles, tools and repairing farm machines) could both absorb excess labor and supply the capital inputs to promote agricultural growth.[53] In 1978, another proponent of China's Green Revolution, Steven Butler, agreed that "without question, brigade and commune industries are becoming a more important part of the rural economy."[54]

Gordon Bennett, a political scientist at the University of Texas-Austin, conducted important in-commune field research on politics at the team level. After observing the relationship among members and leaders in their local team meetings, Bennett et al. reported that on most important political or economic issues team leaders received and implemented instructions from the brigade and commune. This was because team leaders might serve under the same brigade leadership and with neighboring team leaders for decades, which incentivized them to maintain cordial relations. Still, Bennett et al. observed, by 1978 the amount extracted for investment and/or welfare expenses had become controversial topic in team meetings. [55] Additional researchers who have published work associated with the Green Revolution thesis include the famous botanist Arthur W. Galson and economist Dwight Perkins, as well as, Swedish Zoologist Per Brinck, On Kit Tam, an Australia-based economist, and journalists Peggy Printz and Steinle.[56] More recent studies by Chinese-born professors Li Huaiyin, Mobo C. F. Gao, and Han Dongping have provided valuable firsthand accounts of China's Green Revolution in Jiangsu, Jiangxi and Shangdong, respectively.[57] When taken together these micro level studies

reveal wide variation and localization in remuneration and investment schemes as well as the seemingly limitless scope of commune leader's autonomy.[58]

Data Review

"It is a capital mistake to theorize before one has data," wrote Sir Arthur Conan Doyle speaking as the fictional detective Sherlock Holmes. "Insensibly one begins to twist facts to suit theories, instead of theories to suit facts."[59] Indeed, the biggest weakness of the two existing theories is that both lack a reliable macro-level data set that can be replicated and used to convincingly prove or disprove its validity. Reform and Opening Up is based almost exclusively on anecdotal accounts, personal observations, and elite interviews in the post-commune period, Green Revolution advocates, despite extensive efforts in some cases, also lack the appropriate statistical resources to make definitive conclusions on the provincial or national levels. To fill the data gap this study uses newly recovered national and provincial level date to evaluate the communes' economic performance based primarily on two interrelated measures: change in development and change in output. Whenever possible these measures are supplemented with foreign data sources.

Some existing studies use local statistical records to reveal the workings and outcomes of a particular commune or its subunits; others combine records from several localities to explain outcomes within a particular county or subregion; still others, draw conclusions based on limited existing macro level data, elite interviews and secondary sources. Although political scientists generally pay less attention to the first two categories –primarily historical, anthropological, sociological, journalistic, and agro-technical accounts – they do allow for useful comparative observations about institutional change over time and geographic space. Like the third, however, the first two varieties' explanatory power is also constrained by a lack of national and provincial

level data, which prevent them from making all but strongly qualified extrapolations about the commune's macro-level economic performance and its causes.

To fill this data gap and convincingly determine whether or not the commune increased agricultural development and food output I collected official Chinese data on the national and provincial levels. In order to explain as much of commune era China as possible, provinces were selected primarily based on their current population size. Then statistics on agricultural output and inputs were obtained primarily from libraries at provincial level Chinese universities.[60] In 2011-13, I sought data in every province in the top ten for population and made the better part a success. Agricultural production data is presented here on China as whole and on seven provinces, which taken together accounts for approximately 33 percent of the total population living under the commune and about 35 percent of total grain output.

To examine the effects of commune institutional change across food types I included geographic regions that cultivate different grain varieties (i.e. rice, wheat, corn and sorghum) and then measured pig production to ensure the results were not limited only to grain. This approach was selected to determine whether national agricultural productivity and rural development increased under the commune, and if so, whether it was a broad-based phenomenon, or was concentrated in only one or two provinces, a particular region, or in just one agricultural product type. The objective was to determine if commune economic failure or success was systemic, that is, generalizable on either the provincial or national level. This approach to theory testing is only viable, however, with extensive and accurate provincial level data.

The mainstream literature presents the commune as the source of economic failure on two accounts, its inability to develop rural China, that is, increase the capital-labor ratio, and its failure to increase food production. Green Revolution, by contrast, claims precisely the opposite.

To test which of these two competing theories is correct I present national, and where possible, provincial level data in two areas:

(I) Agricultural output: operationalized as both grain output per capita and per unit land. As an additional robustness check, data on animal husbandry, that is, China's yearly aggregate and per capita pig production, is also included.

(II) Rural Development: operationalized as agricultural capital accumulation and the expanded use of technological innovations, which whenever possible are presented in aggregate as well as per unit agricultural/rural labor and per unit land. To measure agricultural capitalization I report data on agricultural investment, tractors, farm machines, trucks, boats, irrigation systems, electrification, as well as basic and vocational education. To approximate the rate of technological innovation in agriculture I provide data on the application of hybrid seed varieties and agricultural chemicals, i.e. pesticides and fertilizers.

Data Accuracy

But can this data be trusted? Pre-1978 China has long been considered a 'black box' whose statistics are either unavailable or suspect.[61] Indeed, it is always important to be cautious, and recall that 1970s China was a closed economy and political system, such that *all* rural economic data cited in studies on this era was passed up from the commune authorities and made available by Beijing or provincial authorities. Before examining the data, therefore, we must first question its accuracy.[62]After an extensive examination I concluded that there are a handful of convincing reasons to believe the data does genuinely reflect improvements in commune economic

performance over time.

First, while official grain output data was infamously over reported during the GLF afterward grain data accuracy was greatly improved. One reason is because the tragedy of the GLF famine and its excessive extraction prompted a party-wide rebuke of grain output exaggeration.

Second, this data includes the massive failures of the GLF, which are represented in the data by substantial declines in population and grain production at both the national and provincial levels. If the GLF, the commune's worst failure, is accounted for it is reasonable to assume that these figures were officials' best approximations at the time.

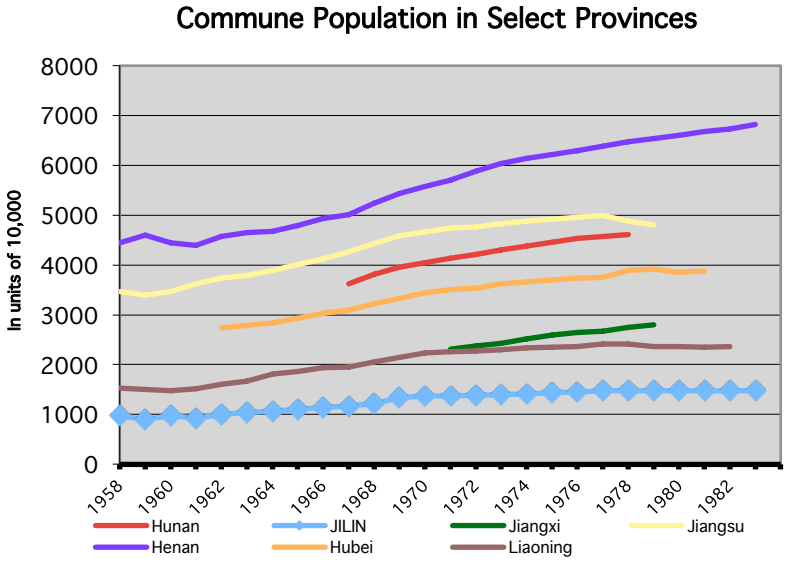
Third, as part of the Green Revolution literature there are numerous corroborating eyewitness accounts that suggest increases in grain output and capitalization did actually occur under the commune. After 1971, as noted above, China began to allow western agricultural experts to visit select rural areas. Although often dismissed by political scientists and policymakers as fruits of the *Potemkin Village*, optimistic reports on Chinese agriculture gathered by U.S. government experts and western academics on their trips to China can now help substantiate the accuracy of the newly acquired official Chinese data presented here.

Fourth, there is reason to believe that the data may actually *underreport* increases in agricultural output under the 1970s commune. It was not uncommon for commune cadre to intentionally underestimate grain surpluses in an effort to reduce their tax bill and keep more resources under their auspices. Fairbank and Goldman identified team leaders' "hundred ruses to deceive brigade cadres," which they list as "falsifying accounts, keeping two sets of books, underreporting, padding expenses, delivering grain after dark to keep it unrecorded, holding back quantities of grain by leaving the fields ungleaned, keeping new fields hidden from the brigade

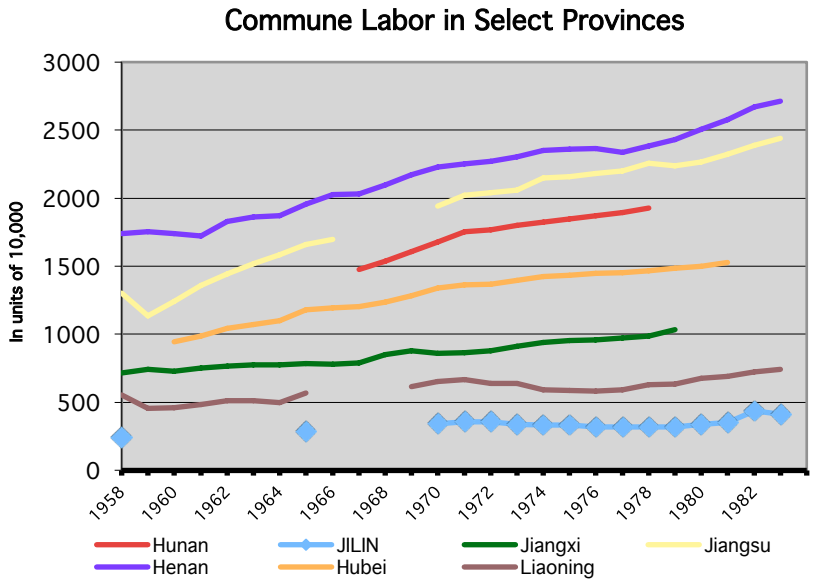
inspectors."[63] Bramall agrees that official agricultural data for the 1970s "systematically under-state" production levels, which, if true, suggest the commune was even *more* productive than the data presented here suggest.[64]

The fifth, and perhaps most convincing, reason to believe that the commune successfully increased food production at least apace with population growth, is that rural China, an essentially closed agriculture-based economy, added about 169 million people between 1969 and 1979 and yet no large-scale famine was reported. This suggests that the institution was able to, at a minimum, feed tens of millions more people on less and less land.

1.1



1.2

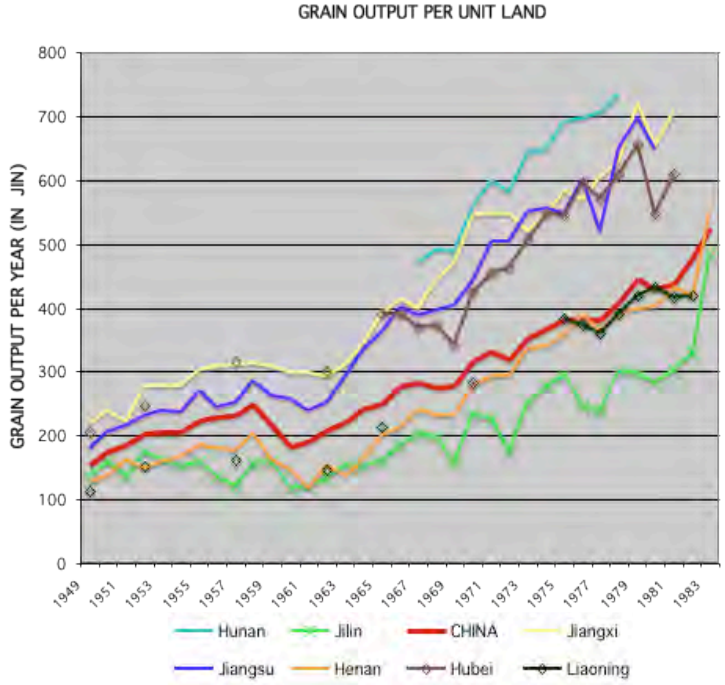


Data Summary and Analysis

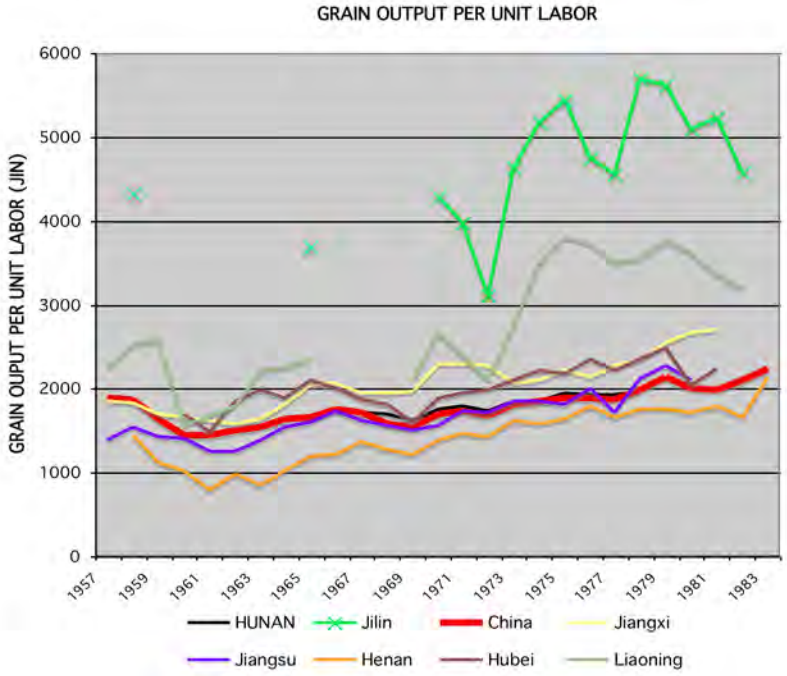
Output

The graphics below summarize the extent of improved food grain output and pig production under the commune (1958-1983). This data indicates that most rural Chinese witnessed consistent increases in food output per unit land and per unit labor throughout the 1970s. Provincial level data reflects trends similar to those observed on the national level: sustained increases in output per unit land and labor amid a rise in population and a fall in arable land.

1.3


GRAIN OUTPUT PER UNIT LAND
GRAIN OUTPUT PER YEAR (IN JIN)
800
700
600
500
400
300
200
100
0
1949
1951
1953
1955
1957
1959
1961
1963
1965
1967
1969
1971
1973
1975
1977
1979
1981
1983
Hunan
Jilin
CHINA
Jiangxi
Jiangsu
Henan
Hubei
Liaoning

1.4


GRAIN OUTPUT PER UNIT LABOR
GRAIN OUPUT PER UNIT LABOR (JIN)
6000
5000
4000
3000
2000
1000
0
1957
1959
1961
1963
1965
1967
1969
1971
1973
1975
1977
1979
1981
1983
HUNAN
Jilin
China
Jiangxi
Jiangsu
Henan
Hubei
Liaoning

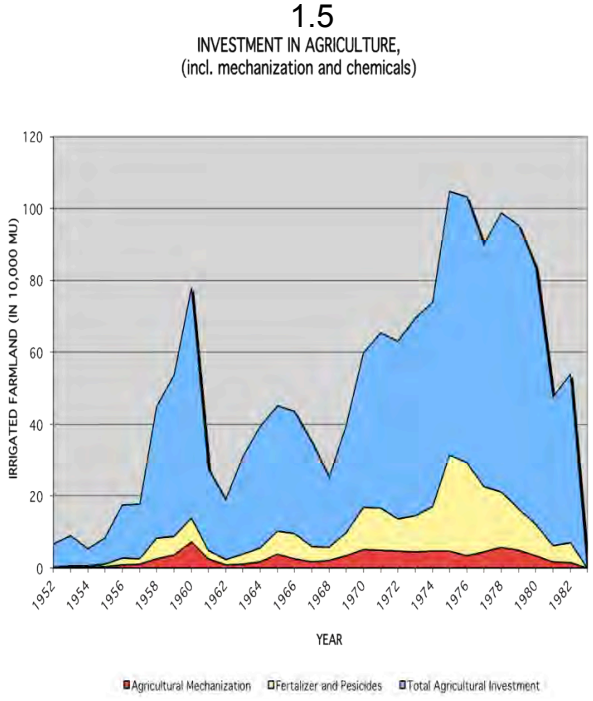
Inputs

Next, graphs below reveal the startling rate of capital accumulation and technological innovation under the commune, particularly after 1970. By comparison it is noteworthy that 1979, the year the mainstream literature usually associates with the beginning of rural economic success, is often denoted by a fall or stagnation in most types of capital investment including mechanization, irrigation, and agricultural chemicals.

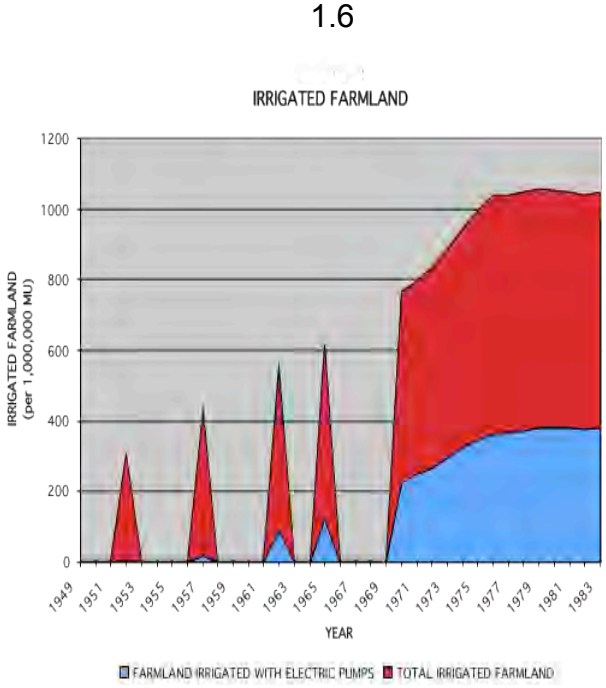
Increasing Capital Investment

Physical Capital

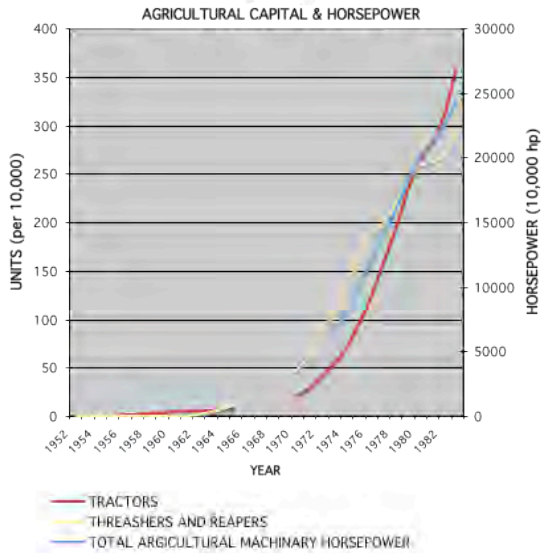
1.5



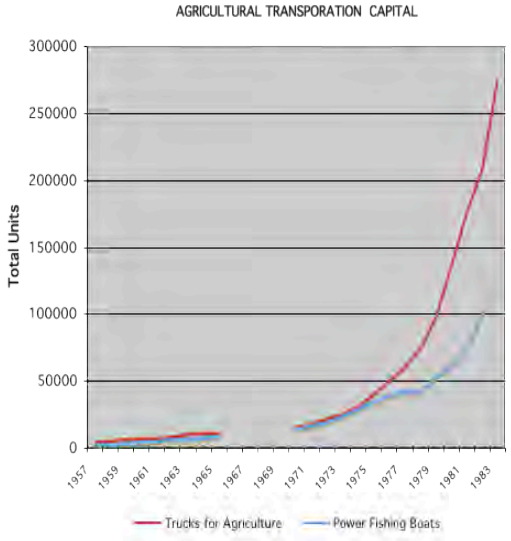
1.6



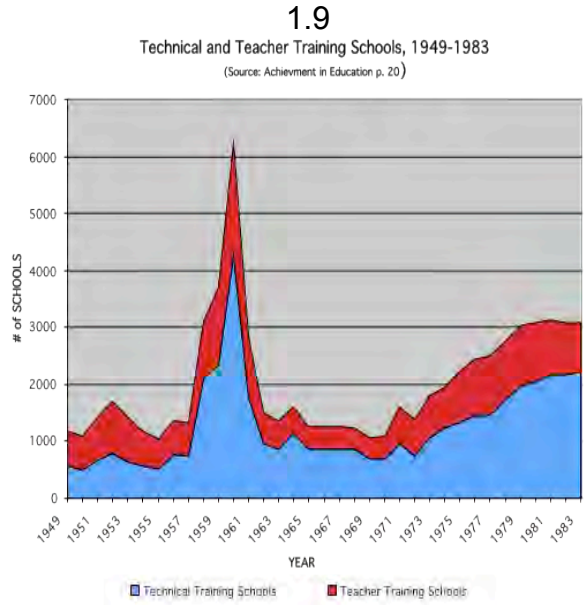
1.7


AGRICULTURAL CAPITAL & HORSEPOWER
UNITS (per 10,000)
HORSEPOWER (10,000 hp)
YEAR
TRACTORS
THREASHERS AND REAPERS
TOTAL ARGICULTURAL MACHINARY HORSEPOWER

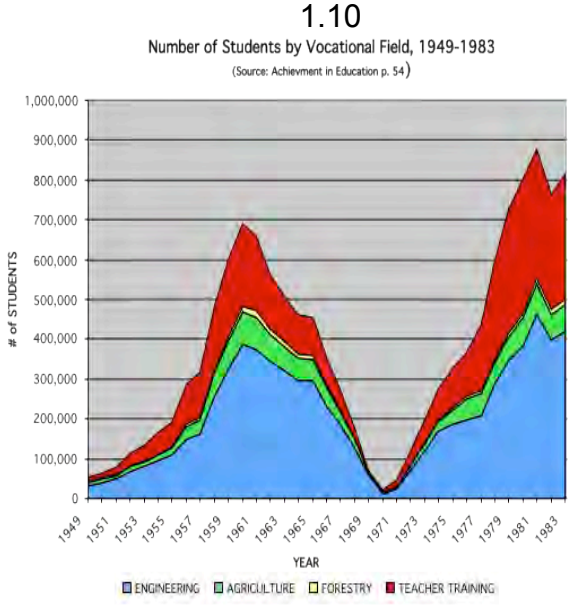
1.8


AGRICULTURAL TRANSPORATION CAPITAL
Total Units
Trucks for Agriculture
Power Fishing Boats

1.9

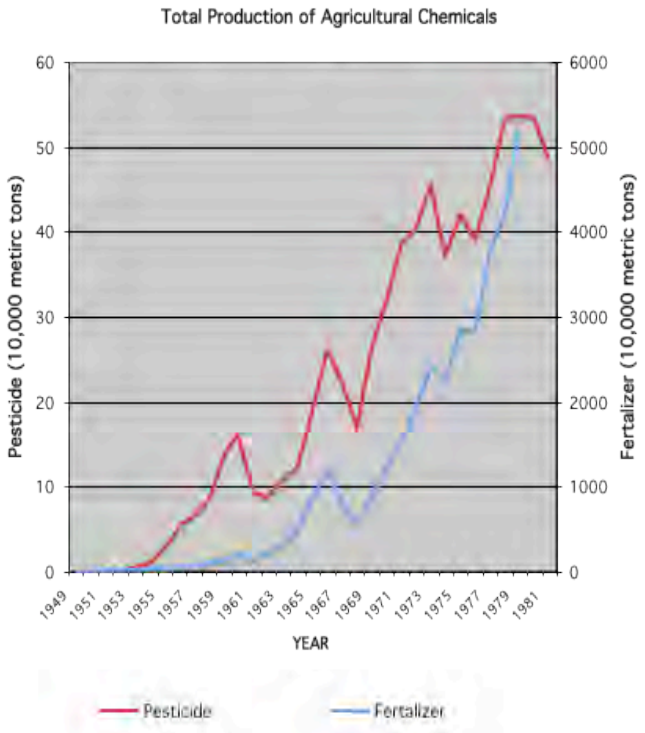

Technical and Teacher Training Schools, 1949-1983
(Source: Achievment in Education p. 20)
# of SCHOOLS
YEAR
Technical Training Schools
Teacher Training Schools

1.10

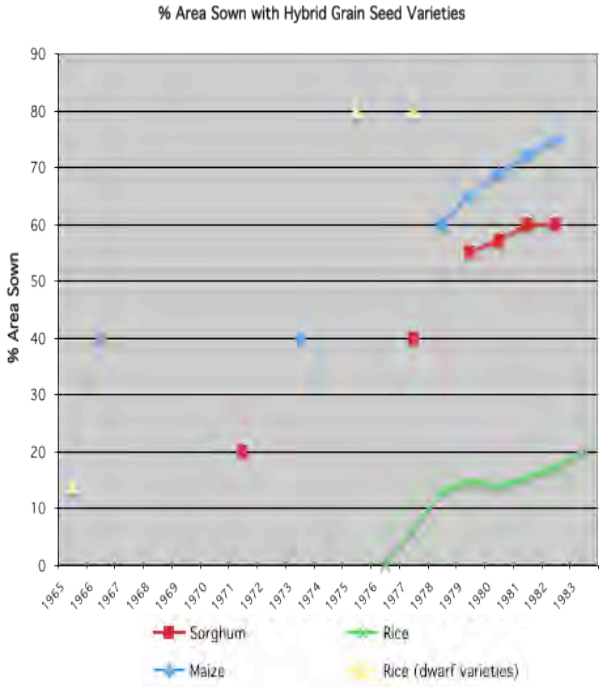

Number of Students by Vocational Field, 1949-1983
(Source: Achievment in Education p. 54)
# of STUDENTS
YEAR
ENGINEERING
AGRICULTURE
FORESTRY
TEACHER TRAINING

Increased Pace of Technical Innovation

1.11



1.12



The Commune's '*Three Legs'*

According to the data presented above, the commune system unquestionably succeeded in increasing rural development and agricultural productivity in China. This conclusion challenges the mainstream Reform and Opening Up hypothesis' primary contention, that rural households abandoned the institution because it was unproductive, and provides strong support for Green Revolution. This section summarizes the sources of commune political support. It concludes that between 1970 and 1979 the commune drew essential political support from three primary sources: its ability to improve *agricultural productivity*, *Maoism*'s political prominence, and the military's support for Mao's *People's War strategy* national defense doctrine (PWS). This tripartite economic-political-military support architecture was strongest when these elements were tightly knit together during the "War Communism," years 1969-1971 and remained stable from about 1972-76. After Mao's death, however, these political bonds gradually withered along with political support for the commune system – a process that triggered decollectivization beginning in 1979.

(1) **Agricultural Productivity**

How could commune era China – a populous developing country with a low and falling amount of land per unit labor – both raise savings rates *and* ensure funds were spent on *productive* capital investments and technical innovations, as the Green Revolution hypothesis suggests? Increased savings rates are necessary to fund the capital accumulation and research and development necessary to improve land and labor productivity in agriculture. "The central problem in the theory of economic development," H. Arthur Lewis observed, is how can an economy with an unlimited labor force living just above substance cut consumption and save

more? "People save more because they have more to save," he concluded. "We cannot explain any industrial revolution until we can explain why saving increased."[65] So *how* did commune era China – a country with scarce capital and land and essentially unlimited labor at or near subsistence levels – generate the savings rates necessary to place its people on the first rung of the development ladder?

In August 1970, during a speech to 1100 conference delegates at the Great Hall of the People in Beijing marking the end of the Northern Agricultural Conference, Premier Zhou Enlai "set a modernizing direction while hewing to the collective." He endorsed the work point remuneration system and stressed the need to "increase local investment in modernizing and mechanizing agriculture."[66] The new capital investment and modernization agenda begun in 1970 at once reaffirmed the commune's authority and reformed it in ways that enhanced its economic viability. Friedman et al. described China's post-1970 plan to fund agricultural modernization through increased household extraction in this way:

> Villagers were to get rich by tightening their belts for a while, investing more, and working harder. The line evoked vague memories of the Leap. But this time, Zhou stressed the state would invest in such suitable technology as fertilizer and irrigation and would not tolerate the squandering of precious resources.[67]

In 1970 alone over 150 separate official Chinese press stories and radio broadcasts appeared in almost every province stressing the importance of agricultural capital and technology.[68] Yet, the post-1970 approach was careful to avoid over extracting household resources as occurred during the GLF, as Harry Harding observed in late 1970:

> The Chinese newspapers these days are full of appeals to avoid waste, to recycle industrial by-products, to work harder. But the appeals lack the sheer fanaticism of the Great Leap Forward. The demands being made on the Chinese people today are very high indeed, but they are not impossible to meet. [69]

China's post-1970 agricultural policy line had four components: first, it endorsed the commune as the primary political and economic institution of rural China; second, it increased incentives

by expanding the breadth of acceptable income remuneration schemes permitted under the commune's work point remuneration system; third, it pushed a nationwide campaign to modernize agricultural capital and technology, and fourth, it reinforced the importance of the PLA, and its militia units, as the vanguard of Maoism in the commune. Unlike during the GLF, knowhow, not politics, was placed in the lead after 1970. The commune became an institution fixated on increasing rural development and agricultural productivity.

Changes in two commune sub-institutions – the work point remuneration system and agricultural research and extension system – contributed most to the accelerated pace of capital accumulation and technical change. The work point remuneration system extracted income from households, then the agricultural research and extension system invested it productively to expand rural development. Both were sub-institutions nested within the commune and its subordinate brigades and teams. They worked in tandem, forcing households to 'save' and then using those funds to standardize capital, test new innovations simultaneously at multiple local levels, and disseminate agricultural skills and knowhow on an unprecedented scale.

(2) **Maoism**

The Chinese commune was created primarily to overcome the collective action problems associated with agricultural modernization that had plagued small-scale peasant farmers since time immemorial. How to get households to work together to make large scale investments in land improvement, modern farm inputs, and machines? In England, East Prussia, and southern Italy European the usual solution was to "enclose" lands and throw peasants off of them. One successful solution came from in Denmark, where farm co-operatives boosted grain output and the quality of meat and dairy products without displacing farmers.[70] In 1958, at Mao's impetus

and under the slogan *Many People, Big Strength* (*renduoliliangda),* China merged its own agricultural co-operatives into communes with a vastly expanded economic, political and military mandate.

A pervasive collectivist dogma, Maoism, coupled with a strict "no-exit" policy, allowed the commune to mitigate the social discontent associated with extracting a growing percentage of household income for capital investment. The control of information was an important part of the system since by keeping commune members ignorant leaders were able to fill the void. Members were kept in the dark about events beyond their team unless the party specifically provided it to them for its own purposes, as occurred, for instance, after the 1969 Sino-Soviet border clashes. Into this information blackout were fed two kinds of materials: Maoist propaganda and "news" about the productivity of neighboring collective units so workers could measure their relative progress. This information embargo also served to reduce more productive members tendency to leave, as they did not know, *if* they could leave, whether they would actually do better outside their commune.

As an ideological adhesive, Maoism was generally successful in eliminating the institutional threats posed by the brain drain, moral hazard and adverse selection problems common to agricultural collectives. A comprehensive ideology, whether religious or political, is an essential element of commune success, Ran Abramitsky observed. Communes throughout the world have used ideology and religion to keep productive members engaged and attentive to their collective responsibilities. According to Abramitsky

> Ideology and religion…play an important roles in alleviating brain drain and moral hazard. First, ideology increases members' perceived value of living in the Commune, thereby alleviating the brain drain problem. Second, they serve as hard-to-fake signals of commitment to the commune, thereby alleviating moral hazard by promoting loyalty and norms of cooperation. Furthermore, because it seems plausible that religious rituals are typically more difficult to fake than socialist rituals, religious communes have generally been more successful than socialist ones.[71]

Abramitsky's notion, that "religious communes have generally been more successful than

socialist ones" because their "signals of commitment" are "more difficult to fake," may help explain the overt religiosity of commune era Maoism. As practiced under the coercive atmosphere of the commune, Maoism employed various ideological commitment mechanisms to mitigate the collective actions problems associated with that increased extraction of household income. The most common was required regular participation in political study sessions. These gatherings included a rally-like atmosphere that combined religious-like fervor, the proclamation of moralist principles, scapegoating of enemies, and, of course, the ever-present edifice of the Great Helmsman, in this case Mao.[72]

After 1966, the military supported the left politically and used its commune-based militia units to spread Maoist ideology and promote the cult of Mao by conducting nationwide study sessions using the *Quotations from Mao Zedong*, aka Little Red book. PLA support for the left was constructed via a successive Maoist ideological indoctrination campaigns undertaken throughout the 1960s and 1970s. After PLA indoctrination was complete soldiers were turned outward to preach Maoism throughout rural China using the commune-based militias. All Chinese were told to "learn from the PLA," which, in turn, expounded on the infallibility of Mao Zedong Thought.

Maoism combined patriotism, a collectivist ethic, and a cult of personality into a potent mix. In Weihai, Shandong a Mao Zedong "blessing" was recited three times before each meal. In 1969, at the height of Mao's War Communism, brigade and commune militia platoons started each meeting by standing at attention with Mao's Little Red book clutched in the right hand. Then waving the book they would shout: "Long Live Chairman Mao!" and "Good health to Vice Chairman Lin!" Then they would put on skits in which the evil Soviet revisionists were routed through acrobatic bayoneting. Chairman Mao and Lin Biao were praised and the vanquished

President Liu Shaoqi was ridiculed.[73] Militia members competed against each other to memorize and recite Mao's works and his orations to the PLA martyrs.

The Dazhai work point remuneration system, which rewarded members' for both hard work and their prioritization of collective interests above their own, was woven into the Maoist ideological architecture. Dazhai used Maoist teachings as justification for the gradual increase in income extraction rates to fund agricultural investments. Between 1961 and 1979 the team remained the basic accounting unit through which collective remuneration was decided and dispensed. Their small scale, 20-30 households, made teams small enough to ensure workers had an incentive to monitor each other's performance and could redress slacking at mandatory team meetings. Leaders used community-level social norms and expectations to pressure offenders, and could remove workpoints from habitual offenders in a process known as *kuofen*.

Under Maoism the stated economic objective was long-run productivity increases and egalitarian redistribution to reduce the intra-commune income gap. This proved a ready excuse for resource extraction from the more well to do households, but without a corresponding transfer to the poor. Instead, extracted funds were often channeled directly into capital investments intended to increase food grain production (e.g. fertilizer, irrigation, mechanization) or into more profitable light industrial production, which could help absorb labor freed up by agricultural modernization. The former was the most visible and measurable determinant of a commune cadre's success, while the latter would most likely increase commune revenue.

(3) <u>The People's War Military Strategy</u>

During the 1960s and 1970s the military provided essential political support for Mao Zedong and the commune. To ensure his political success in recurrent intra-party factional struggles with a

rival rightist coalition Mao pulled the military into politics on the leftists' – and hence the communes' – side.

Beginning in 1959 with the initial Sino-Soviet fissure and the appointment of Lin Biao as Minister of Defense, PLA political support for the left was constructed using a combination of policy prescriptions collectively known as Mao Zedong's People's War national defense strategy (PWS). PWS' primary components were, the maintenance of PLA-controlled militia units within every commune down to the brigade level, and the military's support for "the left" as defined by Mao. Overtime, the later policy came to include the recurrent purging of right-leaning military leaders, Maoist political indoctrination, and the politicization of the military. Until Mao's death in 1976, these policies successfully elicited essential military support for the left and for its institution, the commune, as rural China's foremost *military* institution.

During the 1960s Lin oversaw a wide-ranging purge of right leaning military officers and a Maoist ideological indoctrination campaign. Then beginning in 1966, at Mao's invitation and on his behalf, the military expanded its role in politics. By 1967-68 the PLA had gained control of the central organs of political power in Beijing and the provinces; reaching down into every commune and brigade via their people's militia units. Militia units had been part of the communes' institutional architecture since their mutual inception in 1958. But commune-based, PLA-controlled militias were not only "rural bases," an essential component of Mao's PWS, they also served as a vital two-way conduit for Mao to both receive information outside the party apparatus and to broadcast his ideology and commands into households throughout rural China.

In 1969, after a decade of public animosity, the disintegrating Sino-Soviet relationship culminated in military clashes along the border at the Ussari River. Chinese policymakers and citizens treated these skirmishes – which were later shown to have been initiated by the PLA – as

the culmination of a long-awaited exogenous security threat that galvanized nationalistic public support for the military. In 1969, with PLA political power at its apex (military leaders controlled 21 of China's 29 provinces), communes hurried to implement Mao's PWS in preparation for an anticipated Soviet invasion.

As part of this national military mobilization campaign, which Friedman et al. called "war communism," the PLA expanded the size and influence of its commune-based militia. Using the militia's organizational network PLA regulars were sent throughout the countryside, commune-to-commune, brigade-to-brigade, to mobilize militia leaders and drill their members. In the commune the militia was often at the forefront of Maoist political indoctrination, leading political study sessions, putting on plays and distributing propaganda to build grassroots support both for Mao and the military. In this way the PLA-controlled militia units, were essential to Mao's nationwide effort to spread his collectivist ideology, which, in turn, empowered and justified the commune's extraction of household income.

Until Mao's death the military's political support for the left provided strong ideological legitimacy for PWS and ensured the commune's continued strategic necessity as a central component of a national security bulwark against Soviet imperialism. So long as the PLA adhered to PWS the commune-based militias were essential, and military support for the larger institution remained strong. Conversely, to the extent the PLA moved away from PWS and towards military modernization, its support for the militia – and for the commune system generally – was weakened. In this way PLA leftism and active political support for PWS were closely tied to the commune fate.

Conclusion:

In an effort to understand the causes of commune abandonment this chapter evaluates two different assessments of commune performance: the first, the conventional wisdom, dubbed Reform and Opening Up, which portrays the commune as an economic failure; and the second, the all but extinct minority view, "Green Revolution," which portrays it as an economic success. Using newly acquired official data on the provincial and national levels this study comes to the surprising conclusion that the later view is correct. The data presented above eliminates economic failure from among the competing reasons for commune abandonment. It is now left for remaining chapters to explain and expand on my answer to the initial research question: *Why did China Abandoned the Commune?*

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[1] Quoted in Lin Biao in "Speech at Peking Rally Commemorating the 50th Anniversary of the October Revolution," *Xinhua,* 6 Nov 1967.

[2] Luo Hanxian, *Economic Changes in Rural China* (Beijing: New World Press, 1985) 92.

[3] Thomas Friedman, "Shanghai's Secret," *The New York Times,* 23 Oct 2013.

[4] It is important to remember that decollectivization was a gradual nationwide process that began in 1979 and ended in 1983. The dissolution of the commune took place unevenly across China with some provinces closing them quicker than others.

[5] Benedict Stavis, *The Politics of Agricultural Mechanization in China*, (Ithaca: Cornell University Press, 1978) 228.

[6] The term "Reform and Opening up" has been used to reference China's experimental foreign trade and investment policies introduced in select special economic zones along the coast line beginning in the early 1980s. For the purposes of this study, however, this term refers only to domestic policies pursued in the rural agricultural sector.

[7] John King Fairbank and Merle Goldman, *China: A New History* (Cambridge: Harvard University Press, 2006) 353.

[8] McMillian et al., for instance, attributed about 78 percent of productivity gains between 1978 and 1984 to economic reforms associated with decollectivization. See John McMillan, John Whalley, Zhu Li Jing, "The Impact of China's Economic Reforms on Agricultural Productivity Growth, *Journal of Political Economy* Vol. 97, No. 4, Aug 1989, 781-807.

[9] Fairbank, 405.

[10] Kenneth Lieberthal, *Governing China: From Revolution Through Reform* (New York: W.W. Norton, 2004) 124.

[11] Zhang Yulin, "Readjustment and Reform in Agriculture," in Lin Wei and Arnold Chao eds. *China Economic Reforms* (Philadelphia: University of Pennsylvania Press, 1982) 128.

[12] Luo, 89. For the official account see "Resolution on certain questions in the history of our party since the founding of the People's Republic of China," *Adopted by the Sixth Plenary Session of the Eleventh Central Committee of the Communist Party of China*, 27 June 1981.

[13] Luo, 90, 94-95.

[14] Fairbank and Goldman 398.

[15] Carl Riskin, *China's Political Economy: The Quest for Development Since 1949* (Oxford: Oxford University Press, 1987) 288.

[16] "Economic Take off in China's Reform and Opening Up: The Xiaogang Village Story," *The People's Daily,* 11 Nov 2008.

[17] Anne Thurston "Muddling Toward Democracy: Political Change in Grassroots China," (Washington, DC: U.S. Institute of Peace, 1998) 7.

[18] The decollectivization agreement on left – signed by peasants to affirm their participation and sealed with their thumbprints – was displayed in the Museum of PRC History on Tiananmen Square when the author visited in 2001 and remained part of the exhibit after its full renovation in 2013. This document is clearly different than the document on the right, which appeared in the People's Daily on November 11, 2008.

[19] Tony Saich, "Governance and Politics of China, (London: Palgrave Macmillan, 2001) 61. Also see Erza F.Vogel, *Deng Xiaoping and the Transformation of China* (Cambridge: Harvard University Press, 2011) 443.

[20] Zhao Ziyang, *Prisoner of the State: The Secret Journal of Premier Zhao Ziyang* (New York: Simon & Schuster, 2009) 142.

[21] Saich, 61.

[22] Vogel, 443.

[23] Jonathan Unger, "The Transformation of Rural China," 97.

[24] Fei Hsiao-tung, *Rural Development in China: Prospect and Retrospect* (Chicago: University of Chicago Press, 1989) 232-233.

[25] Kate Xiao Zhou, *How the Farmers Changed China: Power of the People* (Boulder, Colo.: Westview, 1996) 2-3.

[26] Fairbank, 411-412.

[27] Zhou, 1.

[28] Huang Yasheng, *Capitalism with Chinese Characteristics* (New York: Cambridge University Press, 2008) xiv.

[29] Based on authors experiences in the U.S. and China.

[30] White's book won the 1999 Association for Asian Studies Joseph Levenson Book Prize for Outstanding nonfiction scholarly book on China. It is focused primarily on southern Jiangsu, Zhejiang, and Shanghai, an area known as Jiangnan. Although it does regularly refer to other regions, this effort is unsystematic. Similarly, White's pre-1978 data is almost entirely from Jiangnan. Although this is understandable given the difficulties in acquiring data from this period, it limits his study's ability to demonstrate the geographic reach of agricultural modernization and its effects on productivity. Lynn T. White III, *Unstately Power: Volume I Local Causes of China's Economic Reforms* (Armonk: ME Sharpe, 1998) 111 and 151.

[31] White, 93.

[32] White, 85.

[33] Chris Bramall, *The Industrialization of Rural China* (Oxford: Oxford University Press, 2007) 145.

[34] *Plant Studies in the People's Republic of China: A Trip Report of the American Plant Studies Delegation* (Washington, DC: National Academy of Sciences, 1975).

[35] Merle Esmay and Roy Harrington, *Glimpses of Agricultural Mechanization in the PRC*: *A Delegation of 15 Members report on their technical inspection in China Aug. 18-Sept. 8, 1979* (St. Joseph: American Society of Agricultural Engineers, 1979) 2.

[36] Esmay and Harrington, 1 and 9.

[37] Examples of these publications include: Esmay and Harrington. *Plant Studies in the People's Republic of China.* G. F. Sprague, "Agriculture in China," *Science* 9 May 1975. *Animal Agriculture in China: A Report of the Visit of the Committee on Scholarly Communication with the People's Republic of China Animal Sciences Delegation* (Washington, DC: National Academy of Sciences, 1980). Per Brinck, *Insect Pest Management in China: A Delegation Report* (Stockholm: Royal Swedish Academy of Engineering Sciences, 1979).

[38] Three good examples of such publications, which are too numerous to count, include: Roderick MacFarquhar and Michael Schoenhals*, Mao's Last Revolution* (Cambridge: Harvard University Press, 2006). Joseph Esherick, Paul Pickowicz and Andrew Walder, eds., *The Cultural Revolution as History,* (Stanford: Stanford University Press, 2006). Elizabeth Perry and Li Xun, *Proletarian Power: Shanghai in the Cultural Revolution*, (Boulder: Westview Press, 1997). For the late 1970s and early 1980s see Richard Baum, *Burying Mao: Chinese Politics in the Age of Deng Xiaoping,* (Princeton: Princeton University Press, 1994).

[39] Luo, 90.

[40] Bramall, 145.

[41] Fan and Pardey, 115, 131-132.

[42] Bruce Stone, "The Basis for Chinese Agricultural Growth in the 1980s and 1990s: A Comment on Document No. 1, 1984," *The China Quarterly*, Vol. 101 Mar 1985, 114.

[43] Bruce Stone, "Developments in Agricultural Technology," *The China Quarterly,* Vol. 116 Dec 1988 1988, 767.

[44] Anthony M. Tang and Bruce Stone, *Food Production in the People's Republic of China* (Washington, DC: International Food Policy Research Insitute, May 1980) 6, 117, 123.

[45] In addition to his 1978 book, *The Politics of Agricultural Mechanization,* noted above, Stavis also published: *Making Green Revolution: The Politics of Agricultural Development in China*," (Ithaca: Rural Development Committee of Cornell University, 1974). *People's Communes and Rural Development in China* (Rural Development Committee of Cornell University, 1974.) "Agricultural Research and Extension Services in China," *World Development* Vol. 6 (1978).

[46] Stavis, *The Politics of Agricultural Mechanization*, 15.

[47] Stavis' 1978 book, which traces the political process associated with agricultural mechanization and its relationship to yield output, was not well received by Sinologists. Stavis work suffers, argued Vivienne Shue in her review for the *American Political Science Review*, because he fails to adopt any particular theory or model to assist in explaining policy change over time. The discussion leaps from the consequences of technological insufficiencies, to the vagaries of Politburo infighting, to the machinations of middle-level bureaucratic politics. "All are treated more or less equally as 'constraints' on the process of

China's agricultural mechanization, providing the reader almost no help in weighting the import of these various factors, and no clues for the construction of predictive hypotheses," Shue wrote. The book is, she concluded, more a chronicle than an analysis that "touches only the high points." Shue was not alone in suggesting Stavis was painting an overly rosy picture of Chinese agricultural development. Audrey Donnithorne's review in *The Journal of Asian Studies* noted that Stavis' last chapter "is devoted to an advocacy of the Chinese system." Vivienne Shue, "Book Review: The Politics of Agricultural Mechanization in China, by Benedict Stavis," *The American Political Science Review*, Vol. 73, No. 3 (Sep., 1979), 926-927. Also see Audrey Donnithorne, *Book Review: "*The Politics of Agricultural Mechanization in China by Benedict Stavis," *The Journal of Asian Studies*, Vol. 38, No. 4 (Aug. 1979) 760.

[48] Stavis, "Agricultural Research and Extension," 631.

[49] Stavis, *Politics of Agricultural Mechanization*, 261.

[50] Stavis, *Politics of Agricultural Mechanization*, 18.

[51] John Wong, "Some Aspects of China's Agricultural Development Experience: Implications for Developing Countries in Asia," *World Development* Vol. 4, No. 6, (June 1976) 488. Wong's additional contributions to the literature include: "Agriculture in the People's Republic of China" in D. Bing (ed), China: Cultural and Political Perspective (London: Longman Paul, 1975). "Communication of Peasant Agriculture: China's Organizational Strategy for Agricultural Development" in Peter Dorner (ed), *Cooperative and Commune: Group Farming in the Economic Development of Agriculture* (Madison: University of Wisconsin Press, 1977). "An Economic Overview of Agriculture in the People's Republic of China," (New York: Agricultural Development Council, 1973. "Grain Output in China: Some Statistical Implications," *Current Scene* Vol. 9, No. 2, (Feb., 1973).

[52] Leslie T.C Kuo, *Agriculture in the People's Republic of China: Structural Changes and Technical Transformation* (New York: Praeger Publishers, 1976) 259.

[53] Kuo, 261.

[54] Steven Butler, *Agricultural Mechanization in China: The Administrative Impact,* (New York: East Asian Institute of Columbia University, 1978) 25.

[55] Gordon Bennett, Ken Kieke and Ken Yoffy, *Huadong: The Story of a Chinese People's Commune* (Boulder: Westview Press, 1978) 19-20.

[56] Arthur W. Galston and Jean S. Savage, *Daily Life in People's China* (New York: Simon & Schuster, 1973). Dwight Perkins and Shaid Yusuf, *Rural Development in China,* (Baltimore: Johns Hopkins University Press, 1985). On Kit Tam, *China's Agricultural Modernization: The Socialist Mechanization Scheme,* (London: Croom Helm, 1985). Peggy Printz & Paul Steinle, *Commune,* (New York: Dodd, Mead & Company, 1977).

[57] Li Huaiyin, *Village China under Socialism and Reform: A Micro-History, 1948-2008*, (Stanford: Stanford University Press, 2009). Mobo C.F. Gao, *Gao Villiage: Rural Life in Modern China*, (Honolulu: University of Hawaii Press, 1999). Han Dongping, *The Unknown Cultural Revolution: Life and Change in a Chinese Villiage*, (New York: Monthly Review Press, 2008).

[58] These conclusions were supported in interviews with agricultural historians and rural residents in Jiangxi, Henan, Jiangsu, Jilin, and Hubei.

[59] Arthur Conan Doyle, *Sherlock Holmes: A Scandal in Bohemia* (London: The Strand Magazine, 1891).

[60] Research trips were made, in chronological order, to Henan Agricultural University (Nov 2011), Jiangxi Agricultural University (Dec 2011), Nanjing Agricultural University (March 2012), Nanjing University (March 2012), Huazhong Agricultural University (April 2012), Wuhan University (April 2012), Jilin Agricultural University

(June 2012), Jilin University (June 2012), Dalian University of Technology (March 2013), Liaoning Normal University (March 2013) and Sichuan University (March 2013).

[61] "China's Economic Policy and Performance," in John K. Fairbank and Roderick MacFarquhar, eds. *Cambridge History of China Vol. 15: The People's Republic, Part 2: Revolutions within the Chinese Revolution, 1966-1982* (Cambridge: Cambridge University Press, 1991) 517. Also see Huang 61, Tang and Stone 6, Fan and Pardey 127, and On Kit Kam 64.

[62] I have long maintained that official Chinese economic data can be used to reveal macro-economic trends. See Joshua Eisenman, Eric Heginbotham and Derek Mitchell, *China and the Developing World: Beijing's Strategy for the 21st Century,* (Armonk: ME Sharpe, 2007) 41.

[63] Fairbank and Goldman, 356.

[64] Bramall, 145.

[65] W. Arthur Lewis, "Economic Development with Unlimited Supplies of Labour," (*The Manchester School of Economic and Social Studies, 1954)* 416-17.

[66] Edward Freidman, Paul G. Pickowitz and Mark Selden, *Revolution, Resistance, and Reform in Village China* (New Haven: Yale University Press, 2005) 155.

[67] Friedman et al., 155.

[68] Stavis, *Politics of Agricultural Mechanization*, 229.

[69] Harry Harding "Modernization and Mao: The Logic of the Cultural Revolution and the 1970s," *Conference Paper presented to the Institute of World Affairs, San Diego State University,* 11 (Aug 1970) 19.

[70] C. P. Kindleberger, "Group Behavior and International Trade," *Journal of Political Economy* 59 (1951), 30-46.
[71] Ran Abramitzky "On the (lack of) Stability of Communes: An Economic Perspective," in. Rachel. McCleary (ed.) *Oxford Handbook of the Economics of Religion,* (Oxford: Oxford University Press, 2011) 170-171.

[72] For a description of scapegoating see Friedman et al. 141.

[73] Friedman et al., 140.

Chapter 2: Institutional Antecedents of the 1970s Commune

CHAPTER OUTLINE

I. Introduction

II. Antecedents of the Commune

a. *Land Reform*

b. *Agricultural Producer Cooperatives (1953-1957)*

III. The Commune: The Merger of Political and Economic Institutions

a. *Phase 1: The Great Leap Forward (1958-61)*

b. *Phase 2: The Post Great Leap Commune Re-organization (1962-1965)*

   i. Expanding Incentives, Sidelines and Markets

   ii. Using Trusts to Centralize Agricultural Technology

c. *Phase 3: The Dazhai System (1965)*

   i. The Political Origins of Dazhai

   ii. Remuneration Under Dazhai

   iii. Commune Control of Agricultural Modernization

The contradiction between the working class and the peasant class in socialist society is resolved by the method of collectivization and the mechanization in agriculture.

– Mao Zedong[i]

I. Introduction

This chapter looks at why the commune was first created and how it was adapted over its first dozen years, 1958-1969. In order to explain why the primary political and economic institution of rural China was abandoned – this study's foremost objective – this chapter first identifies what it was created to do and then traces how its priorities and structure changed over time. The next chapter then explores those exogenous factors (i.e. rising population, falling arable land, and the rising Soviet threat) and their influence on the commune's mandate and institutional development.

From 1958, when communes were first created, until 1979, when decollectivization began, evolutionary changes – in commune size, organizational structure, methods of member remuneration and systems to promulgate agricultural capital and technology – reflected both shifting policy objectives and political dynamics stretching from the central leadership down to production team. Over time the commune's mandate was substantially altered, however, decisions taken during the first half of the institution's life, 1958-1969, regarding its size, structure, priorities, and remuneration schemes, created a path dependence that substantially influenced its design during the second half, 1970-82, which is examined in Part II of this study.

During the first half of the commune's existence remuneration and agricultural investment policies changed a lot. The Great Leap Forward (GLF) instituted "free supply" remuneration without free markets or material incentives and prioritized "red" agricultural

modernization over technical knowledge. After 1961 markets and private household plots and enterprises and material incentives in remuneration were permitted along, with targeted, profit-minded agricultural modernization efforts. Then beginning in 1965, and throughout the Cultural Revolution (1966-69), a more egalitarian income distribution mechanism was put in place (i.e. Dazhai), but this time supporting, at least rhetorically, a nationwide agricultural modernization drive. These changes in commune policies were closely tied to elite political struggles among factions in Beijing.

To increase agricultural production those on the "right" of the political spectrum, led by Liu Shaoqi and Deng Xiaoping, favored the expanded use of markets and incentives supplied by large, centrally controlled state-run companies or trusts that sold or leased agricultural equipment, seeds, chemicals, etc. to small rural collectives for a profit. During the early 1960s advocates of this approach succeeded in shrinking the commune's size, limiting its political and social mandate, introducing material incentives in remuneration, expanding rural markets, and removing the production and ownership of agricultural machines and other inputs from commune control and placing it in the hands of one or more centrally controlled trusts. Under Liu's direction a dozen trusts or supply companies were established. In 1963, for instance, a trust was established to coordinate the production and leasing of agricultural machines in rural areas. The large trust was, in many ways, a rural institution created to rival the commune, but, unlike the commune, it lacked extensive local autonomy and was closely bound a highly centralized bureaucracy.

By contrast, Mao and his supporters on the "left" championed the commune as an institution that could introduce socialist values and agricultural technology nationwide. They opposed the creation of centralized trusts and instead supported the establishment of large, semi-

autonomous communes, each with an extensive political, economic and military mandate. Communes, the Maoists believed, should be more than customers for profit-seeking state-run trusts, but should build and maintain farm equipment, fertilizer production facilities, and crop test fields. They should keep their profits and reinvest them in local skills and capital with an eye toward increasing agricultural output. Rural industry and infrastructure were seen as the key to quickly expand local production of agricultural machines, irrigation works, chemical fertilizer and pesticide, and disseminating them on a large scale.

During the late 1950s policy debates about which institution – the trust or the commune – would best increase agricultural production were less acrimonious and there was ample policy reevaluation, half-measures, and "flip-flopping" on both sides. Political divisions hardened, however, after the commune's initial failure during the GLF and the resulting mass famine. Seized the opportunity, the rightists quickly subdivided the large communes from about 26,000 in 1958 to nearly 81,000 in 1963, ended "free supply" remuneration, and introduced a variety of incentive-based contract farming remuneration schemes – an effort that succeeded in quickly reviving agricultural production.

During the early 1960s the rightists established large trusts to manage nearly all aspects of agricultural modernization, a move widely seen by Mao's leftists as undermining the commune as rural China's foremost political and economic institution. By 1965, the leftists, realizing they were outnumbered within the Party leadership, adopted the Dazhai system as a grassroots attempt to strengthen the commune's autonomy and regain control over its structure and priorities. Institutional momentum and the popularity of incentive-based remuneration and household private plots and markets (aka the "small freedoms") established during the early 1960s, proved impossible to quash and were again reaffirmed in 1970. During the first half of the

commune's life political battles between the two rival factions often contributed to contradictory instructions from the center that at times interfered with production.

This chapter is divided into two broad sections. The first briefly introduces the origins of collective agriculture in China after 1949, first under the Mutual Aid Teams (MTA) and then under the Agricultural Producer Cooperative (APC) – organizations with economic, but *not* political, mandates. The second section examines the commune between 1958-70. It is subdivided according to the three systems of institutional organization, member remuneration and ideological orientation introduced during the commune's first dozen years: the GLF commune (1958), the restructured post-GLF commune (1961-62), and the Dazhai system (1965-69). These subsections trace the successes and shortcomings of each of these short-lived initial phases, which I treat as institutional antecedents to the 1970s commune. Special attention is paid to evolving approaches to member remuneration agricultural modernization and their impact on savings and investment rates.

II. **Antecedents of the Commune**

A. Land Reform

For centuries before 1949 the independent family farm remained the dominant rural Chinese economic institution. Family farms were small, averaging just under two hectares in the north, and just over one in the south. Landlords owned nearly half of the land, which they leased to peasant families, but contributed little else by way of investment or inputs to agricultural productivity. In the south rental contracts were generally long, sometimes for life, while in the north one-year land leases were common. As in most premodern rural societies rents were high, generally about half of the main crop, as were interest rates, which averaged more than 30

percent a year in the 1930s. Underemployment was already a serious problem by the 1930s, with an excess of labor most of the time, but a scarcity during the planting and harvesting seasons. Peasants in the north worked an average of only 100-120 days per year and peasants in the south worked an average of only 80-100 days per year. The economic hub was the local market town, which was connected to the higher-level domestic and, to widely varying degrees, the international market.[ii]

After its victory, the CPC quickly ended this "feudal" system with the stated objectives of land redistribution and increasing grain yields. During the late 1940s and early 1950s a land-to-the-tiller reform program had been implemented in areas as they came under Communist control. The Agrarian Reform Law of 1950 revoked all land ownership, redistributed land to farmers, and designated all landlords and rich peasants as class enemies, before brutally displacing them. The purpose of China's land reform – like similar programs elsewhere – was to simultaneously consolidate political support for the Party among its natural constituency of landless rural farmers and to seize control of the economic factors of production from traditional elites. In China, as in most agrarian societies, land ownership remains closely associated with social power; hence, seizing land was synonymous with seizing political power. The destruction of existing rural political and economic institutions that accompanied land reform cleared the way for the CPC to build its own rural institution: the commune.[iii]

During land reform was generally distributed on a per capita basis resulting in economic inefficiencies. Families with small children received more land than they could manage while families with older children might have more labor than they could use. In addition, labor remained in short supply during planting and harvesting seasons. To alleviate these efficiency problems Mutual Aid Teams (MATs) composed of about ten families were created to exchange

labor and help each other during times of peak labor demand. The teams were built on patterns of labor sharing among friends, relatives, and neighbors that had been common in traditional China. By 1954, 68 million families were participating in MATs.[iv]

Land reform and MATs redistributed land and power, but they did not change the structure of ownership or resolve basic collective action problems that disincentivized household savings and productive capital investments. Strong traditionalist tendencies and commercial patterns remained, which, if unchecked, would gradually undo the recent wealth redistribution via land reform. Households continued to buy, own and sell land and borrow money from richer farmers and poor families that lacked able-bodied labor or proper inputs were beginning to sell their land, borrow money at high interest rates, and hire themselves out as contract laborers. As the MATs were small it was also difficult to organize labor for large-scale infrastructure projects (e.g. irrigation works, land leveling and terracing) or collect funds for the purchase of modern agricultural inputs like newly available plows and water wheels.[v]

B. Agricultural Producer Cooperatives (1953-1957)

To cope with these political, economic, and social problems that remained after land reform Agricultural Producer Cooperatives (APC) were established. By the end of 1955, 17 million peasant households had joined 630,000 APCs. The notion that collectivization increases agricultural output is attributed to increased efficiencies associated with economies of scale in agriculture and the mobilization of surplus labor during the down season for work on capital development projects.[vi]

The APC was a cooperative economic institution at the village or sub-village level in which farm families pooled their tools and collectively managed the land. Productive inputs,

managerial and administrative costs, and taxes were all paid collectively. Income was distributed based on the proportion of land and other resources each member contributed to the APC and their labor performed that season.[vii] On the heels of the APCs establishment (and in some cases before) some CPC leaders, led by Mao, seized the political momentum to quickly expand their size. On July 31, 1955 Mao proclaimed:

> Throughout the Chinese countryside a new upsurge in socialist mass movement is in sight. But some of our comrades are tottering alone like a woman with bound feet. The tide of social reform in the countryside – in the shape of cooperation – has already been reached in some places. Soon it will sweep the whole country.[viii]

A larger organization, Mao argued, would improve labor mobilization for local infrastructure projects and harness greater collective resources to purchase modern agricultural inputs. It was widely accepted within the Party that a new rural institution was needed to consolidate its political control and prevent the rise of an independent class of rich and middle peasants. These "political considerations," explain Perkins and Yusuf, "virtually dictated eventual collectivization, although the decision was made much easier by the justification that socializing agriculture would yield economic benefits as well. Political objectives enjoyed primacy over economic ones."[ix] Richard Baum succinctly summarized the initial objectives of collectivization:

> Politically, the goal was to put an end, once and for all, to the traditional rural power structure, dominated by the landlord-gentry class. Economically, the goal of land reform was to stimulate the rapid recovery of agricultural production, which had been stagnant since the mid-1930s.[x]

To achieve these goals larger cooperatives called Higher-level Producer Cooperatives (HAPCs) were established in 1956. Many areas skipped directly into HAPCs. By February 1956, more than half China's villages had opened HAPCs and by the end of the year, 107 million farm families – including more than 90 percent of China's 500 million farmers – had joined 746,000 HAPCs. The average HAPC was far larger than the collectives that preceded it, with each new

economic organization including an average of 100 to 200 families – between 500 and 1000 people. [xi]

In most cases, a HAPC was the same size as the village (*cun*), so that first time the local political leadership and economic management were placed under one institution. Most private property distinctions were abolished, especially among productive property – land, tools, and farm animals – which were entirely administered by the collective. The only remaining vestiges of private property were a few chickens or pigs within the family compound and a small, adjacent "private plot" primarily used for growing the family's vegetables.

Under the HAPCs income was awarded in work points and distributed according to the amount of labor a member contributed to the cooperative – the share based on property contribution was removed from the calculation.[xii] Its members' total number of work points determined each household's income. Adults received more work points than children and men received more than women. The members' share (normally in grain or cash) was what remained after all taxes, collective investment costs, input costs, and communal welfare funds were deducted. After the harvest was sold, all members' work points were added together and divided into total collective income. Only production on the family's small private plot was except from this calculation.[xiii] Work-point remuneration was calculated in this way throughout the life of the commune, with the brief exception of the failed experiments with "free supply" systems during the GLF. Interesting variation emerges over time and place, however, in how work-points were awarded.

Although Higher APC income was determined collectively and private marketing had been restricted since 1953, rural markets remained open in most areas until 1957 and the volume and scope of items on sale continued to expand. Originally the "free markets" established in the

summer of 1956 were intended for native and subsidiary products, which were not subject to state planning or purchase. After their establishment, however, the free markets' scope quickly expanded to include grain, cotton, oil-bearing crops and other commodities subject for state purchase. This undermined the state's ability to extract the agricultural surpluses necessary to support industrialization. To remedy this problem in August 1957 new regulations were issued prohibiting the sale of grain, oil-bearing crops and cotton at free markets. Surplus grain could only be sold to state purchase agencies or at state-controlled grain markets.[xiv]

During the off-season collectives supplied labor to help build local infrastructure projects. Like fieldwork, those who worked on a project received work points based on time spent. Any increase in farm productivity enjoyed from a project went into the institution's general fund to be divided on the basis of all other income. Since income payments were based on the average product of the collective as a whole rather than on the marginal product of each member's labor it did not matter to the worker if his/her productivity on a particular project was low as long as it was higher than the value his/her leisure time.[xv]

The APC was quite successful in mobilizing labor for local public works and agricultural input investments. But it did not eliminate the obstacles to mobilizing labor for large-scale public works. An irrigation or road project might require labor from dozens of APCs but if the benefits would only go to a few, those collectives that received little or no benefits lacked the incentive to supply labor. Leaders and members were understandably reluctant dilute the value of all members' work points by awarding them for labor on projects that did not increase their co-op's income.[xvi]

Other problems became evident as well. By 1957 Chinese leaders, particularly those on the left, had come to doubt the sustainability of the Higher APCs. Concerns were voiced about

the system's ridged hierarchical organization, the clear division of manual and mental work, the aloofness and unresponsiveness of cadre, over centralization of power in the bureaucracy and a lack of grassroots participation and local autonomy. Leftists attacked the logic of squeezing the rural agricultural sector to fund the urban industrial sector. In a country that was over 80 percent rural such a policy benefitted only the minority of urban Chinese and where or when the rural area was unable to produce a surplus it benefitted no one.[xvii]

Against significant opposition on the right Mao was able to establish the HAPCs, an economic institution whose mandate began to overwhelm its sister political administrative institution, the township (*xiang*). The HAPC organized production, collected taxes, distributed food and income and the township administration ensured CPC policies were followed, it maintained the police force, investigated political crimes, and recruited for the army. "As the APCs grew into multi-village organizations," Stavis explains, "it became more difficult for the township to offer leadership. In some cases the cooperatives actually grew larger than the township, rendering the township's leadership quite meaningless." To address this problem during 1955-56 townships were consolidated into Big Townships (*da xiang).* The Big Township was larger than the Higher APCs and able to coordinate and maintain political leadership over them. In 1957 there were about 750,000 cooperatives and about 100,000 big townships, such that on average each big township governed 7-8 cooperatives.[xviii]

III. The Commune: The Merger of Political and Economic Institutions

Communist ideology stresses two broad interrelated goals, one economic and the other political: (1) economic development; and (2) changing the character of social relations to emphasize equality, end exploitation and promote a collectivist ethic. What it is less clear about –

particularly in the agricultural sector – is what institutions are needed to achieve these ends. For two-dozen years China tested and modified its rural communes in an effort to create an institution that answered this fundamental question; to create a self-sufficient, self-governing, collectivized rural institution with a broad political and economic mandate that produced development and increased agricultural output. According to one official propaganda pamphlet published in 1975, since their creation in 1958 "the people's commune is a social structure that integrates government administration with commune management. It is at once a basic economic organization and a grass-roots unit of state power in China's socialist countryside. The people's commune exercises state power and organizes its own economic activities related to production, distribution and consumption."[xix]

Each phase of the commune was distinguished by its size, the extent of economic incentives in its remuneration system, and its approach to promoting agricultural modernization. Throughout the life of the rural commune there were four important structural consistencies: the union of political and economic institutions; a three-tier organizational structure (i.e. team, brigade and commune); individual income (with the exception of private "sideline" plots) was distributed as a portion of collective income in cash or in kind; and an unquestioned priority was placed on increasing agricultural productivity.

The post-1961 commune was redesigned to address the most pressing concern of its day: increasing rural food consumption. At first the famine of the GLF enabled Liu Shaoqi, Deng Xiaoping and other right-leaning leaders to expand the role of incentives in the remuneration system and launch a centralized trust or state-run company system that would, among other things, introduce agricultural machines and inputs into a limited number of regions based on expected profits. Between roughly 1961-65 the second phase communes' tolerance of material

incentives, sideline plots and free markets – collectively known as the "small freedoms" – created a path dependence that predisposed it to continue to tolerate them until the institution was abandoned. After being reintroduced into communes beginning in 1961, household sideline plots and rural free markets were *never* undone. Together they provided a clearing mechanism to ensure excess household sideline production would not go to waste – the cardinal sin under the commune.

Phase 1: The Great Leap Forward (1958-61)

In 1958 the Higher APCs were consolidated into 26,000 massive People's Communes, each containing about 20,000-30,000 people and 4000-5000 families, although there was substantial regional variation. Skinner hypothesizes that since townships were the lowest level of the traditional marketing area, communes generally included the cooperatives in 2-3 marketing areas, perhaps an intermediate market and its subordinate markets.[xx] An average commune included about 30 cooperatives and as many villages, but in some regions a commune could include up to 100 villages.[xxi]

The initial movement to create the commune included a drive to increase the speed of agricultural mechanization and infrastructure construction. Mao argued that the communes' could be used to introduce a technical transformation in agriculture that would increase crop yields. This agricultural surplus would expand opportunities in rural industry, which, in turn, would eliminate the differences between the city and the countryside, hence solidifying the CPC's peasant-worker alliance. The more effective and extensive mobilization of labor alone, they argued, was unable to generate rapid, sustained advances in agricultural productivity. To meet the fast growing needs of China's expanding rural population, modern inputs (e.g. fertilizer,

water pumps, high yield seed varieties, and farm machinery etc.) were also needed and communes would make it easier to standardize technology and introduce it on a large-scale. As early as 1956 Mao had envisaged that economies of scale in agricultural mechanization would result in a diversification of tasks and create jobs "never before imagined by people":

> After the mechanization of agriculture there will emerge in the future various kinds of undertakings never before imagined by people, and the yields of agricultural crops will be raised several times and even scores of times the present level. The development of industrial, communications and exchange enterprises will even be beyond the imagination of the people of the past. Likewise, there will be such developments in the fields of science, culture, education and public health.[xxii]

But not everyone within the Party agreed that the expanded use of agricultural capital was desirable for China. Generally those who opposed mechanization raised five types of arguments: (1) China's population was too large, land is scare, and intensive farming is practiced so mechanization will cause unemployment; (2) China's extensive mountains and rivers will impede agricultural machinery and the supply of inputs; (3) mechanization requires iron, steel, and petroleum which are in short supply; (4) mechanization would not raise agricultural yields or total output (5) agricultural modernization is too expensive. One high level critic, Bo Yibo, warned in a 1956 speech that:

> With such a large reservoir of manpower in the Chinese countryside and such complicated farming systems, it is impossible to introduce mechanization. If mechanization is introduced, the problem of surplus labor power in the countryside so acute as to defy solution.[xxiii]

This view was also advocated by Liao Lu-yen, then Minister of Agriculture, who warned:

> With the exception of those areas where land is plentiful and labor power is inadequate and also with the exception of a number of economic crop growing areas any hasty steps to achieve mechanization are unacceptable to the masses, nor will they be conducive to raising agricultural output.[xxiv]

By contrast, a report published in October 1957 by the State Technical Commission that found that due to rapid population growth after 1949 China must prioritize increased grain yields and that technology could help. The report observed that even densely populated areas suffered from labor shortages during the harvest and planting seasons. Under new multiple cropping systems farmers were simultaneously harvesting one crop and planting another resulting in labor

shortages that required electric irrigation and chemical fertilization as well as new farm machines, vehicles, and tools that could be used for transportation, water lifting, harvesting, threshing, plowing, and transplanting. The report described the successful collective as one that used machines to diversify its economy and free commune members from field labor to work on a myriad of collective tasks including oil processing, sugar refining, wheat-flour processing, brick making, pipe-making, tractor-repair, carpentry, iron work, tailoring, animal husbandry, embroidery, pig-raising, chicken raising, and operating a grinding-stone house.[xxv]

The Chengdu Conference of March 1958 advocated the initial deployment of agricultural technology in suburban and commercial crop areas and then its rapid expansion to the rest of China. It urged an emphasis on small-sized farm machines and semi mechanized farm implements, supplied by small-locally-based factories.[xxvi] Mao strongly supported introducing agricultural mechanization and other green revolution technologies though the commune because he believed it would promote rural industrialization and thus help resolve the rural-urban divide and solidify the peasant-worker alliance as the bases of CPC political support. Leftists had long feared the benefits of industrialization would remain in urban-industrial centers and instead sought to improve the countryside's capital/labor ratio. To this end on April 29, 1959 Mao set forward a ten-year plan to mechanize China's agriculture in a directive delivered to all cadre from the province to the work team:

> The fundamental way out for agriculture lies in mechanization. Ten years will be needed to achieve this. There will be minor solutions in four years, intermediate ones in seven, and major solutions in ten. This year, next year, the year after and the year after, we will be relying mainly on improved farm tools and semimechanized farming implements. Every province, every district, and every county must establish farm tools research stations and concentrate a group of scientific-technological personnel and experienced carpenters and blacksmiths of the rural areas to gather together all kinds of more advanced farm tools from every province, district, and county. They should compare them, experiment with them, and improve them. New types of farm implements must be trial-produced. When they are successfully trial-produced, test them out in the fields. If they are found to be truly effective, then they can be mass produced and widely used. When we speak of mechanization, we must also include mechanized manufacture of chemical fertilizers. It is a matter of great importance to increase chemical fertilizer production year by year.[xxvii]

Mao continued his fight to expand the deployment of agricultural technology at the Lushan Conference of July 1959, where he successfully established the Ministry of Agricultural Machinery, to manage the modernization of agricultural production. It was founded on August 26, 1959, two days before the announcement of the Ten Year Plan for Agricultural Mechanization in the official *People's Daily.* Policy statements from 1960 continued to stress mechanization and new innovations in farm tools. *People's Daily* editorials on January 13 and February 25 endorsed the approach and in April T'an Chen-lin, then deputy director of the CPC's rural work department, endorsed a ten-year three-stage agricultural mechanization plan. These three stages were specified in a *People's Daily* article in August 1960:

1. Small-scale solution in four years (1959-63) agriculture, livestock breeding, irrigation and drainage, During this time, mechanization should be achieved in a preliminary way in the outskirts of big cities, market grain growing centers, the major industrial crop growing centers and the major non-staple food rowing centers, while the major part of the rural area concentrate mainly on popularizing semi-mechanization and improved implements.

2. Medium-scale solution in seven years (1964-66). By the end of seven years, mechanization should have materialized over more than half of the rural areas as a result of the gradual development of the agricultural industry and increased supply of agricultural machines.

3. Large-scale solution in ten years (1966-69). By the end of the ten years, virtually all the countryside as a whole should have mechanization everywhere and also a considerable degree of rural electrification.[xxviii]

As part of this program steps were taken to improve the quality of agricultural machines and other inputs and expand their use throughout the countryside. In 1958-60 widespread maintenance problems developed because hastily assembled large communes lacked the skills and facilities to efficiently operate and maintain tractors and other equipment. Thus, in the summer and fall of 1961 the process of establishing central control over tractors began. The Agricultural Machinery Station (AMS) system was established and charged with managing machinery operation, leasing, and repair. As discussed below, this system was later disbanded under the Dazhai system when tractors were again placed under commune control.[xxix]

In addition to expanding the use of agricultural machinery and inputs, the large commune could mobilize labor to build enormous rural infrastructure projects to boost agricultural productivity. This concept dated back to ancient times: Large-scale water conservation projects meant higher, more stable crop yields; and stable crop yields could support a larger population, which increased state tax revenues. If village-size cooperatives made it possible to mobilize labor voluntarily, then pooling 20 or 30 cooperatives into a commune would make it possible to mobilize labor on a far larger scale. To increase the number of localities that shared the benefits of infrastructure projects the commune was made the basic accounting unit whose collective income determined the value of the work point. In this way projects that benefited the commune would increase the value of all members work points, thus incentivizing members participation on a larger scale.

The first major attempts to mobilize massive amounts of rural labor came at the end of 1957. Instead of sitting in their villages through the slack winter season, tens of millions of collectivized farmers were put to work building large-scale water conservation projects – dams, reservoirs, dikes, and irrigation canals. During this period "redness" – including political zeal, enthusiasm for the collective and class background – was prized over technical knowledge and experience. Reflecting the policy of local self-sufficiency Mao coined the phrase "take grain as the key link," which remained a cornerstone of China's agricultural policy until decollectivization. Free markets for agricultural commodities were closed in the fall of 1958 and private plots were eliminated in many regions. [xxx]

At first the signs of China's rural technology and infrastructure construction campaign were promising. In 1958 China's grain harvest had, at first estimate, exceeded 450 million tons, surpassing even that of the United States; and Party leaders were told that the country could

produce as much rice as it wanted.[xxxi] Mao publically announced that rural residents should eat five meals a day and based on its apparent success the commune movement accelerated rapidly during the summer and fall of 1958. By August 1958, Central Party leaders, believing that food was abundant, increased the state's mandatory grain procurement quotas. Commune level cadre, who knew their grain production reports were grossly inflated, were nonetheless obligated to fulfill their increased procurement quotas. Reluctant to offend their superiors, they lied to them, inflating their harvest estimates while squeezing every last drop of procurement grain out of the hapless members, who were forced to tighten their belts to survive. The result was an orgy of official exaggeration; meanwhile at the bottom hundreds of millions of rural residents began to suffer.

Although the initial crop harvest in the summer of 1958 was larger than average, a number of serious problems began to emerge within the large communes. When the first heavy summer rains fell in 1958, many of the hastily constructed dams, canals, dikes and reservoirs built the previous winter failed, causing inundation of hundreds of thousands of acres of cropland. Of the 500 largest reservoirs under construction in the winter of 1957-58, over 200 were abandoned within two years. Primary causes of commune failure during the GLF include inadequate engineering know-how, widespread skill deficiency, flawed technical innovations, the lack of high quality capital materials and inputs, an emphasis on labor mobilization over careful planning, and ideological "redness" over technical "expertise."[xxxii]

Moreover, the "free supply" remuneration system introduced in commune cafeterias proved a failure. With an average of 50-80 percent of a member's income distributed as "subsistence supplies" and only 20-50 distributed with regard to labor contribution a serious "free rider" problem quickly emerged.[xxxiii] The communes were too large and impersonal,

making it impossible to effectively monitor each worker's performance and punish slackers. Under these circumstances the incentive to work industriously was seriously weakened, field management was done carelessly, planting was haphazard, and mature grain was left to rot in the fields. The massive communes had expanded individual entitlements while diminishing work incentives and reducing the system's supervisory capability. The consequence was a false sense of abundance followed by cataclysm: between 15 and 30 million rural Chinese died in the famine of 1960-61.[xxxiv]

Despite its catastrophic consequences the GLF did introduce several important concepts into rural China whose legacy outlived the movement itself. Among the most important were the notion of rural development and the commune as a vehicle to expand modernization and improve living standards. As Carl Riskin observed:

> In retrospect, the main institutional legacy of the Great Leap Forward was the modified rural commune with its mission of bringing industry, education, health and culture to the countryside. The three-tier commune turned out to be a flexible instrument for organizing farmland capital construction, facilitating technical change, introducing some social welfare protection to rural people, and instituting rural industrialization. Many of the small and medium-size industries that sprang up in the countryside after 1962 originated in the backyard factories of the Leap.[xxxv]

Phase 2: The Post Great Leap Commune Re-organization (1962-1965)

A. Expanding Incentives, Sidelines and Markets

The GLF disaster prompted a review of the commune. Ideologically, in 1958 party leaders had pitched the commune as the institution that could help China quickly reach communism and overtake Western capitalist countries in terms of productivity. After 1962, they promoted it as an institution to facilitate China's slow and gradual transition from socialism (collective ownership of the means of production) to communism (ownership by all people). These ideological revisions were reflected in commune policies. Massive communes had failed to expanded rural development, but the result was famine and vast quantities of poor quality capital. By 1961

China had little advanced agricultural technology, few world-class scientists and engineers, falling amounts of arable land, and a massive, growing pool of unskilled rural labor that still used ancient farming tools and techniques. In the face of these mounting challenges the commune's inability to remedy them, its mandate was scaled back and its size and structure were redesigned accordingly.

Before 1960, China's rural policy prioritized transforming grassroots social relations over increasing productivity. This had affected large changes in the architecture of local power relations but the basic agricultural capital and technology had remained unchanged. In the second phase of the commune, economic development was unquestionably placed at the fore, and it was generally agreed that politics would not be permitted to interfere with methods that expanded production. To quickly increase grain production and employ excess labor, in the wake of the GLF famine China's leaders unanimously sought incentive-based remuneration methods. After the crisis abated however, they gradually returned to a long-term agricultural modernization strategy under the commune.

In the early 1960s, Mao and Liu offered competing visions on *how* to spread agricultural technology. Liu, supported by Deng and Peng Zhen, argued that profits were the critical measure of efficiency. They believed that technological progress in agriculture required an efficient, centralized administration, specialization and economies of scale in production, and incentives for workers and managers. Mao and his supporters, by contrast, advocated the commune as a conduit to disperse green revolution machines and technologies. The expansion of rural industry, they argued, would reduce the differences between agriculture and industry, rural and urban areas, manual and mental labor.

The famine of 1960-61 unofficially halted Mao's ten-year plan for national agricultural mechanization. It shook the Chinese leadership to the highest levels and drew its attention to the unthinkable consequences of a failure to increase agricultural production amid rapid population growth and a fall in arable land – the specific influence of both are detailed in the following chapter. In the wake of the GLF failure Mao was forced to step back to what he called "the second line of policymaking" and nationwide agricultural modernization was deprioritized in favor of material incentives intended to quickly revive grain production. Under Liu and Deng stewardship beginning in 1960 the ideological and institutional support for the commune as the primary agent of agricultural modernization was severely undercut. Throughout the early 1960s the dominant view within the party swung against commune control over farm machines and inputs and in favor of expanded incentive-based remuneration schemes and the formation of large centrally controlled trusts that dictated agricultural modernization policies and disbursed capital and technological inputs in accordance with profit incentives.[xxxvi]

The chief objective of the post-GLF commune was to generate sustained increases in grain production to revive the rural economy. In the face of the 1960-61 famine and the unprecedented speed of population growth there was substantial intra-party consensus concerning the necessity to introduce incentive-based remuneration schemes in the countryside.[xxxvii] To increase food production communes were permitted to experiment with a range of incentives and remuneration systems for their members. These efforts took four primary forms: an end to the "free supply" system and a return to remuneration based on labor, the production team became the primary accounting unit by which the value of the work point's value was determined, private plots were returned, and free markets reopened. Communes were allowed to experiment with different incentive-based remuneration systems including household

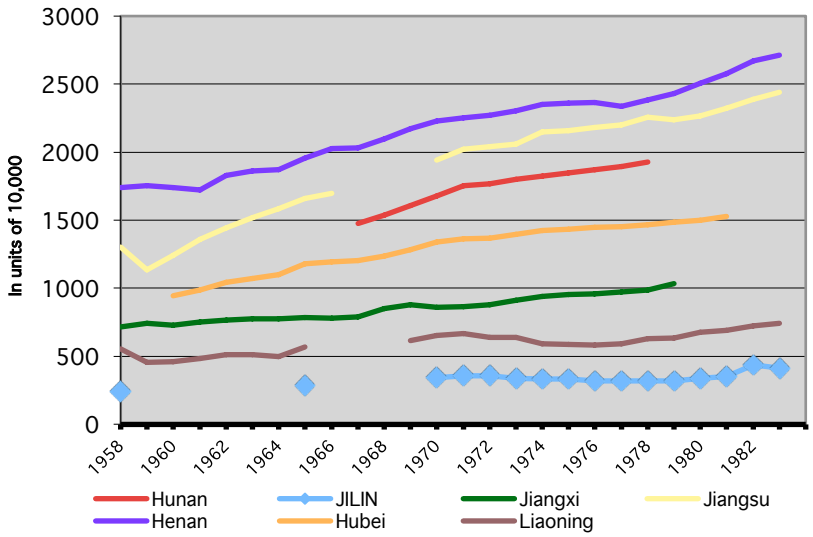
contracting, time and task rate systems. These policy changes were reflected in the "Urgent Directive on Rural Work" (the Twelve Articles) in November 1960 and in "Regulations on the Rural People's Communes" (aka The "Sixty Articles on Agriculture") drafted in June 1961, subsequently revised and adopted in September 1962 at the Tenth Plenum of the Eighth Central Committee in 1962. The later document, which remained in force as the primary operational guide to rural administration until the commune's abrogation, officially sanctioned private plots and free markets.[xxxviii]

To understand why China moved so quickly and at any ideological cost to address the failure of the first phase commune and redesign it with a focus on agricultural production, experts have stressed the impact of the GLF famine, which was undoubtedly the most poignant concern among policymakers. Yet, perhaps ironically amid the famine, the *growth* of the rural population was arguably a more worrisome problem facing the nation – one with serious long-term economic and political consequences. The following chapter presents detailed data on the expansion of rural population on the national and provincial levels and how this exogenous change influenced commune institutional development. Here, however, we can briefly review the extent of the problem as it related to the growth of labor supplies.

In 1949 China's population was 541.67 million and by 1957 it was over 646.53 million, an increase of nearly 105 million people over seven years – roughly the total combined population of South Africa *and* South Korea in 2011! Between 1949 and 1957 China's birth rate averaged 3 percent while its death rate averaged only 1 percent – resulting in an average population growth rate of 2 percent per year. During this period China's rural population rose particularly rapidly from 447.26 about million to 540.35 million. Since China's baby boomers were still young in the late 1950s the amount of rural labor increased relatively slowly, from

173.17 million to 193.1 between 1949-1957. The political and economic implications caused by the lagged effects of this population surge were implicit to China's leaders: communes would need to produce more food and jobs. If the CPC could not find effective policies to feed and employ the expanding working age population the resulting externalities would likely jeopardize the stability of CPC rule.[xxxix]

2.1
Commune Labor in Select Provinces



One important decision, made by 1961-62 was to return to the production team, a subunit of the commune consisting of about 20-30 families, as the basic accounting unit.[xl] In order to harness more labor for rural infrastructure construction between 1958-60 the accounting unit had been set at the commune-level. This remuneration system had offered too little reward for increased productivity. Since work points entitled a member to a percentage of the total output of the entire commune (4000-5000 families) even if a worker's effort were completely unproductive the value of his work points would decline by only 0.01 percent. There was simply too little connection between an individual's labor and the work point's value. Furthermore, because members saw too little connection between the work of others and their own work points' value there was insufficient supervision and social pressure to do a good job. Reducing

the basic accounting back down to the production team – where it had been in 1955 during in the original APCs and would remain until decollectivization changed it to the household – ensured members had the incentive to do their own work as well as monitor other's performance.[xli] In his examination of Chen Village in Guangdong Jonathan Unger describes how remuneration via the production team worked in practice:

> Each of Chen Village's five neighborhoods was organized into a production team, and each was granted ownership and control over a fifth of the village land. This relatively small number of fifty households would be remunerated through the harvest yield from its own fields. To assure that the peasants would see a vested interest in working hard to improve their own livelihood, each of the five neighborhoods was further divided half a year later to form even smaller teams, each containing some twenty to twenty-five families.[xlii]

Throughout the first half of the 1960s communes were allowed to experiment with piece rates and work grades to link the assignment of work points with effort.[xliii] One of these remuneration systems, household production contracts, was first introduced in 1960-61 to raise output quickly and renew peasants' confidence in collective agriculture. In the aftermath of the GLF famine in 1960 Anhui Party Chief Zeng Xisheng applied a "designated land responsibility system" to restore agricultural productivity[xliv] and a year later, under Liu Shaoqi's direction, Beijing officially blessed the *baochan dao hu* or "household contracting" system.[xlv]

According to *baochan dao hu* at the start of the growing season each family was provided with fertilizer and seed and allotted a piece of land that they were responsible to plant, weed, and harvest. Each plot had a production quota attached to it and after the harvest the family would turn over their crop to the team in return for a set number of work points. The team would then sell most of the grain to the state, cover its managerial and input costs, and distribute the remaining income either in cash or kind to each family in accordance with its number of work points. Sometimes a family could keep the excess grain it produced above the state quota, but more often the team paid farmers a progressive work point bonus for surpluses. Unger notes that in Chen Village, for instance, "an extra 150 pounds (of rice) over the quota would, say, earn a

family 200 extra work points."[xlvi] In this way productivity and income were closely tied, yet households depended on collective inputs and participated in the commune's work point remuneration system.

In the early 1960s, with the support of Liu Shaoqi, private plots and rural private enterprises were also reintroduced and rural markets were reopened in some areas.[xlvii] Each production team allotted between 5-7 percent of cultivated lands to families on a per capita basis for their private plots. On private plots families remained free to plant whatever they wanted, with common items being vegetables, fruit trees, tobacco or mulberry trees. Other common family "sideline" activates during the 1960s and 1970s included raising pigs, chickens, ducks and geese. A commune, brigade, or team might sell a piglet to a family on credit, or provide low cost veterinary or stud services and recoup their cost when the pig was brought to market. Pigs, the most common "sideline" animal, would be fed on household scraps or surplus straw or leaves and their manure used to fertilize private plots or as another source of private income.

Handicrafts were another common source of private income. Activities such as basket weaving, embroidering, knitting, and tailoring were done privately by the household. If more than one household was involved a handicraft cooperative could be established within the commune, brigade or team. Other important private revenue streams were fishing, hunting wild animals or snakes for food or medicine, silk production, bee raising and collecting firewood.[xlviii] The expansion of "sideline" production and private rural enterprises after 1961 re-emphasized the role of local free markets. In September 1959 the central government approved the opening of markets on a national scale and by 1961 40,000 rural markets had been reestablished. In 1962 one-quarter of all rural commodity transactions were once again taking place in rural free

markets.[xlix] Private household farming expanded rapidly in 1961-62 and in Yunnan, Guizhou, and Sichuan its value exceeded that of collective farming.[l]

Amid this rapid expansion of rural marketization and private enterprise, tensions between the private and collective sectors grew more acute. During the down season peasants' focus on private sidelines was helpful, but during planting and harvest seasons the commune and private cottage industries vied for a limited amount of household labor. But because the profits of sideline labor went directly to the worker they were naturally drawn to devote increasing amounts of time to their private sidelines at the expense of collective production. To keep commune members' attention on collective production during the early 1960s a variety of political and social pressures were brought to bear on individuals who devoted too much energy on the private sector.[li] One left-leaning commune leader's self-congratulatory account dealt of how he dealt with this problem is worth quoting at length. It reveals how the initiative of a single leader could determine the fate of the free market:

> In 1960 the pernicious doctrine of the free market and material incentives were being propagated by the capitalist roaders in the Party leadership. There was a free market about 20 li (10 km) away from the commune. I came to learn that some of our members were going to the free market and selling the produce of their private plots at exorbitant prices. They also used to take their hens and eggs for sale. The most grave situation, in this regard, arose in one of our difficult and poor brigades. Members would take the tobacco grown on their private plots to the free market. The normal price of such tobacco was 1 yuan per catty, but they would sell it at 6 yuan per catty. The same was true of chickens. If the normal price was 1 yuan, they would get on the free market about 5 yuan. Now these were dangerous tendencies. Work for the collective was ignored in favor of work on private plots. Profit was put in command. One day I went to the free market to make an investigation. My comrades, who had gone there, disappeared when they saw me. I recognized one person and I asked him: "Why are you here?" He said: "I have come to buy some things." This was not true. Then why did he lie? Because he felt that what he was doing was not right. That evening I went to this comrade's house and I asked him: "What did you buy?" He answered: "Tobacco." I asked: "Can't you grow enough on your own plot?" He did not answer. Then we organized mass meetings in the brigade. We asked, should we rely on private plots or on the collective, should we depend on 5 percent or on 95 percent. All of us cadres went to the various teams and launched a mass education campaign. Gradually, fewer and fewer people went to the free market. We mobilized the masses and started a campaign for production. People's enthusiasm was roused, and we reached a high tide in production.[lii]

By 1963, the GLF food crisis had eased considerably and it was announced that household contracts were a temporary measure and that communes should move back to a more collective system of agricultural production and remuneration. On the local level farmers who had not done

as well under contract farming or on their private plots supported these instructions. Particularly, families with young children or where an adult was weak, old or sickly welcomed a return to more collective approach. Under contract farming those families with a number of capable teenagers or adept at agricultural planning had profited most. They were able to earn more, which allowed them to bid on more land or contracts to raise livestock, which, in turn, further increased their income. Yet, labor rich families not only wanted a chance to maximize their income, but also wanted to minimize their risks and increase their financial security. At any time they too could be struck with illness or lose a crop to drought or pestilence. Based on interview research on Guangdong during this period Unger notes that most farmers supported "a system of collective agriculture [that] provided a peasant with a cushion of sharing in broader economic resources than his or her family could manage on its own."[liii]

B. Using Trusts to Centralize Agricultural Technology

By the end of 1962 grain production had stabilized and expanding the use of modern agricultural machines and inputs began to reemerge as a national priority. The communiqué of the Tenth Plenary Session of the Eighth Central Committee of the CPC in September 1962, for instance, noted:

> It is necessary to mobilize and concentrate the strength of the whole Party and the whole nation in an active way to give agriculture and the collective economy of the people's communes every possible material, technical and financial as well as aid in in the field of leadership and personnel, and to bring about the technical transformation of agriculture, stage by stage in a manner suited to local conditions.[liv]

A month after the Tenth Plenum in 1962 a small conference was held in Beijing to give top political leaders and agricultural scientists a chance to discuss the implementation of the new policy. Participants included Zhou Enlai, Minister of Agriculture Liao Luyen, T'an Chen-lin (politburo agricultural specialist), Nieh Jung-chen and Han Kuang (Chairman and Vice

Chairman of the State Science and Technological Commission). The agricultural scientists at the meeting included 26 specialists, 13 of whom had received doctoral degrees from American or European universities. This meeting was followed by a six-week conference of 1200 agricultural scientists and technicians, which mapped out the plans and set the priorities for agricultural research and development. The Ministry of Agriculture was charged with rebuilding the agro-technical extension station system that was destroyed under the GLF. At least one professionally staffed station was created for every three or four communes in order to push new production techniques from centralized R&D institutions directly to the communes.

In June 1963 a lengthy article in the *People's Daily* entitled "Exploration of a Few Problems Concerning Mechanization in our Agriculture" stated that the three immediate goals in agriculture were to (1) improve yields (2) guarantee production of commercial grain, and (3) strengthen management of modern techniques. It advocated a targeted approach that focused on developing only a few selected regions:

> Technical transformation of agriculture and the placement of modern technical equipment and major material resources should not be carried out it in such an excessively scattered manner as to seem blooming everywhere. Instead, key points should be decided upon. There should be concentration of forces to fight battles of annihilation, basically winning one battle before waging another.[lv]

Specifically, the article prioritized (1) mechanization of cultivation and transport in the Northeast and North (2) mechanization of irrigation and drainage in the south (3) supply of chemicals to important regions with a concentration of commercial crops such as cotton, eatable oils, tobacco, sugar, and hemp, and (4) supply electricity and chemicals to suburban areas. A conference on agricultural science and technology met in the spring of 1963 and selected ten major areas to serve as demonstration sites: Beijing, the Northeast, The Sichuan basin, Lake Taihu area near Shanghai, the Pearl River Delta in Guangzhou, Hainan Island, and the Northwest. Programs in

these areas were successfully carried out and new irrigation works and increased fertilizer production helped increase yields.[lvi]

Beginning in 1963, under the leadership of Liu Shaoqi, China introduced a system of trusts to control and operate agricultural machinery. Peng Zhen supported Liu's strategy predicated on centralization, gradualism and profits: "Use of machinery must be centralized. If ten or eight tractors are allocated to one county they cannot be well maintained. Tractors must be used in a centralized manner in counties one by one," Peng said. Mao had been weakened by the failure of large communes during the GLF and, despite his strong opposition, was unable to block the measure's adoption at the Tenth Plenum. In 1961-62 agricultural machinery stations (AMS) were established on the basis of the machine tractor stations (MTS), which had existed before 1957. These stations quickly began to pile up excess staff and losses and were warned in 1963 to turn a profit within two years or risk being closed down. To increase productivity, rewards were provided for exceeding the acreage targets per tractor. To reduce costs, incentives were also introduced to reduce gasoline use and maintenance costs.[lvii]

Liu sought to incorporate the AMS into large monopolistic trusts that would manage all agricultural machinery, and eventually turn a profit. The trusts would centralize administration, increase planning and target investments into the most profitable regions. In the fall and winter of 1963 Liu strongly advocated trusts and the primacy of central control over agricultural modernization:

> Our present method is for provinces, municipalities, departments, bureaus and various departments of the Central Committee to interfere in the economy. This is extra-economic method; it is not a capitalist method but a feudal method. It is necessary to consider the trust method. Control must be exercised over manufacture as well as business management. Rather than set up truck and tractor departments, it is better to organize truck and tractor companies. The operating expenses for agricultural machines should also buy those companies….In short, things must be organized and planned. Don't promote things on your own with no regard for the Center. All local undertakings must be organized, and this is what is called socialism.[lviii]

A dozen or more trusts were established between 1963-66 and others contemplated each with a monopoly in its own economic area. The first, created in 1963, was the agricultural machinery trust, which received explicit instructions during a meeting with Liu in December 1963 to maintain tight control:

> It is good to have agricultural machinery supply centers. A big trust should be formed and supply substations should be set up along railroads and highways. Don't set up stations according to administrative districts and don't put them under the direct jurisdiction of counties. Local authorities must not lay their hands on such stations. They can make suggestions, but cannot allocate money for making such stations. All agricultural machines should be under the unified management of the supply company and factories should also be under its control. Tractors, irrigation supply companies and factories should also be under its control. Tractors, irrigation and drainage machines and oil supply should be under the unified management of the company.[lix]

Between 1963-65 trusts were established in order to spread agricultural machinery gradually to areas where it would prove profitable. By the end of 1965 one trust in Shaanxi came to control 120 local factories and stations, 6 major factories, 4 schools, 10 research stations and about 100 stores. The large trust was, in fact, a rival rural institution to the commune that, rather than operating as a self-reliant unit with extensive autonomy, was closely bound to follow the instructions of a highly centralized bureaucracy. The instructions for setting up the system in Shaanxi stated that a "Party committee be set up at the provincial company, and the Party committees attached to district, county, or municipal companies should be led by the company Party committees of a higher level and the local Party committees, but principally by a higher Party committee of the company." In July 1965 a National Conference on Agricultural Machine Work was held at which Peng Zhen gave his report and the following month the China Tractor and Internal Combustion Engine Industrial Company was officially inaugurated. It was expected to absorb more than a hundred local enterprises and had eight regional branches operating in the Northeast, Shanghai, Tianjin and other places.[lx]

Beginning in the summer of 1965 trusts faced rising opposition. In August 1965 the National Agricultural Machinery Management Conference, although sharply divided on the

issue, turned back to communes as the primary institution to disperse agricultural technology. It concluded that communes should use collective accumulation to invest in and operate agricultural capital. It called for "integrating stations with communes and state-operated stations with collective-operated stations," but identified "collective operation" as a critical component. This conference did not end the movement to establish trusts, however, and in the fall of 1965 Liu travelled to Hebei and Heilongjiang to explain and promote the system and establish the enlarged China Agricultural Machine Company.[lxi] In February and March of 1966 party leaders appear to have debated trusts for the last time and there appears to have been widespread support for Liu's position. But on March 12, while the conference was still is session, Mao sent a letter to the delegates sharply criticizing trusts and advocating decentralization of agricultural capital manufacture and technology innovation to the localities. Mao wrote:

> [Agricultural mechanization] must be carried out in the main by various provinces, municipalities and regions on the basis of self-reliance, and the Center can only give assistance in the form of raw and semi-processed materials to places short of such materials. Local authorities must be given the right to manufacture some machines. It is not a good way to exercise too ridged control by placing everything under the unified control of the Center.[lxii]

Phase 3: The Dazhai System (1965)

In the early 1960s Liu's vision of centralized, specialized trusts and small rural cooperatives had gained traction among high-ranking party members in Beijing. To force continued debate on this (and other) topics beyond Beijing and into lower-level venues nationwide Mao first sought to gain control of the Socialist Education Movement and later launched the Cultural Revolution. The commune, Mao argued, should introduce both agricultural modernization and a more "democratic" and "egalitarian" remuneration scheme on a nationwide scale. This dual-pronged approach came to be known as the Dazhai system. Although Dazhai was championed vigorously

by Beijing for over a decade, it was repudiated as a "representing an ultra-left model" when decollectivization began under Deng Xiaoping in 1979.[lxiii]

Dazhai combined agricultural technological modernization and a new more egalitarian remuneration system in an ideology, Maoism, which stressed the collective above the individual. Among its chief objectives was an explicit effort to narrow the income gap within the commune that had emerged during the liberalization of the early 1960s, when the weakest man had been earning roughly half as much as the strongest man. To redress inequality Dazhai sought to evaluate a worker's enthusiasm for the collective by introducing attitudes and effort as determinants of work point allocations. In team appraisals a member's labor and accomplishments were evaluated, but so was his or her enthusiasm for his work and the collective interest.[lxiv] This changed the basis upon which work points were awarded, but did not change how individual income was calculated, which remained as a portion of team income.

In 1965 Mao wrestled control over the Socialist Education Movement away from Liu and Deng and moved to infuse it with his vision of Dazhai. This represented an important policy change from an anti-corruption campaign in 1963-64, into a broad movement to introduce a new remuneration system and modernize agricultural production in the commune. No longer would agricultural modernization be targeted into only those areas where it was thought to be profitable. This mandate would now be decentralized to the commune level and expanded nationwide.

A. The Political Origins of Dazhai

Dazhai refers to the Dazhai brigade in the eponymous Dazhai commune in Xiyang County, Shanxi. Between 1964 and 1975 the brigade and its party branch secretary, Chen Yonggui,

received more favorable publicity in the official media then any other village or cadre. Before 1949 Dazhai had been a "poor and backward" mountain village, comprising about 380 peasants living in crude, handmade caves. The hillside lands were unfertile and extremely vulnerable to weather variations and soil erosion. Through several years of hard work and cooperation among farmers and cadre the brigade reportedly achieved spectacular increases in its annual grain harvest – from 150 jin per mu of cultivated land before 1949 to over 800 jin per mu in 1964. This rapid increase in productivity turned Dazhai into a national model production unit and in 1964 earned Chen Yonggui a place as the Shanxi provincial representative to the National People's Congress in Beijing.[lxv]

In late October 1964 as Dazhai and its leader began their rise to national prominence a central government work team was dispatched to verify their claims. The work team that arrived in Dazhai took control of the brigade and immediately called into question the "unnatural phenomenon" of unity between the cadre and poor and lower-middle peasants. For two months they called meetings and forums with poor and middle-lower peasants urging them to turn on the local cadre and "expose the inside story." The work team subsequently accused Dazhai cadre of falsifying grain output records and to investigate these claims spent two months interviewing households, checking the grain stores, and conducting land surveys. As a result of their investigation in early December 1964 the work team reclassified Dazhai from an "advanced" unit to a "brigade with serious problems." They concluded that: "There are grubs in the staff of the red banner of Dazhai. It they are not eliminated, the banner cannot be raised high."[lxvi] But the struggle over Dazhai's reputation was over more than just the fate of a few local commune officials. As Richard Baum observed in 1975:

> Whether or not Tachai's production claims in the early 1960s were fraudulent, the fact remains that in late 1964 there existed a group of higher-level Party officials who suspected them to be fraudulent, and who

> acted upon that suspicion by having a work team thoroughly investigate the question of Tachai's agricultural acreage and output.[lxvii]

Liu Shaoqi, Deng Xiaoping, and Wan Li and were among the "higher-level Party officials" that sought to undo Dazhai in late 1964. (Indeed, a decade and half later Deng and Wan successfully disavowed the Dazhai system and dismantled the communes.) Mao and his supporters, by contrast, sought to use Dazhai as a rallying cry to capture control over the fledgling Socialist Education Movement and use it to reinvigorate the commune system and strengthen local autonomy. Thus, Mao strongly supported Dazhai's cadre in their dispute with the central government's work team. After meeting with Chen Yonggui on the sidelines of the Third National People's Congress in Beijing in mid-December 1964 he selected Chen to the Presidium of the NPC and gave him the rare privilege of addressing the assembled NPC delegates. According to Chen's personal account of this meeting:

> Chairman Mao was best able to understand us [the cadre of Dazhai], and he showed the greatest concern for us. At the crucial moment of the struggle, he received me in audience and gave me important instructions concerning work in Dazhai. To us this was the greatest encouragement, the most intimate concern, and the most powerful support.[lxviii]

On December 22 Premier Zhou Enlai, in delivering his "Report on the Work of the Government" to the NPC, publically singled out the cadres and peasants of Dazhai for high praise. Zhou summarized the principles of Dazhai: placing politics in command and ideology in the lead; love for the country and the collective; and self-reliance and hard struggle.[lxix] Mao's ultimate gesture of public support for Dazhai came in late December when Chen's picture appeared alongside his own on the front of the *People's Daily.* The article quoted Mao's instruction that in agriculture communes should "Learn from Dazhai," a slogan that soon swept the countryside.[lxx]

At the December 1964 NPC Mao held a working conference of the Party Central Committee at which he criticized the orientation of the Socialist Education Movement and demanded a reordering of its priorities. In particular Mao criticized the anti-corruption efforts

conducted in the communes under the campaign. He argued that the central government work teams should not indiscriminately struggle against commune-level cadre and said, in thinly veiled reference to Dazhai, that:

> Four Cleanups means cleaning up *a few people.* Where there is something unclean, clean it up; where it is clean, no cleaning up will be necessary. There must be some clean people! *Where there are no lice on a person, how can you find lice?*[lxxi] (Italics in original text)

Mao's call for leniency for local officials was more than just soft-heartedness: the success of the Dazhai system would require capable, untarnished commune-level cadre to implement it. For Mao the Socialist Education Campaign under Liu and Deng was too centrally controlled and too narrow in its scope. The reclaimed, Mao-led, Socialist Education Movement sought to introduce both a more "socialist" remuneration system and agricultural capital and technology on a wide scale into the commune. Mao ordered the work teams focus only on those anti-corruption efforts that increased agricultural productivity. After 1965 and the introduction of Dazhai, the campaign's goals broadened to include mass politics, changes to the work point remuneration system, and the wide expansion of agricultural technologies at the local level. Mao described this new approach:

> We must announce what we wish to do: production, distribution, and work-points – these are matters to which we must devote ourselves. Whether to clean up or not must be discussed by the masses. 'Striking roots and linking up' is too placid without any mass movement.[lxxii]

B. Remuneration Under Dazhai

Experiments with task rates during the early 1960s included some "group task work" whereby the team was awarded work points based on its combined production. Members would then hold a post-harvest meeting to appraise each other's labor contribution and divide up work points. First introduced in 1965, Dazhai expanded the concept of group-appraisals into a complete program for wage distribution under which team members would judge each other's contribution at periotic appraisal meetings. Ideally, a team member would be awarded more work points if

they displayed positive political attitudes that placed collective over individual interests. By employing direct social pressures rather than incentives this approach did away with cumbersome work point recorders and individual task rates.[lxxiii]

As noted above, the Socialist Education Movement initially targeted corruption among low-level rural cadre. CPC work teams called "Four Cleanups Teams" were sent to take control of communes, where many stayed for up to two years. Under Mao's instruction by 1965-1966 the campaign was expanded into a larger movement to spread the socialist value of "serving the people" and "selflessness" through the use of a new remuneration system that rewarded active adherence and support for them. Dazhai's "underlying idea," Unger observed, "was to structure remuneration in ways that induced people to concentrate their attention upon the gains that would accrue from a larger pie." To achieve this it sought to employ social pressures at regular appraisal meetings to determine the value of each member's labor. The work point recorders and extensive bookkeeping used under the task rate system of the early 1960s had, according to the post-1965 Four Cleanups work teams, corrupted the peasants' "proletarian" consciousness and engendered bickering over assignments and point allotments.[lxxiv]

In 1965-67 Four Cleanups work teams not only introduced the Dazhai remuneration system into China's communes, but also led an expanded propaganda and ideological indoctrination program based on the Mao's works. In May 1965, China began publishing *Quotations from Chairman Mao Zedong,* otherwise know as *Mao's "Little Red Book."* The CPC Central Committee approved the final version, which covered 33 topics and included 427 quotations by Mao, at the end of 1965 for nationwide publication and distribution. The Ministry of Culture worked to develop a production and distribution plan and hundreds of new printing houses were built to publish the *Quotations* during the second half of 1966. Within communes

Mao study sessions were organized where members recited the Chairman's writings, sang revolutionary songs, and listened to older members testify about the improvements since CPC rule.[lxxv] Unger described the scene at one commune in Guangdong:

> Daily study sessions were inaugurated in which the workteam cadres had a group of urban-educated youths who had settled in the village taught Mao's quotes and incessantly impressed upon the peasantry the sanctity and relevance of the quotes. A perfervid atmosphere somewhat like a religious revival was whipped up – and put to the service of the new wage system. The rhetoric of the Mao study sessions and of the new village broadcasting system repeatedly intoned: fight personal selfishness, devote yourself to the collective.[lxxvi]

The Dazhai system was an explicit effort to narrow the income gap within the commune that had emerged under task rates. Under task rates the weakest man had earned half as much as the strongest man so to redress inequality Dazhai sought to employ a system to evaluate a member's attitudes and effort. In team appraisals a member's labor and accomplishments were evaluated, but ideally so were his/her enthusiasm for the collective and efforts to help and inspire others to work in the collective interest. Once Dazhai introduced attitudes into work point allocation decisions the team's decision came to be perceived as a measure of a member's status within the collective. Judgments about a person's politics are subjective in a way judgments about labor productivity are not. Work point evaluations inevitably became intertwined with clan loyalties, kinship relationships, and personal rivalries making team meetings increasing unwieldy and unpleasant. In an effort to maintain the peace team leaders and members gradually increased the work point allocations of those members that complained, which, over time reduced income inequality.[lxxvii]

Yet, despite the introduction of Dazhai's more egalitarian remuneration system and unending Maoist propaganda against the prioritization of individual interest above the collective, the "small freedoms" of private plots and rural free markets remained a "sacred cow" of the commune's remuneration system. Once reintroduced during the commune's reorganization in the

early 1960s the private sector took root and was not changed or discontinued because, according to Kuo, of "a fear of general opposition from the peasants." Although in a few communes action was threatened against small private enterprises and sideline plots, they remained a rural reality throughout the entire post GLF commune era.[lxxviii]

C. Commune Control of Agricultural Modernization

After the Cultural Revolution began in August 1966 China affirmed the use of agricultural technology to increase output and placed it under commune control. The power of the state bureaucracy in the form of trusts and state-run companies, was severely diminished. By 1963 the food crisis was alleviated and from 1964 to 1969 annual grain production increased steadily allowing the unresolved debate about the correct institutions to control the modernization of agriculture that had been silenced by the GLF famine to reemerge in the mid-1960s. Although the initial manifestations of the Cultural Revolution in 1966 involved criticisms of theater and education, the movement was quickly expanded well beyond cultural questions. A larger political conflict was underway between the advocates of two alternative visions of Chinese socialism in which agricultural capital and technology – its manufacture, distribution, ownership and management – played a central role. These competing visions of Chinese socialist modernization had been debated for years and during the Cultural Revolution what had been largely an intra-party dispute exploded into every aspect of Chinese life.

The first and most popular strategy within the CPC was championed by Liu Shaoqi and Deng Xiaoping, and based on the Soviet experience. It was partially implemented before the establishment of communes in 1958 and stressed using agricultural surpluses to support building the heavy-industry sector. From late 1953 until the early 1960s compulsory grain delivery quotas

made an important contribution to industrial development.[lxxix] In this conception trusts or state-run companies selectively distributed agricultural technology in areas where it would be profitable. This process would, in principle, target inputs into rural areas that would benefit most from them. This approach would be concentrated in urban, suburban and selected rural areas, thus excluding most rural residents from the modernization process. Planning and allocation for this system required the government bureaucracy set production targets and make decisions about where and how to distribute agricultural technology. It required bureaucrats that who were educated, cohesive, honest, centrally-controlled and made decisions on how to improve the efficient allocation of agricultural technology based on based on scientific and technical expertise.

The second vision, advocated by Mao and the leftists, stressed the commune as China's primary political and economic institution charged with the modernizing the countryside – home to over 80 percent of the population. It suggested that the fruits of agricultural modernization should remain in the communes to support their programs for basic education, medical care and nutrition and provide collective funds for investment in modern agricultural inputs. The emergence of a powerful centralized elite that would capture the benefits of modernization and channel them into their own interests would threaten this conception. A similar ethos had underlain the initial communization policies of 1958-60, but at that time, the technical and administrative foundation had not yet been established to support its successful implementation.[lxxx]

By late 1966, with Liu, Deng, and hundreds of others under criticism during the Cultural Revolution, the trust was rejected as a system for modernizing Chinese agricultural inputs and the commune was reaffirmed. In retrospect the commune's triumph over the trust seems an

inevitable result of the Mao's political victory over Liu and Deng during the Cultural Revolution. But there were other economic factors that contributed to the trust's institutional failure. In order for trusts to take advantage of the economies of scale of production associated with specialization, for instance, close coordination and timing would have been essential to reduce transportation costs. The objective (not unlike a modern day corporation) was to operate state-run firms at capacity with as little inventory as possible, but that would require an efficient transportation and logistics system, an area in which China was seriously deficient. Concerns were also raised among the military, which feared that in the case of a war with the U.S. or Soviet Union a system that required close integration and coordination would be vulnerable to disruption. Also important was the lack of support from provincial and commune level cadre who the centralized trusts would deprive of influence over the introduction of agricultural technologies in their regions. Some feared that if production were centralized any positive local externalities associated with modernization – such as popular enthusiasm for agricultural technology, local investment in industry, area specific innovations and modifications, and the development of a pool of local knowledge and capital related to production and repair– would be lost. Perhaps most significantly, however, the trusts' targeted approach did not offer a plan for the rapid introduction of modern agricultural inputs and technology on a national scale.

Politically speaking, the commune system not only offered to build and disseminate agricultural technology on a large scale, but also promised to help resolve what Mao called the "three differences" – differences between urban and rural life, industrial and agricultural work, and intellectual and manual work. Trusts were opposed by Mao and his supporters because they made no attempt to bridge these social cleavages and because they were inspired by Soviet institutions, which were branded as revisionist after the Sino-Soviet split. An editorial in the

People's Daily on April 3, 1966 starkly underscored the divisions within the leadership as the Cultural Revolution began:

> In regard to production and technique, management, regulations in our enterprises, shall we go our own way or copy from capitalism and revisionism? Shall we foster a collective spirit and a communist style, or cultivate bourgeois ideas? Shall we gradually narrow down the differences between town and country, workers and peasants, and mental and physical labor or preserve and widen them?[lxxxi]

Amid the debate over which institution, the commune or the trust, would control the introduction of modern agricultural inputs, another debate reemerged about how to cope with the rising number of rural laborers and fears that agricultural mechanization would exacerbate the problem. Hsiang Nan identified the battle lines of this dispute in a series of articles published in March 1965:

> In areas with large tracts of land and a small population – such as Xinjiang, Inner Mongolia, and Heilongjiang – the controversy over the introduction of mechanization does not arise. However, in areas with little land and a large population, views are by no means unanimous.[lxxxii]

Fears that agricultural machines would displace large numbers of rural laborers were closely tied to the debate over the best way to manufacture, distribute and use them. To study the consequences of the adoption of modern agricultural machinery and inputs on productivity and employment, Xinzhou, Hebei and Nanhai, Guangdong were selected as test sites. They were provided electric irrigation and drainage equipment, threshers, cotton gins, diesel engines, grain-processing machines, oil presses and tractors. Not surprisingly the test sites recorded substantially increased output: Xinzhou reported a 56 percent increase in cotton output, self-sufficiency in grain production, and bumper crops in oil-bearing crops, tobacco, lotus seeds, hogs, and fish, while Nanhai, despite a drought, increased rice production 48 percent. Just as important, however, were the consequences for surplus labor…..

> After mechanization was introduced, how did Xinzhou and Nanhai handle their labor power thus saved? They promptly organized their labor power for more activities of intensive farming such as plowing, hoeing, tilling, accumulating manure, selecting seeds, and preventing insect pests. Laborers were organized to go up to the mountains or down to the river – for purposes of undertaking afforestation, animal husbandry, fishing, and developing a diversified economy. They were also organized for activities of

> capital construction on farms such as cutting canals, building roads, building reservoirs and dams, and leveling land.[lxxxiii]

It is noteworthy that as early as 1965 China had the technology, albeit on a small scale, to free up a large percentage of rural labor for work in other sectors within the commune. As we shall see in the chapters that follow this process of rural labor diversification quickly accelerated during the 1970s. The report on Xinzhou and Nanhai also notes, however, that after investments in agricultural capital some teams were unsuccessful in shifting labor into other tasks:

> The phenomenon of "surplus" labor power indeed exists. This is because [some] people have merely used mechanization to reduce labor intensity and raise labor productivity. *Thus they may afford to have more "idle" moments* because mechanization merely aims at "using a lamp without oil and tilling land without cattle." [Italics added for emphasis] [lxxxiv]

In spring 1965 Zhouxin Commune in Guangdong was also inspected to determine whether an expansion of irrigation works had produced surplus labor. The inspection team reported that:

> When the production activities of basic-level production teams were unplanned there was the problem of superfluous labor power. To employ their surplus labor manpower, some production teams were willing to restore the use of the old-type water wheels for drainage and irrigation. They were not willing to use the newly-built electric-operated drainage and irrigation equipment. This was a new problem, and a big problem that Zhouxin commune had to solve urgently.[lxxxv]

The Zhouxin commune's leadership solved this problem by encouraging the diversification of productive activities within its brigades and teams. Commune leaders emphasized using freed up labor to sow new crops including peanuts, onions, garlic, sugarcane and bamboo, raise more livestock, and expand local industry. Using labor and land freed up from agricultural modernization, the test communes diversified their agricultural output and reinvested their profits locally in commune, brigade and sometimes even team level small industries such as the manufacture of farm implements, fertilizer and pesticide production, irrigation piping, brick and tile making. One brigade in Jiangxi, for instance, used excess labor to supply a factory that built pipes for use in irrigation works. It supplied other communes, primarily in neighboring areas and in Hunan, with the necessary materials for water works and when necessary was paid in cash via transfer through the post office.[lxxxvi] In 1965 results from these few test communes suggested the

long-term viability of the leftists' wide-ranging agricultural technology scheme. In the short run, however, semi-mechanized farm implants and intermediate inputs were adopted as stopgap measures to provide localities with relatively simple, locally produced transitional technologies.[lxxxvii]

The aforementioned March 1965 report by Hsiang Nan favored the initial use of intermediate technologies for four reasons. First, "the state is not able to supply large quantities of farm machines overnight." Second, "the [limited] purchasing power of the communes and the demand of most production teams to buy and use these tools themselves." Third, semi-mechanized implements and intermediate inputs "can be produced and used locally and are more suited to the local needs of agricultural production." Fourth, "their application makes it possible to mobilize to the broadest extent the peasants to participate in the farm tool innovation movement and in the work of experimenting on manufacturing and popularizing semi-mechanized farm tools."[lxxxviii] To manage this transitional stage, the Second Ministry of Light Industry was created in 1965 to push semi-mechanization and popularize the use of improved farm tools within communes.

Official press reports suggest that the effort to introduce new farm tools was at least somewhat successful. In October 1965, for instance, 500 new varieties of semi-mechanized improved farm tools were displayed at the National Farm Tools Exhibition in Beijing held under the combined sponsorship of the Second Ministry of Light Industry, the Ministry of Agriculture, and the All-China Federation of Handicraft Cooperatives. Similar reports of expanded farm tool production came from other provinces.[lxxxix] By 1967 the manufacture of more than 800 varieties of agricultural machines had been transferred to provincial officials.[xc] Local innovations included improvements in the cable-drawn plow in Jiangsu and the Jiangxi-65 rice planter, which

sowed five rows and could be adjusted to alter the number of rows and depth of seedlings. Other power-driven planters of the era include the Shanghai-65, Hubei-59, and the Fengyang-6016. One model commune was hailed in the official press for developing 22 new implements and producing 12,000 of them.[xci]

Preceding the Cultural Revolution sharp conflicts had emerged at the highest levels of CPC leadership over the alternative strategies to mange the production and distribution of agricultural technology. Of course, disagreements about how to modernize agriculture were not the only cause of the Cultural Revolution; they were, however, among the most important.

A proposal from the Hubei CPC provincial committee in January 1966 helped bring the political crisis to a head. Hubei's leadership had decided to dramatically speed up its agricultural mechanization program through the establishment of two factories in Wuhan making 10,000 7-hp walking tractors and 20 hp tractors per year. Based on the assumption that 22,000 of its 38,000 production brigades could each use two tractors, the Hubei proposal reasoned that agriculture could be mechanized in five years. The plan was first approved by Mao on February 19, then rejected by Liu on February 23. On March 11 Liu wrote to Mao arguing that "the transmission of the Hubei Provincial Committee's documents should be postponed." The next day Mao composed a letter that outlined a series of proposals for agricultural modernization. [xcii] Once again, as he had in April 1959, Mao proposed a three-step, 10-year plan for agricultural modernization.[xciii] Against Liu's wishes the Hubei proposals were published, first on April 4 in the *Canton Evening News,* and then again in the *People's Daily* on April 9, 1966.[xciv]

In July 1966, on the eve of the Cultural Revolution, the Central Committee of the CPC convened the *On-site Conference on Agricultural Mechanization* in Hubei. This meeting, which

later came to be known as the First National Conference on Agricultural Mechanization, reached three broad conclusions:

1. Agricultural mechanization must rely on the collective economy,
2. It must rely on local industries to manufacture machines and tools
3. Basic realization of agricultural modernization should be realized by 1980.[xcv]

Based on these conclusions, commune ownership and management of farm machinery gradually expanded from 1966-68. At first, due to a lack of clear instructions from the center, the transfer of agricultural machinery from the state Agriculture Machinery Stations (AMS) to commune control took place slowly. Some communes, Stavis concludes, may have considered Mao's vague May 7, 1966 directive that communes should, where appropriate, run small factories a signal of the new policy. But lacking a Central Committee directive, as late as 1968 some AMS personnel remained reluctant to decentralize control of agricultural machines to commune control. Beginning in mid-1968 official press articles began to appear praising efforts to decentralize agricultural machinery in at least ten provinces. Although it is not possible to know if these experiments represented the general situation, they did signal to localities the center's policy of commune ownership and management as well as provide indirect instructions on how to handle the challenges that might arise during the transition.[xcvi]

This process of decentralization of agricultural technology to the communes stands in stark contrast to experiments in 1957-58. At that time preliminary experiments had been confined to only four cooperatives in two locations outside Beijing and Heilongjiang before being rapidly expanded nationwide. By contrast, the 1966-68 effort to decentralize the production, ownership and management of agricultural technology down to the commune sought to avoid the devastating problems that resulted from minimal testing followed by a hasty

expansion nationwide during the GLF. One publication from the era summarized the process of decentralizing agricultural technology during this period:

> As to the localities to which [machines] were sent, the original working areas were taken as the base areas with consideration given to the important communes and teams. Aid was given to mountain areas the consideration given to poverty-stricken communes and teams. In addition, rational distribution of agricultural machines and implements was made with consideration given to the terrains of the communes and teams, repair force and the technical state of machines and implements.[xcvii]

The 1966-68 experiments with commune control over agricultural technology stressed local planning and leadership rather than direction from the center. Most were conducted on a less formal basis and completed *before* the establishment of a provincial revolutionary committee in the area – which usually occurred in 1969. Of course, local experiments were not always spontaneous; some were inspired by Mao's May 7, 1966 directive, the reissue of his instructions on agricultural modernization from 1958-59, and the promotion of commune self-reliance as virtue. Between 1966-68, in an effort to marry capital management and ownership with production needs communes were urged to set up an integrated management system with personnel at the commune, brigade, and team levels. Decisions about which level would control agricultural capital and inputs were resolved based on the size of the investment and area affected. Commune leaders controlled larger farm processes and delegated smaller-scale, more specialized projects to the brigade or production team. The commune, for instance, might operate tractor stations, big electric irrigation stations and substations; the brigade might administer electric irrigation stations and processing machines for farm and subsidiary production; the production team might control planting, shelling, and threshing machines and semi-mechanized transportation equipment.[xcviii] Where implemented, this three-level administrative structure was charged with the management, repair and supply of agricultural technology for a given locality.

This new and major addition to the commune's mandate required personnel who were properly trained and enthusiastic. The general policy was that AMS personnel and cadre, who

were originally state employees, would be transferred to the commune payroll. The methodology behind their remuneration appears to have varied considerably among communes. In one location for the first two years former AMS personnel would work at the commune level but receive salaries and food rations from the state. In another, personnel who operated agricultural machinery would receive one portion of their compensation according to the average work point value of the brigade and another based on their share from the production team where they did farm labor.[xcix] Despite the transfer of technical personnel to the commune, however, in the late 1960s rural localities remained woefully lacking in technical expertise – a problem that was not properly remedied until the expansion of vocational training programs during the 1970s.

When the responsibility for agricultural modernization was placed under the commune in 1966-68 new financial and accounting provisions were also established. These policies – like many at the time – seem to have varied among localities and were closely tied to the agency of local leaders. Bank credit does not appear to have been made available, so to finance purchases of agricultural equipment communes enlarged their accumulated collective funds and distributed an ever-smaller percentage to members via the work point remuneration system detailed in chapter 7.[c] To raise the level of agricultural modernization equally within the commune, wealthier brigades lent (interest free) to impoverished ones and loans were repaid from the commune's tractor station income. Commune leaders pressed AMSs to insure that machines were in good condition and were purchased at fair prices before they were transferred down. In one locality the appraisal of AMS machinery took place in this way…

> First, the machines and implements were technically appraised in detail. An appraisal and evaluation team was then formed to fix the price of each engine in light of the present prices of new engines. Finally a symposium of leading aged workers, cadres and technical personnel was held to examine the engines one by one and make appropriate corrections before submitting the prices.[ci]

Measures were taken to ensure commune members' participation in the agricultural modernization process. Special study classes were conducted for commune cadre and personnel associated with agricultural modernization to study Mao's directives and the experiences of neighboring communes. One commune established a management committee for farm machinery composed of commune and brigade-level cadre, poor and middle peasant representatives, and technical personnel. Discussions were also held within the production teams and concerns passed up to the management committee, which was obliged to take them into consideration when designing the commune's agricultural modernization plan. The objective of this mass line policy process was the smooth transition of responsibility for agricultural capital and technology to commune control. This collective approach was intended to gain the support of commune members at each level and ensure that local variation was taken into account. Frequent and coercive team meetings, a cornerstone of the Dazhai system, were also used to obtain members' consent on production plans, infrastructure projects, and purchases of agricultural inputs and machines. To improve efficiency the interlaced fields of brigades and production teams were sometimes altered to reduce the travel time of machines and other inputs and ensure their use on as many fields as possible.[cii]

By 1969, after years of experimentation, the parameters of a commune-based system of agricultural technology management were emerging. After the People's Liberation Army under Lin Biao consolidated control in 1969, military-style regimentation and the Maoist vision of socialist modernization were rigidly enforced in communes. In this way China was completely committed to a program of widespread agricultural modernization. Liu Shaoqi was arrested in 1967, publicly abused by rowdy mobs, discredited, expelled from the CPC at the Ninth Party Congress in October 1969, and died in prison from untreated diabetes and pneumonia the next

month. Meanwhile, in September and October 1969 conferences stressing the Dazhai approach to agricultural modernization were held in provinces including Gansu, Inner Mongolia, Anhui, Shandong, Hunan, and Guangdong. The 1970s, they each concluded, would be the decade of agricultural modernization in China. A broadcast on Radio Shanghai on November 1969 emphasized the all-important political implications of this effort to maintain CPC legitimacy among workers and peasants in the decade to come:

> Today, our worker-peasant alliance has entered the new stage of realizing agricultural mechanization. Agricultural collectivization without agricultural mechanization cannot consolidate the worker-peasant alliance because it is impossible for such an alliance to rest forever on two diametrically opposed material and technical foundations. The development of agricultural production lies in mechanization. The realization of agricultural mechanization in turn will consolidate agricultural collectivization and eliminate the differences between workers and peasants, town and countryside, mental and manual labor.[ciii]

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[i] Mao Zedong, "On Contradiction," (Aug. 1937), *Selected Works*, Vol. I, 322.

[ii] Dwight Perkins and Shahid Yusuf, *Rural Development in China,* (Baltimore: Johns Hopkins University Press, 1984) 74. Also see John Wong, "Some Aspects of China's Agricultural Development Experience: Implications for Developing Countries in Asia," *World Development* Vol. 4, No. 6, (June 1976) 493.

[iii] Perkins and Yusuf, 75.

[iv] Benedict Stavis, *People's Communes and Rural Development in China,* (Ithaca: Cornell University Rural Development Committee, 1974) 43.

[v] Stavis, *Communes,* 44.

[vi] Perkins and Yusuf, 75.

[vii] Stavis, *Communes,* 44.

[viii] Ezra F. Vogel, *Deng Xiaoping and the Transformation of China,* (Cambridge: Harvard University Press, 2011) 440.

[ix] Perkins and Yusuf, 75-76.

[x] Richard Baum, "Lecture 14: The Chinese People Have Stood Up," *The Fall and Rise of China,* (Chantilly: The Teaching Company, 2010).

[xi] Stavis, *Communes,* 44.

[xii] Stavis, *Communes,* 44.

[xiii] Perkins and Yusuf, 76.

[xiv] Nicholas Lardy, *Agriculture in China's Modern Economic Development,* (Cambridge: Cambridge University Press, 1983) 39-40.

[xv] Perkins and Yusuf, 77.

[xvi] Perkins and Yusuf, 77.

[xvii] Stavis, *Communes,* 35.

[xviii] Stavis, *Communes,* 44.

[xix] Wu Chou, "Report from Tungting: A People's Commune on Taihu Lake," (Beijing: Foreign Languages Press, 1975) 8.

[xx] William G. Skinner, "Marketing and Social Structure in Rural China," *Journal of Asian Studies,* Vol. 24 (1965*),* 385.

[xxi] Stavis, *Communes,* 44.

[xxii] Comment on article "Mobilize Women to Take Part in Production to Solve the Difficulties of the Insufficiency of Labor Power," cited in P'ang Hsien-chih, *Upsurge of Socialism in China's Countryside: Document of Historical Significance in the Party's Leadership of the Socialist Revolution in the rural Areas* (Peking: Hsueh-hsi, 1956) 27. Also available in an edited version in *Socialist of Socialism in the China's Countryside,* (Peking: Foreign Language Press, 1957) 286.

[xxiii] Cited in Benedict Stavis, *The Politics of Agricultural Mechanization in China*, (Ithaca: Cornell University Press, 1978) 105-06.

[xxiv] Cited in Stavis, *Agricultural Mechanization,* 106.

[xxv] Stavis, *Agricultural Mechanization,* 107.

[xxvi] Stavis, *Agricultural Mechanization,* 161.

[xxvii] Mao's Intraparty correspondence dated April 29, 1959 cited in Stavis *Agricultural Mechanization* 129. Also see Jerome Ch'en, ed. *Mao Papers* (London: Oxford University Press, 1970) 7. Ch'en dates the letter as November 29, 1959.

[xxviii] Stavis, *Agricultural Mechanization,* 129-31. Also see Howard L. Boorman, *Biographical Dictionary of Republican China,* (Columbia University Press, 1971), 214.

[xxix] Stavis, *Agricultural Mechanization,* 146.

[xxx] Lardy, 41.

[xxxi] Richard Baum, "Lecture 18: The Great Leap Forward," (1958-60)" *The Fall and Rise of China,* (Chantilly: The Teaching Company, 2010).

[xxxii] Baum, "Lecture 18."

[xxxiii] Perkins and Yusuf 77.

[xxxiv] Baum, "Lecture 18."

[xxxv] Carl Riskin, *China's Political Economy: The Quest for Development since 1949,* (Oxford: Oxford University Press, 1987) 138.

[xxxvi] Stavis, *Agricultural Mechanization,* 161.

[xxxvii] Richard Baum, *Prelude to Revolution: Mao the Party, and the Peasant Question*, (New York: Columbia University Press, 1975) 162.

[xxxviii] Baum, *Prelude to Revolution,* 162. Also see Lardy, 44.

[xxxix] A similar population bubble had emerged during the Qing Dynasty, helping to unseat the Manchu rulers. In the early in the 18th Century China's population – which had been stable at between 50 million and 100 million for almost a thousand years – began to grow quickly. Within 75 years the population had doubled, from 116 million to 242 million and in the century that followed, it doubled yet again. This time, however, population growth occurred even more rapidly, as the following chapter discuss in detail.

[xl] Perkins and Yusuf, 78.

[xli] Perkins and Yusuf, 79.

[xlii] Jonathan Unger, *The Transformation of Rural China,* (Armonk: M.E. Sharpe, 2002) 75.

[xliii] Perkins and Yusuf, 78.

[xliv] Zhao Ziyang, *Prisoner of the State: The Secret Journal of Zhao Ziyang* (New York: Simon & Schuster, 2009) 139.

[xlv] Unger, 75. Also see Baum, *Prelude to Revolution,* 164.

[xlvi] Unger, 75.

[xlvii] Baum, *Prelude to Revolution,* 164.

[xlviii] Stavis, *Communes,* 57-58.

[xlix] Lardy, 43-44.

[l] Kang Chao, *Agricultural Production in Communist China, 1949-1965* (Madision: University of Wisconsin Press, 1970) 64. Also see Dick Wilson, "The China After Next," *Far Eastern Economic Review,* (Feb. 1968), 193.

[li] Stavis, *Communes,* 58.

[lii] Cited in A.Z.M. Obaidullah Khan, "Class Struggle in Yellow Sandhill Commune," *China Quarterly,* No. 51 (July-August 1972), 536-537.

[liii] Unger, 76.

[liv] "Communiqué of the 10th Plenary Session of the 8th Committee of the CPC," *Xinhua,* 28 Sept 1962. Cited in Anthony M. Tang and Bruce Stone, *Food Production in the People's Republic of China* (Washington, DC: International Food Policy Research Institute, 1980) 138.

[lv] Liu Jih-hsin, "Exploration of a Few Problems Concerning Mechanization of Our Agriculture," *Jen-min Jih-pao,* 1963, 11. Cited in Stavis *Agricultural Mechanization* 165.

[lvi] Stavis, *Agricultural Mechanization,* 166-67.

[lvii] Stavis, *Agricultural Mechanization,* 183-186 and 195.

[lviii] Cited in Stavis, *Agricultural Mechanization,* 188-190.

[lix] Quoted in Stavis, *Agricultural Mechanization,* 191-192.

[lx] Stavis, *Agricultural Mechanization,* 193-196.

[lxi] Stavis, *Agricultural Mechanization,* 197.

[lxii] Mao Zedong, "Letter of Instructions on the Question of Agricultural Mechanization," Dated 12 March 1966. See *Peking Review,* no. 52 (26 Dec 1977) 7-9. Quoted in Stavis, *Agricultural Mechanization,* 199.

[lxiii] Vogal, 438. This quote from 1978 was part of Wan Li's rejoinder to Chen Yonggui, then vice minister for agriculture, who accused him of opposing Dazhai. Wan said: "You say you are speaking from the Dazhai experience; I say Dazhai is an unlta-leftist model. You go your way and I'll go mine. Don't impose your views on me and I won't impose mine on you. As for who is right and who is wrong, let's see which way works best." Also see Luo Hanxian, *Economic Changes in Rural China*, (Beijing: China International Book Trading Corp., 1985) 97.

[lxiv] Unger, 79.

[lxv] Baum, *Prelude to Revolution,* 117.

[lxvi]Baum, *Prelude to Revolution,* 118-19.

[lxvii]Baum, *Prelude to Revolution,* 120.

[lxviii] Baum, *Prelude to Revolution,* 120-21.

[lxix] Luo, 96-97.

[lxx] Baum, *Prelude to Revolution,* 121.

[lxxi] Baum, *Prelude to Revolution,* 122.

[lxxii] Mao Zedong, "Talk on the Big Four Cleanups," (January 3, 1965). Quoted in Baum, *Prelude to Revolution,* 124-125.

[lxxiii] Unger, 77-78.

[lxxiv] Unger, 79.

[lxxv] Roderick MacFarquhar and John K. Fairbank, eds. "Volume 15: The People's Republic, Part 2: Revolutions within the Chinese Revolution, 1966-1982," *The Cambridge History of China,* 660.

[lxxvi] Unger, 79.

[lxxvii] Unger, 79 and 83-84.

[lxxviii] Leslie T. C. Kuo, *Agriculture in the People's Republic of China: Structural Changes and Technical Transformation* (New York: Praeger Publishers, 1976) 44. Confirmed in personal interviews conducted in rural Jiangxi on December 29, 2011.

[lxxix] Perkins and Yusuf, 76.

[lxxx] Stavis, *Agricultural Mechanization,* 202-3.

[lxxxi] Stavis, *Agricultural Mechanization,* 215-216, quote on 218.

[lxxxii] Hsiang Nan, "Stable and High Yields and Agricultural Mechanization," *Jen-min Jih-pao,* 22 Mar 1965. And "Agricultural MechanizationCan be Achieved with Good and Fast Results," *Jen-min Jih-pao,* 6 July 1965. The *Jen-min Jih-pao* series was culled from Hiang's article "An Inspection Report on the Mechanization of Our Agriculture, *Chung-kuo Nung-yeh Chi-hsieh,* May 1965, 11-20. See Stavis, *Agricultural Mechanization,* 205-207.

[lxxxiii] Hsiang.

[lxxxiv] Hsiang.

[lxxxv] Work team of Central-South Bureau of the CPC Central Committee, "Where Should Revolutionary Zeal be Exerted? Second Question Concerning Organization of a High Tide in Agricultural Production," *Nan-fang Jih-pao,* 28 Mar 1965. See Stavis, *Agricultural Mechanization,* 209.

[lxxxvi] Interviews in at Jiangxi Agricultural University on 26 Dec 2011 and confirmed in field interviews with old commune members.

[lxxxvii] Stavis, *Agricultural Mechanization,* 209.

[lxxxviii] Stavis, *Agricultural Mechanization,* 209.

[lxxxix] Stavis, *Agricultural Mechanization,* 213.

[xc] On Kit Tam, *China's Agricultural Modernization: The Socialist Mechanization Scheme*, (London: Croom Helm, 1985) 39.

[xci] Stavis, *Agricultural Mechanization,* 214.

[xcii] Mao, *Instructions on Agricultural Mechanization.* Cited in Stavis, *Agricultural Mechanization,* 224.

[xciii] On Kit Tam, 37.

[xciv] "Postulation by the CPC Hupeh Provincial Committee Concerning Gradual Realization of Agricultual Mechanization," *Yang-ch'eng Wan-pao* (Guangzhou), 4 Apr 1966. Also see the "Editor's Note *on* Postulation by the CPC Hupeh Provincial Committee Concerning Gradual Realization of Agricultural Mechanization," *Jen-min Jih-pao* 9 Apr 1966. See Stavis, *Agricultural Mechanization,* 225-226.

[xcv] On Kit Tam, 39.

[xcvi] Stavis, *Agricultural Mechanization,* 238-240.

[xcvii] Stavis, *Agricultural Mechanization,* 239 and 242.

[xcviii] On Kit Tam, 40.

[xcix] Stavis, *Agricultural Mechanization,* 243.

[c] On Kit Tam, 40-41.

[ci] Stavis, *Agricultural Mechanization,* 244-246.

[cii] Stavis, *Agricultural Mechanization,* 245-46.

[ciii] Stavis, *Agricultural Mechanization,* 228.

Chapter 3: Commune Reponses to Exogenous Economic Change

CHAPTER OUTLINE

Introduction

I. Increase rate of Population Growth

Policy Responses: Rural Industry, Population Control, and the "Sent-down" Campaign

a. Commune and Brigade Level Enterprises

b. Population Control

c. The "Sent-down" Campaign

II. Falling Arable Land

Policy Responses: Technical Innovation and Land Reclamation

a. Technical Innovation

i. Agricultural Chemicals

ii. Hybrid seed varieties

b. Land Reclamation

III. Increased rate of Capital Depreciation

Policy Responses: Agricultural Modernization

a. Physical Capital Investment

i. Water Management

ii. Agricultural Machinery

iii. Electricity Generation

iv. Transportation Infrastructure

b. Human Capital Investment

Introduction

This chapter identifies and explains the importance of three evolving exogenous economic changes on its institutional development: rising rates of population growth, falling arable land, and high capital depreciation rates. The Soviet threat, which constituted an exogenous *security* challenge, and the system's response to it are discussed in chapter 8. The institution's primary economic policy objectives were to feed and employ more people. In practice that meant modernizing agriculture in order to increase food grain output per unit land and using industry to create new jobs. In the commune the cardinal sin was waste, as such any savings in labor hours resulting from increased capitalization and technological innovation were reinvested in almost anything that would occupy idle hands and increase output, no matter how little.

Communes were used to disperse the negative externalities associated with population growth as widely as possible into the vast Chinese countryside. They tightly monitored population residency (*hukuo)* and incentivized residents to stay in their production teams using the local distribution of land, employment, income, ration coupons, healthcare and education. Furthermore, the state instituted a urban-rural transfer program called the "Up to the Mountain, Down to the Village Campaign," which reassigned an approximated 14 million urban youth, for whom urban jobs were few, into communes.

Meanwhile, to address the continuous fall in arable land research was targeted into new technological innovations in agriculture (e.g. chemicals and hybrid seeds). Land reclamation schemes were also undertaken to improve the quality of rural land through leveling, fighting blight and soil erosion, removing salt crystals, and in other ways that prepared the land for irrigation and mechanization.

The commune was tasked with growing more and more food and employing more and more people on less and less arable land and doing it amid quickly depreciating capital stocks. Beijing's response beginning in 1970 was an extensive national campaign to use the commune system to raise local investment and target it into productive physical and human capital.

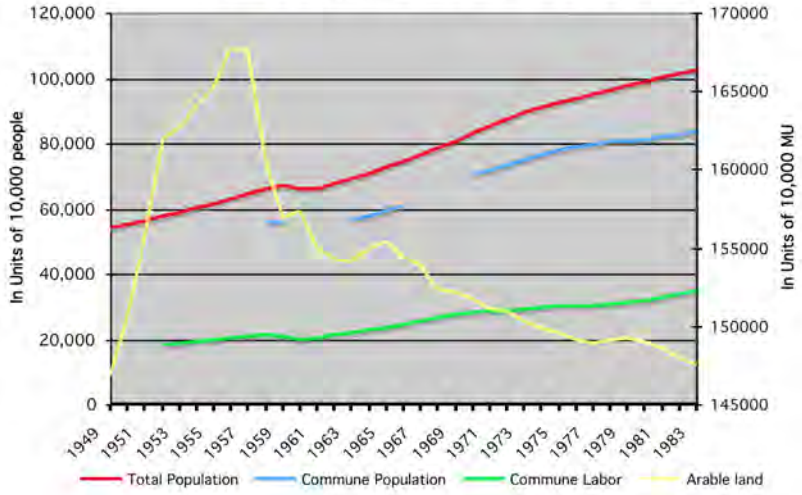
I. Increased Rate of Population and Labor Growth

China experienced a population surge between 1949 and 1973.[i] After a century of civil war and foreign invasion peace, unity and optimism under the newly established PRC brought population growth. At first the CPC encouraged population growth to strengthen the nation in the event the war with the western bloc in Korea widened to China. After its consequences for food production and job provision became apparent, however, Chinese leaders used the commune system to manage its adverse consequences and dissipate them throughout the expansive countryside. They implemented policies that limited, and at times even reversed, the urbanization process. By keeping the growing population and workforce diffused in communes and decentralizing power and responsibility to commune cadre, Chinese leaders sought to soften the acute negative effects of population growth and keep them from materializing in urban areas. Population control policies and the "Up to the Mountain, Down to the Village" campaign were also intended to reduce the costs of rural development by relocating unemployed skilled human capital and youth from urban into rural areas. Taken together these policies kept many more skilled workers in rural localities than would have been there had labor been permitted to move freely into cities.

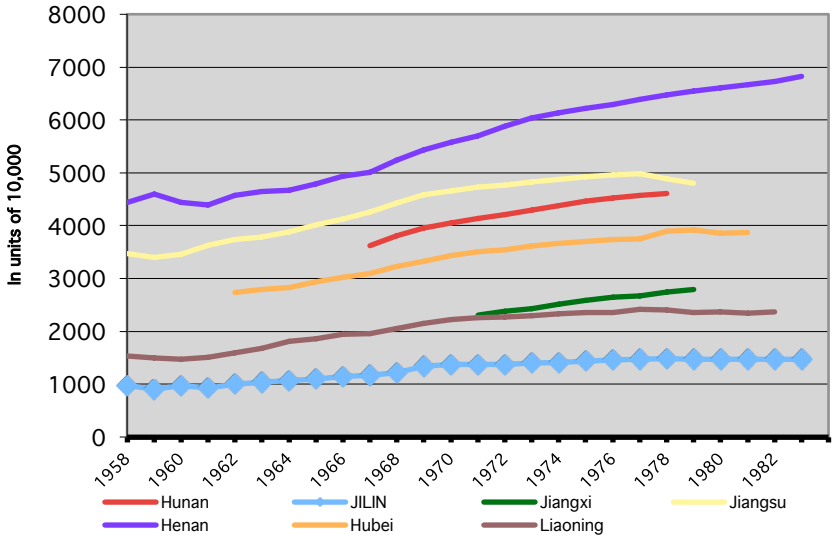
By 1970, China's 1950s baby boomers had reached working and marrying age. That year China's rural population numbered over 705 million by 1976 it was 774 million, an increase of about 70 million in five years – or the entire population of France in 2010![ii] The number of agricultural workers grew

apace with the rural population: increasing from over 170 million in 1960 to over 278 million in 1970 to 294.5 million in 1976.[iii] China's population surge and its resulting demands on food production and rural labor employment was almost certainly the primary exogenous force driving Chinese policy making after 1970.

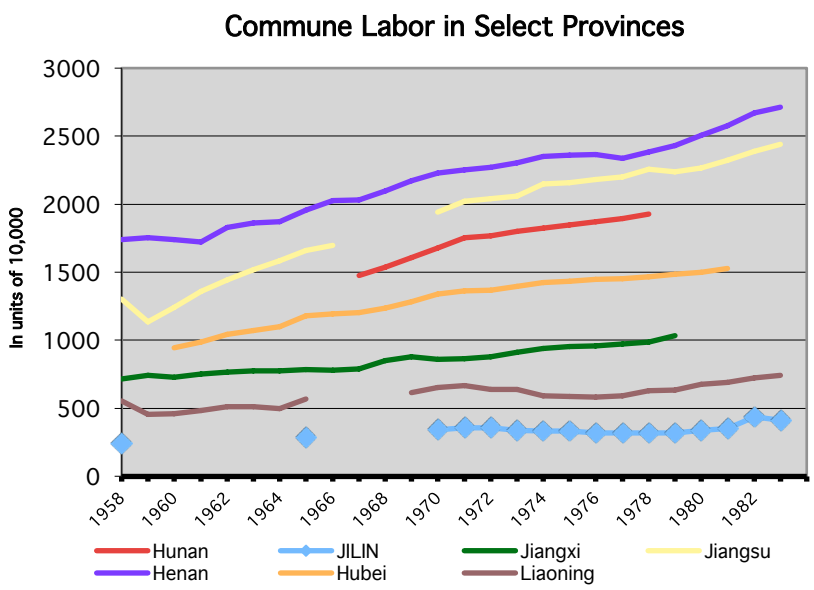
3.1
China's Population vs. Arable Land



3.2
Commune Population in Select Provinces



3.3



Policy Responses: Rural Industrialization, Population Control, and the "Sent-down" Campaign

Rural Industrialization

China's leaders were well aware that they required increased agricultural production in order to feed the growing population and were "making an all-out effort to reduce the population growth rate" according to a delegation of American agricultural scientists that visited China in 1974. The group observed the severity of the challenges associated with China's population growth at the time:

> [Something] must be done quickly, for a population increase of no more than two percent per year mandates an increase of in food output equivalent to 5 million tons of grain per annum just to maintain present standards of living. Failure to reduce population growth rates now would probably create very serious food problems for the country within a few years.[iv]

In 1979, Vice Premier Wang Renzhong, who was in charge of agricultural affairs, explained the extent of the population problem and Beijing's strategy to employ excess rural labor to a group of visiting American agricultural experts. Wang's comments reveal the extent of the Chinese leadership's concerns about rural population growth and labor mobility during the 1970s and

how it sought to use commune and brigade administered enterprises to alleviate them:

> Agricultural mechanization must be commensurate with the development of industry. Labor efficient mechanization could cause a movement of laborers to the industrial cities in your country. But China, with her high population, must not let this happen as the factories could not employ so many people in cities. Arrangements should be made, as part of agricultural modernization, to utilize the excess laborers of the 80% of the population that live in the country in the local rural areas in medium and small size industry.[v]

The goal, as Wang's comments suggest, had long been to put rural people to work locally in different industries rather than allow them to relocate to urban areas. This objective contributed substantially to economic diversification in the countryside and the creation of productive small and medium sized industries. Louis Putterman observed: "Rural industrialization under commune and brigade auspices laid the foundation for one of the most dynamic sectors of Chinese industry in the reform era, the township and village enterprises which would grow to account for nearly 20% of national industrial output in 1989."[vi] The success of rural industrialization and local skill development are addressed in detail below in the section on policy responses to capital depreciation. As it related to population and labor growth, however, the commune and brigade led industrialization was among those policies intended to employ excess rural labor in ways that increased agricultural output.

Population Control

During the 1970s it was nearly impossible for a commune member to change her residency registration from "rural" to "non-rural" (i.e. urban) or even from one commune to another. Formal regulations, regular manditory team meetings, and an incentive structure that rewarded rural residents who remained in their commune and punished unapproved urbanization constrained labor mobility. Cash and in-kind payments (e.g. grain allotments, cigarette coupons, and cooking coal) were among the important benefits that commune members could only receive locally. Workpoints were distributed primarily for work done on collective fields, while

members' sideline plots and small household businesses (pig/chicken raising, shoe repair, tailoring, etc.) were adjacent to their rural homes. As land could not be sold or transferred from one household to another, residents who decided to seek their fortunes in cities would have their land redistributed among the team or brigade members. Such carrot-and-stick policies made it nearly impossible for commune members to formally become urban residents, ensuring that between 1959 and 1976 China's official rural population fluctuated only in a narrow range between 83.2 percent and 81.6 percent.[vii] Indeed, the rapid pace and massive size of China's urbanization after most barriers to labor mobility were removed in the 1980s and 1990s suggests that during the 1970s tens of millions had been successfully dissuaded, or forced, to forgo urbanization.

That said, official statistics on urbanization presented below do suggest some unofficial movement did occur, as does the Italian director Michelangelo Antonioni's 1972 documentary *Chung Kuo (aka Cina*) which includes footage of illegal settlements on the outskirts of Beijing.[viii] The data indicates a rapid growth in the number of large (i.e. +1,000,000 and 800,000-1,000,000 residents) urban areas between 1965 and 1982, the final year of decollectivization. Unfortunately, the data from 1965-75 is missing. It remains unclear how much the increased number of large urban areas was driven by illegal urbanization, and how much was due to population growth or other causal factors.

3.1
URBANIZATION IN 1953-1982

	1953	**1957**	**1965**	**1975**	**1981**	**1982**
TOTAL	2139	2046	2147	2128	2130	2132
1,000,000 +	8	20	18	80	99	106
800,000-	36	51	58	132	152	145

1,000,000						
500,000-800,000	201	256	304	366	393	398
300,000-500,000	391	418	477	540	531	539
150,000-300,000	671	606	652	558	525	517
150,000 -	832	695	638	452	430	427

SOURCE: Agricultural Economic Statistics, 1949 – 1983 p. 38

"Sent-down" Campaign

The "Up to the Mountain, Down to the Village" campaign (aka, Sent Down Campaign) was a program to incentivize, coerce, cajole and reassign millions of young urban residents into the countryside. Although first practiced on a limited scale before the Great Leap Forward, afterward the numbers of "sent down" youth and cadre (i.e. those forced to relocate from cities to countryside) increased substantially. Although continued on a smaller scale in the early and mid 1960s, beginning in 1968 the program accelerated sharply. According to official statistics 1.2 urban youth were set to the countryside between 1956-66, and 12 million between 1968-75.[ix] Between 1966 and 1968 the Sent Down Campaign was suspended, but then rapidly restarted. This section will focus only on the second period (1968-75) of the urban-rural transfer program and its implications for the commune.

The expansion of Sent Down transfers in 1968-69 was not, as some have hypothesized, to rid the cities of meddlesome Red Guard youths. Instead, he explains that the episode's primary

objectives – job creation and rural development – were intended to help alleviate tensions created by increases in the urban population and labor force. Bernstein references T'an Chen-lin's 1964 estimate that China would have 6 million new urban job claimants without positions; a figure he argued was remarkably close to the 5.4 million youths moved from urban areas to rural communes from 1968-70.[x]

The Sent Down Campaign ran counter to two widely held traditional Chinese assumptions. First, it countered the preference for urban over rural life, which was rooted in the (realistic) expectation that the rural-urban inequality and income disparities would continue. Second, the campaign countered the proposition that education's purpose was to make upward mobility possible; specifically, movement from manual labor to a white-color administrative job. In pre-modern China the major objective of education was to prepare students to pass state examinations to enter the bureaucracy and gain social status. One indicator of how deeply this traditional view was held is that throughout the 1970s the expectation of "studying to be an official" (*dushu, zuoguan*) was regularly condemned in the official press.[xi]

Of course, these two traditional beliefs are not unique to China. David Apter argued that "embourgeoisement" is a defining characteristic of modernizing societies such that popular motivations center around opportunities for upward social mobility and the satisfaction of economic interests:

> If a society is in a period of modernization, the preoccupying equity principle or values of the society as a whole will be centered around material benefits and their distribution, even if the regime is a revolutionary one.[xii]

The Sent Down Campaign had two broad policy objectives, dispersing and employing surplus urban labor, and increasing rural development, that is, the capital/labor ratio. The first and most important was employing excess urban labor within the commune system. Bernstein noted in 1977 that examining the relationship between the Sent Down Campaign and surplus labor was

"difficult because of official reluctance to talk on this matter."[xiii] In August 1974, however, the official Xinhua news agency made a rare comment suggesting the linkage:

> In the cities, work must be provided every year for graduates from universities, colleges, vocational and technical schools and regular secondary school. Since China has a planned economy, these educational institutions enroll students according to state plans. College and vocational school graduates are assigned to work in various departments of the national economy according to state needs and their specialties. As to secondary school graduates, in cities and towns, some of them are given jobs in industry, capital construction, communications and commerce so as to enlarge the ranks of the working class, while others work in the county to build up new socialist villages.[xiv] [Underline added for clarity]

The transfer of urban youth to the countryside fluctuated sharply during the first half of the 1970s: about 700,000 were "sent down" in 1971, about 650,000 in 1972, about 1.3 million in 1973 and about 2 million in each 1974 and 1975. The cause of this rapid increase appears to have been an over estimation in the number of available urban jobs, for which Vice Premier Li Fu-ch'un took responsibility and performed a self-criticism. According to a document entitled "Outline of Education" issued in April 1973 by the Political Department of the Kuming Military Region:

> In planning work, due to inadequate understanding of Chairman Mao's strategic policy…as well as due to negligence and carelessness…the number of workers and employees was exceeded by so many tens of thousands, the wage bill was exceeded by so many hundred million yuan, the quantity of commodity grain was exceeded by so many hundred million catties; and there were holes in the storage of grain and cotton.[xv]

The urban-rural transfer program's second objective was to provide skilled labor to support the rural industrialization scheme. The Chinese press published scores of instances in which urban youth made technical innovations that contributed to the modernization of agriculture. They include sent down youths' contributions to fish farming, fertilizer and pesticide production, seed breeding and cross-fertilization, hydroelectric expansion, irrigation systems, veterinary work, tractor and agricultural machine repair, land reclamation and the expansion of electricity.[xvi] These official accounts, regardless of their accuracy, demonstrate that the sent down campaign was publicly promoted as a plan to transfer skilled human capital from urban to rural areas.

Indeed, the connection between agriculture modernization and the transfer of urban residents to communes was made as early as 1964 in a *China Youth Daily* editorial*:*

> Agriculture is the foundation of the national economy. To transform thoroughly the "poor and blank" aspects of our countryside and to build a socialist, new countryside is an unprecedented undertaking. Our party and state are concentrating on aiding agriculture. Thousands upon thousands of cadre, technicians and educated youths are showing their talents in places where the motherland needs them most. In the countryside it is necessary to bring about technical innovations so as to realize mechanization, electrification, chemicalization and universal building of water conservancy projects in the 20- to 25 years to come. Cultured youths with socialist consciousness are urgently needed in building a new socialist countryside.[xvii]

Politically, newly arrived urbanites aimed to spread Maoism, but economically many were also charged with facilitating the dissemination of practical, productivity-increasing basic and vocational skills. Technicians and skilled workers were sent to help rural residents build irrigation projects, maintain farm equipment, reclaim land, apply fertilizer, plant seeds, and various other efforts that enhanced agricultural productivity. Experienced peasants and urban high-schools graduates might reinforce college-trained personnel. By 1978, urban youth constituted 2-3 million of the 13 million members of the national rural research network, detailed in chapter 7.[xviii]

To prove their value and reduce their burden on the rural residents Sent Down urban youth were sometimes resettled on reclaimed, marginal land and provided material assistance from the state. In Jiangxi, 1400 such youth teams were established and received 6 million yuan in 1974-75 for the purchase of chemical fertilizer, oxen, seeds, and farm tools to improve the land's quality. Bernstein observed that the objective of this policy was that it "permitted large-scale settlement of urban youth on poor and remote communes, thereby enhancing their developmental relevance."[xix]

In its efforts to address urban unemployment and increase rural development, the Sent Down campaign expanded skilled and semi-skilled labor and information flows into communes in three ways. First, it increased the number of people and the number of localities with practical

skills relevant to improving agricultural production; second, it expanded personal networks and enhanced information distribution and communication between rural and urban Chinese; third, it acquainted urbanites with the commune's methods of production, agricultural products, and hardships rural residents faced. Although they came at great personal cost to millions of urban youth and their families, "sent down" policies implemented during the 1970s, helped to disperse excess skilled and semi-skilled urban labor and disseminate basic educational and vocational skills to a wider swath of rural population than ever before. They created countless social, economic and political linkages between rural and urban areas that had previously not existed.

II. Fall in Arable Land

Given the severity of China's population crisis in the 1960s and 1970s, it was almost certainly the primary exogenous determinant of the commune's institutional structure and mandate. Yet, two additional domestic factors also influenced the commune institutional development: an increasing rate of decline in the quantity of arable land and increasing rates of capital depreciation. The former is addressed here, the later just below.

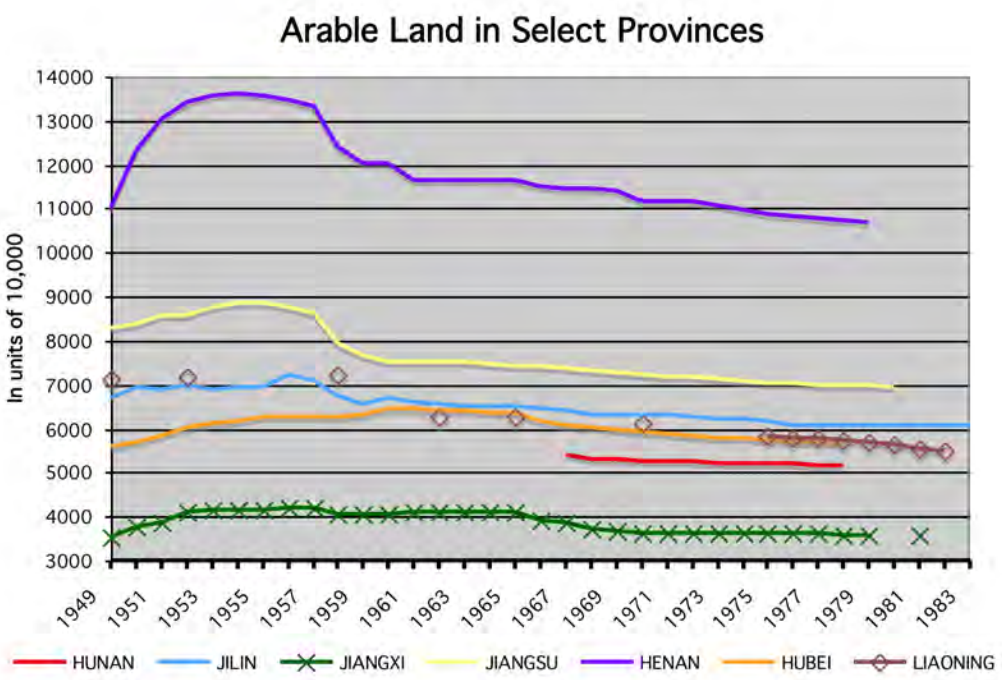
The fall in arable land compounded the severity of the food and employment crises caused by population growth. Despite sizeable investment in land reclamation, between 1970 and 1976 arable land fell from 1,517,020,000 mu to 1,490,820,000 mu.[xx] When combined with the increase in rural labor described above, the result was a dramatic reduction in the amount of land per agricultural worker. Between 1952 and 1960 there was an average of about 9.25 mu per Chinese rural worker. During the 1960s this number gradually declined and by 1970 there was an average of only 5.45 mu per farmer. By 1976 this number was just over 5 mu per rural worker; just over half of 1950s levels.

Rural population growth amid a reduction in land under cultivation left hundreds of millions of rural Chinese unemployed or underemployed during the early and mid 1970s.[xxi] One American economist writing in 1975 explained that the level of excess rural labor on the land had risen to the point where "any small addition it can make to output is considered worthwhile." He explained the nature of Chinese underemployment in a fashion akin to that of Vice Premier Wang above:

> China is thus still a 'labour surplus economy' in the sense that there are many rural workers whose marginal product is below their consumption. But until there is a demand for these workers in urban industries, their use in low productivity rural activities is sound social policy.[xxii]

The tables below show that the trend of falling arable land per unit of labor was not only a national trend, but a uniform phenomenon in each province for which I have data. Throughout the commune era the average farmers in Hunan, Jiangsu, Jiangxi, Zhejiang, Ningxia, Liaoning, Henan and Hubei continually had less and less land to farm and more and more labor to farm it. Each province's average land per unit labor, like the national average, experienced a continuous decline, with the situation appearing most desperate in Hunan and Jiangsu. By 1978 each Hunanese farmer had a mere 2.68 mu of arable land to cultivate, a gradual decline from 3.14 mu in 1970. Similarly, in Jiangsu the average farmer went from 3.72 per mu of land in 1970 to 3.12 in 1978. The other provinces exhibit similar tendencies with the exception of Jilin province, which bucked the national trend and enjoyed an expansion of arable land per unit labor from 17.45 mu per labor in 1972 to 19.11 in 1976. Generally speaking, the northeastern provinces of Jilin and Liaoning enjoyed far more land per unit of labor than the more southern Chinese provinces for which I have data.

3.4


Arable Land in Select Provinces
In units of 10,000
14000
13000
12000
11000
10000
9000
8000
7000
6000
5000
4000
3000
1949
1951
1953
1955
1957
1959
1961
1963
1965
1967
1969
1971
1973
1975
1977
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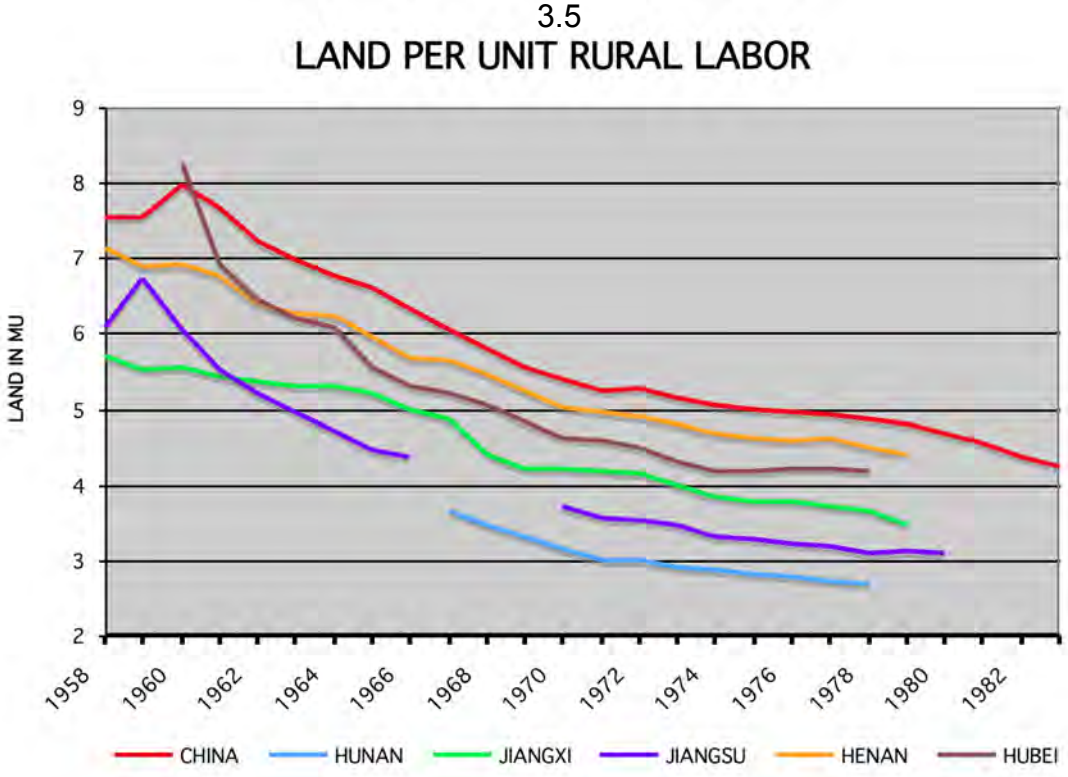
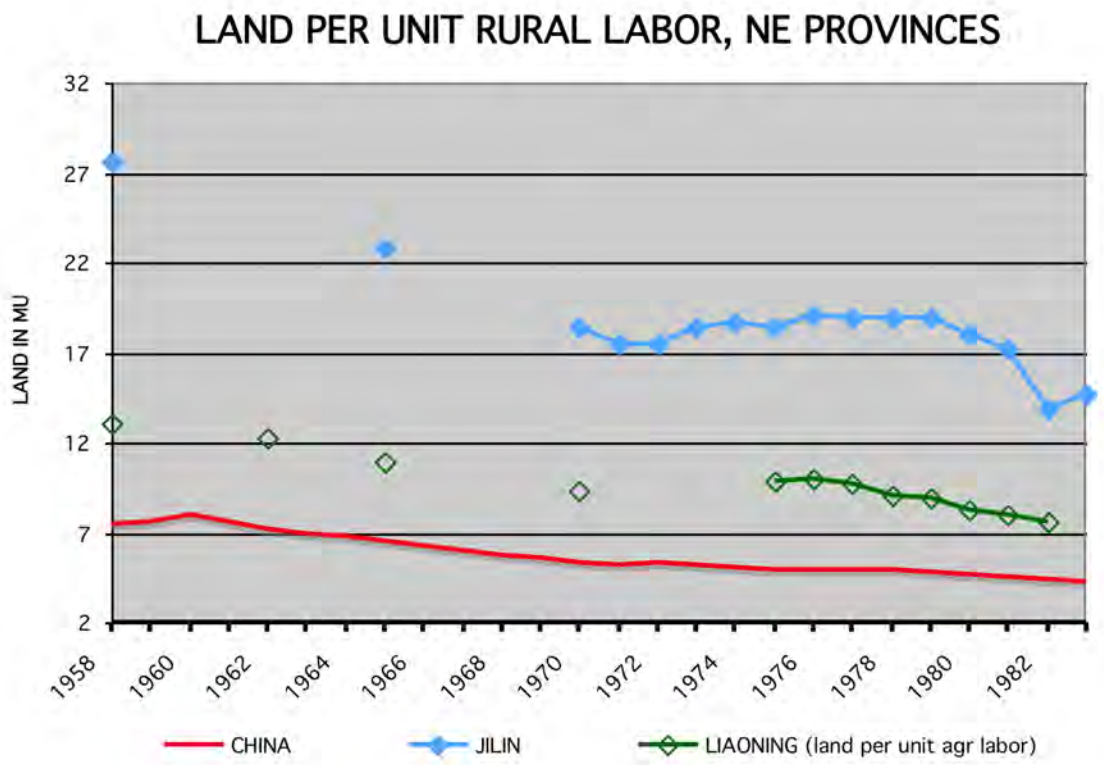
1981
1983
HUNAN
JILIN
JIANGXI
JIANGSU
HENAN
HUBEI
LIAONING

3.5


LAND PER UNIT RURAL LABOR
LAND IN MU
9
8
7
6
5
4
3
2
1958
1960
1962
1964
1966
1968
1970
1972
1974
1976
1978
1980
1982
CHINA
HUNAN
JIANGXI
JIANGSU
HENAN
HUBEI

3.6



Policy Responses: Technological Innovation and Land Reclamation

China tried to both increase the output of existing arable land and reclaim as much land as possible. Large investments were made in the research development and dissemination of agricultural technologies including agricultural chemicals (e.g. fertilizer and pesticide) and in hybrid seed varieties. Furthermore, land reclamation efforts during undertaken by the commune to drain flooded lands, fight soil erosion, blight and salt-water damage, were at least partially successful.

Technological Innovation

Agricultural Chemicals

Stone argued that "improved water control, abundant supplies of fertilizers, and high-yielding seed varieties responsive to these inputs" were largely responsible for rapid increases in China's

agricultural production per unit land during the 1970s.[xxiii] He explained that the use of one or more of these three inputs produces some growth in yields but returns are greatest when all three are applied appropriately. Water management is discussed below as a policy response to capital deprtiation. To increase the supply and availability of high-quality fertilizer China made sizable investments in both small and large-scale plants.[xxiv] During the late 1960s and early 1970s small-scale, county owned plants provided the largest supplies of chemical fertilizer. By 1973, 63 percent of total chemical fertilizer output came from small industries scattered across rural China.[xxv] This made fertilizer available to a wider breadth of farmers but was inefficient and insufficient to satisfy growing demand.[xxvi] (See above Fertilizer poster, 1972 and Pesticide stamp, 1975.)

In the early 1970s China imported 13 large synthetic ammonia/urea complexes – eight from the American firm M.W. Kellogg Co. These capital investments in modern fertilizer capital and technology were so extensive, according to Stone, that during the late 1970s and 1980s, "fertilizer availability began to grow so quickly that continued allocation of large quantities of fertilizer (especially nitrogen fertilizers) to the same areas became problematic." By the early 1980s China had increased supplies of manufactured fertilizer faster than any country, and was the world's largest consumer.[xxvii] Experiments were done with dwarfing agents and on nitrogen fixing bacteria that reduced the need for chemical fertilizers.[xxviii] During this period a phosphate bacteria fertilizer (aka 5406) was developed that improved wheat production by an average of 20 percent. After used on wheat fields in Weihai, Shandong it increased yields by 13 percent on average.[xxix]

In addition to fertilizers China's agricultural scientists developed various other chemical agents and biological processes that increased grain productivity per unit land.

"Integrated pest control plays a great role in China," observed a Swedish agricultural expert Per Brinck after a visit in 1979. "[Farmers] engaged in the new techniques and made integrated pest control possible."[xxx] One such biological technique that did not require conventional chemicals was using insect hormones to regulate growth and sex attractants; another introduced destructive insects' natural predators such as red-eye wasps, magpies, or red lady beetles.[xxxi] Innovations in pest management were achieved through extensive investment in research and development, which according to Ma Shichun, who was head of Insect Ecology at Peking University's Institute of Zoology in 1979, had four objectives: "high quality product," "no environmental contamination," "low production costs," and "increased yields."[xxxii] Reliance on chemical fungicides and pesticides (such as bavista) laid the foundation for discoveries and expanded application throughout the 1980s.[xxxiii] (See Graphic J)

Experiments on growth regulating hormones had been conducted since the 1960s. One organic stimulator, liquid gibberellin (aka 920), increased the yield of oranges, pineapples, grapes, spinach and other green leafy vegetables by 12 percent. Gibberellin could also break the dormancy of ginseng and potatoes and could keep vegetables fresh longer, which aided in their transportation to outlying markets.[xxxiv]Ethrel (2-chloroethyl phosphoric acid) sprayed on rice made it ripen more quickly. Hydrolytic nucleic acids, produced from molds (aka 702), improved root development and photosynthesis in rice. Microbiological processes were developed to control plant diseases including rice blast and wheat scab and although application of these techniques as of 1978 remained limited to a few test regions this research laid the groundwork for future yield-increasing innovations.[xxxv]

High-yield Seed Varieties (HYV)

Among China's most important technological advances was in new seed varieties that generated increased productivity under complex multi-cropping systems and in various climates and conditions. Agricultural economist Scott Rozelle explained the importance of seed technology breakthroughs for increased output:

> While some productivity growth arose from institutional innovation much of the increase still came from the spread of new technology. New breakthroughs during this era include the adoption of hybrids and the introduction of insect and disease resistant [seed] varieties. [xxxvi]

Throughout the commune era China continued to improve its food grain varieties to make them increasingly rapid-maturing, high-yield, disease resistant, and well adapted to local conditions. By the late 1970s China was at the forefront of food grain research, particularly rice, wheat, and corn seed.[xxxvii] As long as sufficient water supplies and fertilizer were available, new seed varieties coupled with the expansion of multiple cropping techniques increased yields to unprecedented levels. In 1972 an American agricultural specialist observed the results of semi-dwarf wheat under well-irrigated conditions:

> Many of the irrigated wheat fields of north China reminded me of the irrigated wheat in the Snake River Plains and the Columbia River irrigation districts of the Pacific Northwest – uniform dense crops with almost no disease or insect pests.[xxxviii]

In the 1950s Chinese scientists began working to create stable HYV grain seed and disseminate it via the agricultural extension system (discussed below). Although hastily established, the early national network for breeding, testing, producing, and disseminating HYV seed represented an important first step.[xxxix] Chinese breeders focused on varieties that exhibited high yield, early maturity, and improved tolerance to stress factors. From 1952-57 multiple cropping was expanded in South and South Central China creating a demand for improved seed. Multiple cropping meant more output, but

more growing cycles meant each crop was more easily damaged. Thus, an important objective in the early years of seed technology was to combine foreign varieties and selected local cultivars to develop rapidly maturing, cold tolerant varieties compatible with multiple cropping systems.[xl] During the 1960s and early 1970s, China's HYV seed program flourished in spite of its relative isolation compared to comparable programs in other countries. According to Stone:

> The scientific community suffered from isolation and, to some extent, harassment, but China's own varietal breeding became a formidable force. The breeding of new varieties with superior traits was very strong, and the speed with which new varieties were tested and adapted to local environments was especially rapid. The system grew to be highly sophisticated for wheat and rice in China's major growing regions.[xli]

China also made important advances in anther or pollen cultures, which allowed scientists to isolate all the potential genetic combinations possible by crossing two varieties in a single step. Unlike normal crosses' whose genetic make-up is unstable and subject to change in subsequent generations, anther crosses' genetic combinations are stable and could be rapidly popularized. In 1970-71 China developed pollen cultures for ten species, including wheat and rice.[xlii]

China's field-testing network conducted countless screenings on tissue cultures to identify superior progeny. This did not require elaborate equipment, only the labor to do the tedious work of extracting pollen and screening thousands of samples. This labor-insensitivity, however, allowed seed breeding work to be decentralized to provinces and counties, where the combination of local tissue cultures and abundant labor allowed China to reduce the development time needed for new pure strain crops from 10-30 to 2-3 years. By 1976, 200 units around China were studying tissue culture and by 1978 China was at the forefront of worldwide tissue culture research.[xliii]

Rice, southern China's most important crop, received special attention from breeders.

Throughout the 1950s the best local rice varieties were promoted to support the expansion of double cropping in south China. From 1952 to 1957 the multiple cropping index rose from 167 to 187 in south China's rice-growing region.[xliv] In 1956 Chinese rice breeders started to crossbreed semi-dwarf rice from Jiangxi with already identified highly productive rice varieties. Semi-dwarf varieties were rapidly maturing, requiring only 80-100 days to ripen after transplanting.[xlv] By 1964, after several years of field-testing different varieties, those capable of high yields (5-8 tons per hectare) received full-scale distribution and the next year were planted on 3 million hectares. By the late 1970s the rapidly maturing, high-yield dwarf varieties developed in the early 1960s were grown on 80 percent of China's rice acreage.[xlvi]

Research into first generation (F1) hybrid rice began in 1964 under a team of agricultural scientists headed by Professor Yuan Longping at the Hunan Hybrid Rice Research Center in Changsha. Between 1964 and 1973 F1 hybrid indicia rice seed with strong heterosis (Nanyou No. 2) was developed. It yielded about 15 percent more than conventional varieties, and was released and rapidly distributed in 1975-76. By 1986 the area planted with hybrid rice had reached 8.94 million hectares, about 28 percent of China's total rice-growing area. As of 1990 China remained the only country that commercially produced and distributed hybrid rice.[xlvii]

Wheat, a staple crop in northern China, was another important target of seed breeding programs. Chinese farmers had developed the first semi-dwarf varieties before 1949. In the 1950s the development of rust-resistant semi-dwarf wheat began, and once developed was planted widely. National level HYV wheat breeding programs officially began in 1965, but unlike rice, their impact was limited until the late 1970s. Many semi-dwarf wheat cultivars were released after 1972, but these and other advancements were largely thanks to the work of provincial and county level plant breeders rather than national level scientists.[xlviii] Then in 1979,

after more than 20 years, national level investments paid off when geneticist Li Zhensheng, a wheat breeder at the Chinese Academy of Sciences Institute of Genetics and Developmental Biology, joined domesticated wheat with wild varieties to create wheat that could withstand outbreaks of the fungal disease stripe rust (Xiaoyan No. 6).[xlix] Li also introduced chromosome engineering technology that reduced the time needed to develop and breed new wheat strains from 20 to 3.5 years. By 2007, based largely on work pioneered during the commune era, China had spawned 79 varieties of wheat grown on 20 million hectares.[l]

Corn is primarily grown in northern China, and as with wheat, high-yield varieties were developed more slowly than rice but over time proved equally important. "Corn yields benefited from the introduction of hybrids as early as the 1950s and the range of hybrids increased throughout the 1970s," note Valerie Karplus and Xing Wang Deng. During the 1970s Chinese researchers worked to create high-yield cross-bred corn and double-crossed corn. When introduced in Hebei, hybrid corn varieties yielded five to six tons per year per hectare – a substantial improvement over the three to four tons produced from previous varieties. Like wheat, however, by 1978 these varieties were not yet in widespread use. By the late 1980s, however, hybrid corn covered 90 percent of China's corn planting area.[li]

Crops such as sweet potatoes and sorghum also showed impressive gains and, note Karplus and Deng, were "yielding as much as the best elite varieties anywhere in the world."[lii] During the 1970s major advances in sweet potato HYVs helped average yields to surpass all other producers, while in China's top yield areas cassava and white potato output were comparable to the world's top producers.[liii]

Land Reclamation

Through various land reclamation methods, and with mixed results, China tried to reduce the rate of arable land loss.[liv] From the mid 1960s to the late 1970s the development of biological plant protection techniques was emphasized.[lv] Large amounts of rural labor were sometimes mobilized to change the soil composition in particular areas by adding compost or by removing salt crystals by hand.[lvi] The construction of large wells, aqueducts and reservoirs made large-scale irrigation possible but the land often first need to be leveled and its soil quality improved before irrigation and mechanization could be effective. These initial land reclamation and leveling projects were as complicated and costly, sometimes more so, than the construction of the irrigation networks themselves. During a visit to several Shanxi communes in 1977 Dwight Perkins observed such a land reclamation project…

> We saw ample evidence of increasing arable land through reclamation and improvement projects in every area that we visited. In Shansi province, we saw badly eroded mountainous areas, with yellowish wind-deposited loess soils, being reclaimed for good arable land.[lvii]

In Hui county Shanxi and Lin county Henan, Perkins and his team observed communes "reclaiming land through terracing of mountains and filling of gullies and riverbeds" as well as "many land development, irrigation, and water control projects to transform sandy marshy riverbeds into productive agricultural land."[lviii] Such observations, skeptics may warn, should be taken with a grain of salt however, as the communes selected for foreign visitors' rural investigations were thoroughly screened and visitors remained under the watchful eye of their official Chinese minders. Yet, Han Dongping, who witnessed similar land reclamation successes first hand while growing up in commune in Weihai, Shandong, bolsters Perkins' observations.[lix] Most importantly, land reclamation efforts are well documented in official statistics from the period, which reveal their extent and relative success.

Statistics on drainage techniques used to reclaim land from waterlogging also began in 1973 although the process began earlier in some places. Drainage was another somewhat successful, albeit arduous, approach used to open new lands for cultivation that developed improved techniques and effectiveness overtime. In 1973 of the 330,240,000 mu that had been "flood prone," or "water logged" 234,300,000, or 70.9 percent, was reclaimed. This impressive percentage continued to increase and by 1976 of the 333,430,000 mu of such land 250,330,000 mu, or 75.1 percent, was saved. Chiliying commune in Hsinhsiang County, Henan, for instance, sought to drain a wetland to create a pond and new lands for cultivation workers. To achieve this they first dug ditches two meters wide and one and half meters deep on either side of the swamp to drain any excess water. Then during the late winter or early spring when the water was still frozen workers would carve up the frozen earth into squares and pry them loose and remove them. After the surface water was removed workers next dug away the soil, where the reed roots – sometimes extending 2-3 feet into the earth – would be removed. Next drainage ditches were completed, trees planted around the pond, and crops planted on the reclaimed fields.[lx]

Throughout the 1970s although flood prone land increased slightly so did China's ability to reclaim it. Between 1979 and 1982 flood land accounted for about 355,000,000 mu per year, but China managed to save about 270,000,000 mu per year, an annual average of about 76 percent.

China's national statistics began reporting on land reclamation efforts in 1972-73. According to this official data communes employed three major types of land reclamation treatment: soil erosion, plant disease and insects (i.e. blight), and salt-water damage. Of these methods blight treatments were used most often and proved the most effective; yet, despite the treatment, the problem of blight continued to grow faster than any other. In 1972, the first year

official records were kept, China had 1,069,260,000 mu of blighted lands and was able to treat 755,680,000 mu, or 70.6 percent. By 1976, however, the amount of blighted land had nearly doubled to 2,090,896,300 mu but the amount of treated land had increased almost 2 ½ times to 1,874,788,000, or 89.7 percent of the total. This percentage was lower in 1977 (80.1 percent), 1978 (72.6 percent) and 1979 (80.4 percent) but increased again in the early 1980s thanks to the expansion of chemical-based treatments.[lxi] In 1982 China experienced 2,630,122,700 mu of blighted lands but was able to treat 88.2 percent or 2,319,865,300 mu. Despite China's impressive attempts to fight blight these data indicate that the problem continued to spread throughout the decade.

Chemicals to combat blight were only partially successful and in many cases losses were sustained despite their application. Yet, the treatment does appear to have become increasingly effective over time. In 1972, 27,420,000,000 jin of grain were produced on land reclaimed from blight, although losses after failed treatment equaled 22,147,000,000 jin. By 1976, however, 31,835,000,000 jin of grain could be grown on land treated for blight and losses had fallen to 17,048,000,000 jin. With the exception of 1978 this trend continued throughout the decade and into the early 1980s and despite a large increase in blighted land in 1982 43,816,000,000 jin of grain were produced on land treated for blight and losses equaled 18,330,000,000 jin. (p.298-99) Although blight continued to spread it seems China's communes were increasingly able to treat blighted lands and put them back to work.

Beginning in 1973 China had 1,764,750,000 mu of land suffering from soil erosion and successfully treated 526,350,000 mu, or 29.8 percent. China's ability to reclaim land from erosion increased as the decade went on, however, and in 1976 out of the 1,788,620,000 mu of land suffering from erosion 630,110,000 mu or 35.2 percent was reclaimed. That percentage

peaked the following year at 36.8 percent before dipping slightly throughout the remainder of the decade and the early 1980s. By 1982 the percentage of land successfully treated for erosion was 34.2 percent, with 615,000,000 of 1,800,000,000 mu successfully brought back under cultivation.[lxii]

Land was also reclaimed from saltwater damage. Han Dongping explained how land was reclaimed from saline and alkali damage in Weihai, Shandong. First, during the slow seasons in the winter and early spring farmers built irrigation channels and level fields so that water could flow over them. They would then begin the tedious process of removing the salty soil on the surface and covering each mu of land with hundreds of wheelbarrow loads of good soil. Next they would divide it into large pieces and build 30cm ridges around each piece before flooding it with water for a time before allowing the water to run off through ditches constructed on either side and carrying away the remaining salt and alkali. Han reports that this process, which farmers called "land washing," increased the unit grain production of salty land from fifty kilos to one hundred kilos per mu. In this way, Han claims, the quality of salty land could be improved.[lxiii]

Yet, official data indicate that China's efforts to reclaim land from salt water proved only partially successful. In 1973, 101,310,000 mu of land were destroyed by salt water and 48,390,000 mu, or 47.8 percent, were reclaimed. This percentage steadily increased and by 1976 106,980,000 mu of land were destroyed by salt water and 62,790,000, or 58.7 percent, were reclaimed. But this impressive improvement in salt-water treatment did not continue into the early 1980s: by 1982 108,650,000 mu were destroyed by salt water and 58.9 percent, or 63,980,000 mu, were reclaimed.[lxiv]

Taken together these statistics reveal the extent and large-scale of efforts undertaken during the 1970s to reclaim arable land, which appear to have slowed, although not stopped, its

overall decline. Throughout the decade, moreover, communes gradually improved their capacity to reclaim land in various areas including blight, waterlogging, land-leveling and terracing, erosion, and saltwater damage. Despite the widely reported official accounts of these land reclamation efforts success in the Chinese press, the statistics reveal that on balance China continued to lose arable land.

III. Capital Depreciation

For reasons discussed in detail in the previous chapter and summarized briefly here large amounts of poor quality capital were built during the GLF. Facing conditions of unlimited labor and exceedingly scarce capital, in 1957-58 Chinese planners harnessed tens of millions of workers at subsistence wages to build substandard agricultural capital, particularly large infrastructure projects such as dams and reservoirs. With extraction at record levels and workers occupied with capital construction, grain fields went untended resulting in famine. Richard Baum explained:

> Since China was short on both investment capital and advanced technology, but long on raw, unskilled human labor, idle male laborers were conscripted from the villages to do the heavy work of building water conservation projects using whatever simple tools they had at hand—shovels, picks and hoes. In some cases, as many as ten thousand peasants were transported to a single dam or canal-site from more than a dozen nearby villages. Since the commuting distances involved often exceeding twenty miles, and were too great to complete on foot in a single day, temporary barracks were erected for the laborers at the work sites, where they would remain for weeks, or even months at a time, returning home only infrequently.[lxv]

During the GLF despite a shortage of skilled labor those experts marked by "black" class backgrounds (e.g. landlords, capitalists, bourgeois intellectuals) were discriminated against for political reasons. Policies that placed those with "red" class backgrounds (i.e. workers, peasants, soldiers) in charge of those with "expert" knowhow lowered the effective amount of capital in the rural economy at a time when it was already scarce.[lxvi]"Politics in command" caused the misallocation of investment on a massive scale, resulting in vast quantities of poor quality

physical capital and dispirited skilled workers. A vast amount of marginal quality capital was constructed, and began depreciating at an accelerated rate. Again, Baum cogently summarized this process:

> Although the initial crop harvest in the summer of 1958 was, in fact, larger than average, a number of serious problems had already begun to emerge. When the first heavy summer rains fell in 1958, many of the dams, canals, dikes and reservoirs hastily constructed in the previous winter began to fail, causing inundation of hundreds of thousands of acres of cropland. Of the 500 largest reservoirs under construction in the winter of 1957-58, over 200 were abandoned within two years. Nor did the Great Leap's water management failures end there. In 1975 a huge dam built in 1958 in Henan province collapsed, causing an estimated 200,000 deaths—the largest single dam disaster in human history. The main causes of failure were inadequate engineering know-how and the routine use of substandard construction materials. The Maoist emphasis on mass mobilization over careful planning, ideological "redness" over technical "expertise," had created not miracles, but vast misfortune.[lxvii]

China's response to the famine of 1959-60 was to reduce the communes' extractive capability. Communes saw their size, mandate and coercive controls shrink in the early 1960s as more right-leaning leaders (among them Deng Xiaoping) pushed to boost household consumption. After the crisis abated, however, China returned to conditions of rising/unlimited labor supplies, severe undercapitalization, and a lack of productive technological innovation. Amid this brewing Malthusian crisis, in 1970 China again began to increase household savings rates (in ways explained in chapter 7), but unlike during the GLF channeled funds into simultaneous investments in numerous complementary types of *productive* physical and human capital. Improved input quality to slow the rate of capital depreciation was s "major plank" in the new agricultural investment scheme, observed Tang and Stone.[lxviii]

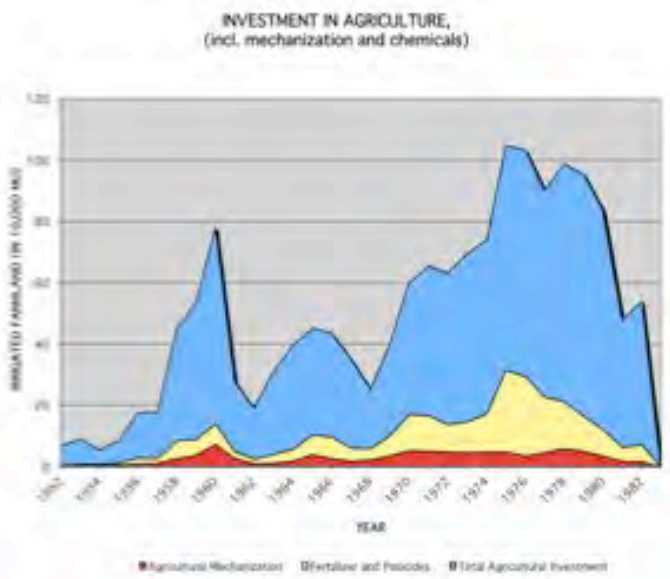
Policy Response: Agricultural Modernization

Physical Capital Investment

3.7

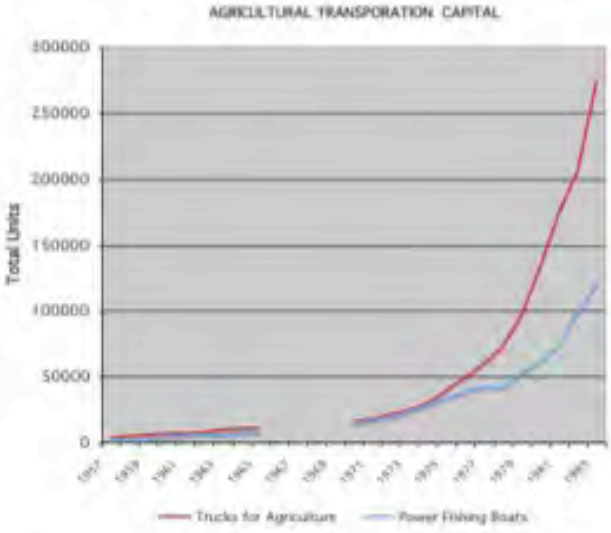
GRAPHIC F

3.8



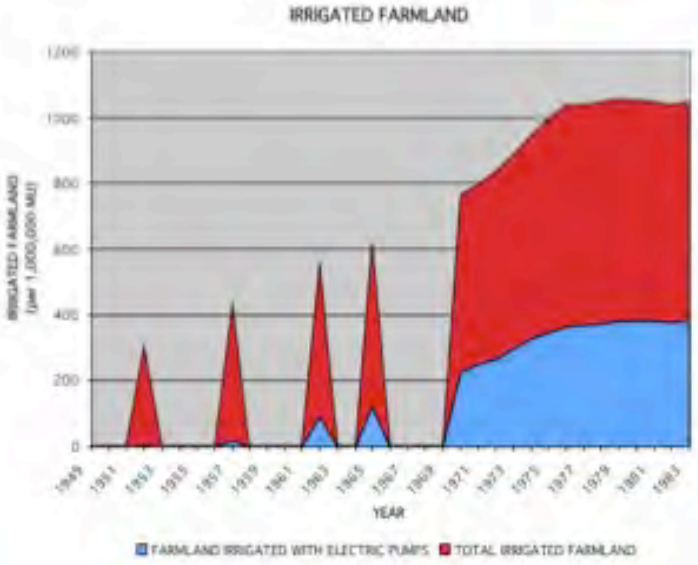
GRAPHIC G

3.9



GRAPHIC H

3.10



GRAPHIC I

Water Management

After land reclamation was completed any existing water management systems including irrigation, dams and drainage systems were expanded using electrical and mechanical pumps that improved water control in large river valleys, lake basins, and in China's dry northern areas.

Irrigation increased existing yields, reduced labor hours and opened old fields to new crops. During the GLF communes mobilized labor on a massive scale to expand China's reservoirs and wells, but they lacked the equipment and skilled workers necessary to build irrigation facilities to efficiently disburse the water. GLF wells were often too shallow, so when the water table shrank they went dry. As a result, despite the increase in water storage capacity throughout the 1960s when drought hit some localities still faced shortages.[lxix]

In the 1970s large wells with electric pumps became critical to irrigation and helped boost agricultural productivity and alleviate drought in northern China.[lxx] Stone notes that "following setbacks in the early 1960s resulting from poor design and construction of a portion of the late 1950s projects, irrigation development resumed with further reservoir construction and a major focus on tubewells."[lxxi] Investments in irrigation works and water storage made farmers less dependent on rainfall, which, in turn, increased the consistency of grain production. Graphic I reveals the drastic increase in irrigation driven primarily by the expanded use of electric pumps during the 1970s and how the trend of increased investment in water management stops after decollectivization began in 1979.

In the 1970s large wells with electric pumps became critical to irrigation and had large impact on agricultural productivity and drought reduction in northern China.[lxxii] In 1965 China had 558,000 mechanized irrigation and drainage systems and in 1970 in had 1,471,000. That number increased by a factor of four during the 1970s, however, to 4,262,000 in 1976 and 5,026,000 in 1978 before leveling off in the early 1980s. Moreover, the power of these systems also grew exponentially during this period from 9,074,000 hp in 1965, doubled to 18,249,000 in 1970, then nearly tripled to 54,166,000 in 1976 and then increasing to 65,575,000 in 1978 before leveling off in the early 1980s. These investments in irrigation works and water storage made

farmers less dependent on rainfall, which, in turn, increased the consistency of grain production.[lxxiii] Graphic I reveals the increase in irrigation during the 1970s and how the trend leveled off after decollectivization began in 1979.

We can also compare the amount of irrigated lands with the percentage of lands irrigated using mechanized water distribution systems. In 1965 China had 495,820,000 mu of well-irrigated lands consisting of 31.9 percent of China's total cultivated land. That year of those well-irrigated lands, 121,400,000 mu, were irrigated using mechanized systems representing 24.5 percent of China's total arable land. In 1970, there was 540,000,000 mu of well-irrigated lands representing 35.6 percent of China's total cultivated land. Of that number 224,880,000 mu were irrigated using mechanized systems representing 41.6 percent of the total. By 1976 674,720,000 mu or 45.3 percent of China's total cultivated land was effectively irrigated, a peak in the nominal and percentage levels of irrigation that remained consistent though 1983. That year 363,420,000 mu or 53.9 percent were irrigated using mechanized systems, these numbers also remained constant until the end of the decade and into the next. When combined with new "green" technologies such as hybrid seeds and chemical fertilizers, irrigation helped push crop yields per mu to unprecedented levels.[lxxiv]

Agricultural Machinery

During the 1970s China invested heavily in the production and diffusion of agricultural capital equipment including both large and handheld tractors, engines, vehicles of all types, and electricity grew exponentially throughout the country. This included the vastly expanded production in a variety of overlapping types of agricultural machinery, transportation

infrastructure, technology, and vocational skills training, discussed elucidated below. Harding explained the aims of this initiative:

> Chinese agricultural programs have emphasized the development of decentralized local industries to provide machinery and tools for farming [and will] make them available to a broader segment of China's peasantry than ever before. [lxxv]

Improved farm machinery became widely available for the first time in the 1970s and quickly increased the productivity per unit land. Beijing stressed the importance of agriculture and encouraged county, commune, and brigade factories to produce farm machines and parts that were tailored to local needs. The agricultural research and extension system – a sub-institution nested into the commune's sub-units detailed in chapter 6 – helped administer this process. Machines introduced to aid in planting, harvesting and other fieldwork included tractors, planters, sprayers, harvesters, mills and furrow-makers.

In 1965 233,690,000 mu, or 15 percent of all cultivated land was under machine cultivation, by 1970 it was 273,330,000 mu or 18 percent, but by 1976 it jumped to 523,690.000, 35.1 percent. The percentage of agricultural lands under mechanized production peaked in 1979 at 633,290,000 mu or 41.3 percent and by 1983 had fallen back below 1976 levels, thus reflecting the quick rate of capital depreciation after the commune.[lxxvi]

The tractor was the most important piece of agricultural capital in 1970s China. There were various types but in commune-era statistics tractors were divided into two categories, large and medium sized tractors and small handheld tractors (*shoufutoulaji)*. During the 1970s in many areas tractors gradually replaced animal powered plows. The impact of tractors was uneven, however. In some areas they were invaluable while in mountainous and swampy regions they had little impact. Graphic F illustrated the number of tractors, which increase precipitously beginning around 1970.[lxxvii]

Tractors were only one type of farm equipment used in communes others included planters, sprayers, harvesters, mills and furrow-makers. These machines were almost always owned by the collective and available to its members for use in transporting fertilizer to the fields or crops to the threshing grounds. Many of these machines were labor saving, like the electric grain grinder, which after being introduced in Weihai, Shandong in 1976 liberated women and children from countless hours of slow and tiresome work from this onerous effort.[lxxviii] The amount of tractor tailing furrow makers (for digging furrows for planting) increased from 258,000 in 1965, to 346,000 in 1970, by 1976 had nearly tripled to 985,000, and by 1978 there were 1,192,000 of them. Threshers, used for separating grain from stalks and husks, only became available for Chinese farmers in 1962 and by 1965 there were still only 114,000 in the country. By 1970, however, there were 455,000, in 1976 there were 1,803,000, and in 1978 there were 2,106,000. Reaper machines, which cut and gather crops, became available later, in 1972, when 3517 were available nationwide – by 1976 there were 41,518 and in 1978 there were 63,002. Machines that combined threshing and reaping processes also expanded rapidly but remained more rare. In 1965 there were 6704 such machines, in 1970 there were 8002, by 1976 there were 14,233, and by 1978 there were 18,987.[lxxix]

Farm equipment that helped expand animal husbandry also increased quickly during the 1970s. Official records for feed mixing machines begin in 1973 when there were 676,000, by 1976 there were 1,132,000 and in 1978, within five years of their introduction, there were 1,342,000 feed mixing machines in China. Similarly, official records for sheep shirring and cow milking machines also began in 1973 when there were 980 and 399 of each. By 1976 there were 1178 and 868 and by 1979 there were 2069 and 1304, respectively.[lxxx]

Rapid increases also took place in the number of trucks and motor powered fishing boats. In 1965 China had a total of 11,063 trucks in the agricultural sector, by 1970 it had 15,593 and in 1976 it had 48,739. This rapid increase continued throughout the decade into the early 1980s and by 1983 China had 274,751 trucks involved in agriculture. Somewhat slower growth took place in the number of boats, which increased from 7789 in 1965, to 14,200 in 1970, and 38,567 in 1976. Like trucks the number of boats also continued to increase during the late 1970s and by 1983 China had 120,288. The increased carrying capacity of these boats can also be measured in raw horse power, which increased from 992,000 hp in 1970 to 2,435,000 hp in 1976 and continued to rise continuously throughout the decade and into the 1980s.[lxxxi]

Electricity Generation[lxxxii]

Increases in electrical power and power provision in the communes were essential to expand the use of agricultural machinery. To supply needed power for new capital equipment purchases investments were made in both the acquisition and provision of raw materials (e.g. coal, oil, and hydropower) to power machines and generate electricity and the infrastructure to transmit them into the communes.

Throughout the decade and into the 1980s the amount of kw hours used in agriculture continued to rise steadily both as a nominal figure and per unit of agricultural land. Although more than 80 percent of China's population was rural by 1965 only 5.62 percent or 37.1 billion kw hours of China's electricity production was in rural areas, an average of 2.4 kw per mu of land under cultivation per year! By 1971 7.55 percent or 104.5 billion kw of China's electricity was in rural areas, an average of 6.9 kw hours per mu. By 1976, however, the amount of kw hours used in rural areas had nearly doubled to 204.8 billion or 10.09 percent of total Chinese

electricity production, an average of 13.7 kw hours per mu. In 1978 Chinese agriculture received 253.1 billion kw hours or an average of 17 kw for each mu under cultivation and by 1983 that number had risen to 435.2 billion kw hours and 29.5 kw hours per mu – over ten times the amount 18 years earlier. The distribution of electricity to power machines and provide light for additional work or study during the evening hours helped increase rural productivity markedly during the 1970s.[lxxxiii]

In keeping with the principle of "self-reliance" during the 1970s communes were encouraged to develop their hydropower resources. Hydropower stations and dams, which were often linked to and powered irrigation systems, increased substantially during this period. According to the official statistics hydropower stations came under the jurisdiction of either the commune or the production team. Being the higher and less numerous administrative unit hydropower stations under the commune generated more power per station, but were fewer in number.

No statistics on hydropower stations are available prior to 1970, but that year China's 7297 commune-controlled power stations produced 335,000 kw and its 21,905 brigade-administered stations produced 374,000 kw. By 1976 communes ran 9348 hydropower stations producing 706,000 kw and brigades oversaw 64,777 stations producing 904,000 kw. By 1978 communes directed 11,256 stations producing 1,069,000 kw. The number of commune stations went up slightly until 1981 and then fell after that, although the number of kw produced continued to rise steadily. By contrast, the number of hydropower stations under brigade control peaked in 1979 at 71,384 and fell consistently afterward. In 1979 brigade-controlled power stations produced 1,239,000 kw.[lxxxiv] After decollectivization began, however, underinvestment in rural electricity provision inhibited the expansion of agricultural mechanization, particularly

electric water pumps critical to expand irrigation networks. Instead, power generation for urban centers became a priority in the early 1980s.[lxxxv]

After 1979 rural infrastructure investment declined precipitously. Expenditures on water conservancy and irrigation projects, highway construction and rural electrification were all cut, Lardy observed. Decollectivization led to a decline in collective investment in agriculture that parallels the simultaneous reduction in state investment funds. Collectives generally set aside about 5% of income to fund local agriculture investment projects. "These funds," which Lardy explains, "were allocated to repair and maintain local irrigation systems, to finance land improvement projects, and to finance the purchase of agricultural machinery" averaged 7 billion RMB annually in 1977-78 and peaked at 8.7 billion RMB in 1980. But as farmland was increasingly assigned to households and the commune's extractive capabilities grew increasingly weak expenditures on capital investment fell, and by 1983 they were 4.39 billion RMB.[lxxxvi]

Transportation Infrastructure

Rural transportation infrastructure including road, rail, and ship transportation networks all saw sizable increases during the 1970s. Transport development for urban areas became a priority after 1979, yet rural infrastructure benefited little during this period. The development of rural agricultural markets depends on the expansion and upkeep of the rural road networks. Yet, after decollectization highway construction declined from 1.086 billion RMB in 1980 to 722 million RMB in 1983. As a result between 1979 and 1983 the national road network grew less than 4%. In part this reduction in road construction was because the major responsibility for construction was devolved to the local levels. In 1983, for instance, more than half the roads constructed were "built by the people," a phrase usually implying only a modest amount of government

investment. By contrast, railroad construction, which connects urban areas, rose significantly after 1979. Between 1980 and 1983 rail investment increased from 3.044 billion RMB to 4.22 billion RMB.[lxxxvii]

Human Capital Investment

Appropriate application of new agricultural capital and innovations (coupled with the need for complex work point tabulation systems addressed in chapter 6) required expanding basic education (i.e. reading and basic math) and vocational training and basic skills to more rural residents. The manufacture and distribution of capital equipment and infrastructure production on a large scale required the dissemination of new techniques and know-how. Without an increase in the skill level of rural commune members, widespread agricultural modernization would have been unimaginable.[lxxxviii]

Until the late 1960s China's universities were elite institutions virtually impenetrable by rural commune members. As part of the anti-elitism of the Cultural Revolution, however, China's educational system went through a period of "struggle, criticism, transformation," such that for the first time many areas benefited from the widespread expansion of basic and vocational education. The stated goal was to develop the "New Socialist Man," a versatile, selfless, and loyal "red expert" knowledgeable about techniques that would increase his/her unit's production.[lxxxix] The May 7th Directive issued by Mao Zedong in 1966 encouraged farmers to develop in many directions simultaneously, including in agriculture, forestry, fishing, animal husbandry and rural industry. One saying, prevalent in Weihai, Shandong pushed communes to "simultaneously develop multiple industries based on local conditions and resources." (*yin di zhi yi, duo zhong jing ying).*[xc]

The lines of responsibility for research institutes, curriculum development and student selection were substantially altered during the Cultural Revolution. Official policy deemphasized elite education and prioritized disseminating basic and vocational education to "the masses" via the commune system. Before 1966 students from cities had been given preference in local universities. During the 1960s and early 1970s the "worker, peasant, soldier," (*gong, nong, bing)* campaign brought millions of rural students from communes to towns and cities to attend vocational schools. (See propaganda poster farmer's daughter off to school) The publication of theoretical scientific periodicals was suspended, courses were shortened and made increasingly practical, and agricultural colleges were moved from urban to the rural areas.[xci] After receiving training, however, rural residents were returned to their communes to implement and teach new techniques. This expansion of commune education contributed greatly to agricultural productivity, as Han observed:

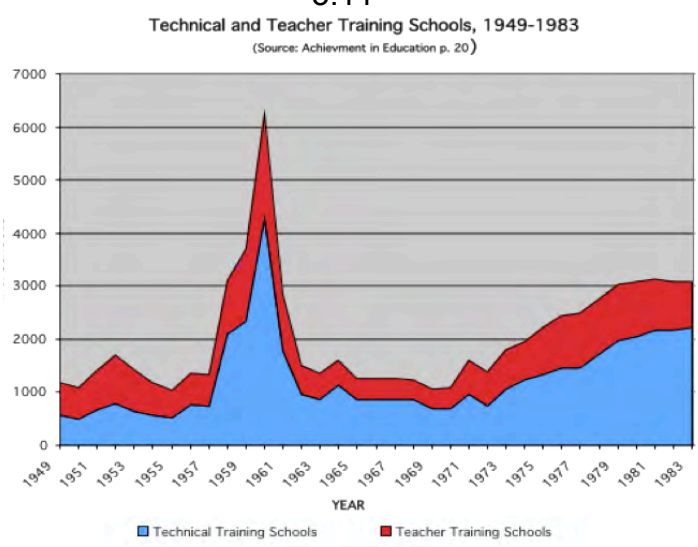
> There was a direct link between educational expansion and rural economic development. The large number of rural youth with the special training from joint village middle schools and commune high schools helped farmers improve the economic situation in the village. Unlike their illiterate predecessors the newly educated young farmers had the conceptual tools to modernize production.[xcii]

During the "War Communism" period, identified by Freidman et al. as 1969-1971 and discussed in chapter 7, local self-reliance grew apace with fear of a Soviet invasion.[xciii] Each commune was ordered to become a self-sufficient unit that could sustain itself if cut off from the center during a conflict. To achieve this goal, investment in education was expanded considerably through the commune system with a focus was on basic reading, math, and occupational skills (e.g. tractor and machine repair) tailored to address practical needs. Although Chinese boys usually received more education than girls, commune education was broadly egalitarian, allowing both to attend primary and middle school regardless of their household income level. The commune could transfer teachers among its brigades so if a unit lacked a teacher one could be transferred from

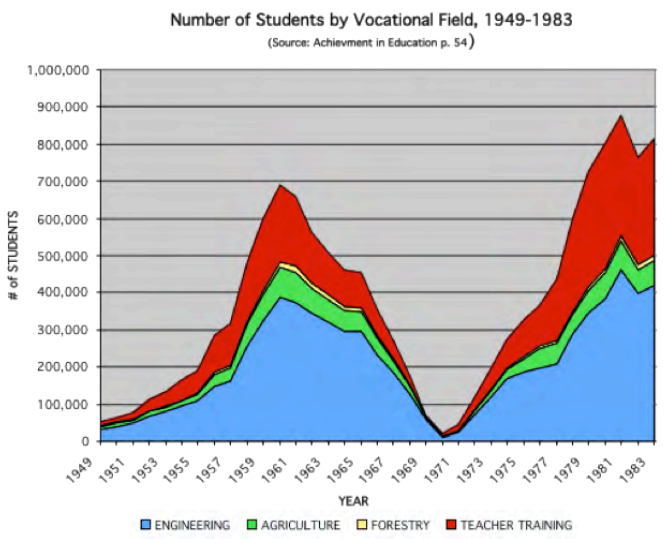
another. (See rural women teachers stamps.) Under the commune curricula were reviewed and standardized over a wider geographic area, and many more students came in contact with each other than ever before. Basic rural education was improved and open it to millions of rural Chinese.

During the commune period a much larger number of rural youth received basic and vocational education (see Graphic O). Those who travelled beyond their immediate locality to attend high school came into contact with an even larger number of ideas. This interaction helped break down barriers to collective action that had hindered agricultural investment and the dissemination of techniques for centuries. In this way the commune served as an institutional conduit by which basic skills and agricultural techniques were disseminated and personal contact networks expanded.

3.11



3.12



GRAPHIC N

LEFT: "Before Going to School" (1976) 3.2

RIGHT: "Rural Women Teachers" (1975) 3.3 **)**

GRAPHIC O

[i] Excluding the Great Leap Forward famine years, 1959-1960.

[ii] *Agricultural Economic Statistics,* 1949-1983 (*nongyejingjiziliao)* (Beijing: Agriculture and Fishing Planning Bureau, Nov 1983) 35.

[iii] Agricultural Economic Statistics, 46.

[iv] *Plant Studies in the People's Republic of China: A trip report by the American Plant Studies Delegation,* (Washington D.C.: National Academy of Sciences, 1975) xiii.

[v] Speech by Wang Renzhong to U.S. delegation in China quoted in Merle Esmay and Roy Harrington, *Glimpses of Agricultural Mechanization in the PRC*, (St Joseph: American Society of Agricultural Engineers, 1979) 7.

[vi] Louis Putterman, *Continuity & Change in China's Rural Development,* (New York: Oxford University Press, 1993) 13.

[vii] Agricultural Economic Statistics, 35.

[viii] Michelangelo Antonioni, dir. *Chung Kuo, Cina*, RAI Radiotelevisione Italiana, 1972. Film. At 1hr 1min 16 sec Antonioni films an illegal urban settlement and the dialogue says: "There is also a new growing Beijing. Although the government does not favor urban expansion the natural growth cannot be stopped. New districts are built in a place formerly crossed by the city wall."

[ix] Thomas P. Bernstein, *Up to the Mountains and Down to the Villages: The Transfer of Youth from Urban to Rural China*, (New Haven: Yale University Press, 1977) 2.

[x] Bernstein, 39-40.

[xi] Bernstein, 4-5.

[xii] David Apter, *Choice and the Politics of Allocation* (Yale University Press, 1971) 37.

[xiii] Bernstein, 33.

[xiv] *Xinhua* 24 August 1974. Cited in Bernstein, 33.

[xv] "Outline of Education on Situation for Companies (Lesson Five)," *Propaganda Division, Political Department, Kunming Military Region,* 6 June 1973, 99-104. Cited in Bernstein, 40.

[xvi] Bernstein, 222-24.

[xvii] *China Youth Daily* 8 Sept 1964. Quoted in Bernstein, 60.

[xviii] Benedict Stavis, "Agricultural Research and Extension Services in China," *World Development,* Vol. 6 (1978) 634.

[xix] Bernstein, 68-69.

[xx] Agricultural Economic Statistics, 120.

[xxi] Suzanne Paine, "Balanced Development: Maoist Conception and Chinese Practice," *World Development* Vol. 4, No. 4. (1976) 290.

[xxii] Quoted in John Wong, "Some Aspects of China's Agricultural Development Experience: Implications for Developing Countries in Asia," *World Development*, Vol. 4, No. 6 (1976) 493.

[xxiii] Bruce Stone, "Developments in Agricultural Technology," *The China Quarterly*, No. 116 (Dec. 1988) 767.

[xxiv] Bruce Stone, *Evolution and Diffusion of Agricultural Technology in China*, (Washington DC: International Food Policy Research Institute, 1990) 51-52.

[xxv] Wong 493.

[xxvi] Bruce Stone "Fertilizer's Greener Pastures," *China Business Review* Sept-Oct 1989*,* 1.

[xxvii] Stone, "Fertilizer's Greener Pastures," 1.

[xxviii] Stavis, 639.

[xxix] Han Dongping, *The Unknown Cultural Revolution: Life and Change in a Chinese Village* (Monthly Review Press, 2008) 133. Also see description of "5406" at "Prospects for the Technical Development of Bio-fertilizer," *State Intellectual Property office of the PRC* website.

[xxx] Per Brinck, *Insect Pest Management in China: A Delegation Report,* (Stockhom: Ingenjorsvetenskapsakademien, 1979) 10-11.

[xxxi] Stavis, 639.

[xxxii] Brinck, 10-11.

[xxxiii] Stavis, 639.

[xxxiv] Han 133. Also see Richard Hoyt, "Gibberellic Acid in Plant Growth," *eHow.com* undated.

[xxxv] Stavis, "Agricultural Research and Extension Services," 639.

[xxxvi] Scott Rozelle, "Annex I: China's Corn Economy, A Brief Introduction," *Posted on University of California, Davis website*, Undated.

[xxxvii] Stavis, 638 and 640.

[xxxviii] Report in Stavis, 638.

[xxxix] Stone, *Agricultural Technology in China*, 44.

[xl] Stavis, 632.

[xli] Stone, *Agricultural Technology in China*, 44.

[xlii] Stavis, 638.

[xliii] Stavis, 638-640.

[xliv] J.Y.Lin "The Household Responsibility System and the Adoption of Hybrid Rice in China," *Journal of Developmental Economics,* 36 (1991) 355.

[xlv] Stavis, 632.

[xlvi] This expansion of semi-dwarf rice occurred 2 years before the release of IR-8, the variety that launched the Green Revolution in other parts of Asia. See Lin 355. Also see Stavis, 633 and 638.

[xlvii] Lin, 354 and 356.

[xlviii] Valerie J. Karplus and Xing Wang Deng, *Agricultural Biotechnology in China: Origins and Prospects* (New York: Springer, 2008) 37 and 40. Also see Stavis, 638.

[xlix] Mobo Gao, *The Battle for China's Past: Mao and the Cultural Revolution,* (Ann Arbor: Pluto Press, 2008) 147.

[l] "Li Zhensheng breeds wheat to help feed the nation," *People's Daily,* 28 Feb 2007.

[li] Karplus and Deng, 40. Also see Stavis, 638.

[lii] Karplus and Deng, 40.

[liii] Stone, *Agricultural Technology in China*, 44.

[liv] Agricultural Economic Statistics, 296-7.

[lv] Stone, *Agricultural Technology in China*, 83.

[lvi] Stavis, 640.

[lvii] Dwight Perkins, ed. *Small-scale Industry in the People's Republic of China,* (Berkeley: University of California Press, 1977) 121.

[lviii] Perkins, 121.

[lix] Han, 130-131.

[lx] Chu Li and Tien Chieh-yun, *Inside a People's Commune: Report from Chiliying* (Beijing: Foreign Languages Press, 1974) 135.

[lxi] Jae ho Chung, "The Politics of Agricultural Mechanization in the Post-Mao Era, 1977-87," *China Quarterly,* No. 134 (June 1993).

[lxii] Agricultural Economic Statistics, 296-299)

[lxiii] Han, 130-131.

[lxiv] Agricultural Economic Statistics, 297)

[lxv] Richard Baum, "Lecture 18: The Great Leap Forward," (1958-60)" *The Fall and Rise of China,* (Chantilly: The Teaching Company, 2010).

[lxvi] Stavis, 635.

[lxvii] Baum.

[lxviii] Anthony M. Tang and Bruce Stone, *Food Production in the People's Republic of China* (International Food Policy Research Institute, Research Report 15 May 1980) 6 and 123. Also see Harry Harding "Modernization and Mao: The Logic of the Cultural Revolution and the 1970s," *Conference Paper presented to the Institute of World Affairs, San Diego State University* on 11 August 1970, 19.

[lxix] Han, 129.

[lxx] Han, 129.

[lxxi] Stone, *Agricultural Technology in China*, 44.

[lxxii] Han, 129.

[lxxiii]Agricultural Economic Statistics, 288.

[lxxiv]Agricultural Economic Statistics, 291.

[lxxv] Harding, 16.

[lxxvi]Agricultural Economic Statistics, 290.

[lxxvii] In 1952 China had only 1307 large and medium sized tractors. This number ballooned to 72,599 by 1965, rose steeply to 150,179 in 1971 before skyrocketing to 397,000 in 1976 and 557,385 by 1978. Meanwhile, small handheld tractors rose even faster. Chinese statistics report no small handheld tractors until 1962 when there were a mere 919 of them throughout the country. By 1965 there were still only 3956 but in 1971 there were 133,550. Between 1971 and 1976 the number of small tractors rose to 825,000 and by 1978 there were 1,373,000. The impact of the tractors can also be measured in total agricultural horsepower, which in 1957 was only 1,650,000 for the entire country. By 1965 total hp had increased to 14,940,000, by 1970 it was 29,440,000. By 1976 China's total agricultural hp had mushroomed to 117,330,000 and by 1978 it was 159,750,000.

[lxxviii] Han, 131.

[lxxix] Agricultural Economic Statistics, 286-87.

[lxxx] Agricultural Economic Statistics, 288-289.

[lxxxi] Agricultural Economic Statistics, 286-289.

[lxxxii] Agricultural Economic Statistics, 294-5.

[lxxxiii] Agricultural Economic Statistics, 294.

[lxxxiv] Agricultural Economic Statistics, 295.

[lxxxv] Nicholas R. Lardy, "Prospects and Some Policy Problems of Agricultural Development in China," Journal of Agricultural Economics Vol. 68, No. 2 (May 1986) 453.

[lxxxvi] Lardy, 453.

[lxxxvii] Nicholas R. Lardy, "Prospects and Some Policy Problems of Agricultural Development in China," *Journal of Agricultural Economics* Vol. 68, No. 2 (May 1986) 453.

[lxxxviii] Han, 127.

[lxxxix] Robert J. Lifton, "Thought Reform of Chinese Intellectuals: A Psychiatric Evaluation," *The Journal of Asian Studies*, Vol. 16, No. 1 (Nov 1956) 75-88. Also see Theodore Hsi-en Chen, "The New Socialist Man," *Comparative Education Review,* Vol. 13, No. 1 (Feb 1969) 88-95.

[xc] Han, 135.

[xci] Stavis, 634.

[xcii] Han, 127.

[xciii] Edward Friedman, Paul G. Pickowitz, and Mark Seldon, *Revolution, Resistance, and Reform in Village China,* (New Haven: Yale University Press, 2005) 132.

Chapter 4: The Soviet Threat as an Exogenous Driver of Military Support for the Commune

CHAPTER OUTLINE

I. Introduction

II. Exogenous Change: Soviet Military Threat

III. Policy Response: PWS

- a. People's Militia
- b. "Support the Left"
  - i. Purges
  - ii. Political Indoctrination
  - iii. Politicization

IV. Burying Mao and Abandoning 'People's War'

Introduction

During the 1960s and 1970s the military provided essential political support for Mao Zedong and the commune. To ensure his political success in recurrent intra-party factional struggles with a rival rightist coalition Mao pulled the military into politics on the leftists' – and hence the communes' – side. Beginning in 1959 with the initial Sino-Soviet fissure and the appointment of Lin Biao as Minister of Defense, PLA political support for the left was constructed using a combination of policy prescriptions collectively known as Mao Zedong's People's War national defense strategy (PWS). PWS' primary components were the maintenance of PLA-controlled militia units nested within every commune and the military's support for "the left" as defined by Mao. The later policy included the purging of right-leaning military leaders, Maoist political indoctrination, and the politicization of the military. Until Mao's death in 1976 these policies successfully elicited essential military support for the left and for its commune as rural China's its foremost rural *military* institution.

During the 1960s Defense Minister Lin Biao oversaw a wide-ranging purge of right leaning military officers and a Maoist ideological indoctrination campaign. Then beginning in 1966, at Mao's invitation and on his behalf, the military expanded its role in politics. By 1967-68 the PLA had gained control of the central organs of political power in Beijing and the provinces; reaching down into every commune and brigade via their people's militia units. Militia units had been nested into the communes' institutional architecture since their mutual inception in 1958. But commune-based militias were not only "rural bases," an essential component of Mao's PWS, they were also an vital two-way conduit for Mao to both receive information outside the party apparatus and to broadcast Mao Zedong Thought into every commune.

In 1969, after a decade of public animosity, the disintegrating Sino-Soviet relationship culminated in military clashes along the border at the Ussari River. Chinese policymakers and citizens treated these skirmishes – which were later shown to have been initiated by the PLA – as the culmination of a long-awaited exogenous security threat that galvanized nationalistic public support for the military. In 1969, with PLA political power at its apex (military leaders controlled 21 of China's 29 provinces), communes hurried to implement Mao's PWS in preparation for an anticipated Soviet invasion.

As part of this national military mobilization campaign, identified by Friedman et al. as "war communism," the PLA expanded the size and influence of their commune-based militia. Using the militia's organizational network PLA regulars were sent throughout the countryside, commune-to-commune, brigade-to-brigade, to mobilize militia leaders and drill their members. All Chinese were told to "learn from the PLA," which, in turn, proclaimed Mao infallibility, and above all, his PWS to cope with the Soviet imperialist threat. In the commune the militia was often at the forefront of Maoist political indoctrination, leading political study sessions, putting on plays and distributing propaganda to build grassroots support both for Mao and the military. In this way the PLA-controlled militia units, were essential to Mao's nationwide effort to spread his collectivist ideology, which, in turn, empowered and justified the commune's extraction of household income described in chapter 7.

Until Mao's death the military's political support for the left provided strong ideological legitimacy for PWS and ensured the commune's continued strategic necessity as a central component of a national security bulwark against Soviet imperialism. So long as the PLA adhered to PWS the commune-based militias were essential, and hence military support for the larger institution remained strong. Conversely, to the extent the PLA moved away from PWS and

towards military modernization, its support for the militia – and for the commune system generally – was weakened. In this way PLA leftism and active political support for PWS were closely tied to the commune fate.

Once military leaders were comfortably ensconced in their political positions many became unwilling to leave. Although PLA political influence receded somewhat after Lin Biao's death in 1971, the PLA's leftist orientation and commitment to PWS persisted throughout the commune era. The "military modernization" campaign begun after Mao's death gradually removed PLA political support for the commune-based militia as a network of rural guerilla bases. It was not until China's lost to Vietnam in the short-lived 1979 border war, however, that proponents of military modernization led by Deng Xiaoping were finally able to discredit and eliminate PWS, and achieve the retirement of top Maoist generals that had long supported the strategy. The China-Vietnam conflict marked the end of PLA support for PWS, its commune-based militias, and contributed substantially to the abrogation of the commune itself.

Exogenous Change: The Soviet Threat

Throughout the 1960s, just as China's agricultural policy makers faced the exogenous economic challenges associated with rising population growth, falling arable land, and quickly depreciating capital (discussed in the previous chapter), the specter of all out war with the Soviet Union loomed increasingly large. This foreign military threat constituted a fourth exogenous influence on commune development, one that enhanced PLA authority and prestige from Beijing down to the brigade. The 1969 Sino-Soviet border skirmishes, which came at a time when the military under Defense Minister Lin Biao supported a definitively Maoist political line, were particularly fortuitous for commune proponents as they occurred amid the provincial level conferences that

debated institutional reforms in preparation for the 1970 Northern Agricultural Conference hosted by Premier Zhou Enlai.

After a decade of close cooperation Sino-Soviet relations had grown progressively frosty after 1958 and became openly hostile after Moscow removed all technical support and personnel in 1960. In his memoir, Sidney Rittenberg (aka Li Dunbai), an American member of the CPC that worked at senior levels in the official Xinhua news service during the late 1950s and 1960s, recounts how top propaganda cadre were informed of the Sino-Soviet split in 1959. According to Rittenberg, he and about twenty top level propaganda officials were called together to hear a top-secret, "vitally important message" made by Mao at an enlarged meeting of top party leaders. Mao said: "From now on, China confronted not one main enemy – American imperialism – but two main enemies: American imperialism and Soviet revisionism. It may also be that our greatest threat will come from Khrushchev and Soviet revisionism." Rittenberg also recounts the response: "It was the biggest bombshell I had ever heard at one of these meetings. A few brief minutes had completely changed the shape of the worldview we had been operating with for years. We could hardly imagine the implications."[i] After 1959, mutual suspicions and hostility leached into the bilateral military relationship and grew apace with the rising shrillness and intensity of rhetoric on both sides.

In 1966, as the Cultural Revolution began, the Soviets quietly begun reinforcing their combat units along the Manchurian and Mongolian borders. That December China's Foreign Minister Chen Yi accused Moscow of conspiring with Washington to launch a surprise attack on China. "The Chinese people are ready for war," he said in a press interview; "we are confident of final victory. [Any] nuclear bombs which fall on China will be returned with interest."[ii]

Tensions continued to rise throughout the late 1960s. In January 1967, a group of overseas Chinese students got into a brawl with Russian police and bystanders in Moscow's Red Square. Fistfights broke out when the students lined up at the entrance to Lenin's mausoleum and began shouting quotations from Mao's Little Red Book. A few weeks later, Red Guards besieged the Soviet Embassy in Beijing for the second time and burned Soviet leaders in effigy. In the first half of 1968, Sino-Soviet relations reached the breaking point, with the two sides routinely excoriating each other in the strongest possible terms. By year's end the Soviet Union, which enjoyed a large material advantage over China, had amassed more than a dozen combat-ready divisions along the 4000-mile border – many of them equipped with tactical nuclear weapons. "Once entirely unthinkable, all-out war between the two Communist giants was growing increasingly possible – even likely," Richard Baum observed.[iii]

Throughout 1968-69 there were increasingly tense confrontations all along the Sino-Soviet border. Often the encounters were shouting matches, other times fistfights, and occasionally shots were fired. Armed conflict broke out in early March 1969, when a Chinese border patrol ambushed a Soviet patrol on tiny Chengbao Island in the middle of the frozen Ussuri River in Northeast Manchuria. The Soviets suffered 31 dead and 14 wounded in the initial skirmish. Two weeks later, during a much larger battle on March 15, a devastating Russian artillery barrage against Chinese troops concentrated on the other side of the river inflicted over 800 Chinese casualties. While the Russians suffered just 60 dead and wounded.[iv] For U.S. military strategists, the threat of Soviet invasion looked imminent. Indeed, according to then Assistant Secretary of State Marshall Green, in 1969 the CIA estimated the chances of a Soviet nuclear attack on China at 1 in 3.[v]

Policy Response: Mao Zedong's 'People's War Strategy' (PWS)

The border conflict of March 1969 set off a nationwide civil defense mobilization in China that politically benefited both the PLA and their unquestioned leader: Mao. In anticipation of a possible Soviet invasion and/or nuclear attack, the Chairman instructed people to "dig tunnels deep, store grain everywhere." Urban areas responded by digging massive networks of subterranean tunnels and complexes to store food, clothing, medicine, and military supplies.[vi] In rural areas war preparation efforts focused on building and training brigade and commune level militia units to conduct an autonomous "people's war" against the Soviet imperialist invaders.

Mao's original guerilla warfare strategy had first been conceived in the early 1930s in rural Jiangxi province. There, in their mountainous refuge known as the Jiangxi Soviet, Mao and his top military strategist Zhu De, began fashioning the first PWS principles. From their isolated rural military bases in Jiangxi and later in Yenan, the Chinese communists perfected the strategy of peasant mobilization against a stronger invading force. These techniques were battle-tested against the Japanese and proved successful against the much larger and better-equipped Chinese Nationalist forces during the Chinese Civil War.

Throughout the commune era PWS helped preserve military morale in the face of overwhelming U.S. and Soviet military power by asserting that although in 1970 China was 20 years behind it still enjoyed superior military strategy and tactics and would thus prevail in a conflict.[vii] According to PWS, the growth of insurrectionary forces from weak to strong is a "universal law," ultimate victory of a people's war is "inevitable," the weak can "always" defeat the powerful, and it is a "universal truth" that primitive weapons "can prevail over modern arms."[viii] There was a strong psychological and propagandist element to the doctrine, which stressed the military-style mobilization and political indoctrination of the "masses" using the

commune militias. Propaganda commemorating "PLA heroes" (e.g. Lei Feng) were used along with "learn from the PLA" campaigns that rallied commune members to support the military and prepare for conflict.[ix]

PWS called for an active defense at all levels of society employing both mobile conventional and independent guerrilla warfare and trading space for time. The enemy was forced to fight a demoralizing conflict against an unlimited number of fighters one by one, unit by unit, while Chinese guerilla forces gathered their strength and increased cohesion over the course of the war. The commune's decentralized decision-making structure (particularly after 1970) was thus, in part, a strategic response to the Soviet military threat. In the case of a Soviet attack on Beijing, the thinking went, commune militia forces indoctrinated with Mao Zedong Thought and using PWS guerrilla tactics, would become an "impregnable bastion" that could both resist the Soviets and sustain agricultural production with little instruction or material support from higher level authorities. Chinese fighters "must dare to lure the enemy in deep" so that the enemy will become "bogged down in endless battles" and "drowned in a human sea." Emphasis was placed on bravery and the glorious benefits of "daring to fight with bayonets."[x]

In 1966, Lin Biao published his famous essay "Long Live the Victory of the People's War" in which he argued: "The most important method is still mobilization of the people, reliance on the people, making everyone a soldier and waging a people's war." Lin's essay sought to ready the population for a guerilla war of attrition – a "protracted war," which he described as "a process of mobilizing, organizing and arming the people. It was only by mobilizing all the people to fight a people's war that the war of resistance could be persevered in." [xi] To help achieve these ends, the commune-based militia was affirmed as an essential element of Mao's "great strategic thinking and of his views on people's war."[xii]

4.1

The Commune-based People's Militia

The commune-based people's militia is as old as the institution itself. PWS concepts and ideology were institutionally embedded in the commune through militia units at the commune and brigade levels. PWS' "war preparedness," which grew apace with the Soviet threat, sought to make localities more militarily self-sufficient and enhance the communes' value to the PLA as a system of 50,000+ "rural bases" across the country. Lin Biao drew lessons from the fight against the Chinese Nationalists for the construction of rural "revolutionary base areas" against the Soviets. Militia units, like communes themselves, he argued, should stress "self-reliance" and "prepare to carry on the fight independently even when all material aid from outside is cut

off."[xiii] Perhaps not surprisingly, Lin's description of these rural militia bases bears a striking resemblance to the commune:

> The work of building the revolutionary base areas was a grand rehearsal in preparation for nationwide victory. In these base areas, we built the party, ran the organs of state power, built the people's armed forces, and set up mass organizations; we engaged in industry and agriculture and operated cultural, educational and all other undertakings necessary for the independent existence of a separate region. Our base areas were in fact a state in miniature. And with the steady expansion of our work in the base areas, our party established a powerful people's army, trained cadres for various kinds of work, accumulated experience in many fields, and built up both the material and the moral strength that provided favorable conditions for nationwide victory.[xiv]

4.2

In August 23, 1958 the PLA bombarded Quemoy Island precipitating the Taiwan Straits crisis. "It was in the midst of these military operations and while the great drive to establish the communes was in full course, that the related campaign to make 'Everyone a Solider' was begun," noted Ralph Powell. Beijing claimed that "aroused by U.S. provocations" the Chinese masses demanded arms to defend the homeland, in response the commune-based militia system was born and rapidly expanded throughout the countryside. According to 1958 estimates a full mobilization could have provided China with 120 million militiamen "with at least some basic training" and 180 million "with at least a conception of military organization and discipline."[xv]

In September 1958, amid the creation of the GLF communes, the initial Sino-Soviet rupture, and at the height of anti-U.S. sentiment, Mao said:

> The imperialists are bullying us in such a way that we will have to deal with them seriously. Not only must we have a powerful regular army, we must also organize contingents of the people's militia on a big scale. This will make it difficult for the imperialists to move a single inch in our country in the event of invasion.[xvi]

In 1959 an estimated 220 million rural residents were enrolled in militia units. Powell explained that commune militias' were intended, as part of China's people's war national defense strategy, to "serve as a deterrent by convincing enemies that an attempt to conquer China would be too costly."[xvii]

> To defeat China an invasion of the area by ground forces would [be necessary]. This invasion would be bitterly opposed and "defeated" by a Maoist "people's war" – a protracted, broken-back war supported by "aroused masses" of people and fought by the large regular forces, local forces, and a massive militia developed under the concept "everyone a solider." These forces would combine mobile conventional war with widespread, independent guerrilla warfare. In recent years statements regarding the effectiveness of a "people's war" have been grossly exaggerated. It is claimed that mobilizing all the people as soldiers would result in making every factory, school and collective farm a combat unit. In the case of attack every mountain, forest, ditch and house would become a stronghold and the enemy would be attacked from all sides. Although the concept is overstated, the strategy is apparent.[xviii]

Despite their purported tactical value to the military, the actual reason for Mao's push to establish the militia, was entirely *political*: the creation of a sub-institution nested into each commune down to the brigade level that was administered by the PLA and accountable to himself alone. According to Richard Thornton:

> The issue of party control of the militia was discussed in the December 10, 1958, party resolution, the same meeting at which it was decided that Mao would not stand for reelection to the chairmanship of the state. The connection of these events suggests the possibility that Mao agreed to step down from the state post in return for acceptance of his commune and militia proposals. <u>The militia was to be an independent military organization, the armed instrument of the self-supporting commune, which was directly responsible to the party center, that is, to Mao Tse-tung.</u>[xix] (underline added for emphasis)

Militia leaders were selected by the PLA and maintained close ties with the regular army, which provided their units with training and equipment. Units were organized into divisions, regiments, battalions, companies, platoons, and squads whose size depended on the size of the commune or brigade to which they were attached. The army recruited from commune and brigade militia

units and it was common for local veterans to return to lead them after completing military service.[xx] Throughout the commune era PLA veterans assumed a high status in their communes with improved chances for party membership and a stable state job with cash income and benefits. Veterans maintained ties with other veterans and martyr families, which during the 1960s came to constitute "a base of Lin Biao's revolutionary politics," observed Friedman et al.[xxi]

Militia units conducted political propaganda and study sessions using the "Quotations of Mao Zedong" famously known as the "Little Red Book" and other texts. Mao ordered militia units to became an integral component and proponent of the collective ethic of self-sacrifice of commune life. He argued that: "The establishment of the militia divisions on a large scale is not purely a question of mobilization of manpower, collective action and fulfillment of production tasks. It is a question of having the masses militarize and collectivize their life."[xxii] According to one official account, brigade militias conducted political study sessions 2 or 3 evenings per month using the works of Marx, Engels, Lenin, and Stalin, but were primarily focused on the martial works of Chairman Mao; "particularly his theory of people's war and teachings concerning the militia."[xxiii]

In the wake of the 1969 border clashes brigade level militia units carried out a national campaign to "to emulate the PLA" and strengthen preparations for a people's war against the Soviet invaders. At this time Chenchuang brigade of Chiyiling Commune, for instance, was ordered to quarter a PLA detachment and learn all they could from the servicemen. According to one official publication:

> In August 1969, a few months after the invasion of China's Chenpao Island by Soviet troops, Lu Yin-ling, a former Chiliying [People's Commune] militiaman serving with the frontier guards in Northwest China, came on home leave. He was invited many times to talk on the battle there, and particularly about the local militia's valiant participation in the defense side by side with the frontier guards. About 10,000 people heard him, and were deeply stirred. On winter day in 1969 Liuchang [Brigade] organized a warm mass

> send-off for three young villagers who had newly enlisted in the People's Liberation Army. Amid thunderous applause, their militia commander pinned a large red flower on the brand-new army uniform of each of the recruits.[xxiv]

Similarly, in December 1969, in Raoyang, Hebei, a five-day emergency meeting of over a thousand leaders at the county, commune and brigade levels was held to listen to a recording from the Hebei Revolutionary Committee describing Chinese martyrdom along the Soviet border. The group then watched a film of Soviet aggression on "sacred Chinese soil" and observed militia field exercises. The official *Hebei Daily* presented militiamen as heroes, the revolutionary successors of the PLA and reported that the 38th Army had trained and promoted militia leaders as revolutionary heirs. The Hebei provincial publishing house, meanwhile, issued a book entitled, *Stories of the Revolutionary Struggles of the Hebei Militia*.[xxv]

The "four-good" movement, initiated as part of the "to emulate the PLA" campaign to recruit militiamen, focused on four areas: political thought (meaning Mao Zedong Thought as explicated by Lin Biao), work style (meaning selfless and placing the collective before the individual), production, and military training. In late 1969 the head of the Raoyang armed-forces department instructed all commune and brigade militias to establish a "four-good platoon," which included 184 members selected from the 300-plus regular militia members. The honored platoon was organized into teams of 36 members each – 12 women and 24 men – and trained by army veterans. Members at first met every ten days then as the war scare intensified they began meeting nightly. Militia youth were urged to prepare for war and Wugong residents "believed the soldiers would soon see action," noted Friedman et al. Early each day 108 members, sometimes carrying weapons, would jog through the village and sometimes conducted shooting practice with live ammunition. Leaders designated select communes and/or their subunits as models for the army-led campaign to heighten revolutionary consciousness. The four-good militia

campaign, which was intended to reinforce the political strength of the PLA and its support for Maoism, embodied Chinese patriotism at the time.[xxvi]

The official account of Chiliying Commune provides an interesting window into changes overtime in the structure and size of the commune-based militia. Between 1958 and 1975 Chiliying reportedly increased its number of militia members from 1000 to 15,000. Each of its 38 brigades as well as its enterprises and schools was required to have its own "militia battalion" and the number of "companies" or "platoons" depended on the number of available recruits. Together they formed a regiment under the leadership of the commune's militia work department. Most young men and women belonged to the "core militia," with men and women 26 to 35 dubbed "ordinary militia." To develop their militiamen's "marksmanship, grenade throwing, bayonet fighting, marching in formations, etc" Chiliying brigade (within Chiliying Commune) had a rifle ranges and a field to organize joint training exercises with units from neighboring brigades. To test militias' capacity to guard against invasion sometimes commune-wide militia drills were held.

> The Chiliying militia regiment has an integrated ladder of command. When the need arises, the commune's militia department can alert all the units by signals over the commune's broadcast network. It can also convey orders through other channels. Any enemy, however crafty, would have great difficulty in eluding the dragnet of the alerted militia.[xxvii]

Such rhetoric may sound almost comical, but it not only reflects the heightened threat level within the commune, but also references the existence of an "integrated" command structure used to transmit orders into the commune via the militia. In addition to its training and in the absence of a Soviet invasion, the militia's primary responsibilities were public order, the implementation of more challenging brigade level agricultural modernization projects, and raising public awareness about possible counter-revolutionary sabotage. To achieve these

objectives militia functioned like a local police force conducting foot or bicycle patrols and by guarding of strategic facilities, particularly the granary.[xxviii]

Militias were also tasked with helping to increase agricultural production, which helped reduce the demand on PLA resources. Production teams assigned most routine farm work, but sometimes the militia took the lead in urgent or arduous tasks or "major campaigns to remake nature." These might include large-scale pest elimination and large water conservancy projects, such as the construction of irrigation channels, drainage ditches, wells, underground pipes, and land leveling. A brigade militia could request the commune militia provide support for a particular agricultural development project, but it would take the lead and do the most difficult jobs during construction.[xxix]

4.3

"Support the Left"

Through repeated cycles of purging, indoctrination and political empowerment Mao "purified" the military and caused it to intervene in politics repeatedly on his, and thus the communes', behalf. If Maoist indoctrination were incomplete or if a "small handful" of top-level actors

remained in power, then after politicization the PLA could use its newfound power to support Mao's advisories on the right or to advocate for its own material interests. To avoid this, Mao first purged the military of "rightists," then after intensive and prolonged indoctrination in Mao Zedong Thought, compelled the PLA to "support the left" at all levels of politics: from the top provincial and national decision making bodies down to the commune and brigade levels.

Purges

As noted above, the PWS called for preparations for a protracted defensive war of attrition supported by both decentralized commune militia units in rural areas and regular PLA forces. Throughout its history this strategy and its prioritization of Maoist ideological indoctrination over military training faced widespread opposition among more conservative elements of the party and the military establishment. Its critics, advocates of a strategy called *military modernization*, called for a more conventional city-based approach predicated almost entirely on the use of regular military forces. Guerrilla warfare, this group argued, should occur only under close central coordination. When finally adopted after Mao's death this approach essentially rendered the decentralized commune militias irrelevant to national defense, and hence, unworthy of PLA support. This internal PLA debate between supporters of PWS and military modernization was identified in the official *Peking Review* in November 1967:

> Within our Party and Army, in recent decades and in all historical stages of the development of the Chinese revolution, there has always been a sharp and acute struggle between two diametrically opposed military lines. One is the proletarian military line represented by Chairman Mao, the other is the bourgeois military line advocated by opportunists of the "Left" and Right. Chairman Mao's proletarian military line has been gradually developed and perfected in the course of this struggle against the bourgeois military line.[xxx]

Advocates of the military modernization strategy generally held that drills, equipment, technological expertise and foreign experience, rather than political indoctrination are the best preparations for war. Fighting power, they argued, is better judged by the results of military

training and the study of military science. Defense Minister Peng Dehuai stressed this position at the Lushan Conference (held from July 2 to August 1, 1959) by rhetorically asking "What is the use relying entirely on political and ideological work? It can't fly."[xxxi]

Peng's remarks at Lushan underscored and criticized the close link between the commune, the militia, and Mao's PWS. His criticism focused on the "excessiveness," "shortcomings," and "errors" of the Great Leap Forward communes, terming them the result of "petty-bourgeois fanaticism" and of being "dizzy with success." These "leftist mistakes," Peng said, derived from the misapplication and exaggeration of the principle of "putting politics in command" and a misunderstanding of the "socialist laws of planned and proportionate development."[xxxii]

Underscoring the tenuousness of Mao's position in the wake of the GLF commune's failure, he could not count on a majority of support in the enlarged Politburo at Lushan. Because he could in the Central Committee meeting at the CPC's Eighth Plenum, however, Mao withheld his rejoinder to Peng and the military establishment until the Plenum, which convened immediately afterward from August 2 to 16. In a rousing speech Mao returned the challenge to Peng and the military leadership claiming that the loyalty of the PLA rank and file was to him personally:

> If we deserve to perish, then I will go away, go to the countryside to lead the peasants and overthrown the government. If you the Liberation Army don't follow me, I'll go find a Red Army. I think the Liberation Army will follow me.[xxxiii]

The final resolution of the Plenum on August 16, 1959 labeled Peng and his followers a "right-opportunist anti-party clique" seeking to sabotage the dictatorship of the proletariat.[xxxiv] At Lushan Mao and supporters of the commune-based PWS emerged victorious in the first of many struggles with the proponents of military modernization.

Huang Kecheng, PLA Chief of Staff under Peng, also clashed with Mao over the communes, militia and the leftist indoctrination of the PLA. He was removed with Peng and replaced by General Luo Ruiqing, who himself made the mistake of stressing military modernization above Maoist ideology and PWS. In 1964 Luo reportedly held military skills completions for his troops in place of additional Maoist political study. One party committee member noted that under Luo "Chairman Mao's quotations were being replaced by fire mission manuals and instructions." Luo was also accused of reprimanding an air force unit for lowering its combat strength and effectiveness because it "give too much prominence to politics."[xxxv]

Luo sealed his fate in his 1965 speech "Commemorate the Victory over German Fascism!" when he called for confronting the enemy at the borders or beyond. In a future war with the U.S. "the Socialist countries," Luo said (without excluding the Soviet Union), must not only drive the invader out but also engage in pursuit to destroy the enemy in his "nest" or homeland.[xxxvi] These views clashed directly with those of his boss, Defense Minister Lin Biao, who sought to elevate Mao's defensive PWS above all else. In December 1965 Luo was stripped of all of his military positions and on March 16, 1966 after hours of intense criticism and interrogation leaped out of a window resulting in his partial paralysis.

Peng, Huang, Luo, T'ao Chu, Li Ching-ch'uan, and other advocates of military modernization over PWS threatened PLA support for the commune in two ways. First, they opposed a high degree and pervasive form of Maoist indoctrination in the military. Maoism was the ideological glue that bound the commune together by helping to mitigate collective action problems among members amid increasing extraction rates. Any attempt to weaken Maoism's ideological influence, especially by the prestigious PLA, was a direct threat to the entire system. Even though advocates of military modernization did not advocate giving up party control over

the PLA their support for an "equal emphasis" between politics and military skills training was nevertheless a grave threat to the political supremacy of Mao Zedong Thought, and hence the entire commune enterprise.

Second, those who questioned whether Mao's PWS could be an effective national defense strategy in the nuclear age threatened PLA's support for the militia. By contending that Maoist theories of armed forces were outdated, unsystematic and objecting to the use of a massive localized militia as an effective deterrent political opponents sought to shrink the militia's size and diminish or remove its status as a sub-institution within the commune. Rather than a nationwide commune-based militia, opponents favored "smaller, better organized and more efficient militia units," a proposition would have removed it from within the commune, and, in turn, weakened military support for the larger institution.[xxxvii]

There were also important economic considerations involved in the dispute over defense policy in the mid 1960s. PWS promoted "self-reliance" and its militia's relied almost entirely on local commune resources, making it a low-cost national defense strategy. Military modernization, by contrast, would require large investments in military training and conventional weapons systems, which would have had to come at the expense of economic priorities. "The defense policy advocated by General Luo and the opposition," noted Powell in 1968, "would require military aid and support from the Soviet Union in order to really be effective."[xxxviii] In the late 1960s, with Sino-Soviet relations at their nadir, geopolitical alignments made such an entreaty to Moscow unthinkable for Beijing.

Throughout the 1960s as Mao urged greater PLA political participation the resistance grew stronger among the PLA brass resulting in four crises – in April and August 1967, March 1969, and the spring of 1971. "Each crisis, except the last, was resolved in favor of an increased

role for the military and each decision resulted in a reshuffle of military leadership in Peking," Thornton notes.[xxxix] Proponents of military modernization on the losing side of political struggles against Mao were accused of seeking to "usurp military power," plotting a *coup d'etat* and seeking to restore capitalism. But their most serious crime, of which they were all certainly guilty, was failing to sufficiently defer to Mao in all matters or, worse, having directly contradicted or "slandered" his works.[xl]

Indoctrination

The PLA's indoctrination began with the appointment of Lin Biao as Minister of Defense to succeed Peng Dehuai in September 1959. Lin, a Maoist sycophant, set about implementing a leftist political indoctrination campaign such that by 1972 Ellis Joffe observed that: "There is no doubt that the revolutionary vigor of the PLA in the early 1960s contrasted sharply with the increasing bureaucratism and unresponsiveness of the Party apparatus."[xli] Mao's objective was to recapture the organs of power and this required him to establish and consolidate a firm position in the military. Under Lin the PLA was instructed to subjugate its professional activities to hours of Maoist political study and participate in mass campaigns "to maintain a high ideological consciousness, stay close to the people, and remain loyal and subordinate" to Mao's leadership.[xlii]

To build a loyal pro-Mao military force Lin sidestepped the Ministry of Defense bureaucracy built by Peng and instead employed the party Military Affairs Commission and the General Political Department of the Ministry of Defense. The Military Affairs Commission, where Mao had a majority and served as the chairman, had its role elevated and tasked with the political task of the Maoist indoctrination of the PLA. The military was organized into three

elements: main force units (the thirty-five army corps); regional forces (the independent divisions and regiments, border defense units, and garrison forces); and the militia. According to Thornton:

> In each of these elements, Mao Zedong, through his Defense Minister Lin Biao, carried out three basic policies: purge of undesirables, recruitment of new party members, and the intensive indoctrination of all in the "Thought of Mao Tse-tung." While methods employed varied slightly in each case, the objective was the same: the establishment of a reliable "Maoist" party group within the military at every unit level, which would place overall control of the military apparatus in Mao's hands.[xliii]

Dominance of the Military Affairs Commission gave Mao virtually automatic and immediate command over the army corps, representing about half the army. At this point Mao and Lin made no effort to dislodge regional commanders from their positions. The early stages of the PLA political indoctrination the focus was placed on building a loyal 'Maoist' force among the rank and file. To accomplish this Lin began a campaign to expand the party's organization in the army. Where Peng had reduced the party's presence in army units to one man per unit and eliminated the position of political commissar, Lin restored and empowered the position and expanded party representation in military units to several people. Meanwhile, Lin purged undesirables and began a vast party recruitment campaign among PLA officers that netted 229,000 new party members.[xliv]

The PLA's indoctrination coupled with the expanded influence of commune-based militia units allowed Mao, who had become disenchanted with top party leaders, to bypass them and take control of the system at all levels by 1969. Mao used the PLA to support the left against other groups in an increasingly divided leadership, with the result that the army was repeatedly drawn into the political arena. It is important to recall that the PLA's increasingly political intervention on Mao's behalf came at the *same time* as the provincial level reevaluation of the commune that culminated in the 1970 Northern Agricultural Conference discussed in chapter 3. In 1969-70, the PLA controlled most provincial level Revolutionary Committees, which made

their support essential for the adoption of institutional reforms that strengthened the institution after 1970.[xlv]

4.4

Politicization

Until the 1960s the CPC delegated important non-military functions to the army (e.g. disaster relief and infrastructure construction) but a united party leadership retained control of the military. The PLA aided the party, did not compete with it politically, or pose a challenge to its position of political primacy. "Civilian and military leaders were members of distinct and frequently competing bureaucratic hierarchies," observed Ellis Joffe.[xlvi]

Sociologist Morris Janowitz described the PLAs growing political role throughout the 1960s as a case of "reactive militarism," that is, the PLA gained new political power, not through a premeditated coup – "designed militarism" – but largely as a result of political pressure placed on it by Mao and his supporters on the left.[xlvii] Although the Chinese military did not grab political power, once military officers had gained political power it became nearly impossible to

get them to relinquish it.[xlviii] Less clear, however, is why Lin Biao and his senior associates' exhibited relentless dedication to the military's leftist orientation, and to Mao personally.[xlix]

PLA politicization in the mid-late 1960s, Chang observed, is best viewed as the "socialization of political conflict," in which the politically weak (Mao) mobilized new participants (first the youth then the PLA) and expanded the arena of political conflict so as to redress the balance of forces. Facing political defeat Mao was compelled to go outside the party to recruit support from other groups. First, the "revolutionary left" (including the Red Guards and Rebels) was organized to "bombard the headquarters." Then, when the PLA's leftist indoctrination was complete, Mao enlisted the PLA's support in the face of strong conservative resistance in Beijing and the provinces. In short, according to Chang, Mao "turned to the PLA, coopted it, and changed its political roles in the system. The expansion of the PLA's political power had been a direct result of the pressure of party leaders, especially Mao."[l]

By the spring and summer of 1966, according to Chang, "the PLA was nearly a 'veto group': it directly participated in the resolution of political conflicts at the highest levels, and its support for the Maoist faction resulted in the defeat and displacement of anti-Maoist party leaders."[li] Between spring 1966 and January 1968, with PLA support the Maoists undertook the most extensive purge in party history: 99 of 136 active members on China's ruling Central Committee were publically criticized, struggled against, "dragged out," or otherwise vilified.[lii]

The PLA became politically active in the provinces as well. After January 1967 the military began to supplant the civilian party authorities in most provinces and took over various political and economic functions previously performed by the party and government. The all-powerful revolutionary committees had been designed to reflect a "three-way alliance" among "revolutionary leading cadre" (i.e. party cadre whose backgrounds had been cleared),

"revolutionary masses" (i.e. Red Guard and revolutionary rebel mass organizations), and PLA representatives. By mid-1967, however, it was apparent that local and regional military leaders were beginning to occupy more than their share of the all-important committee chairmanships and vice-chairmanships. Mao called upon the PLA to restore social order in urban areas (which it did with mass casualties) in the face of violent factional struggles between rival mass organizations throughout China in the spring and early summer of 1967. The PLA's rapid rise in political power at the provincial level was such that by the end of 1967, Richard Baum observed, "the value of the army's political stock rose appreciably to the point where it now appears that provincial and military leaders (who are serving as leaders of the provincial revolutionary committees) are able to exercise effective veto power over the policy decisions of the central (Maoist) leadership in Peking." (*Parenthesis in original text*).[liii]

The political activation of the PLA on the provincial level in 1967-68 is evident in the makeup of the Revolutionary Committees. Of the 12 chairmen and first vice-chairmen appointed to the six provincial and municipal revolutionary committees formed in the winter and early spring of 1967, 8 (or 67%) were identified as former party officials. After that, however, the proportion of cadre dropped with a corresponding increase in PLA participation. Of the 46 chairmen and first vice-chairman appointed to the 23 revolutionary committees established after August 1, 1967, 37 (81%) were identified as high-ranking regional or provincial army officers.[liv]

January and February 1968 witnessed a nationwide campaign to "support the army" and in late January the PLA Daily published an article calling for the army to "support the left, *but not any particular faction,*" a slogan widely interpreted as: restore order at all cost. The PLA was promoted as a stabilizing force in Chinese society, and even took control of functions such as rail traffic and public security. By the CPC Central Committee's 12th Plenum in October 1968 the

military's political primacy was apparent throughout "all levels of Chinese society." As Richard Baum noted in January 1969:

> There has been the oft-noted tendency toward progressively increasing military involvement in political decision-making at all levels of Chinese society – a tendency reflected in the high proportion of PLA officials appointed to positions of leadership on the all-powerful, provincial-level revolutionary commits. The meteoric political ascendancy of China's regional and provincial military leaders has been the most spectacular byproduct of the virtual destruction of the party machinery in 1967-68.[lv]

The Soviet military threat not only empowered the PLA, but also settled the debate between the PWS and military modernization in Mao's favor. PWS grew in military and political importance apace with the threat of a Soviet invasion such that Friedman et al. observed:

> Between 1969 and 1971 China increased military spending at the fastest rate since the end of the Korean War. In February 1969 a leap in agriculture and industry was announced. Each small region was to become self-reliant so it could regerminate true communism if China was attacked. The center ordered localities to "grow grain everywhere." Military representation at the April 1969 Ninth Party Congress soared from 19 to 45 percent. More Politburo seats were filled by the military. The economy and society were militarized in ways reminiscent of the Leap. It was war communism. Militarization, class struggle, forced labor, and grain-fist reliance pervaded the countryside.[lvi] (Underline added)

PLA political strength peaked in 1969-70 and, although the military remained a formidable political force for Mao after Lin's fall in 1971, its representation in the party's national level policymaking organs was reduced. Between the Ninth and the Tenth Party Congress in late August 1973, PLA representation in the Central Committee fell from 45 percent to about 30 percent – 60 of the 195 regular members and 38 of the 124 alternate members. Of the 25 Politburo members (21 regulars and 4 alternates) military members were reduced from 13 to 7, although two of them were also vice chairmen of the party and members of the nine-man Politburo Standing Committee.[lvii] The Tenth Party Congress also formalized the rehabilitation of senior cadre and military officers that suffered attacks during the Cultural Revolution including Deng Xiaoping and Luo Ruiqing.[lviii] Meanwhile, down on Chiyiling commune, brigade militias units were promoting "conscientious study of the documents of the Tenth National Congress of the Communist Party of China, and criticizing and condemning the Lin Biao anti-Party clique for its crimes."[lix]

A gradual reduction in PLA political representation, albeit slower, also occurred on the provincial level. After provincial-level party committees were reconstituted in August 1971 PLA commanders or professional military commissars headed 21 of 29 them and among the 158 ranking provincial officials 95 (60%) were PLA men. By July 1973, however, the number of PLA in provincial party committees had fallen to just below civilian representation – among the 163 party secretaries 80 (49%) were civilians, 77 (47 percent) were military, while the backgrounds of the remaining six were unclear.[lx]"It seems plausible, in light of these results at the provincial level, that the military retained its dominant position in the lower-level party bodies and other reconstructed local organizations as well," observed Ellis Joffe in 1978.[lxi] As Baum, in 1969, had prophetically warned:

> Mao Tse-tung, Lin Piao and company have rid themselves of Liu Shao-ch'I and his fellow "bourgeois powerholders" within the party apparatus only at the cost of creating a new, regionally based and military-dominated power structure which may ultimately prove even more intractable and difficult to manipulate.[lxii]

In part the "stickiness" of PLA's politicization was the product of their reluctance to hand over political power at the grassroots level to radical leftist elements. Throughout the early 1970s regional army leaders and leftist elements clashed over the allocation of power in the reconstituted party organs, especially the provincial party committees. As they personally favored more moderate cadre whose rehabilitation was a slow process the PLA's withdrawal from regional political power centers was also slow. Instead of giving up their political posts the military commanders used them to ensure that the new political leadership would not reduce their own power. Between 1971 and 1976 nine military officers gave up their concurrent positions as provincial first party secretaries, bringing the number from 21 to 13. In each case the post was taken over by a veteran cadre.[lxiii]

After its politicization during the 1960s and throughout the early and mid 1970s the PLA remained among China's most powerful political groups.[lxiv] In 1972, the year after Lin's fall, a campaign to increase PLA professionalism was launched with the implicit objective that soldiers that concentrate on military skills are less likely to be politically active. This goal went unachieved, however, and the campaign was quietly ended in 1973. "From then on until the death of Mao and the purge of the radical leaders little was heard in favor of military professionalism – but much was said against it," observed Joffe.[lxv]

Burying Mao and Abandoning 'People's War'

Soon after Mao's death on September 9, 1976 his designated successor Hua Guofeng ousted the top leftists (aka The Gang of Four) and became the new party chairman. This decision was taken with direct military support and as a result, senior officers moved even closer to center of Chinese political power. Of the eleven full members of the Central Committee Politburo present at the rally celebrating Hua Guofeng's appointment on October 24, 1976 seven – including Hua himself – appeared in the PLA's olive green uniform. "With the consolidation of the PLA's power military leaders have unquestionably enhanced their leadership position," Jonathan Pollack observed in 1978. Despite Mao's passing, support for PWS temporarily continued in a path dependent fashion. As late as 1976 Deng was personal admonished for asserting that "fighting a modern war means fighting a war of steel."[lxvi] Furthermore, noted Pollack, "Undiminished emphasis upon Mao's doctrine of people's war suggests that an invasion by ground forces remains a principle threat against which China must prepare seriously."[lxvii] Yet, despite official declarations favoring PWS change was in the offing.

Throughout the late 1970s pressure mounted against PWS and in favor of a revitalized PLA military doctrine that included a national military modernization program. The official press openly discussed military modernization and PLA commanders questioned the need for a close link between army and society. Pollack observed in late 1976 that some senior officers "contend that China's security will not be assured so long as the PLA doctrine continues to stress the defense of Chinese soil to the exclusion of more assertive military options."[lxviii] One Navy spokesman, for instance, accused the Gang of Four of "obstructing the growth of a powerful navy" and rejected the notion that China was a "continentalist" power. By decade's end the anti-PWS chorus had risen such that it constituted "a new general line with a less ideological and more pragmatic thrust." According to Graham:

> There is no doubt that there are such pressures [to abandon the PWS]. In recent months a numbers of articles have appeared in the Chinese press arguing that the external threats require prompt action to accelerate military preparedness and the acquisition of more up-to-date weapons. An article written in the Canton Garrison Command came close to stating openly and flatly that the PLA was not prepared with its obsolescent and deficient equipment to cope with an attack by either of the two superpowers who "are making every effort to improve their weaponry and equipment." [lxix]

This same view, expressed explicitly by the National Defense Science and Technology Commission in January 1978, was repackaged using the inclusive political terminology: "people's war under modern conditions." Yet, while the term bridged the rhetorical divide, it could not alter the stark ideological, strategic and economic implications of a change from PWS to military modernization. Rather than decentralized, guerilla warfare dominated by the commune-based militia, the new strategy called for the militia's abolition in favor of a more costly, "highly centralized, unified, planned, and flexible command structure." According to the Commission:

> In any future war against aggression, if anyone still thinks it's possible to use broadswords against guided missiles then he evidently is not prepared to posses all the weapons and means of fighting which the enemy has or may have. This is a foolish and even criminal attitude. Any future war against aggression will be a people's war under modern conditions. The suddenness of an outbreak of modern war, the complexity of coordinating ground, naval, and air operations, the extreme flexibility of combat units and the highly

> centralized, unified, planned, and flexible command structure – all these factors make it necessary for our army to have appropriate modern equipment.[lxx]

Supported by Deng Xiaoping's new liberal-right leadership coalition calls for the abandonment of PWS in favor of military modernization grew increasingly louder. By 1979, with Hua Guofeng ousted, a sizeable contingent within the PLA continued to advocate for PWS. To bypass them, Deng and supporters of military modernization seized on China's poor performance in the 1979 border war with Vietnam as a pretext. The military campaign, the PLA's largest since the Korean War, was a limited, ground-force offensive. Although the war lasted only sixteen days, the PLA sustained heavy casualties that revealed conspicuous shortcomings in PLA communications, logistics, weaponry, as well as its unclear command structure.

The PLA's embarrassing public demonstration of combat ineffectiveness against Vietnam provided precisely the impetus the modernizers needed to discredit PWS and remove intransigent Maoists military leaders. The removal of Maoist PLA leaders permanently ended military support for the commune and coincided with the beginning of the Fengyang decollectivization narrative discussed in the introduction. Thus, just as PWS supporters did in 1969 with Sino-Soviet border clashes, advocates of military modernization presented Sino-Vietnamese border clashes as an exogenous outside threat in order to push the military to adopt a strategy favorable to achieve their designed political outcome, in this case, ironically, the abandonment of PWS.

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[i] Sidney Rittenberg and Amanda Bennett, *The Man Who Stayed Behind* (New York: Simon & Schuster, 1993) 243-44.

[ii] *The Sino-Soviet Dispute* – Research Report 3 (Bristol: Keesing's Publications, 1970) 94.

[iii] Richard Baum, "Lecture 24: Mao's Last Revolution III: The Storm Subsides (1968-69)" *The Fall and Rise of China,* (Chantilly: The Teaching Company, 2010).

[iv] Richard Baum, "Lecture 25: The Sino-Soviet War of Nerves (1964-69) *The Fall and Rise of China,* (Chantilly: The Teaching Company, 2010).

[v] Interview in Martin Smith and Kenneth Branagh, narr. *Cold War Documentary - Episode 15: China (1949-1972)* BBC, CNN, prod. 36 min.

[vi] Baum, "Lecture 25."

[vii] Paul H.B. Godwin, "A Tiger with Wings: Self-Reliance and the Modernization of the Chinese Armed Forces," Paper presented at CIA conference entitled *The Future of China's Political Economy,* (29 Apr-1 May 1977) 2.

[viii] Xinhua, English, March 4, 1966 and Aug 25, 1966 and Dec 22. 1967. In Ralph L. Powell, "Maoist Military Doctrines," *Asian Survey* (Vol. 8, No. 4, Apr 1968) 17.

[ix] Chinese public fear of conflict with the Soviet Union was akin to, if not in excess of, American fears generated by the Cuban missile crisis of October 1962.

[x] Powell, "Maoist Military Doctrines," 5, 12-13.

[xi] Lin Biao, "Long Live the Victory of People's War!: Commemoration of the 20th Anniversary of Victory in the Chinese People's War of Resistance Against Japan," (Beijing: Foreign Languages Press, 1966).

[xii] Ralph Powell, "Everyone a Soldier," *Foreign Affairs,* October 1960, 3.

[xiii] Lin.

[xiv] Lin.

[xv] Powell, "Everyone a Soldier," 3.

[xvi] Quoted in Chu Li and Tien Chieh-yun, *Inside a People's Commune: Report from Chiliying* (Beijing: Foreign Language Press, 1975) 126-27.

[xvii] Powell, "Maoist Military Doctrines," 7.

[xviii] Powell, "Maoist Military Doctrines," 5.

[xix] Richard C. Thornton, *China: The Struggle for Power, 1917-1972* (Bloomington: Indiana University Press, 1973) 245.

[xx] Powell, "Everyone a Soldier," 5 and 7.
[xxi] Edward Freidman, Paul G. Pickowitz and Mark Selden, *Revolution, Resistance, and Reform in Village China* (New Haven: Yale University Press, 2005) 139.

[xxii] *Jiangxi Ribao*, 14 Dec 1959. Cited in Powell, "Everyone a Soldier," 4.
[xxiii] Chu and Tien, 128.

[xxiv] Chu and Tien, 129.

[xxv] Freidman et al., 137-9.

[xxvi] Freidman et al., 139-141.

[xxvii] Chu and Tien, 126-7, 133 and 138.

[xxviii] Chu and Tien, 126.

[xxix] Chu and Tien, 134.

[xxx] Proletarian Revolutionaries in the offices of the Headquarters of the General Staff of the Chinese People's Liberation Army, "Basic Differences between the Proletarian and Bourgeois Military Lines," *Peking Review No. 48* 24 Nov 1967, 11.

[xxxi] Powell, "Maoist Military Doctrines," 20.

[xxxii] For Peng Dehuai's "Letter of Opinion," and selected Red Guard criticism, see "The 'Wicked' History of Peng Teh-huai," *Current Background,* No. 851, 26 April 1968. Also see Thornton 245-6.

[xxxiii] Mao Zedong, "Speech at the Plenary Session of the CCP's Eighth Central Committee, *Issues and Studies,* Vol. VI, No.7 (April 1970) 80-86. Cited as translated in Thornton, 246.

[xxxiv] Thornton, 246.

[xxxv] "Luo Ruiqing deserves to die ten thousand times for his crimes," *Xinhua* 15 Dec 1967. Cited in Powell, "Maoist Military Doctrines," 20.

[xxxvi] Powell, "Maoist Military Doctrines," 21.

[xxxvii] Powell, "Maoist Military Doctrines," 19.

[xxxviii] Powell, "Maoist Military Doctrines," 20-21.

[xxxix] Thornton, 298.

[xl] Powell, "Maoist Military Doctrines," 19.

[xli] Ellis Joffe, "The Chinese Army After the Cultural Revolution: The Effects of Intervention," *China Quarterly,* No. 55 (Jul. - Sept 1973) 453.

[xlii] James C. Graham, "Chinese Military Policy and Modernization: Options and Alternatives," *Presented at the Warrenton Conference on the Chinese Political Economy,* undated, 5.

[xliii] Thornton, 252-3.

[xliv] Thornton, 253-254.

[xlv] Placed in this political context Premier Zhou Enlai's full-throated support for the commune's preservation at the 1970 conference can be better understood.

[xlvi] Ellis Joffe, "The Military as a Political Actor in China," *Presented at the conference on "Civil-Military Relations in Socialist and Modernizing Societies* (Palm Springs*:* 14-16 Dec 1978) 5. Later published in Roman Kolkowicz and Andrzej Korbonski ed., Soldiers, Peasants, and Bureaucrats (London: George Allen & Unwin, 1982) 139-158.

[xlvii] Morris Janowitz, *The Military in the Political Development of New Nations: An Essay in Comparative Analysis* (Chicago: University of Chicago Press, 1964) 16.

[xlviii] Joffe, "Military as a Political Actor," 10-11.

[xlix] Joffe, "Effects of Intervention," 453.

[l] Parris H. Chang, "Mao Tse-tung and his Generals Some Observations on Military Intervention in Chinese Politics," in Frank Horton et al. eds, *Comparative Defense Policy* (Baltimore: Johns Hopkins University Press, 1974) 121-122.

[li] Chang, 121.

[lii] Richard Baum, "China: Year of Mangos," *Asian Survey* Jan 1969, Vol. IX 1. 3.

[liii] Baum, "Year of Mangos," 8-9.

[liv] Baum, "Year of Mangos," 8.

[lv] Baum, "Year of Mangos," 5, 10-11.

[lvi] Freidman et al.,132.

[lvii] Chang, 124.

[lviii] Joffe, "Military as a Political Actor," 27.

[lix] Chu and Tien, 128-9.

[lx] Chang, 124.

[lxi] Joffe, "Military as a Political Actor," 21.

[lxii] Baum, "Year of Mangos," 16.

[lxiii] Joffe, "Military as a Political Actor," 27.

[lxiv] Chang, 123.

[lxv] Joffe, "Military as a Political Actor," 25.

[lxvi] Jonathan D. Pollack, "Defense Modernization in the People's Republic of China," *A Rand Note prepared for the U.S. Air Force,* (Oct. 1979) 15.

[lxvii] Jonathan D. Pollack, "Chinese radicals' loss has been Army's gain," *The Boston Globe* 5 Dec 1976.

[lxviii] Pollack, "Radicals' loss has been Army's gain."

[lxix] Graham, 6-7.

[lxx] Pollack, "Defense Modernization," 15.

CHAPTER 5: Institutional Structure and Functions (1970-1979) Part I: The Commune

CHAPTER OUTLINE

I. The Commune, An Institutional Overview

II. Size and quantity

III. Governance:

a. *Party Leadership*

b. *Commune Management Committee (aka Revolutionary Committee)*

IV. Functions:

a. *Production Planning*

b. *Supervision of Subordinate Units*

c. *Equality Promotion*

d. *Member Services*

e. *Agricultural Modernization*

f. *Commune Industries*

V. Conclusion

I. The Commune, An Institutional Overview

Between 1958 and 1983 the commune was *rural* China's foremost economic and political institution. At its peak size in 1980, there were about 811,000,000 commune members representing 82% of all Chinese or 1 out of every 5.5 people on earth. Between 1970 and 1983 the average commune included twelve production brigades, ninety production teams, and about 15,000 people. Although these averages disguise substantial regional disparities in commune size all communes in Maoist China shared the same three-tiered administrative structure and were coercive institutions, that is, *members were not free to leave*. The household formed a fourth administrative subunit under the commune and controlled the rural private sector. This served to constrain the scale of the private production yet also gave households the ability to supplement their collective income with private income from their home-adjacent sideline plots (*ziliudi*).

In 1958 China initiated the commune as the institutional framework for a "Great Leap Forward" (GLF) in agricultural productivity. Over the next two years the program's failure resulted in the loss of many millions of lives and the construction of vast quantities of poor quality capital and infrastructure, which either depreciated quickly or collapsed completely. In the aftermath of the GLF calamity incentives were quickly reintroduced into the remuneration system and in some areas commune were reduced in their size and institutional scope. As discussed in the previous chapter, throughout the 1960s quickly depreciating rural capital stocks, unprecedented increases in population, and a steady fall in arable land inhibited China's ability to generate substantial increases in agricultural output per capita and per unit land.

In 1969 Premier Zhou Enlai ordered provincial level officials to cull together the lessons of the first decade under the commune. That year many including Gansu, Inner Mongolia, Anhui, Shandong, Hunan, and Guangdong held province-wide conferences on the topic.[1] Zhou's

agricultural policy review culminated with the month-long Northern Agricultural Conference held in Shaanxi and Beijing in August 1970, at which he announced a nationwide reform agenda that promised to change the institution in ways that improved its economic performance. Beginning in 1970, Beijing reaffirmed the communes' three-tier institutional structure (commune, brigade, team) and incentivized their institutional interactions in ways intended to increase agricultural output. Throughout the 1970s the commune's institutional structure was stabilized and oriented toward meeting the policy challenges caused by the increasingly rapid rate of population growth, falling arable land and quickly depreciating rural capital stocks. These exogenous economic challenges, discussed in the previous chapter, focused the institution on producing more food, jobs, farm capital and innovation in agriculture.

The commune was the nexus of local and national government in rural China – the institutional cornerstone of 1970s Chinese communism. It was the foremost venue within which local interests – represented by brigades and production teams – were reconciled with central Party policies – originating in Beijing and provincial capitals and communicated via the county government. Although communes theoretically implemented central government policies to the letter, in practice they enjoyed wide latitude on how to transmit and enforce laws and Party edicts. All local policies associated with transforming the relations among different socio-economic classes, production planning, the provision of social services, and investment in rural industry and agricultural modernization were under commune leaders' authority.

After 1970 the commune's institutional structure remained stable for a decade. With political control and economic management unified in a single institution there was virtually no dimension outside its purview. Communes administered schools, hospitals, banks, shops, police and fire departments, telephone services, post offices, radio broadcasting, and organized local

cultural and sports activities and propaganda activities, etc. Each administrative level was charged not only with modernizing agriculture to increase output, but also with gradually building a new socialist political consciousness based on equity, self-reliance, and placing collective before individual interests; a combination that gave cadre nearly unlimited discretionary power over members' lives.

Communes implemented population control measures such as job allocation, the household registration (*hukuo*) system, and family planning, but above all, were mandated to improve their subunits agricultural output with an emphasis on grain productivity. At each administrative level the commune's planting and investment plan was generally risk-adverse and gradualist, aiming for slow and steady increases in grain output, rather than intermittent surges in production followed by stagnation. Although commune leaders were under pressure to increase yields using modern agricultural techniques, they enjoyed wide autonomy in choosing their approach. Commune cadre would draw up a preliminary production plan and budget that apportioned quotas and agricultural inputs to each brigade. Each brigade would then conduct a similar process among its subordinate teams, which, in turn, would do the same with those households under their jurisdiction. During this process cadre selected the work point remuneration methodology that they believed would best incentivized workers, a process described in Chapter 6.

Households were informed of relevant agricultural modernization plans and remuneration schemes during team meetings and were obliged to "vote" for them unanimously. During meetings cadre also transmitted the Chairman's vision of selfless collectivism via propaganda materials, songs, and dramatic reenactments of proper Maoist behavior. Cadre were repeatedly encouraged to take local conditions into account, avoid waste and over consumption, and

rewarded, above all else, for delivering long-run productivity increases in grain output.

This chapter begins by describing the commune's organizational structure, its size and quantity using data from eight provinces and for China as a whole. It examines how these two structural aspects of the commune changed in response to the challenges presented by the three exogenous influences (population growth, a fall in arable land, and rapid capital depreciation) addressed in the previous chapter. Next, it investigates the commune's political and administrative leadership before identifying six institutional functions – production planning, supervision of subordinate units, equality promotion, member services, agricultural modernization, and developing commune industries – that were under commune cadre supervision. Throughout the chapter attention is paid to the political and economic related functions of the commune and its interactions with the county-level administration above and the brigade below. As the lowest level of central authority above the commune, the county linked those communes under its administration to provincial and central level authorities. Chapter 5, which constitutes Part II in this analysis, uses the same three-step approach to explain the structure, functions and inter-institutional dynamics among commune subunits, that is, the brigade, team and household.

II. Size and Quantity

Compared to their drastic fluctuations in size and number during the 1960s the commune was remarkably stabile during the 1970s. After 1970 it was generally, in terms of size, the merger of rural local level township government and collective agriculture on the scale of the 1957 Higher level Agricultural Producer Cooperatives discussed in the chapter 2.[2] Between 1958-1969 the number of communes fluctuated widely as "leftist" and "rightist," factions lead by Mao and Liu, respectively, vied for power. During its second dozen years, by contrast, the leftist perspective prevailed and the number of communes remained relatively constant both nationally and in those

provinces for which I have data. After 1970 the total number of communes settled at about half the number of the original 1958 version – roughly 51,000 replaced the original 26,000.

During a process of commune subdivision between 1961 and 1964 the total number of communes had peaked at more than 80,000 nationwide. After the leftist's introduction of Dazhai in 1965, however, communes were consolidated and by 1970 their total number fell to 51,478. Maoist political doctrine generally held that the bigger the commune the more Socialist. Beyond ideology, however, Butler and Parrish theorized that large investments rural transportation and a desire to reduce bureaucracy also contributed to the expansion in commune size. In the early 1960s communes were designed so that team cadre could walk to commune meetings within a day. During the 1960s and 1970s, however, the widespread growth in the number of bicycles, large and hand-held tractors, and trucks made it possible to bind together a larger administrative unit in ways that reduced bureaucratic and administrative overhead.[3] This process was facilitated by communes' expanded efforts to build local road networks that linked their headquarters and facilities with the brigade offices and teams under their jurisdiction. Statistics on the number of trucks, boats and tractors and their importance for economic development are available in chapter 3. Parish explained the effect of these transportation improvements on commune size:

> The effect of better transport then, has been less to obviate old markets than it has been to make a wider span of administrative control possible. In trying to achieve an efficient level of administration, the officials in south-central Kwangtung (Guangdong) would seem to have judged the marketing area to be too small a unit. The multiplication of these small units would mean not only more reports to be read and filed, but also greater budget outlays for top commune administrators, who receive state salaries.[4] (Underline added for emphasis)

During the late 1960s the process of consolidating communes had increased their average size from 7236 members in 1964 to 13,595 members in 1970, and the average number of laborers per commune had nearly doubled from 2879 to 5463, respectfully. In 1970 there were 51,487 communes in China – about a thousand less than there were in 1976 when each had an average of 14,952 members and 5723 laborers. It is worth noting that after a gradual increase in the early

1970s between 1974 and 1975 the number of communes fell from 54,630 to 52,615. This change appears to be explained by Hubei's consolidation of its 4285 communes into 1331 that year. No other province for which I have data showed a notable change that year.

The national data suggests stability in commune size and quantity after 1970. On the provincial level, however, variation emerges. Between 1961 and 1975 Hubei's communes were significantly smaller and more numerous than any of the other five provinces for which I have data. They did not undergo considerable commune reconsolidation between 1966-70, as did communes in Jiangxi, Henan and Jiangsu among others. In this respect Hubei's communes in the late 1960s were similar to Hunan and Jilin, which also did not substantially consolidate their communes between 1966-70. Still, the Hubei case is unique, because at that time Hunan and Jilin already had relatively few communes and their average size was considerably larger than Hubei's making it arguably unnecessary to consolidate them in the late 1960s. As late as 1974, for instance, the average Hubei commune still had only 8542 members compared to the average Hunan commune which by then had 13,144 members, and the average Jilin commune which had 15,819 members. But after Hubei's 1975 consolidation its average commune population ballooned to 27,887 members, making them over 13,000 members larger than the average Chinese commune. Only Henan, which had a staggering 31,751 members per commune in 1975, had larger communes than Hubei that year.

Although a fascinating side study, for this project's purposes Hubei's decision to consolidate its communes and enlarge their size is of peripheral significance. But as it seems to be unique among provinces for 1974-75 it does appear to account for a large part of the variation observed in that year's nationwide data. In 1975 average commune size in Jiangxi, Jilin and Hunan was around the national mean of about 15,000 members – substantially smaller then those

in Henan and Hubei. Hence despite communes' generally consistent *quantity* and *size* on the national level as well as internally within provinces, substantial cross-provincial variation on these two important aspects of commune structure is observed in the data.

During the 1970s China had, generally speaking, a constant number of communes and a quickly rising rural population and pool of rural labor. Due to the large fluctuations in commune size and the relative youth of the population the effects of population growth on the commune are more difficult to observe in the 1960s. After the commune size was stabilized after 1970 and the baby-boomers became working age laborers, however, the lagged effects of population growth become apparent. On the national level, for instance, the average number of members per commune increased from 13,595 in 1970 to 15,218 in 1978 and the number of laborers increased from 5463 to 5805, respectively. This meant that on average over an eight-year period each commune had to feed 1623 more members and employ 342 new workers! Coupled with a fall in arable land, even after production targets were met using modern inputs unemployment and underemployment remained a serious and growing problem.

The population problem was more acute in some areas than others. Among those provinces surveyed communes in Henan and Hunan appear to have suffered most from over population. Between 1970 and 1974 Henan's average commune added 2177 members (from 33,341 to 35,518 members) and 231 new laborers (from 13,371 to 13,602 labors), respectfully. This pattern is even more troubling if traced back to 1968 when each Henan commune had an average of 31,675 members and 12,672 laborers. In response between 1974-75 Henan divided some of its communes, which increased the total number from 1727 to 1959, and resulted in a fall in the average population and labor per commune to 31,751 and 12,047, respectively – essentially a return to 1968 levels. Yet, while Henan authorities could subdivide communes to

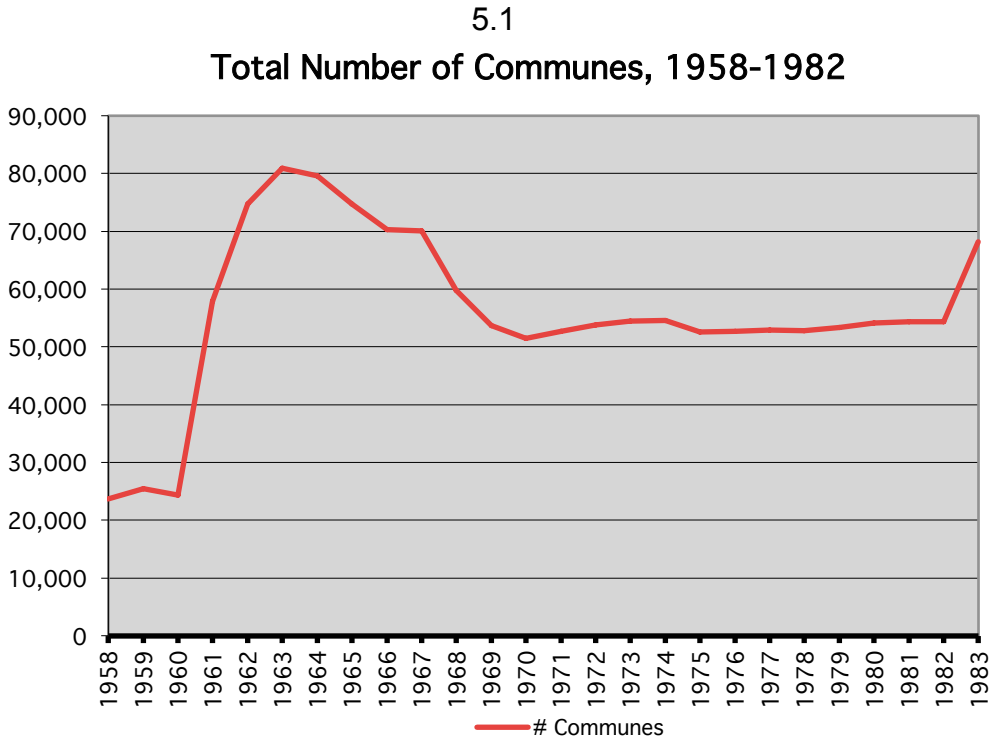
make them more manageable they could not open up more land for cultivation: between 1970 to 1978 Henan's supply of arable land fell steadily from 111,680,000 mu to 107,360,000 mu. In 1970 each agricultural worker in Henan had an average of 5 mu of land, by 1978 he had only 4.5 mu.

Hunan, unlike Henan, did not subdivide its communes despite a sizable increase in their population. In 1967, the first year for which I have Hunan data, the province had 3370 communes, each with an average of 10,750 members and 4375 laborers.[5] From 1967 to 1978 Hunan maintained an almost constant number of communes, but thanks to population growth on average each had to cope with an increase of 2955 members and 1304 laborers. By 1978 the province had 3336 communes each with 13,705 members and 5679 laborers. Feeding and employing so many new people placed increased demands on the commune leadership and spread collective income and resources over an ever-expanding group. Yet, despite this sizable increase in membership Hunan did not subdivide its communes – as Hubei did. One likely reason is that although they were growing fast, by 1975 on average Hunan's communes still contained less than half as many members as those in Henan, Jiangsu, and Hubei.

The data presented above suggests that the commune experienced stability on both the national and provincial levels during the 1970s. It also reveals that during this period (1) communes were forced to cope with sizable increases in the number of members and laborers and that (2) although each province generally maintained a constant number of communes their *size varied substantially among provinces*. But each year the average Chinese commune in all provinces studied had more mouths to feed, more workers to employ, and less land to do it on. In some cases the subdivision of communes may have helped alleviate managerial pressures but

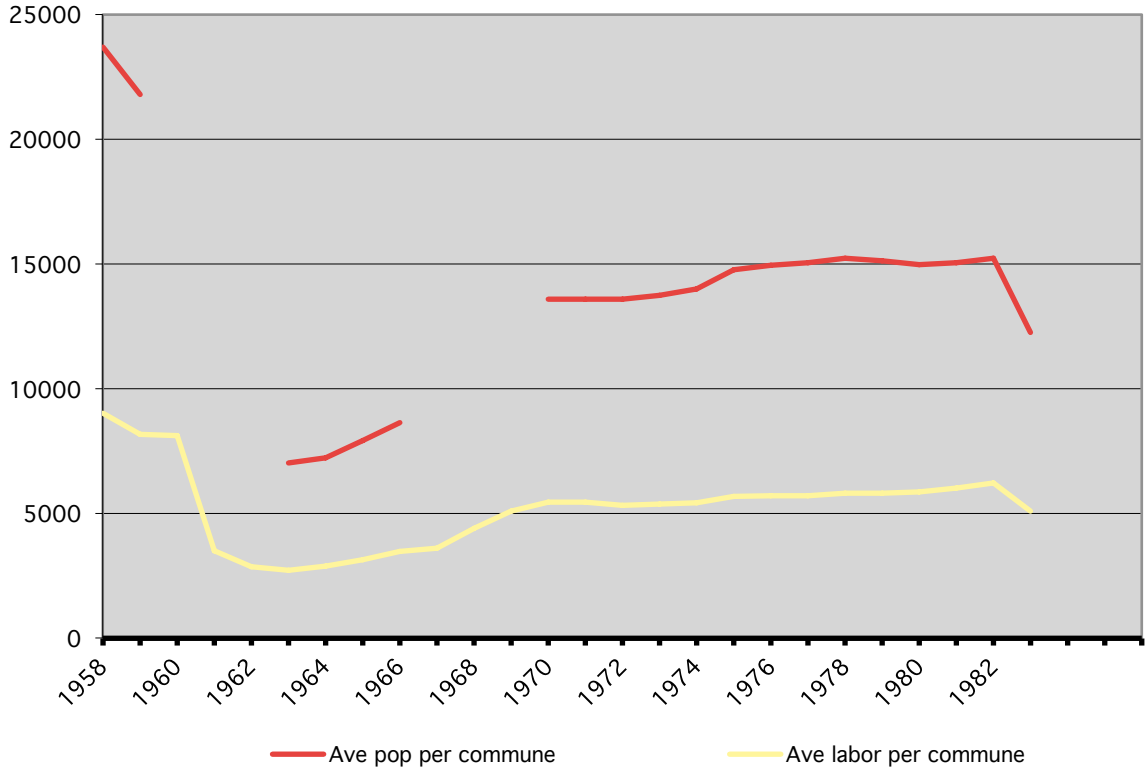
such administrative divisions, but it could not stem the steady fall in arable land and the corresponding fall in the ratio of arable land per agricultural worker.

5.1



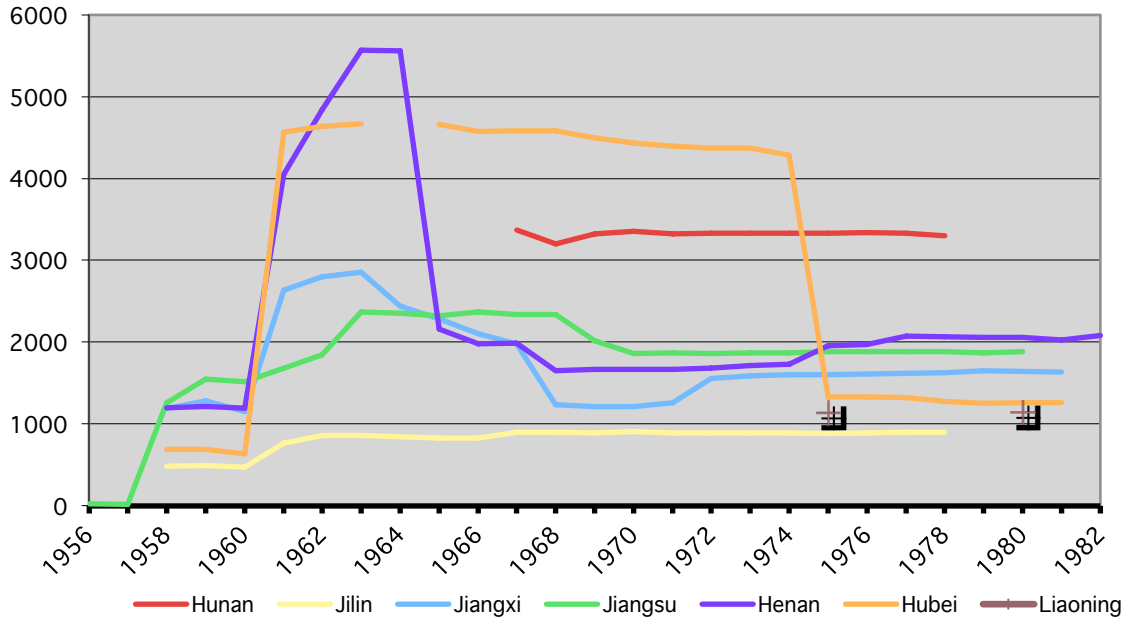
5.2

Ave pop and labor per Commune, 1958-1982



5.3

of Communes in Select Provinces



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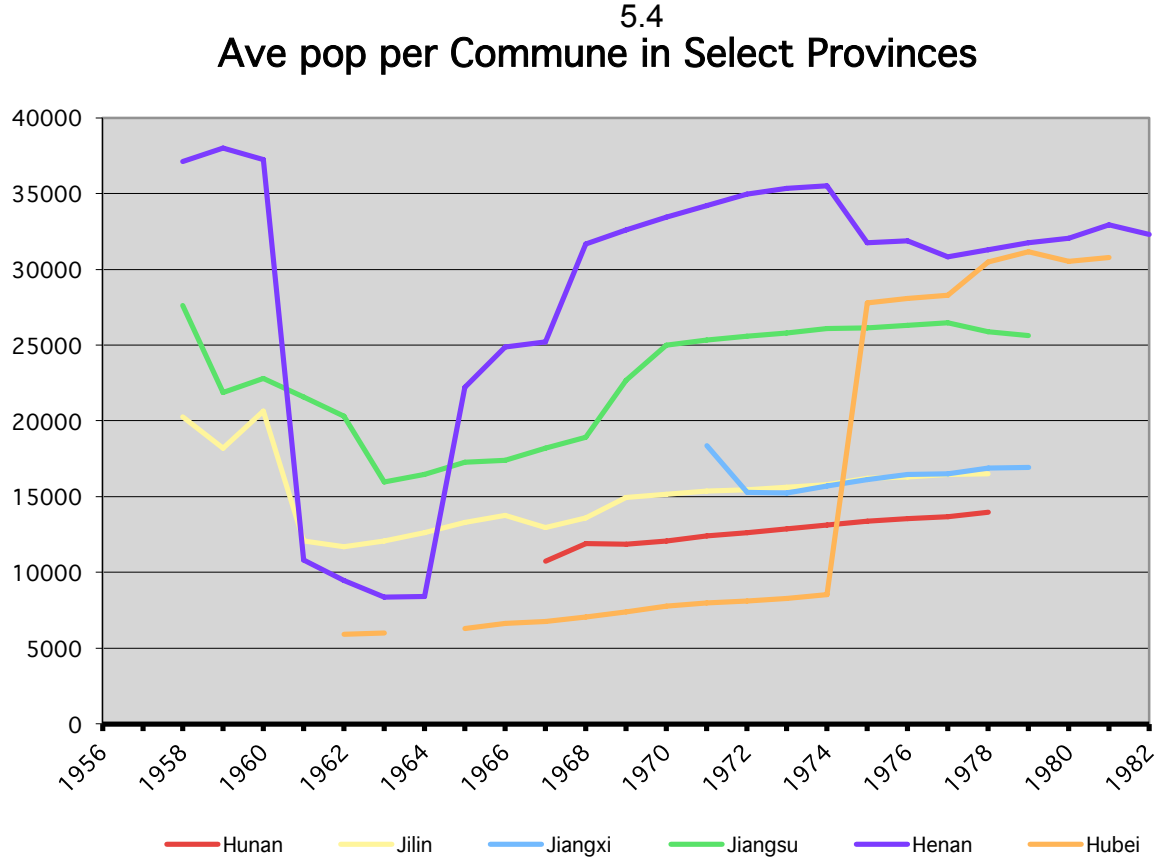

III. Governance

Until its abandonment the commune was China's lowest level of full-time, state-funded government. As the link between the state and the locality the institution's leadership was responsible for implementing national policy at the grassroots level. Commune leaders were charged with vital state administrative responsibilities including all political activities, tax collection, grain procurement, and economic planning. As such, unlike brigade and team leaders, their administrative costs (e.g. salaries, postage, telegraph and telephone, and travel allowances to attend county-level meetings) were borne by the state. This compensation structure helped ensure that while commune leaders wanted the institution's members and subordinates' support they remained ultimately accountable to higher levels. As Butler observed: "The commune is the

most reliable and predictable link of a three-link chain. It is more responsive to higher-level directives and less susceptible to local conflicts of interest."[6]

The commune leadership would communicate to its subordinate brigades and teams those extraction rates, work point remuneration schemes, and levels of private sector involvement that were acceptable according to their interpretation of county level dictates. This meant that while a particular commune's leaders could not unilaterally reestablished private household farming *per se*, they did retain wide latitude to evaluate production teams' work point systems and determine the proper balance between private and the collective sectors in the local economy. Simply put, as long as a commune's leaders could reasonably assure county authorities that capitalism was not being restored and that agricultural (usually grain) production was increasing, they enjoyed *almost complete autonomy* to evaluate the practices of their subordinate units and to allocate productive factors in the local economy. Start here

The commune administration, like higher levels of PRC administration, was an overlapping bipartite structure that included both the party and government leaders. Each commune administration had a permanent headquarters, which, depending on available structures and resources may have been the former township government offices, a large clan temple or a new building built by the commune. The commune administrations and their parallel Party branches were housed in offices equipped with telephones, meeting rooms, dormitories and an armory. Each commune party branch employed 10-20 full-time, state-paid, professional personal, 4-8 party secretaries and an additional 11-18 staff for the various departments under their control.[7]

Party Leadership

The selection of commune Party leadership was a political process that took into account (to varying degrees) the county leadership's suggestions and the preferences of the commune's 500-1000 party members. By rule commune party members elected the Commune Party Committee, but in practice the County Party Committee would propose candidates that Commune Party members would either accept or decide among. In some cases horse-trading and compromise produced a commune-level Party Committee that was acceptable to both the county committee and the commune Party members. In most cases, however, the balance of power disproportionately favored the County Party Committee allowing it to effectively appoint the Commune Party Committee. The Commune Party Committee – with the endorsement from the county – elected its standing committee and appointed secretaries with specific commune management responsibilities, which held ultimate decision-making power within the institution.[8]

Each Commune Party Standing Committee included a First Secretary, responsible for all commune activities – particularly agricultural production; an Organizational Secretary, to manage the Party's personnel affairs within the commune; and a Culture and Education Secretary, to oversee schools, healthcare, and propaganda work. In addition, when deemed necessary commune leaders could create various additional full-time or part-time Party secretary positions. Each commune generally had some or all of the following Party administrators: Political and Legal Secretary, to supervise the militia, police and courts; Finance and Trade Secretary, to supervise the state stores, supply and marketing cooperatives, banks, grain offices, tax and finance; Agricultural Secretary, to assist the first secretary in managing agricultural production; Industry and Communications Secretary, to manage commune industry and enterprise development; Youth and Women Secretary, to manage Party's outreach to young

people and women. Additional departments might have included the propaganda department, finance and trade department, political legal department and rural political work department.[9]

Commune Management Committee (aka Revolutionary Committee)

The commune also had a parallel a non-party administration. The commune (like the brigade beneath it) had a Congress of Commune Member Representatives who were elected for two-year terms and supposed to represent various social groups – different occupations, women, youth, elderly, veterans, etc. The Brigade Congress elected Commune Congress members, but the Commune's Party Committee (like the county party committee above it) identified qualified candidates from among whom the Brigade Congress actually chose. At different times and in different places the size of Commune Congresses varied from about seventy to several hundred representatives.

The Commune Management Committee met every few weeks to administer day-to-day functions based on the ideological and policy leadership provided by the CPC commune committee. To ensure Party policies were being followed members of the Commune's voluntary Supervisory Committee would sit in on these meetings. They could inspect management records and, if necessary, submit complaints to higher supervisory organs. Practically, however, both the Party and management committees tackled problems together and in many cases leaders served on both simultaneously.[10]

Before the introduction of Dazhai in 1965 the County Party Committee essentially selected the membership of the Commune Management Committee. It would "suggest" names to the Commune Congress, which would rubber-stamp the decisions in a process akin to having commune leaders appointed from above. After the Cultural Revolution began in 1966 the

Commune Management Committee was renamed the Commune Revolutionary Committee, the Director was retitled the Chairman, and secretaries were renamed "responsible persons." Often the first Commune Revolutionary Committee selections took place under the military supervision in 1968-69. New Revolutionary Committee leadership teams were composed of people's representatives from the commune members, the military, and the CPC. To ensure rightist cadre would not thwart the Cultural Revolution's iconoclastic message the newly renamed Revolutionary Committee was placed in charge of all political propaganda distribution.

After 1970 the Commune Party Committee was again placed in charge of propaganda and the Revolutionary Committee resumed its original, mostly administrative, functions. Printz and Steinle observed that by the early 1970s, "despite the new nomenclature, the bureaucracy remained essentially the same, and the Chinese understood that." Indeed, the terms "Management Committee" and "Revolutionary Committee" came to be used interchangeably in many communes.[11]

To ensure Revolutionary Committee members' actively implemented national policies and directives all members were subject to county level approval. The County Revolutionary Committee would appoint some Commune Revolutionary Committee members directly while others were nominated at a rural political caucus of commune members and selected by county level leaders.[12] During the 1970s the exact institutional arrangements involved in selecting the Commune Revolutionary Committee varied from place to place.[13] Printz and Steinle recounted the selection of Revolutionary Committee leaders as practiced in Kwang Li Commune in Guangdong in 1972:

> At a rural political caucus, a list of candidates for the [Commune] Revolutionary committee, drawn up at the county level, was sent for approval to a convocation of village officials and then to a congress of commune members. This local congress or nominating convention consisted of about seven hundred persons, one for every twenty commune residents aged sixteen or over. They submitted their approved list of names to the County Revolutionary Committee, which made the ultimate decision. About every two

> years commune members chose another set of delegates to select new Revolutionary Committee members.[14]

This leadership selection process prioritized active participation as a form of grassroots tacit consent for leaders' decisions. As Butler explained: "The system is designed not to foster democratic competition or to protect guaranteed rights but to encourage greater participation in the political process."[15] In 1970s rural China, as now, higher levels nearly always held the final word such that anyone who actively opposed party policies could never obtain real power. If the county administrators preferred a certain leader retain his position, he almost certainly would. In practice this meant that all criticisms against local CPC cadre were presented using Maoist arguments and rhetoric. Anyone daring or foolish enough to openly call for an end to CPC rule would have quickly been branded counter-revolutionary, knowing this ambitious cadre couched their rhetoric appropriately. Enhancing participation and stressing agreement extended into the Commune Revolutionary Committee as well, which was explicitly "instructed to reach consensus."[16]

After their selection Revolutionary Committee members, who served two-year terms without term limits, would meet to choose their leaders and allocate responsibilities. The Commune Director and Vice director in particular had extensive commune management responsibilities. In addition to their office duties Committee members were supposed to spend 200 days per year working at lower levels on everything from teaching planting techniques to leading the criticism of old-fashioned marriage rites.[17] The director was nearly always a Party member and a member of the Commune Party Committee. His salary and grain ration, which were roughly double the wages of the average farm laborer, were fixed and unrelated to the productivity of the commune under his charge. He would often live at the commune headquarters' dormitory while his family would remain at home and continue working for their

local team. Most directors were selected from the more capable brigade-level managers within the commune, although if a director was effective he might be transferred to a struggling local commune to increase its productivity. A director might also be transferred if he was having interpersonal conflicts with colleagues or commune staff.[18]

The Office Administrator was in charge of all day-to-day activities, such as writing letters of introduction for commune members travelling and locating accommodations for visitors. The Director of Civil Affairs handled the commune's official paperwork including registering marriages, births and deaths, ensuring the poor received welfare and veterans are properly provided for. The Director of Education and Culture supervised schools and organized recreation programs, libraries, various clubs, sports activities, arts and singing. The Director of the Militia, (for reasons discussed in chapter 8) was appointed by the military and remained on its payroll. The Director of Finance kept track of budget, income and expenses for the commune and its brigades and ensured each team paid its share of taxes and collective investments. In addition to the managers an average commune might have five to seven staff associated with the management committee. They too enjoyed fixed monthly government salaries, might live at the commune dormitory, and eat in the office cafeteria.[19]

Proponents of the Cultural Revolution claimed the advent of the Revolutionary Committee served to "democratize" the commune's leadership selection process and strengthened voices outside the party establishment. Some claim that the Cultural Revolution reduced the size of bureaucracy in many communes.[20] The Cultural Revolution does appear to have introduces more public assemblies concerning commune leadership selection and local team-level production decisions. Despite a widespread increase in political participation, however, the average member still wielded minimal influence over the makeup of the commune

administration whose decisions affected his/her live in important ways. Contrasted with western representative governments China's commune "democracy" was lacking in several critical aspects. But at heart the Chinese commune system stressed agreement and harmony over the checks and balances many Americans often associate with representative democracy. That said, taken in the context of China's history of unchecked local despotism and elite extraction and excessive consumption and waste any large-scale evolvement in politics could rightfully be considered an improvement. Even if their political power was minimal, the fact that local peasants had *any* role at all in selecting or approving their leaders represented historic gains.

IV. Commune Functions

Production Planning

The devolution of responsibility for agricultural production and modernization to the commune was championed by the Maoists' and officially implemented after their political victory over Liu and Deng, et al. during the Cultural Revolution. Thereafter, throughout the 1970s, the commune was the foremost institution responsible for formulating and implementing production targets and plans, approving local remuneration schemes, and expanding agricultural modernization in the units under its auspices.

Commune production plans were officially "designed to enable the peasants to increase their income every normal year on the basis of increased production."[21] This two-pronged objective required team members to earn more by producing more. Coupled with the aforementioned grain-first policy this strategy effectively ruled out extensive cash-crop farming. To create production plans that met these two objectives the county would first submit preliminary targets in specific areas (e.g. grain or fertilizer making) to the communes under its

jurisdiction taking into consideration various elements of their productive capacity (e.g. land and capital). Commune leaders would then negotiate with county level leaders to set and adjust targets for crop production, factory output and to identify the agricultural inputs, machines, or water works, etc. necessary to reach them.

A commune leader (or group of leaders) relative strength in negotiations with the county could vary considerably. It was tied to a multitude of social, political and economic conditions including the commune's productivity and arable land compared to others in the county as well as the personalities, relative skill levels, and interpersonal relationships among the individuals involved. After production targets were decided commune managers would design a tentative cropping plan that allocated a potion of commune targets to each brigade. This would involve another round of negotiations, this time between commune and brigade leaders, over the relative size of their quotas compared to other brigades and the quantity and quality of agricultural inputs and machines each would be allocated. Brigades, in turn, would assign quotas and negotiate with their teams.[22]

Supervision of Subordinate Units

Communes were too large and populous for their leaders to supervise all the sub-units under their jurisdiction. Although this coupled with their direct government funding helped insolate commune leaders decision making from local disputes it also made them heavily reliant on brigade leaders' reports to keep track of grassroots developments.[23] A persistent problem or violation in a lower unit could not escape commune detection indefinitely, but often commune leaders only became aware of a problem after it had manifested itself. In order to boost supervision and prevent the emergence of an isolated bureaucratic elite Revolutionary

Committee members and other cadre were required to spend at least sixty days working in the fields and keep a notebook to document their experiences. In practice, however, rather than till the soil cadre might fulfill their obligation by inspecting waterworks and other infrastructure.[24] In December 1976 National Conference on the Dazhai Movement called for commune level cadre to spend more time working with their brigades and teams on the "front line of agriculture" – a common refrain throughout the 1970s.[25]

The emphasis placed on aggregate agricultural production above profit placed commune leaders under considerable pressure from their superiors to increase output in their subordinate units. To get results commune leaders could intervene in subordinate units to provide an objective assessment of the troubles facing the team or to help break political logjams and ensure the implementation of Party policies. Distrust and disunity in a brigade might result from the conflicting interests of lineage and clan affiliations allowing commune cadre to offer an impartial evaluation based on Party policy. Although problems could still arise when commune officials "failed to comprehend the complexity of a situation and offer inappropriate directives," Butler observed.[26]

"Bad harvests more than anything else seem to provoke the most serious responses from commune cadre," noted Butler. He provides an account of one commune in which the grain crop of 13 of 17 brigades fell. Only after the commune leaders conducted an investigation did they "discover that commune members had been spending their time in the lucrative brick-making business." To solve the problem commune cadre conducted study meetings in the wayward units to cajole them into leveling the brick kilns, which, in turn, increased grain output. This example is illustrative of how commune authorities in 1970s China prioritized agricultural production, particularly grain output, above team profits.[27]

Equality Promotion

Commune leaders' most capricious power and most challenging institutional responsibility was probably the redistribution of income with an eye towards increasing equality among brigades and teams. During the 1970s it was national policy that the better off should not be made worse off, rather the poor should be helped to develop at a quicker pace such that intra-commune disparities narrowed over time. In practice this meant that increased *intra*-commune equality was achieved through the preferential allocation of inputs to poorer teams with the stipulation that richer teams' incomes should not decline, as this would engender resentment and the expansion of class cleavages. Commune leaders, unable to focus their energy on all subordinate units, would often select a backward or underachieving brigade or team and concentrate their efforts on improving its productivity and calling attention to its success.[28]

Commune leaders enjoyed nearly complete discretion to structure production plans or allocate resources in ways that favored some teams over others. Although the most radical form of income redistribution – the combining of wealthy and poor teams – was a decision approved at the county level, there were countless ways commune planners could favor a select team. Rather than provide direct cash or grain transfers leaders might reduce the team's tax burden or provide it additional agricultural inputs or trained personnel. Specific methods included increasing a team's allocation of fertilizer or irrigation water, selecting it as the location for high-value specialized crop plots or improved seed varieties, or making loans to help it purchase agricultural capital or technology. To boost a poor team's income commune planners could also

alter the percentage of team members allowed to work in more profitable non-agricultural industries or private sidelines. Or they could provide technical expertise from the agricultural research extension station to help an underperforming unit undertake construction projects that would generate future production increases. Another indirect method to favor poor teams was providing commune health, education or other services equally to all teams' members, but recouping the lion's share of support funds from more profitable teams. Problems might occur, however, if commune leaders' desire to produce glowing, reportable results in select units came at the expense of overall commune agricultural productivity.[29]

During the 1970s official policy was that: "As conditions gradually develop, the current basic ownership at the production team level will switch to that at the production brigade level and then the commune level, which will eventually pass over to socialist state ownership. But this will be a fairly long and gradual process."[30] In reality, however, here were only ever cautious and scattered efforts to raise the basic accounting unit to the brigade level.[31] Instituting the brigade as the basic accounting unit would have resulted in all brigade members receiving pay on the basis of work points of equal value. Thus, in order to shift the basic accounting unit from the team to the brigade large income differentials among teams had to be eliminated or better off teams would have seen a fall in their income from collective sources. This would have created a disincentive for well-off teams to actively participate in collective labor and as such intra-brigade inequality was seen as extremely detrimental to the collective economy.[32] Brigade leaders, like commune leaders, avoided using direct grants to increase equality among teams. Instead they too preferred to earmark funds for a particular project, say a collective sty, that would increase its teams' incomes, support household sideline enterprises, and whose proceeds could not be easily diverted towards unproductive or private uses.

Member Services

After the Great Leap Forward the commune was *never* again the basic accounting unit of rural China. That distinction and its numerous remuneration-related responsibilities belonged to the production team and as such are covered in the following chapter. The commune did, however, play an important role in allocating resources to its brigades and teams as well as in the direct provision of healthcare, education, veterinary and stud services, agricultural research and extension and agricultural mechanization.[33] Putterman notes the importance of these member services:

> The commune system played a major role both in the delivery of health care, and the distribution of basic foodstuffs to the population, none of whom, despite their massive pressure on meager base of land, suffered the landlessness and associated deprivation faced by tens of millions of rural dwellers in China's otherwise similar populous Asian neighbors.[34]

Healthcare and education were the two most important commune-provided social services. The workers in commune-run schools, hospitals, and extension stations were commune employees, although in poorer areas the county might provide or subsidize them.[35] During the 1970s commune schools, hospitals, and enterprises all increased in size and number.[36] Members' health insurance was administered collectively and paid for either by households, which each contributed a low fixed amount per year or by the production teams' collective welfare fund, or a combination of the two.[37] Health services stressed preventative medicine and medical personnel generally made house calls. Communes normally maintained a modest hospital with about 10-20 beds, full-time medical personnel, X-ray equipment, microscopes, refrigerators, sterilizing equipment and a collection of traditional Chinese herbal medications. County health officials

licensed the commune hospital to perform rudimentary operations and manufacture and prescribe some medications. Serious cases were referred to county or provincial level hospitals.[38]

The commune educational department administered at least one middle school including its admissions, exams, student performance, and teachers and staff. It also supervised all primary schools, which were operated at the brigade level and dispersed any state funds that might come from the county. Although the commune hired some teachers, the county department of education, which set the curriculum, might hire some as well. Communes also provided members commercial services such as branch banks, supply and marketing cooperatives, tax offices, and procurement stations for grain or other agricultural products. Political "services" included the enforcement of Party policies on women's rights, ideological training and propaganda, regulation enforcement, and cadre selection and performance review.

In addition to all managerial and social service related personnel and their staffs, a commune's payroll would include the hundreds of employees who worked in its enterprises, agricultural machine stations, electricity-generating plants, and mines, etc. Each received a monthly salary paid from their enterprise's income and any profits were kept in the commune's general accounts. If an enterprise proved a drain on commune resources it could be closed and its land, labor and capital redistributed within the commune and put to other uses.

Agricultural Modernization

"The main function of the commune, insofar as production is concerned," noted an official report on Tungting Commune in Wuhsien County, Jiangsu published in 1975, "is to help the production brigades and teams develop agriculture, forestry, animal husbandry, sideline occupations and fishery."[39] Indeed, the commune's primary economic objective was to ensure the units under its

jurisdiction hit their production targets and, whenever possible, provide them the means to do so. Each commune had extensive autonomy to undertake agricultural modernization-related infrastructure projects and was responsible for supplying modern agricultural inputs and services to its brigades and teams. To increase production commune leaders were expected to invest in rural industries, expand road and irrigation networks, and allocate agricultural inputs (e.g. fertilizer, seeds, and animal feed) to units under its jurisdiction. Those inputs or materials the commune could not produce locally (e.g. cement, steel, electricity generating equipment) might be available from other communes or the county or provincial-level suppliers.

Communes were encouraged to expand the size and scope of their agricultural research and experimentation services. An agricultural research station might have several dozen staff including trained experts that were posted to the commune to review and assist in its agricultural work. Stations often had their own experimental fields to test new seed varieties, field management techniques, fertilizer application methods and crop rotational patterns. Communes also maintained specialized seed-breeding fields, which were used to test new varieties and supply teams with the best available, locally tested seeds. Commune's owned and managed larger-scale agricultural machines for their subordinate units and purchased and maintained a stock of modern farm tools. After 1970 it became common for a commune to maintain its own agricultural machine repair station with tractors, trucks and other farm equipment that it rented to its production teams. Some communes combined a farm machine and/or tool factory with a repair shop that could both manufacture and maintain agricultural equipment.[40]

Commune's coordinated large irrigation and infrastructure works, and with a national average of about 14,000-15,000 members including 5700-5800 laborers, communes could implement them on a fairly large-scale. In Guangdong, for example, production teams supplied

labor proportionally for commune-wide or mutibrigade projects based on the anticipated benefit their team it would receive from the project. Team leaders assigned workers to commune infrastructure projects and paid them in work points as if they were doing farm labor. Throughout the life of the commune identifying the best way to structure incentives so as to encourage teams' enthusiastic participation in commune and brigade level infrastructure projects remained a primary objective. Frictions might arise if commune level authorities arbitrarily appropriated team labor or pressured teams to invest in commune enterprises without properly explaining the anticipated benefits or providing adequate compensation.[41]

Improving water allocation to subordinate units via the construction and management of irrigation canals was among commune leaders' most important agricultural modernization related functions. Some communes had a committee specifically to plan improvements and manage irrigation facilities and maintain pumping stations, dikes and drainage channels.[42] To improve water and power provision a commune might dam a river to create a reservoir for irrigation and a power plant for hydroelectricity generation to power its agricultural machines. The members of Kwang Li commune in Guangdong, for instance, dismantled a mountain and used the stones to build a hydroelectric dam and the aqueducts to channel water for a commune-wide irrigation network covering 153,000 mu (25,500 acres) of land.[43] If a project would affect another neighboring commune the county level would manage coordination between commune leaders. Communes tended to allocate water and other inputs based on land acreage, but, as noted, could also target them towards a particular crop or unit to increase its production. If the available water was inadequate the commune could charge its brigades or teams a water fee or introduce a rotational irrigation plan for them.[44]

Commune Industries

As long as there was a local need and a project or investment could be made with local resources a commune could attempt it. Communes established factories and repair facilities in various sectors across the rural economy. Between 1971-78 commune level enterprises grew at an average annual rate of 30.1 percent, compared to 15.8 percent during the 1962-71 period.[45] Thanks to their size commune factories could reach surprising economies of scale and be highly specialized in products including farm tools, building materials, irrigation pipes, shoes, clothing, fertilizer, seed drills, rice planters, harvesting equipment, processing equipment, transportation vehicles, pesticides, building supplies, consumer goods, water pumps and pipes, food processing or any other local product for which there was sufficient demand and available materials. These products were intended to satisfy local or neighboring market demand, not to enter the urban market or compete with urban industries.

According to Butler the primary distinction between the commune's agricultural modernization-related industrial enterprises (e.g. fertilizer and tractor stations) and its other enterprises was that the former did not have to make a profit while the later did. Commune leaders were encouraged by a clear-cut policy designed to increase agricultural production over all. They might have winced when their agriculture-related industries racked up losses, but they suffered no personal financial or political loss. In 1971, for instance, one commune announced:

> To alleviate the economic burdens of various production teams in using machines, the commune Party committee stipulates that farm jobs of drainage and irrigation, husking and tractor cultivation should not earn a profit, should strive to minimize financial loss, and that incurred financial losses should be offset with earnings derived from machine processing jobs.[46]

To support their enterprises communes were encouraged to develop local resources – such as coalmines and hydropower – and buy trucks and other vehicles to transport their goods to customers.[47] State-run companies and county or provincial level marketing units were authorized

to purchase commune industrial parts for assembly (e.g. irrigation piping, transformers or porcelain insulators for rural electrification) or completed products and distribute them beyond the commune's immediate locality. Such extra-commune sales and purchases might require coordination or approval from county authorities. During interviews conducted in rural Jiangxi in December 2011 one former team leader noted that their brigade irrigation pipemaking factory had used a "procurement officer" who sold their products directly and for "many years" to at least one commune in Hunan. He said payment for the orders was delivered via the postal service.[48]

During the 1970s the official rural economic development policy was "self-reliance." In economic terms "self-reliance" meant that while communes had to bankroll their own enterprises, they could also distribute their profits or reinvest them locally as they liked. In this way the earnings from one successful commune enterprise might cover the startup costs for others.[49] To some extent rural commune leaders could employ the rhetoric of "self-reliance" to protect their profits from extraction by county leaders, and spare them for further rounds of productive local reinvestment. The state did extract value indirectly by setting state procurement prices for agricultural products below market prices, state taxes (国家税收) remained a very small percentage of total commune gross income. In 1970 state taxes represented only 4.53 percent of commune gross income and this percentage fell each year over the decade to 3.07 in 1980.[50] But "self-reliance" also put commune leaders on notice that they could not expect much, if any, financial support from county or provincial levels. Although in some instances the state did make loans or grants for large-scale or multi-commune investments that promised to substantially increase agricultural productivity.[51]

Instead, leaders extracted from their sub-units (i.e. brigades, teams and, ultimately, households) to underwrite commune enterprises, specific infrastructure projects or purchases aimed at increasing future production. A team could oppose the commune's request, but if a majority of teams agreed then all were compelled to contribute. Thus, by compelling rural localities to overcome collective action problems inherent in large scale, longterm investments the commune provided institutional support for China's national agricultural modernization and rural industrialization campaigns.

V. Conclusion

The large degree of autonomy enjoyed by China's rural commune cadre in the 1970s, particularly their ability to keep and reinvest profits locally, helped produce large and sustained increases in rural investment and food production. The urban sector did skim off rural communes' profits indirectly, through the state's setting of agricultural products' prices at artificially low levels. Forcing peasants to produce cheap grain – a patently pro-urban policy bias – helped ensure the average commune member's life was less secure, more difficult, and more monotonous than their average urban compatriot, but it also prioritized food security above all else a policy which *required* a successful productive agricultural investment campaign. Urban workers received fixed wages, had state medical care, and generally earned more, worked less, and enjoyed fewer recreational activities than commune members.

Rural commune members received work points whose value depended on that year's harvest and relied on pooled collective resources to provide members' health care – the effectiveness of which varied considerably based on commune resources. Still, despite these blatant inequalities, by the mid-late 1970s the gap between urban and rural life was smaller, and

shrinking faster, than at any other time in Chinese history.[52] Between the establishment of the first communes in 1957 and the beginning of their abandonment in 1978 life expectancy in China rose eight years from 57 to 65 years.[53]

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[1] Benedict Stavis, *The Politics of Agricultural Mechanization in China*, (Ithaca: Cornell University Press, 1978) 228.

[2] Benedict Stavis, *People's Communes and Rural Development in China,* (Ithaca: Cornell University Rural Development Committee, 1974) 37.

[3] Steven Butler, *Agricultural Mechanization in China: The Administrative Impact* (New York: Columbia University East Asian Institute, 1978) 28.

[4] Cited in Butler, 28.

[5] The number of Hunan commune labor is an estimate based on total agricultural labor.

[6] Butler, 28 and 34.

[7] Peggy Printz and Paul Steinle, *Commune: Life in Rural China* (New York: Dodd. Mead & Company, 1977) 54.
[8] Gordon Bennett, *Huadong: The Story of A People's Commune* (Boulder: Westview Press, 1978) 15, 18-20. Also see Stavis, *Communes*, 104-05.

[9] Stavis, *Communes*, 105-06.

[10] Printz and Steinle, 49.

[11] Printz and Steinle, 49-50.

[12] Printz and Steinle, 50.

[13] Stavis, *Communes*, 107-08.

[14] Printz and Steinle, 53.

[15] Butler, 28.

[16] Printz and Steinle, 53.

[17] Butler, 29.

[18] Stavis, *Communes*, 109-110.

[19] Stavis, *Communes*, 108-110.

[20] Stavis, *Communes*, 108-09.

[21] Wu Chou, *Report from Tungting: A People's Commune on Taihu Lake*, (Beijing: Foreign Languages Press, 1975) 19.

[22] Wu, 17.

[23] Butler, 33.

[24] Printz and Steinle, 54.

[25] Butler, 30.

[26] Butler, 30.

[27] Butler, 29.

[28] Butler, 29.

[29] Butler, 30. Also see Stavis, *Communes*, 88.

[30] Wu, 15-16.

[31] Bennett, 18-20.

[32] Butler, 22.

[33] Stavis, *Communes*, 90.

[34] Louis Putterman, *Continuity & Change in China's Rural Development: Collective & Reform Eras in Perspective* (New York: Oxford University Press, 1993) 15.

[35] Stavis, *Communes*, 110.

[36] Butler, 32.

[37] Stavis, *Communes*, 86-87.

[38] Cited in Stavis, *Communes*, 86.

[39] Wu, 12-13.

[40] Stavis, *Communes*, 85.

[41] Butler, 31-33.

[42] Butler, 31.

[43] Printz and Steinle, 42.

[44] Stavis, *Communes*, 84. Also see Printz and Steinle, 44.

[45] In 1980s prices. Cited in Chris Bramall, *The Industrialization of Rural China* (Oxford: Oxford University Press, 2007) 23.

[46] Butler, 33.

[47] Wu, 12-13.

[48] Field research conducted in rural Jiangxi in December 2011.

[49] Wu, 14.

[50] Agricultural Economic Statistics, 1949-1983 (*nongyejingjiziliao*) (Beijing: Agriculture and Fishing Planning Bureau (Nov 1983) 515.

[51] Stavis, *Communes*, 111.

[52] Thomas P. Bernstein, *Up to the Mountains and Down to the Villages: The Transfer of Youth from Urban to Rural China*, (New Haven: Yale University Press, 1977) 5.

[53] Putterman, 15.

CHAPTER 6: **Institutional Structure and Functions (1970-1979)**
Part II: The Commune's Sub-Units

CHAPTER OUTLINE

I. Brigade

a. Size and Quantity

b. Governance

c. Responsibilities:

i. Team Supervision and Policy Study
ii. Production Planning
iii. Members Services
iv. Rural Industrialization
v. Agricultural Modernization
vi. Security

II. Team

a. Size and quantity

b. Governance

c. Functions:

i. Remuneration
ii. Information Dissemination

III. Household

a. Size and quantity

b. Functions:

i. Political Participation
ii. Member Services and Housing
iii. Private Plots and Cottage Enterprises

Introduction

The previous chapter described the institutional structure and functions of the commune as a whole, as well as those of commune level of administration – the top tier of rural local government during the 1960s and 1970s. This chapter peals away the four layers of the institutional governance to reveal the responsibilities of, and relationships among, those subordinate units that fell within commune cadre's purview, that is, the brigade, the team, and the household. Like chapter 4 this chapter breaks each institutional sub-unit down based on its size and quantity, governance structure, and functions.

After the Great Leap Forward, 1959-61, the 1962 commune reorganization affirmed that the commune, brigade, production team, and household would remain the administrative sub-units of all rural China.[1] After the introduction of the Dazhai System in 1965 agricultural modernization, economic development, and the building of a socialist political consciences again came under commune purview. This expanded the functions performed by its subordinate units and altered their interactions in important ways. During the 1970s each sub-unit – from brigade to household – came under the commune's institutional umbrella, yet was considered a distinct legal "accounting unit" *(hesuan danwei*). According to the legal and accounting practices of the 1970s these four "accounting units" were able to own and purchase different types of property, keep and use profits, distribute income, make investments, and hold a bank account. Although commune regulations formally circumscribed each level's purchases and investments they regularly sold or traded property to one another – most often to the next highest or next lowest level.

Contrary to popular perception the concept of property and its ownership and sale was well established in 1970s rural China. Although in practice there was some variation at the

provincial or county level regarding the forms of ownership, three broad types of accounting units existed during this period: (1) State Accounting Units, which were under direct government administration and funded with tax revenues; (2) Collective Accounting Units, which were comprised of a limited number of individuals in a particular location, i.e. the commune, brigade, and team. These separate collective accounting units did not, in theory, receive state funds, but neither were they obliged to provide services or income (beyond state tax payments) to individuals beyond their collective unit; (3) Households and individuals, whose ownership of "the means of production" (e.g. a factory or a large farm) was forbidden, but in rural areas an individual or family owned their home, their adjacent sideline plot or cottage industry, household animals (e.g. pigs and chickens), a bicycle, and various basic household consumer goods (e.g. chopsticks, shoes, comb, clothing, etc.).[2]

I. **The Brigade** *(shengchan da dui)*

Wedged between the commune and the team, the brigade served as an administrative intermediary and supervised the production of teams under its jurisdiction. The brigade was the most important link between central policies and their grassroots implementation because (unlike the commune) its leaders performed regular, in-person inspections to confirm teams were properly carrying out policies. All policies – regardless of whether they originated with commune leaders or Mao himself – were introduced and supervised from the brigade level. In practice this meant that unless a special inspection team was sent, all other levels – commune to central leadership – relied on brigade reports or those summarizing them to inform agricultural policymaking.

Leadership skills were especially important at the brigade level since it was the only administrative unit that could monitor team activities and respond immediately to rectify large-scale problems (e.g. pestilence or plant virus) that threatened to disrupt agricultural production. Whereas commune cadres worked more with balance sheets and schedules, brigade cadre, by contrast, had to pay careful attention to such nebulous and unquantifiable, yet critically important, factors as group cohesion and dedication to the collective.[3] They navigated a multitude of interests and pressures from both above and below. Every project or policy, regardless of whether it was initiated by the commune leadership or the CPC Central Committee, required brigade leaders to motivate teams to actively participate.

First, the commune and brigade negotiated production targets (noted above); next the brigade leaders would divvy up the targets among its teams; then, the brigade planners worked with each team to set its own harvest targets. To ensure its teams met their targets and help improve their management brigades supervised their production, income distribution and bookkeeping work. They also oversaw the construction and administration of brigade-wide irrigation and other farm capitalization projects intended to increase output. Brigades provided an institutional venue for teams to coordinate joint projects and administer member services such as primary education and healthcare. Propaganda distribution and political affairs, militia and public security, and cultural and recreational activities were all under brigade jurisdiction.[4] They coordinated political study sessions aimed at helping their teams and households move away from clan-based, chauvinistic, and other traditional "feudal" attitudes and towards socialist values like class-consciousness and gender equality. Brigade enterprises were the lowest level link between the rural industrial sector and agricultural production. Their enterprises and repair

facilities maintained agricultural machines, organized the production of agricultural inputs, such as fertilizer and pesticide, and ensured teams were properly using them.

Size and Quantity

Each brigade managed an average of seven teams. The brigade was typically a village or multi-village unit comprising about 10-20 production teams. Each commune had about twelve brigades, which may have been a single large village, a large village with smaller surrounding villages, or a collection of villages in close geographic proximity. They were generally small enough to allow meetings of the brigade's 25-50 party members to be held during the evening at the brigade headquarters such that they did not interfere with daily work schedule.[5]

Below the commune were an average of 15 "production brigades" each with an average of 200 households or about 1000 people. Brigades were often the same size as the higher Agricultural Producer Collectives described in chapter 2. The number of brigades remained more stable after the 1961 reorganization than either the number of communes or teams. It seems that as communes were subdivided then reconsolidated during the 1960s, brigades, which were often the size of the big village or old higher APC, were simply shifted from one commune's control to another's.

Governance

The brigade's management committee included a mix of party cadre and managers and was elected every three years or so. Each brigade hosted a small party branch with a secretary and vice secretary provided the most authoritative brigade-level political leadership and set policy priorities. The brigade congress, made up of representatives from its production teams, selected

about ten or so additional committee members to assist in brigade management. These might include, among others, the brigade manager, assistant manager, accountant, public safety director, militia director, women's director and administrator of the brigade credit cooperative.

In 1972-73, in addition to its party secretary and vice-party secretary the Sui Kang brigade in Kwang Li commune in Guangdong management committee, for instance, had seven total members: chairman, vice chairman, public security chief, head of women's work, vice-head of women's work, head of youth work, and another committee member. Between 1958 and at least 1972 the chairman of the 3800 resident-strong Sui Kang brigade was a partially literate, self-taught male "poor peasant."[6] A brigade might also have a supervisory committee that could conduct audits or intervene if a team brought a complaint.[7]

Members of the brigade management committee were generally members of its production teams and remained active team members. They were required to work 120 days per year for their teams (usually on managerial tasks) and would return to team work after serving at the brigade level. They were paid for their work (both in the fields and the brigade office) in work points whose amount and value was determined by their team. Regulations mandated that total management expenses for teams and brigades should be between 1-2 percent of the total number of work points of the teams in the brigade. Official statistics report that commune management costs remained at only 2-3 percent throughout the 1970s – even as expenditures on productive inputs rose rapidly.[8]

Committee members met about once a week to draft, debate, approve and supervise detailed production plans or to deal with problems or challenges. In the spring 1973, at the height of the growing season, journalists Printz and Steinle attended one Sui Kang brigade management committee meeting. They recounted that the meeting, which took place "on the dry grass

bordering a paddy field…was convened to demonstrate the urgency of the insect threat." The brigade committee evaluated the problem and several possible solutions before deciding to set insect lures – lamps set above pools of insecticide – and spray the rice with large quantities of pesticide.[9]

Corruption among brigade level leaders was a problem in some cases. Brigade leaders, unlike their superiors at the commune level, were not on the government payroll and were closer to the teams and households. This provided ample opportunities to receive "gifts" or enjoy various privileges in return for favorable administrative decisions or appropriations. Brigade leaders could seek to accumulate large numbers of work points loafing in their office or engineer a personal loan from the brigade welfare fund, a practice that was technically legal. One area under brigade cadre discretion ripe for corruption was in the allocation of highly coveted jobs at brigade administered enterprises and factories. These workers received a higher income than other team members, albeit lower than urban workers. As one might expect the provision of preferred jobs to family members or in return for "gifts" remained an ever-present temptation for brigade cadre. Teams also had an interest in seeing administrative and factory workers drawn from its ranks since the team received a portion of their workers' pay, which was drawn from the brigade's collective funds to which all teams contributed.[10]

Functions

The brigade had half-dozen or more overlapping and interdependent political and economic functions. These included (1) team supervision and policy study; (2) helping teams formulate and implement agricultural production plans to achieve brigade-wide targets; (3) providing member services beyond the team's capacity such as local security, elementary education, and basic

public health; (3) militia and security; (4) political security and propaganda; (5) coordinating multiteam or brigade-wide projects, particularly water control initiatives related to agricultural modernization, to wit, the manufacture, repair and renting of small and medium-sized agricultural machinery; (6) managing brigade-level enterprises to increase rural industrialization and agricultural production including tractor servicing, farm machinery repair, electric power supply, animal husbandry, brick and tile making, and fish breeding;

Team Supervision and Policy Study

One of the brigade's most important responsibilities was monitoring its teams' implementation of policies and transmitting performance-related information to higher levels. Brigade leaders were supposed to spend about half their time performing administrative and managerial tasks and the other in the fields. A brigade's ability to project administrative power was largely dependent on structural constraints: how many teams were under its jurisdiction, the distance between them and the brigade headquarters, and the available manpower and transportation, etc. Teams located in more remote or mountainous areas naturally enjoyed greater autonomy than those close to brigade headquarters. During times of team subdivision or consolidation, brigade leaders (after consulting team and commune leaders) drew their teams' boundaries. Teams were generally made about the same size in terms of population, arable farmland, and agricultural diversification to simplify brigade supervision and planning. When necessary to reduce tensions team boundaries also accounted for interpersonal, familial or clan relations.[11] According to one former team leader, Guangdong brigade boundaries were redrawn in the early 1970s order to help brigade leaders keep better tabs on their subordinates:

> There were definite advantages in splitting up the previously large brigade. It was easier to inspect production. Previously it took four or five days to make an inspection, but after splitting the brigade it could be done in one day. It prevented the team from covering up the situation and strengthened the control

> over the team leadership. Splitting the brigade also had an effect on profiteering: the brigade controlled the team head. Previously even the team head could engage in profiteering. Before splitting the brigade, field management was not controlled as strictly.[12]

The brigade could interfere in a team's affairs if it was found ignoring or violating policies or if interpersonal disputes were undermining agricultural performance. In some cases, rather than issuing direct orders brigade cadre would subject team leaders to mandatory "policy study" sessions until they complied. In 1972, for instance, teams in Chenkuang Brigade in Tungting commune in Jiangsu wanted to plant more watermelons to increase team income. This decision was contrary to the policy of "taking grain as the key link" so the brigade called a team cadre meeting to "study" the policy. "As a result," an official Tungting Commune report notes that, "team members *voluntarily* reduced the area of their watermelon fields." (italics added for emphasis)[13]

Study meetings were also held to instruct team level cadre on central policy directives and distribute political propaganda, or to recommend the removal of incompetent team leaders or identify and quash clan disputes that hurt team productivity. Most important to average members, noted Butler, "brigades may intervene to force teams to reduce the amount of planned income distribution and thereby increase investment funds."[14]

Brigades' ability to supervise the teams under their purview varied considerably across China. One hands-on brigade reportedly oversaw the organization of cattle herding in all of its teams in wide-ranging areas such as remuneration, fixing quotes, selecting and training specialists, and organizing the inspection teams. By contrast, brigade leaders that were more risk-adverse, less capable or less well resourced might avoid making decisions on controversial issues like team remuneration schemes without direct commune instructions.[15] Although commune cadre regularly urged brigade leaders to assert regular and thorough management of all subordinate teams, in practice the later often lacked the resources to do so. Given real world

limitations a give-and-take relationship often developed whereby team leaders sometimes looked to the brigade for political cover for their activities, while other times they would resist brigade policies that they disliked, usually passively, in the hopes of gaining compensation for their compliance. Rather than outright opposition the methods teams used to resist brigade instructions and gain compensation could generally be termed "weapons of the weak," that is, half measures, complaints, sending poorly qualified or weak labor to participate in brigade projects.[16]

Production Planning

The brigade's primary administrative responsibility was to ensure its teams met their agricultural production quotas. This required coordinating their annual production plans with the commune's assigned quotas for grain and other crops. If brigade leaders felt the quota assigned by commune managers was too high they could push for a reduction, suggest a different division of crop quotas, or request increased access to modern agricultural inputs or machines to increase output. Once the commune-wide plan was finalized, however, brigades were tasked with implementing it within the area under their authority.

Brigade leaders commonly suffered from two primary types of split loyalties in their effort to help teams devise production plans: horizontally, among the different teams within their unit, and vertically, between the interests of the commune above and the teams below. Brigade leaders hailed from different teams and might be strangers, yet despite their differing team allegiances they were all tasked with formulating production plans that placed the collective unit interests above their team. Brigade leaders, who were paid in work points from their team, were charged with informing commune leaders of team compliance with commune-wide initiatives, some of which, like the "grain first" policy, were likely to reduce teams' (and thus their own)

incomes. As one former team member from Guangdong explained, when seeking to implement production plans the brigade was often squeezed between higher-level orders and lower level resistance:

> There is pressure from above, and lower levels won't listen to you. The brigade is pressed in the middle, and thus is very hard to manage. The commune will say to the brigade that they must send that many persons, that this is a directive from the county, and they must implement it. If the brigade does not implement it the commune will tell them they must work according to the county directive, and correctly carry it out. The pressure that they receive is much greater than the team. The brigade will, of course, tell the teams that this is a directive from the county and that they must implement it, but if the team does not actively implement it or opposes it, the commune will criticize the brigade. Sometimes the teams will use passive methods to resist.[17]

Even after all stakeholders agreed on a production plan grassroots collective action problems and limited resources complicated the brigade's political arena. Commune leaders could simply pass down an order or production target, but it was up to brigade leaders to persuade each team to implement it. This often placed them at the crossroads of a complex web of interdependent and competing team level problems, objectives, and interests. Sometimes the human component – a competent and honest administrator with judgment and leadership skills – could make the difference between a particular brigade's success or failure. Other times the sheer number and complexity of the interwoven problems within a brigade's dozens of teams would defy even the most competent and well-meaning administrator's ability to set and enforce production plans.

Commune leaders instructed their brigade-level subordinates to accomplish numerous tasks, but with limited resources it was up to the later to prioritize objectives and manage their superiors' expectations. Although the allocation of resources for long-term, stable output growth was the stated national policy objective, given the myriad of conflicting interests and responsibilities even a skilled brigade leader might not have known if his unit's teams had pursued the most effective production plan – let alone his commune level superiors. Aided by these severe information asymmetries, but constrained by limited resources and besieged by interrelated problems and pressures that challenged cost/benefit analysis, brigade leaders

emphasized readily observable criteria for success (e.g. grain production) and called them to their superiors' attention. Such difficulties coupled with limited rewards may help explain why many brigades had problems recruiting and maintaining competent leaders.[18]

Members Services

Brigades provided members important services including family planning, technical instruction, issuing ration vouchers for goods in short supply (like timber for home construction) and permits for nonfarm work, such as assignments to work in brigade enterprises. The brigade might also run the commune branch store, a marketing cooperative to sell products produced in the unit, and/or a credit cooperative to allow farmers to bank any surplus cash and when necessary borrow. Households might take loans from the brigade to cover medical costs, funeral expenses, or investments in small-scale private sideline enterprises like pig or chicken rising. Agricultural inputs and machines were *not* funded through credit coops since they were purchased and held collectively in agricultural machine stations.[19]

During the first early years of the commune brigades attempted to organize social services including nurseries, kindergarten, sewing centers and old-age homes. Brigade level services were scaled back in the early 1960s, but briefly expanded again during the Cultural Revolution. After 1970, however, households had again resumed primary responsibility for caring for the very young and the very old. Although this might not seem in keeping with the idealized commune some might envision, it did allow rural China to avoid instituting a complex and costly social security system to care for the elderly.[20]

The brigades maintained a basic health station staffed by two or three "bare-foot doctors." Difficult cases were referred to the commune level or above although brigade-level

medical staff might assist doctors at the commune hospital. The brigade also oversaw the primary school or schools in the area under its purview. The brigade paid its staff and elementary school teachers, although in practice primary education was often subsidized during the 1970s.[21]

Security

Although chapter 7 explains the national security implications of the brigade militia it also had some basic public security responsibilities that are worth noting here. Brigades organized militia recruitment and public security. They held thousands of files (*dangan*) on each of its teams' membersand kept tabs on those branded as one of the "Five Bad Elements" – former landlords, former rich peasants, counter revolutionaries, who opposed the revolution and land reform, rightists and bad elements (e.g. thieves or criminals).[22] The decision to label or un-label a person as a bad element could condemn or redeem a member and his family. This power was left to the discretion of the commune party secretary, who by rule took a person's class background into account when making such decisions.

Brigade justice was not intended to be "blind," instead it was intentionally subjective based on class background. This institutionalized double standard, meant that if a poor peasant stole something he would likely be "reeducated," while members of the "Five Bad Elements" and other "class enemies" might undergo public self-criticism or worse, be the subject of a humiliating "struggle meeting" before the entire brigade. Unlike at the Cultural Revolution violence of the late 1960s, "struggle" meetings in the 1970s were often intended more to reinforce a directive or policy than punish actual wrongdoing. To accomplish this those identified for punishment were often the usual suspects – aging former landlords or rich peasants. For instance, in 1972 Sui Kang brigade in Kwang Li commune held a struggle meeting

against a former landlord accused of "serious crimes" to wit: "publically carping that private property was better than collective ownership and attempting to barter one of his nieces in marriage." His punishment: working under the supervision of the poor peasants – essentially what he was already doing.[23]

Agricultural Modernization

"As China's (agricultural) mechanization program progresses, the role of the brigade expands," noted Butler. The brigade provided a critical technical link between rural industry and local agricultural production. Generally the team was too small to provide an adequate economy of scale for the production of modern agricultural equipment or inputs. Brigades also allocated key agricultural inputs such as chemical fertilizer and pesticide to their teams. Pesticide spraying equipment, for instance, was too expensive for teams to own and maintain, but too often used for communes to administer. Hence the creation of the "brigade-level mobile plant protection squad."[24]

Through its agricultural machine stations the brigade played an important role in producing, purchasing and distributing medium sized agricultural machines including tractors, trucks, water pumps, processing equipment, electricity generating equipment, etc. Although they did provide brigades with some technical services, training, and replacement parts, generally commune leaders were both geographically and administratively too far removed from agricultural production and contained too many subunits to efficiently provide day-to-day repair functions.

Each brigade had a farm tool repair shop with electric welding equipment (e.g. a lathe, drill press, and blacksmithing equipment) to service its teams implements and machines. Brigade

agricultural machine repair stations generally did small and medium sized repairs, while the larger, better-equipped commune shops handled big jobs. The expansion of agricultural equipment, tractors in particular, was extensive during the 1970s. Beginning in 1969 all brigades in Chiliying Commune in ___ county Henan, for instance, were told to establish repair workshops and to train "all-round tractor drivers for brigades, able to do maintenance and repairs as well."[25] The brigade's ability to provide training for rural workers in preventative maintenance and basic repair services could save tens of thousands of yuan per year, a substantial sum at the time.[26]

Another important brigade responsibility was the construction of smaller-scale irrigation and drainage projects. The brigade coordinated multiteam development projects including irrigation or large-scale field reconstruction and leveling. Brigade leaders – sometimes with commune level support – would develop plans for small and medium sized reservoirs, canals, deep wells, etc. They would first determine which teams needed irrigation infrastructure, then draw up plans and gain the approval of both the relevant teams and the commune leadership, and lastly, organize labor and materials for the projects. In seeking team contributions for brigade agricultural projects brigade leaders had to reckon with the team's status as the basic accounting unit.[27] For each project labor was garnered from teams proportionally based on the anticipated level of benefit each would receive. Since teams that contributed the most labor were also supposed to be the ones that benefited the most from the project the teams (not brigade) paid the workers it provided in work points.[28]

Official writings said teams participated "voluntarily," which suggests some limitations on the coercive methods brigade authorities could have used to achieve compliance. In practice, however, a brigade's ability to extract labor from its teams for agricultural development projects

varied considerably. In one instance a team refused to send laborers to a brigade project until it agreed to build the team an irrigation ditch. Once construction began, however, it became clear that the other teams in the brigade had each sent their poorest laborers, prompting the brigade to deploy its cadre to "reeducate" the errant teams. In another similar case, brigade authorities "reeducated" a team that objected to having a portion of its cropland lost to a brigade project. Yet, this team too received compensation, this time in the form of priority fertilizer distribution and other assistance to improve the yields of its remaining fields.

Rural Industrialization

The brigade was tasked with helping to diversify the local economy and identify new economic opportunities to help its teams increase agricultural production. Brigades could own and manage the production of high-value crops and products like vegetables or fruit orchards. Like the commune the brigade also operated income-generating enterprises to cover administrative and other costs. Depending on location and wealth a brigade might own several enterprises such as animal husbandry facilities, a dairy, a flourmill, a noodle factory, a brick or tile mill, or fertilizer or insecticide production facilities.

In Guangdong, the Sui Kang brigade, Kwang Li commune's most prosperous sub-unit, operated a bamboo factory, a rice mill and a peanut oil processing factory, and a wooden tools factory. Sui Kang's one-room bamboo factory included two bamboo slicing machines bought from the commune's agricultural machine supply station. It was composed of two workers who managed the machines surrounded by a dozen or so others who sat on the packed dirt floor, weaving and binding baskets, scoops and other farm implements. It turned out a variety of

products including hats, fertilizer scoops, and baskets for farm work. The remaining bamboo leaves were then used for fertilizer or fuel or were sold.[29]

"Without question," noted Butler with foresight in 1978, "brigade and commune industries are becoming a more important part of the rural economy." Indeed, between 1971-78 brigade level enterprises grew at an average annual rate of 17.4 percent, compared to just 2.8 percent during the 1962-71 period. Enterprises yielded a relatively large percentage of commune members income, but tended to employ less workers than agriculture. In one brigade in the Shanghai suburbs, for instance, 13 percent of its members produced 43 percent of commune income. Like those at the commune level the salaries and expenses of those employed by brigade administered small factories, repair shops, orchards or veterinary stations, etc. were paid using the income generated from them or other brigade enterprises. Brigade enterprise employees' monthly salary, as noted above, was generally higher than the average member, but lower than the average urban factory worker.[30]

In one commune brigade-controlled economic activities accounted for about one-sixth of total rural income.[31] In 1976 20 percent of the total income of Hunan's communes was earned at the commune and brigade levels; in Yantai, Shandong in 1975 it was 35 percent; and in the Shanghai suburbs it was 47.7 percent in 1974 (30.5 percent for the commune and 17.2 percent for the brigade). Brigades that enjoyed profits beyond their expenses could invest them in their facilities and enterprises, distribute them to brigade employees, make loans to teams, or distributed them either in cash or in-kind to team members. In one location the brigade distributed 40-50 percent of its industries' profits to the teams proportionally based on the number of workers each send to the brigade's factories.[32]

Throughout the 1970s commune and brigade enterprise output grew faster than agricultural output. In Hunan between 1970 and 1978 the income from commune and brigade enterprises increased at least 30 percent per year, compare to the average production team income, which grew at less than one percent from 1974-1976. Between 1970-74 the income of the aforementioned suburban Shanghai brigades increased 90 percent annual, while team's income increased at an average annual rate of 2.2 percent. In the Shanghai suburban region as a whole, from 1973 to 1974 the brigades' income rose from 21.1 to 24.7 percent of the total team income. Taken together brigade and commune income rose from 43.3 to 47.7 percent. Although these growth rates may be exceptionally higher than for less developed regions of China, they are nonetheless indicative of a general phenomenon: the relative profitability of industrial versus agricultural investments in rural China. The high growth rates of investing in brigade industries and the increasing wealth available to brigade officials during the 1970s had important consequences for brigade administration, as well as for rural industry during the 1980s, a topic beyond the scope of this study.[33]

Brigade industries' profits increased due to the high price and low availability of industrial goods in rural China, which had three main causes. First, during the late 1960s the supply shortages were the product of disruptions in the urban industrial sector resulting from Cultural Revolution. Second, and more importantly, they resulted from systemic problems – worker redundancy, a preference for heavy industrial goods over consumer goods production, a lack of worker incentives, and a lack of concern for profitability and efficiency – factors commonly associated with inefficiency in factories in other socialist countries at the time. Third, there were huge inefficiencies, bottlenecks and costs associated with goods transportation in early 1970s. Productive factors moved slowly and at great cost among communes, although local

factor mobility did increase substantially within communes and brigades as a result of the spread of tractors, trucks and boats (discussed in Chapter 3). Topographically speaking it was understandably difficult to build countrywide transportation network in 1970s China. The country's two primary rivers, the Yangtze and the Yellow River, flow from west to east, into (rather that out from) China's the most capital-abundant areas; making navigation and upriver shipping a major obstacle to the movement of productive factors and finished goods. China is rich in coal, for instance, but it is primarily located far from the most industrialized areas (e.g. Jiangnan and Guangdong) and largest waterways.

Poor urban productivity and high inter-commune factor mobility costs taken together meant that rural communes faced high prices, unreliable production schedules, poor quality, and a scarcity of consumer products from urban manufactures. Brigade enterprises, in turn, were charged with producing products that contributed directly to local agricultural production and satisfied local demand and could be criticized if they strayed too far from this directive into consumer products. In practice brigade leaders faced a difficult choice between manufacturing for profit or to increase agricultural production. During the planting and harvest seasons in particular, brigades were encouraged to suspend factory production to permit laborers to work in the fields, although the need for manual labor was greatly reduced in some more mechanized agricultural areas.[34]

To support their initial investment in brigade-level enterprises were supplied from below in the form of loans, direct investments or labor contributions from teams. Schemes for drawing investment resources from teams varied depending on the availability of local resources and market conditions. One method was to use money from the teams' collective reserve funds. In one brigade, 40 percent of the teams' reserve funds (4 percent of their total income) went directly

into the brigade budget to pay for the development of roads, schools and factories. Another approach was to use labor drawn from teams for brigade projects, with laborers receiving work points from teams. Team's willingness to participate depended largely on the benefit they envisioned they might receive from a particular project. Often brigade enterprises such as brick-making and collective pigpens offered the teams an opportunity to increase team and individual sideline income.[35]

Funds could also come from above in the form of grants or loans from the commune, county or a state-owned bank. "Although the Communist Party stresses self-reliance in the expansion of local economies, state aid still plays an important role," Butler noted. In Xinyang County, Henan, for instance, the state provided about 17 percent of brigade investment funds for agricultural mechanization. In applying for state aid Xinyang brigades stressed their units financial reliability and the important role a particular agricultural project would play in the development of agriculture. Other enterprises might receive technical expertise, training or investments from the commune or county beyond the brigade's capacities.[36]

Each brigade enterprise's approach to earning income depended on the sector they were involved. A brigade agricultural machine and farm tool repair shop, for instance, might charge teams for its work; a brigade orchard might supply the state, its teams, and sell any remainder at the local market. One long-gone irrigation pipe factory I visited in Jiangxi sold its output to state-owned companies and other brigades inside the commune.

II. **Production Team** *(shengchan xiao dui)*

The team was the average member's primary venue for interaction and participation in the commune system. As the first level of commune administration the effects of a team's policies

on production were readily observable to its members, even if higher-level influence over those decisions was not. Teams controlled important decisions related to task allocations, land assignments, provision of housing materials, guaranteed members' basic needs were met, ensured agricultural machines and inputs were properly utilized and distributed the bulk of members' income. It also managed all collective agriculture and ensured that private household farming, while permitted, remained constrained by household and sideline plot size. As the basic building block of the commune system the team's organizational efficiency and the quality of its leadership determined members' confidence in the entire communist enterprise.[37]

The teams were tasked with the day-to-day management of commune affairs and administered their own funds. The team's public funds were divided into the public reserve fund and the public welfare fund; the former was for small public investments and the later for social services. Public welfare fund might support a nursery or canteen during planting and harvest seasons, help subsidize team member medical costs, and provide grants to the elderly or disabled.[38] When these members died their possessions would revert to team ownership, unlike those with families whose property reverted to the household.[39] Teams might also maintain one or more small-handheld tractors, which they might use to haul goods to supplement team income during the down season. In one case a team used its cart to haul goods in the county town for two months. The team peasants that operated the tractor received work points, paid a fee to the team, and were able to keep any surplus. The teams primary objective, in short, was to apply those inputs provided by the brigade to create conditions for long-run, stable increases in agricultural output to support expanded social services, which the growing population required. [40]

Size and Quantity

Most teams brought together the residents of a small village, the ancient basic-level community of rural China. Production teams each had 20-30 households or about 150 people. An average of seven would make up a brigade.[41] Teams were the smallest and most tightly knit of China's collective organizations and by 1970 had been working together and sharing the profits and losses from the same land for a decade or more. Team members might be related or neighbors from the same village. Bennett observed that teams are often "single surname villages, or lineages, where village ties may be reinforced by kinship."[42] But like everything else in China there was undoubtedly great local variation among team membership.

A production team was a geographically defined unit consisting of arable land and a village or section of a large village. The land may be relatively fertile or relatively barren; vary in its suitability to various types of cultivation and animal husbandry; hilly or flat; dry or well-irrigated. Residents may be few or many, may have one or several family or kinship lineages, or may form a sub branch of a larger lineage. These factors influence the nature of the opportunities available and unit cohesion.

Governance

The team organized agricultural production and integrated the individual commune members and their households into the state's production plan. In principle, within its designated area all resources, land, water, forests, animals, farm implements, etc. (expect for those explicitly owned by another accounting unit) belonged to the team and could only be used by the commune or brigade with proper compensation.[43] Yet, in practice as Butler observed:

> Party guidelines for brigades reflect not a desire to preserve the team's independent status, but a desire to preserve the present system of work incentives. The prerogative to decide what is a "reasonable" solution lies not in the team's inalienable rights, but in the judgment of higher authorities.[44]

The team's leadership varied depending on its size and tasks but all had a leader, assistant leader, accountant, treasurer and a granary watchman. They were elected at team meetings for one-year terms, but could be reelected to successive terms.[45] In Tungting commune, Chenkuang Brigade's No. 8 Production team, for instance, had nine leaders including the leader, deputy leader and seven others that divided up the remaining tasks including political and ideological work, production, finance and accounting, work among women, with the brigade militia, etc.[46] Leaders were local team members and the team leader was often a Party member – although not every team had a Party member.[47] The leadership selection process, like those at higher-levels, included a combination of influence from above and below – with the former most often holding sway. David Mozingo's described how the process worked:

> When election time approaches, the team draws up a list of potential candidates. The brigade then uses this list to prepare nominees. The brigade may then nominate seven people for four posts. The members of the team are each given four votes. The four top vote getters become the team's leadership and decide among themselves who will have which job.[48]

The team leader was the communication link between the team and higher levels of commune administration as well as the everyday face of commune authority for most members. He (the team leader was almost always male) was in charge of communicating the team's overall condition and its needs to higher levels and disseminating decisions from the brigade and commune down to team members. Team leadership was a part time job and the leader's home was the team's headquarters. Familiarity among members allowed most routine decisions to be handled informality. Team leaders were paid with approximately the same amount of work points as if they had been farming and officially received no special bonus. Although team administrative work was generally graded at the top of the work point scale, regulations limited the number of days that could be designated for such work and restricted the number of work points that could be awarded to less than one percent of the team's total. If team leaders were

called to attend meetings at higher levels then that level (i.e. the brigade or the commune) was required to pay the member's expenses and a per diem.[49]

The team leader had the difficult and precarious job of assigning tasks and allocating work points. He did this together with the team accountant, whose job was to meticulously record each member's work points as well as any advances on wages or grain. Both jobs required someone with the perquisite math and book keeping skills, which were in short supply during the early years of the commune. By the 1970s, however, after a decade of experience and the widespread expansion of rudimentary education and basic accounting techniques (discussed in the following chapter) the number of rural Chinese with these skills appears to have been adequate.[50]

On most important political or economic issues team leaders effectively received and implemented instructions from the brigade and commune. Team leaders might serve under the same brigade leadership and with neighboring team leaders for decades, incentivizing them to maintain cordial relations rather than engage in prolonged debate or needless confrontation.[51] But on those issues where upper levels did not have a say or stood mute the team leader had almost complete autonomy to decide policy in his locality. After attending one team's meetings first hand Benedict Stavis observed that "a core group of experienced and popular social leaders often discuss matters beforehand and come to meetings with proposals that are often approved with little discussion."[52] In the absence of clear central party dictates some teams had a difficult time deciding how much private production is "too much," or how much to apportion to the welfare fund before members become discouraged by their low income.[53] Some teams resembled small fiefdoms, with efficient markets open in one but unavailable in another, based solely on a

team leaders' preferences. A member of a well-run team could be aloof about a conflict ridden team within its brigade so long as the problems did not spill over into his own team.[54]

Sometimes team leaders would face difficulty mediating among competing demands from above and below. Team members might advocate measures aimed at increasing member incomes, usually through added production of vegetables, meat or other household sideline products to be sold sale at the free market. Meanwhile, by contrast, brigade orders called for team leaders to prioritize grain production and sell to the state at below market prices. Under pressure from above team leaders sometimes had to implement unpopular "grain first" policies that sometimes reduced team income and moral.

Functions

Production teams managed the lion's share of remuneration and production related activities. But, ultimately, the team's small size and limited collective resources constrained its capacity. Without substantial coordination and investment from higher levels the team alone could not have implemented a nationwide agricultural modernization scheme. The team was *not* responsible for modernizing agriculture, diversifying rural employment or distributing education or health services. As noted above agricultural machine stations, schools, health clinics, recreation activities, etc., were under commune and brigade control.

Remuneration

Throughout the 1970s teams were the basic accounting unit in rural China, which meant they were all equally responsible for their profits and losses, with both success and failure shared among members. Teams handled their own production, job allocation, income distribution, and

remuneration, generating a strong incentive to cooperate to maximize collective profits, which, in turn, determined the value of the workpoint. Team members, like it or not, were close associates working together everyday in the fields, shared the same work point remuneration structure, and local leadership.

Collective sources provided for the bulk of members income, both in cash and in kind, via the work-point system and depending on four factors (1) the team's income minus all taxes and costs, i.e management, input and production; (3) the total amount of work points allotted to all team members; (4) the total amount of work points earned by a households members. [55] The institutional process associated with team controlled work point remuneration system and its critical importance for resource extraction from households is detailed in the following chapter. But, in sum, this unique scheme was designed to draw household's attention away from large increases in collective productivity per unit land and direct it towards their own portion relative to others. Unbeknownst to its members, the institutional objective was to take an increasingly larger percentage of household income to fund local agricultural modernization.

After teams allocated work points and determined their value they provided payments to workers and their households in a combination of grain and cash. The in kind product and its ratio to cash could vary widely among teams. To increase the amount of cash teams could distribute to households sometimes they might sell their crop at the local market rather than provide it in kind. Because all members' fortunes rose and fell together – with the value of the work point as determined by collective income – all households benefitted from agricultural capital investments that increased team collective income, even if they did not personally ever use them. Teams members close relations and shared collective interests were further solidified

over the years as they responded together to requests from the brigade and commune level leadership.[56]

Information Dissemination

Teams held regular general meetings to review, approve and discuss important decisions or disseminate instructions passed down from the brigade. At team meetings the leader would report on the previous year's income, expenditure and balance, before presenting the brigade's plan for the next year for member discussion and approval.[57] Each team would discuss and unanimously endorse this annual collective production plan and review the acceptable remuneration systems for attributing, counting and distributing work points. Then at the end of each year the team's last distribution of gross income would be reviewed and finalized after review at the members' meeting. Teams were mandated to divide their gross income according to CPC guidelines, which required they set aside funds and grain for state taxes, production expenses, capital investment, welfare, and, only once expenses were covered, team member's income. These instructions on how to allocate resources directly affected team income levels and were a topic of paramount concern to its members.

CPC regulations ensured that team members could not simply vote to distribute all income to members and not set aside investment or welfare funds. But according to state policy throughout the 1970s increases in output should be reflected in members income as long as they do not threaten long-term production.[58] As such, the amount set aside for investment and/or welfare expenses was often a controversial topic in team meetings.[59] Team leaders were responsible for explaining the need for investments in collective welfare, inputs or capital and gaining members assent. To increase yields commune and brigade leaders might, for instance,

urge teams to use more chemical fertilizer instead of manure, but they would first need to "educate" the team members about the potential benefits of this investment. Alternatively, the commune leadership might want each team to plant 5 percent more winter wheat to expand the collective grain reserve, but the team might prefer to grow vegetables, which would improve their diet and net more income at the free market.

According to directives from above teams were regularly required to plant their land with grain and forced to sell it to the state at low fixed prices. But in the 1970s power within the commune was sufficiently decentralized such that nobody could *force* a team to plant one crop over another if they categorically refuse to do so. But teams did not exist in a political vacuum so they would generally refrain from outright opposition to commune or brigade leaders' requests. Instead, to increase their incomes teams might quietly cut down on grain acreage and increase production of more profitable vegetables or illegally expand fish ponds into adjourning farm land. A team might also resist planting a risky or new crop or attempt to evade state prescribed marketing regulations for short-run gain. They could also sell hybrid seed to their neighbors or state-monopolized foodstuffs or fuel on the black market.[60]

III. Household *(Nonghu)*

Unit Functions

Kate Zhou has observed that: "The commune and later the production teams replaced the family as the basic unit of farming."[61] While this is, strictly speaking, true, it also masks the important role households and their private sideline farming, animal husbandry and cottage enterprises played under the commune system. Throughout the 1970s the private household – the basic accounting unit before 1958 and again after decollectivization – remained an important economic

accounting unit charged with managing private "sideline" production. Although some leftist Chinese leaders maintained the fig leaf of eventually completely eliminating the household's private sector plots and cottage industries, this was *never* actually attempted after the GLF. In the late 1968-69 some localities under PLA control may have suppressed private sidelines, but such decisions were quickly reversed when control returned to local cadre.

Political Participation

Political participation, and Maoism more generally as practiced under Dazhai, was primarily a tool cadre used to twist and realign social incentives in ways that increased production and investment at the expense of household consumption. Each household's adult members were required to attend numerous, tedious and mandatory team or combined team meetings and political study sessions. Households' compulsory participation during political and economic policy decisions was starkly contrasted by their lack of control over them. They were, generally speaking, observers responsible for witnessing team proceedings and then voting or voicing support in accordance with team leaders instructions. Team meetings mainly ensured households were both informed about political and ideology related developments and policies and elicited their tacit consent for them. Politically speaking, a household or group of households did not have the power to support former leaders – whether local or national, rightist or leftist – that had lost power. All households, for instance, would have been instructed to remove pictures or writings of former prominent national leaders cum public enemies such as President Liu Shaoqi or Defense Minister Lin Biao, who were denounced at team meetings.

Households were more powerful, and naturally most interested, in economic affairs. Indeed, it was in economic affairs that households could employ a range of methods to show

dissatisfaction with collective policies. Generally they could use daily resistance, mostly "foot dragging," to slow or tweak the implementation of disagreeable policies.[62] Unlike any other commune administrative unit households were bound by blood and kinship ties. This allowed them an important organizational advantage if they chose to resist a particular policy. Team leaders were well aware of the local sensitivities and would, in theory, take them into account during their negotiations with the brigade. In reality, the regularized and highly controlled nature of household political participation under the commune proved a strong disincentive for leaders to pursue policies that alienated households or encouraged them to take collective action *beyond* the institution.

Member Services and Housing

Although its role was significantly diminished during the GLF the CPC never removed the household as one of the four official accounting units. During the GLF many of the household's responsibilities (e.g. childcare, eldercare, cooking etc.) were given to the collective, which took control of all land and created collective cafeterias, dormitories, childcare and eldercare centers. Although well intentioned these policies not only eroded the household's status as an official economic accounting unit but also overburdened the commune system with public welfare functions that stretched its capacity.

To stem the GLF starvation, in 1961-62 many of the household's responsibilities and private plots were restored. Shared memories at both the grassroots and elite levels linked the protection of household responsibilities and private sideline plots with families' basic self-determination and a baseline food security guarantee, respectively. Regardless of their accuracy these widespread perceptions created a strong national path dependence in favor of the

household such that during the 1970s any attempt to diminish its role or curtail its private plots would have risked widespread noncompliance. In reality most communes lacked the resources to extend basic welfare services, such as childcare, eldercare, healthcare and housing, and were thus content to rely on households to provide them.

During the 1970s caring for the very young and old was primarily a household responsibility. Although this might not seem in keeping with the idealized commune some might envision, it did allow rural China to avoid instituting complex and costly childcare and eldercare systems.[63] In 1970s rural China, families were also responsible for their own homes, which they owned. Generally a household owned its home before the CPC came to power in 1949 or it was given to it during land reform. There was no real estate market and unless special permissions were granted each household could own only one home and within the area assigned by their team. After marriage if a couple wanted to build a larger house or expand their existing family structure they used their private household savings to purchase materials. The growing family might ask the team to allocate more land or to help it locate building materials, but the house itself was purchased with private household funds and privately owned. Neighbors might help each other with simple construction, but each household would privately hire local carpenters or craftsmen for specialized jobs.[64]

Private Plots and Cottage Enterprises

In 1974 Stavis wrote: "The private family remains an important economic unit in China, despite the fact that the economy is basically socialized."[65] Since the CPC prioritized investment and long-run productivity growth above short-run profits one might reasonably ask why authorities would permit any private household production at all? The simple answer was that households made more efficient use of small-scale "scrap" resources that the collective was unable or ill

equipped to handle. To ensure the use of all productive factors the commune simultaneously encouraged household industries to employ any remaining resources (e.g. local skills or sideline lands) that it was unable to collectivize. Under conditions of severe land scarcity, officials concluded, that a small, household-controlled private sector offered diseconomies of scale in some areas that were better suited to such agricultural production than the collective. Unlike grain production, which was consolidated to produce economies of scale and modernized, vegetable cultivation, animal husbandry and other small sideline enterprises were labor-intensive activities that required hands-on daily planning and oversight.

A mix of competition and cooperation was ever-present between collective production, under commune, brigade or team control, and household private production. Rural cadre limited the scale of private household production so as to keep it from competing directly with collective enterprises. Officially, private cottage enterprises were permissible as long as they were done within the household and did not require hiring outside labor. While they were never eliminated China's leader's struggled to maintain the proper balance and relationship between the collective and private sectors. Indeed, the role of the household and proper size of the private sector remained a contentious issue throughout the commune era. To help ensure local cadres did not arbitrary suppress household sideline production in 1975 the CPC reiterated its longstanding policy on private plots:

> Under conditions which guarantee that the commune's collective economy progress and that it occupy a decisively superior position, commune members may operate, in small amounts, private plots and household sidelines. As for the household sidelines products, except for the first and second category goods, other products may be taken to the free market and sold. But Party policy also prescribes that as much as possible household sidelines be coordinated with the collective economy or the state economy; moreover, that market management be strengthened, and speculation be dealt a blow.[66]

Throughout the 1970s China permitted labor-intensive cottage industries included tailoring, basket weaving, embroidering, knitting, shoe repair, fishing, hunting, bee raising, baby sitting, and collecting firewood, etc. These household-made products were sold in local rural markets

throughout China. Images of a 1971 rural market in Hebei were captured in Andonlini's "China" documentary.[67] Often collective payments came in the form of grain, making household's private sidelines an important source of cash for housing construction or healthcare expenses. Indeed, the amount of cash a household might earn from the sale of one pig at market could equal its total annual cash payments from the collective. By the mid-1970s private sideline production on approximately 5-7 percent of arable land accounted for an average of 10-25 percent of total household income.[68]

Officially the average male commune member was supposed to work 28 days per month on the collective fields and a woman was supposed to work 24 days. Private sideline plots and enterprises were only to be tended on days off, in the morning before work, in the evening after work, and by children and the elderly who did not participate in collective labor. By the mid 1970s, however, the expansion of agricultural modernization, population growth and falling arable land had left rural workers with less and less to do. The problem of falling labor demand in the collective agricultural sector was mitigated by households, which once able to devote more time created a range of income-generating opportunities for themselves.

Production teams allotted cultivated lands to families for private plots, most often adjacent to the family home. This land was generally allocated on a per capita basis, but usually remained unchanged despite birth, marriages or deaths. On the collective fields the commune system decided what to plant, but on the private plots the household chose. Generally speaking, grain was the primary crop on the collective land, while on their private plots households mostly planted vegetables, although each could grow anything it chose, e.g. fruit, mulberry trees, tobacco, etc.

Sometimes to cut costs several families might combine their private plots and collectively purchase inputs. A household could also decide to plant individually, but harvest their sideline crops together with neighbors. Or perhaps pool several households might pool their resources to rent a particular agricultural machine or a truck from the commune or brigade to transport their goods to a local market.[69] During an interview conducted with then 80 year old, Guan Shengtang, a former team leader in Jiangxi, Yuhuixian, Shangguanxian Tangcun he explained the rules regarding the sale of agricultural products at the time. The third category Guan identifies includes the most common household sideline products:

> Team members were able to sell some excess crop varieties on the side of the road for cash. But they could sell some things but not others. There were three types of agricultural products: grains, which could not be sold at all; poultry and fish, which could be sold if there was excess beyond the production quota; and fruits, vegetables and eggs, which could be sold freely.[70]

In addition to its sideline plots households managed – and profited directly from – various small-scale economic activities. The most common was animal husbandry, which, depending on the local economy and resources, might include a pig or two, or poultry (i.e. chickens, ducks, and geese) for both meat and eggs. Eggs were among the most important exchange commodities in rural China throughout the commune period.[71] In a 1975 article in *Science* magazine based on a visit to rural China described animal husbandry under the commune in this way:

> In China, swine are raised primarily as a private household enterprise, although some are raised in large-production brigade units. In the private sector, swine are valued almost as much for their manure as for their meat. They are fed on waste materials not suitable for human food: vegetable refuse, ground and fermented rice hulls, corn husks, sweet potato and soybean vines, water hyacinths, and so forth. Grains are used to only a limited extent, and this practice is most extensive in the northeastern provinces where fresh vegetable wastes are not available during the long winters. In consequence of the low-concentrate diet, pigs do not reach a minimum weight of 50 kg in less than 8 months to a year.[72]

Families could purchase piglets or chicks on credit from the commune, brigade or team, which, as mentioned above, might also supply feed and/or stud or veterinary services. Once the animal was brought to market the family would repay its purchase price and any other costs incurred. Through a combination of collective and private production methods China produced an estimated

250 to 260 million swine in 1972 – about fourfold greater production than that in the United States that year! One reason for this Sprague notes was that swine "production practices in the two countries differ drastically" such that the average weight of a Chinese pig was substantially below its American counterpart:

> If swine production followed the U.S. pattern, China's production would represent a severe drain on the available food supply. Swine production in the United States depends upon the use of balanced rations, based largely on corn as an energy source, soy meal for protein, and additions of the necessary minerals, vitamins, and antibiotics. Market weights approximate 100 kilograms, usually achieved in 6 months or less.[73]

Raising a household hog, the most common sideline animal in 1970s China, was simple and economical since they were mainly fed on household scraps and provided a source of income for both the family and the brigade piggery. The brigade-run pig sty might have sold piglets to a family for private pig raising, but then compete with them when it was time to bring the animals to market. Often families would buy pigs on credit and repay the loan only after the pig was sold. The issue of private pig raising was addressed in 1975 in an article in the official press that explained that cadre should not suppress household pig raising because then productive factors would go untapped. It pointed out that households have labor resources, experience raising pigs, food scraps and room for pigpens and that are well suited to the task. In addition to the income each pig sale brings in, the article noted, each household may also earn income by selling manure to the collective or save the cost of fertilizer by using it on their own private vegetable plots.[74]

In more lucrative areas tensions between the collective and private sectors were more acute. In brickmaking, for instance, bricks brought such a high price near the Shanghai-suburbs that many families began to constructed private kilns and individual artisans hired out their brickmaking and carpentry skills. Handicrafts represented another important dimension of household sidelines. Activities such as basket weaving, embroidering, knitting, shoe making, and

tailoring were done privately so long as they were done by the household and did not require hiring labor.[75]

In 1978 Butler observed that: "Burgeoning rural industries have overloaded rural transportation networks and peasants can earn ready cash by leaving the collective and hauling goods." At this time new sayings began to emerge in the countryside to capture the concept of increasing income via private household enterprises. They included: "If the horse doesn't eat night grass it won't get fat; if people don't obtain wealth from outside they won't prosper" or "rely on the collective for grain; rely on yourself for spending money." As Butler concluded with some foresight in 1978: "While we cannot accurately assess the extent to which peasants do engage excessively in private production, clearly the incentive to do so was omnipresent and presents a serious threat to the health of the collective."[76] As rural sideline income continued to rise it increased demand for diverse consumer goods and services faster than the commune could accommodate with drastic consequences to the collective economy. This uneasy relationship among the collective and private economies persisted throughout the 1970s.

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[1] The official Chinese national and provincial data and commune-related propaganda is broken down in accordance with these four levels suggesting Chinese officials also perceived and analyzed questions of rural Chinese governance and economic development based on this institutional organization structure. Using them to structure the analysis in this and the following chapter maintains consistency with the data and reduces unnecessary reorganization.

[2] Benedict Stavis, *People's Communes and Rural Development in China,* (Ithaca: Cornell University Rural Development Committee, 1974) 51-52.

[3] Steven Butler, *Agricultural Mechanization in China: The Administrative Impact* (New York: Columbia University East Asian Institute, 1978) 33-34.

[4] Wu Chou, *Report from Tungting: A People's Commune on Taihu Lake*, (Beijing: Foreign Languages Press, 1975) 14.

[5] Butler, 15-16. Also see Gordon Bennett, Ken Kieke and Ken Yoffy, *Huadong: The Story of a Chinese People's Commune* (Boulder: Westview Press, 1978) 15 and 18-20.

[6] Peggy Printz and Paul Steinle, *Commune: Life in Rural China* (New York: Dodd. Mead & Company, 1977) 65-66.

[7] Stavis, *Communes,* 81.

[8] Butler, 16. Also see Stavis, *Communes,* 103. And, Agricultural Economic Statistics, 1949-1983 (*nongyejingjiziliao*) (Beijing: Agriculture and Fishing Planning Bureau (Nov 1983) 514.

[9] Printz and Steinle, 65.

[10] Butler, 19 and 22.

[11] Stavis, *Communes,* 79.

[12] Cited in Butler, 18.

[13] Wu, 14-15.

[14] Butler, 17.

[15] Butler, 17-18.

[16] James C. Scott, *Weapons of the Weak: Everyday forms of Peasant Resistance* (New Haven: Yale University Press, 1985).

[17] Cited in Butler, 21.

[18] Bennett et al., 18. Also see Butler, 26.

[19] Stavis, *Communes*, 80. Also see Butler, 16 and 19.

[20] Printz and Steinle, 56.

[21] Stavis, *Communes*, 104.

[22] Sun Guihua, Interview in Los Angeles, 1 Mar 2013. Also see Stavis, 81.

[23] Printz and Steinle, 71. Also see Stavis, 81.

[24] Butler, 25.

[25] Chu Li and Tien Chieh-yun, *Inside a People's Commune: Report from Chiliying* (Beijing: Foreign Language Press, 1975) 11.

[26] Butler, 25.

[27] Chu and Tien, 11.

[28] Stavis, 78-79 and Butler, 20.

[29] Printz and Steinle, 68-69.

[30] In 1980s prices. Cited in Chris Bramall, *The Industrialization of Rural China* (Oxford: Oxford University Press, 2007) 23. Also see Butler, 22.

[31] Bennett,18.

[32] Butler, 22. Stavis 79. Sun Guihua.

[33] Butler, 22.

[34] Butler, 22.

[35] Butler, 22.

[36] Butler, 22.

[37] Stavis, *Communes*, 76.

[38] Wu, 19.

[39] Printz and Steinle, 56.

[40] Butler, 12.

[41] Stavis, *Communes*, 98. Also see Butler, 13.

[42] Bennett et al., 19.

[43] Wu, 15.

[44] Butler, 20-21.

[45] The team was also, theoretically, supposed to elect a supervisory committee from within its membership to ensure the management committee is following the law, respecting members' rights and is corruption free. Given the close and continuing linkages between team members and the regular team meetings, however, it is possible to envision a team deciding to mothball its supervisory committee. Stavis, *Communes*, 99.

[46] Wu, 16.

[47] Bennett et al., 15 and 18-20.

[48] David Mozingo, cited in Stavis 99.

[49] Stavis, 101.

[50] Stavis, 99.

[51] Bennett et al., 19.

[52] Stavis, 98.

[53] Butler, 13.

[54] Interview with former commune members in Jiangsu Dec 2011.

[55] Bennett et al., 96-97.

[56] Bennett et al., 18-20, 96-97.

[57] Wu, 19.

[58] Cited in Butler, 11.

[59] Bennett et al., 20.

[60] Butler, 12.

[61] Kate Zhou, *How the Farmers Changed China: Power of the People* (Boulder: Westview Press, 1996) 2.

[62] Zhou, 3.

[63] Printz and Steinle, 56.

[64] Stavis, *Communes* 60.

[65] Stavis, *Communes* 53-54.

[66] Cited in Butler, 10.

[67] The private sector was a touchy ideological subject in 1970s China and Andonioni was officially excoriated in the Chinese press due to his depiction.

[68] Butler, 9.

[69] Stavis, *Communes*, 54.

[70] Interview with Guan Shengtang 26 Dec 2011.

[71] Interviews in Gansu and Jiangxi November and December 2011.

[72] G. F. Sprague, "Agriculture in China," *Science* 9 May 1975, 555.

[73] Sprague Science article 1975 (May 1975) 555.

[74] Stavis, *Communes,* 79. Also see Butler, 10.

[75] Butler, 11.

[76] Butler, 11.

Chapter 7: Institutional Sources of Commune Productivity

CHAPTER OUTLINE

I. The Solow-Swan Neoclassical Growth Model and Lewis' Modified Classical Model

- *a. Solow-Swan Neoclassical Growth Model*
- *b. Lewis' Modified Classical Model*

II. Agricultural Modernization under the Commune

- *a. Political Context*
- *b. Remuneration*
  - i. Work Point System
  - ii. Redistributive Policies
  - iii. Rural Credit Coops

III. Research and Extension

Introduction

The previous chapters have used newly uncovered official production data on the national, provincial, county levels to dispel the false image of economic failure under the commune. They have demonstrated that the system's productivity is better considered a source of institutional fortitude rather than reason for its abandonment. Continuous growth in food production formed the economic leg of the system's tripartite support structure, which also included Maoist ideology and military backing – both addressed in the chapters that follow. Yet, even with ironclad political and military support the commune could not have survived for over two decades if it had failed to feed its members.

Graphics A and B, below, summarize the extent of improved grain output per of unit land and per unit of labor during the commune era. What makes this economic success all the more surprising is that these increases occurred amid a drastic rise in population growth and a fall in arable land, see Graphics C and D, respectfully. High population growth rates, high post-Great Leap Forward (GLF) capital depreciation rates, and a fall in arable land simply *demanded* more agricultural output to avert a national disaster on the scale of the 1959-60 calamity. Despite these obstacles, beginning in 1970 China enjoyed continuous increases in food output per unit land and per unit labor until the commune's abandonment in 1983.

This chapter applies basic insights from both the neoclassical and classical economic traditions to explain *why the commune was productive*. I argue that China's sustained economic growth was the product of "transformation in techniques," similar to what economic historian E.L. Jones argued English agriculture experienced prior to that country's industrial revolution.[1] The commune extracted an increasing percentage of households' savings to finance the capital and technology that increased agricultural output throughout the 1970s and early 1980s. Based

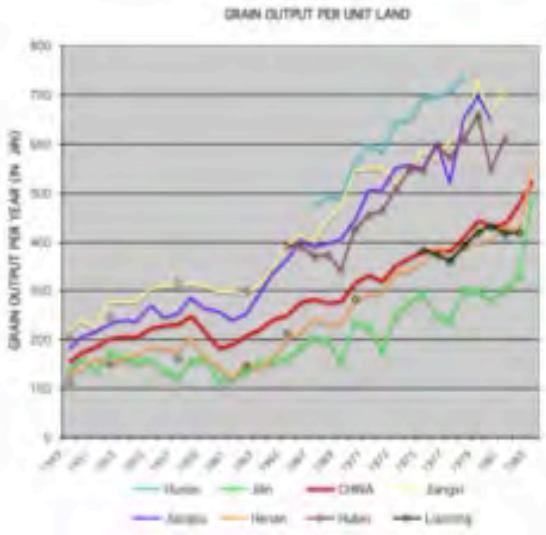
on the patterns observed in my data I identify five distinct periods of savings/investment during China's collective era, 1956-1983: (1) Pre-commune: under savings (2) GLF: over saving with *unproductive* investment (3) The 1960s: return to under saving (4) The 1970s: optimal savings with *productive* investment (5) Decollectivization: a return to under saving beginning in 1978-79 with household consumption peaking at 73.9 percent in 1983 – the year the commune closed its doors.

This chapter is divided into two parts. Part I uses the Solow-Swan neoclassical growth model (1956) and the R. Arthur Lewis modified classical model (1954) to explain how an economy like commune era China could theoretically generate sustained increases in agricultural output. These theories help clarify how changes in per capita rates of savings (s), consumption (c), population growth (n), capital (k), as well as improved technology (A) and capital depreciation (δ) affect levels of agricultural output (y). By observing the transitional dynamics among these variables I seek to explain the case of commune-era rural China – a closed economy with an unlimited or fast growing labor supply, scarce and quickly depreciating capital and land, and a rising savings rate. Given these conditions *both* the neoclassical and classical models' predict sustained increases in agricultural output.

Part II traces the changes in politics, savings rates and investment throughout the commune era. It begins by looking at the political process behind changes in the rate of savings, and the direction of investment over time. The section on savings explains variation in China's household savings rates and examines the policies used to extract household resources. These included the work point system, *ad hoc* equality promoting policies, and Rural Credit Cooperatives (RCCs). The section on investment summarizes the physical and human capital accumulation and technology improvements that produced increased agricultural output. It uses

graphical displays to illustrate the growth of physical capital (farm machines, irrigation systems, trucks, fishing boats, fertilizers, etc.), technology (agricultural chemicals, high-yield seed varieties, etc.) human capital (vocational training and basic education) during the commune era.

7.1

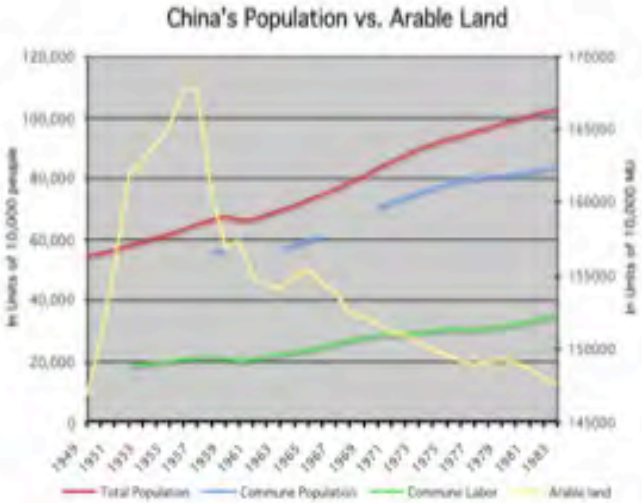


GRAPHIC A

7.2

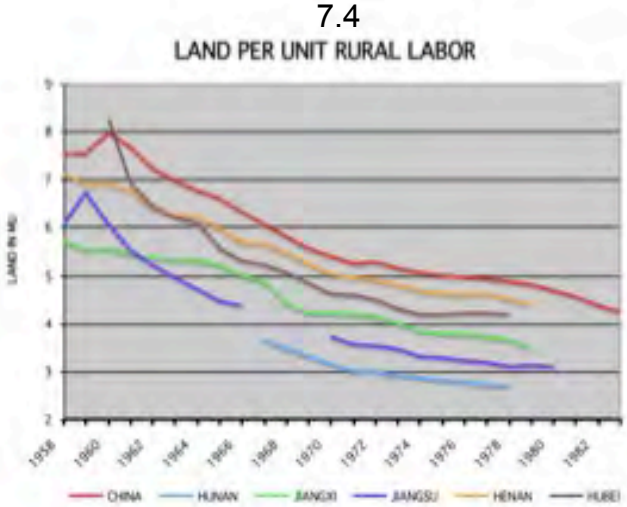
GRAPHIC B

7.3



GRAPHIC C

7.4



GRAPHIC D

I. The Solow-Swan Neoclassical Growth Model and Lewis' Modified Classical Model

This section applies insights from both the Solow-Swan neoclassical growth model and Lewis' modified classical model to explain how extracting households' savings and investing them in productive capital and technology can generate long-run increases in agricultural output. These economic models identify explanatory variables – rates of savings, population growth, capital accumulation and depreciation, and technological progress – and their influence on agricultural output during the commune period.

The Solow-Swan model and the Lewis' modified classical model are used to organize and clarify the empirical data presented in the second half of the chapter. These economic growth models provide internally consistent structures that can help explain long-run consequences of policies adopted during the commune period by identifying causal variables that explain the trajectory of economic growth over time. Moreover, they are particularly well suited and powerful in the China case for two reasons. First, both assume a "closed economy" in which households cannot buy foreign goods or sell their goods abroad. In the Chinese case, for reasons discussed in the following chapter, communes remained highly and intentionally "self-reliant" and, with rare exception, were entirely insulated from foreign trade. In a closed economy, output equals income, and the amount invested equals the amount saved. Indeed, in 1970s China, the resources communes extracted from households' (labor, grain, cash, etc.) were almost always invested *within* the locality itself so that savings and investment were practically identical.[2] There was no access to outside equity or debt markets, sustained deficit spending was impossible, and local financial institutions (i.e. the Rural Credit Cooperatives) could not lend beyond their deposits.

Second, both models assume one-sector production in which output is a homogeneous good that can be consumed or invested to create new units of capital. Again, this condition fits with the commune's "grain first" mandate and the reliance on animal husbandry in rural China. Thus, the simple Solow-Swan neoclassical model and Lewis' modified classical framework are both good fits for the China case and can help explain why the commune was successful in increasing productivity.

The Solow-Swan (Neoclassical) Growth Model

According to the neoclassical growth model, if an economy experiences increased rates of population growth and capital depreciation and responds with policies that increase the savings rate and channel resources into productive capital and technology, then returns to capital will remain relatively high and output is likely to increase over a *sustained* period of time.

To see this, consider a simple constant returns to scale neoclassical production function that includes total factor productivity:

$$Y = A * F(K, L) \tag{1}$$

The above equation represents total output, *Y,* as a function of the level of technological progress, *A,* capital input, *K,* and labor input, *L*. *A* represents the level of technological progress, which is assumed in the Solow Model to change at a steady rate which is exogenously given. Below I argue that there was an increase in the pace of technological advance attributable to institutional changes in the commune system introduced by the Communist Party. *K* is an aggregate index of capital goods, and should be interpreted broadly to include both human and

physical capital.[3] L varies over time based on population growth, which the Solow-Swan model assumes is exogenous and occurs at a constant rate, $n = \Delta L/L \geq 0$. An increase in *A, K* or *L* will lead to an increase in output. Multiplying both sides by $\frac{1}{L}$ yields an expression in per capita terms given by:

$$y = A * f(k) \tag{2}$$

This differential $\partial k / \partial t$ refers to the derivative of the per worker capital stock with respect to time. In steady state *k* is constant so that $\partial k / \partial t = 0$. In steady state the levels of *K, L* and *C* grow at the same rate as population growth, *n*, so that the per capita quantities *k, y,* and *c* do not grow. In Figure 1 this point is determined by the intersection of the $s * A * f(k)$ curve and the $(n + \delta) * k$ line. The curve reflects the increase in capital per worker from saving that is invested, while the line reflects the decline in capital per worker resulting from a growing workforce and capital depreciation. The capital stock is constant where the curve and line intersect. There is a steady state equilibrium for any given positive level of *s* and *A*.

According to neoclassical economic theory the saving rate, *s,* is determined by households via a cost-benefit analysis of the utility of consuming today versus consuming at a future time. Thus, *s* is the fraction of output saved and 1- *s* is the fraction of output consumed. The determination of *s* is actually quite controversial; Barro and Sala-i-Martin claim it is "a complicated function for which there are typically no closed-form solutions."[4] In the current application I assume *s* is given exogenously such that $0 \leq s \leq 1$.

At any point in time a constant fraction of capital stock is exhausted and becomes unproductive so that capital depreciates at rate δ. If *s* were zero, *k* would decline owing to a combination of capital depredation at rate, δ, and growth in the labor force, *L,* at rate *n.* Since a constant proportion of output – the portion saved – is invested we can represent the change in

capital per worker as:

$$\Delta k = s * y - (n + \delta)k \quad (3)$$

Substituting equation (2) into equation (3) yields:

$$\Delta k = s * A * f(k) - (n + \delta) * k \quad (4)$$

Eq. (4) constitutes the Solow-Swan model's fundamental nonlinear differential equation determining the change in capital per worker. At any time, the change in capital per worker is equal to gross investment minus the effective depreciation rate. If $s = 0$, then k would decline partly due to the combination of growth of the labor force at rate n and depreciation of the actual capital stock at rate δ.

Figure 1 illustrates the workings of Eq. (4). The upper curve is the production function, $A * f(k)$, which determines total output. The curve for gross investment, $s * A * f(k)$, reflects the share of total output (s) that is saved and invested as capital. This capital accumulation curve begins at the origin: if the capital stock is zero, output is zero so that saving and investment are also zero. Reflecting the model's assumption of diminishing marginal returns to capital, the $s * A * f(k)$ curve has a positive slope, but flattens out as k increases. The right hand term in Eq. (4) determining the effective rate of capital depreciation, $(n + \delta) * k$, appears in Figure 1 as a straight line from the origin with positive slope $n + \delta$. If the capital stock is zero, effective depreciation is zero. The constant slope reflects the constant rate of effective depreciation per unit of capital per worker.

For any given level of k gross output is given by $A * f(k)$. Gross per capita investment is equal to the height of the $s * A * f(k)$ curve, and per capita consumption is equal to the vertical difference between the $A * f(k)$ and $s * A * f(k)$ curves.

Figures 1-4 provide a stylized graphical representation of the four-stage transitional dynamics that I argue occurred in post-GLF commune era China. Before proceeding it is important to caution that when applying simple theories to a complex empirical phenomenon, such as China's development, questions of "fit" inevitably arise. Mindful that a perfect fit is not possible it is important to recall the limited aim of this exercise is to apply basic insights to help explain patterns observed in new empirical data.

In the wake of the GLF China was recovering from a severe national economic crisis that left approximately 30 million people dead. During the 1960s the country saw an increase in the rate of population growth and capital depreciation. As shown in Figure 1, this corresponds to a counter-clockwise rotation of the $(n + \delta) * k$ line away from the origin. Given an initial capital stock of $k(0)$ and output of $y(0)$ 1960s China was unable to support the existing capital stock per worker and output per worker, which began falling toward a new lower steady-state equilibrium. Per capita consumption, *c,* which equals the vertical distance between the production function, $A * f(k)$ and the $s * A * f(k)$ curve, also began falling from $c(0)$ to c_1. As capital per worker and output per worker fell a collateral effect was that the marginal product of capital (given by the slope of the production function) began to increase. That had important future consequences because it meant investment became more productive, in the sense of having a higher yield, and thus more attractive.

After 1970 China adopted policies that increase rural savings and investment rates. This period is represented in Figure 2 by the upward shift in the capital accumulation function resulting from an increase in the rate of saving from s to s_1 which shifted the $s * A * f(k)$ curve upward. As a result of this increased rate of capital accumulation steady state capital per worker and output per worker both increased, as represented by the new point of intersection of the

accumulation function and the ray from the origin. However, consumption per worker fell from c_1 to c_2 because of the diversion of income into saving and investment. This fall in per capita consumption is captured in countless stories told by former commune members about their austere conditions.

In the 1970s China experienced sustained increases in agricultural output per unit labor. Below I argue this was the result of a unified process of capital investment and technological innovation created under the commune system. Institutional changes thus contributed substantially to the expanded use of hybrid seed varieties, chemical fertilizers, mechanization and increased irrigation, etc. Figure 3 represents the effect of improved technology (A) as an exogenous increase in the level of labor productivity that shifts upward both the production function and the capital accumulation per worker function. In other words, the increase in the level of technical progress from A to A_1 shifts *both* the $s * A * f(k)$ and the $A * f(k)$ curves upward. This raised the steady state equilibrium capital stock per worker from k_2 to k_3 such that China entered a period of rising output per worker, y_2 to y_3. Since the saving rate remained generally constant (albeit high) throughout the 1970s, as output per worker increased so too did consumption per worker, which rose from c_2 to c_3.

The fourth and final period refers to the post-1979 decollectivization period when the saving rate fell back to its earlier level. During this stage, represented in Figure 4, the saving rate declined from s_1 back to s, causing the capital accumulation function to shift down. The decline in the saving rate during decollectivization generated an associated increase in per capita consumption. This sizable increase in rural consumption is represented by the difference between c_3 to c_4. It served to consolidate the liberal-right coalition's political position by securing grassroots support for further reforms, while also keeping as many farmers as possible in the

countryside and out of urban areas.

This analysis shows how increased rates of population growth and capital depreciation result in less output per worker, while increased rates of saving and technological progress have the opposite effect. But how can a poor county with a large and growing population increase savings rates to fund productive investments and innovations? Before answering that question for China, I will first show how a classical economic model yields similar predictions to the neoclassical framework.

7.1

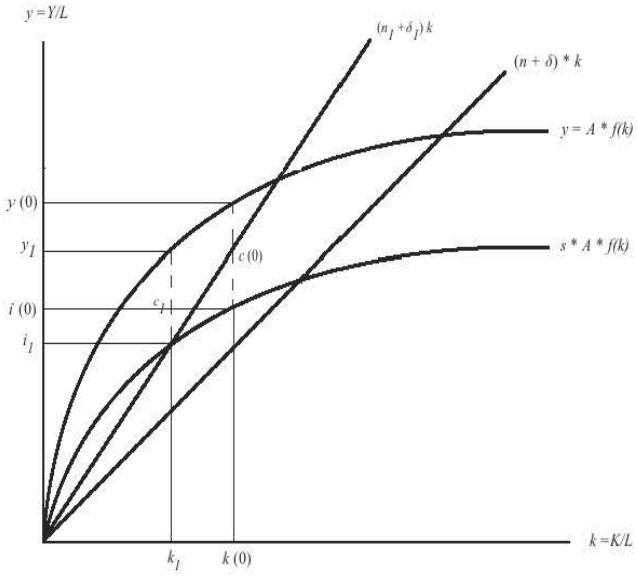


FIGURE 1

7.2

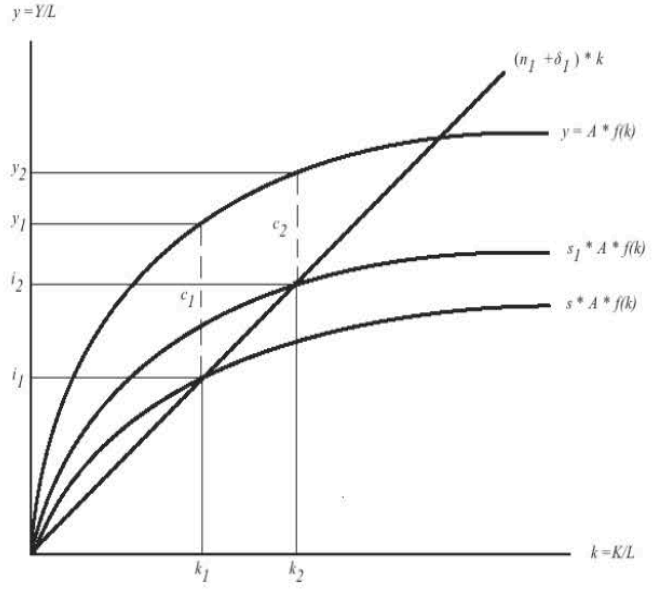


FIGURE 2

7.3

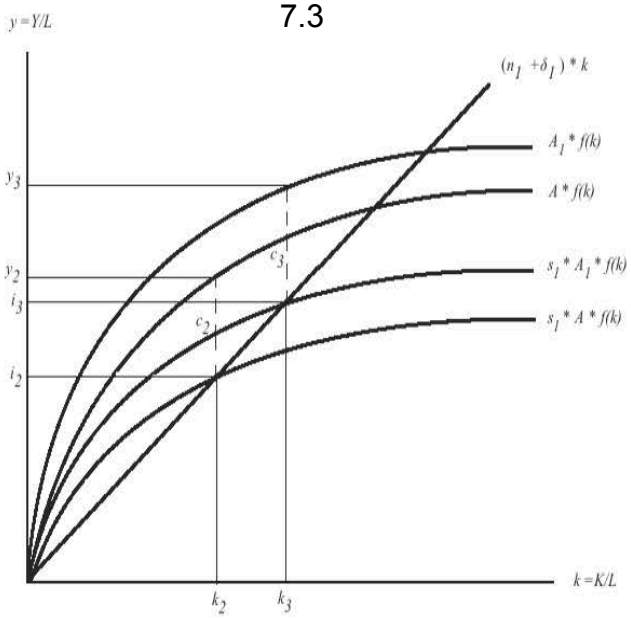


FIGURE 3

7.4

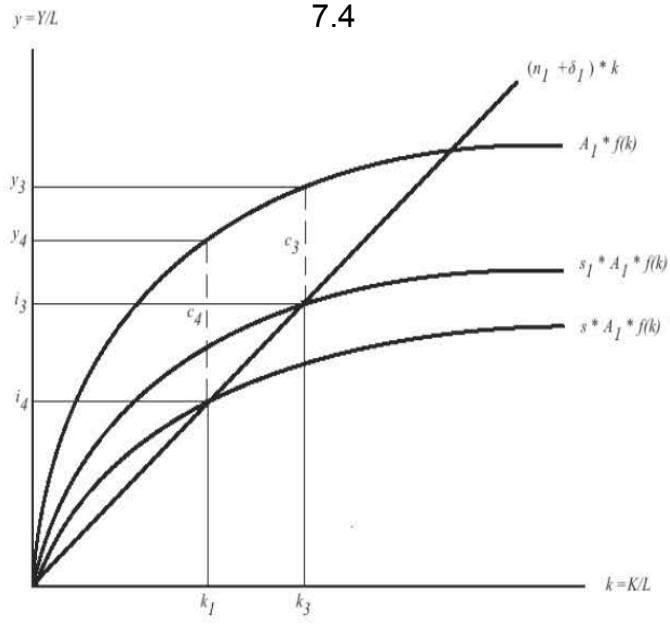


FIGURE 4

The Lewis Modified Classical Model[5]

Lewis' modified classical model assuming unlimited labor supplies can also explain sustained output growth in commune era China. "An unlimited supply of labour," Lewis wrote in his Nobel Prize-winning 1954 article, "exists in those countries where population is so large relative to capital and natural resources, that there are large sectors of the economy where the marginal productivity of labour is negligible, zero, or even negative." Lewis observed that the assumption of unlimited labor supplies best explains "the greater part of Asia [where] labour is unlimited in supply, and economic expansion certainly cannot be taken for granted." Under such conditions "new industries can be created or old industries expanded without limit at the existing wage; or, to put more exactly, shortage of labour is no limit to the creation of new sources of employment." This is because despite surplus labor supplies in traditional agricultural sectors like pre-commune China, "the family holding is so small that if some members of the family obtained other employment the remaining members could cultivate the holding just as well."[6]

An unlimited labor pool means that returns to capital would not diminish over time as the neo-classical model above predicts would occur without technical innovation. Instead in the classical model returns to capital continue to grow unabated until surplus labor is used up. Lewis theorized how this process can kick-start a continuous cycle of capital accumulation…

> The key to this process is the use which is made of the capitalist surplus. In so far as this is reinvested in creating more capital, the capitalist sector expands, taking more people into capitalist employment out of the subsistence sector. The surplus is then larger still, capital formation is still greater, and so the process continues until the labour surplus disappears.[7]

This development process is illustrated in Figure 5 below, which is cropped directly from Lewis' original text. *OS* represents average substance earnings levels, *OW* represents actual earnings levels after providing for additions to productive capital. The marginal productivity of labor is captured by the curves denoted *NQ*, with higher curves corresponding to production with a larger

capital stock. The economic surplus available for investment is the area above the *OW* line and below the marginal productivity of labor schedule.

Since a fixed percentage of the economic surplus is reinvested the quantity of capital increases at a constant rate, causing the marginal productivity of labor schedule to shift right from N_1Q_1 to N_2Q_2. Both the surplus and the percentage of workers earning income at *OW* are now larger. Further investment pushes the marginal productivity of labor to N_3Q_3 then to N_4Q_4 and beyond until all surplus labor is exhausted. At this stage, wages start to rise above *OW* due to the emergence of labor scarcity.[8] This simple diagrammatic framework reveals how once started, China was able to maintain continuous and sizeable increases in output.

7.5

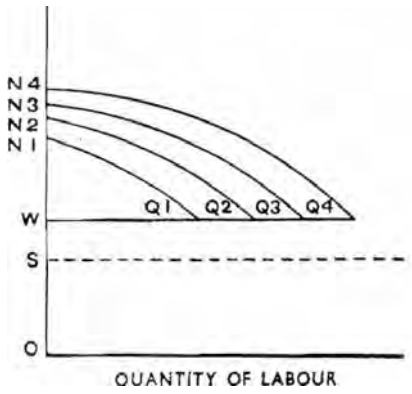


FIGURE 5

As with the Solow-Swan neoclassical model, the classical model considers investments in both agriculture capital and technology are determined by savings, which require refraining from consuming a portion of current output today and investing it in "capital goods which the introduction of new technology requires."[9] The big difference, however, is that the classical model assumes unlimited labor supplies at a constant real wage which means capital per worker (k) can increase at a constant rate in perpetuity. This is because for any quantity of K a

corresponding amount of *L* can be made available at the current subsistence wage rate. Income remains stable throughout the economic expansion and practically the whole profit generated by capital accumulation goes back to capital holders. Labor welfare improves because more workers benefit by being employed at a wage above subsistence. They may also benefit from skills training they receive during the development process. Agricultural workers may also benefit from a higher caloric intake thanks to improved food quality, but *not* from a higher wage. In this fashion, an economy with unlimited labor can enjoy unlimited 'capital widening' without suffering from diminishing returns to capital due to an increased capital-labor ratio. This contrasts with the Solow-Swan neoclassical growth model in which growth raises the capital-labor ratio, thereby raising the marginal productivity of labor and compelling capital holders to pay a higher wage because of full employment.

According to Lewis capital holders consume a portion of their profits and use the rest to support further capital formulation to generate continued returns, which, in turn, increases their capacity to make future productive investments. This means if an agricultural revolution led by capital expansion and technical innovations were to occur in times of unlimited labor supplies – as this chapter claims occurred in 1970s China – practically the whole surplus would become available to capital holders for continued rounds of productive investment.[10]

A second difference from the Solow-Swan neoclassical model is that that the classical framework takes capital accumulation and technical progress as part of a unified development process and does not distinguish between the distinctive effects of each. Lewis argued that capital and technological progress come together with new capital embodying the latest technology. Thus, Lewis directly incorporated technical innovation into his model and stressed its importance as a source of sustained returns to capital that is inseparable from capital itself:

> If we assume technical progress in agriculture, no hoarding, and unlimited labour at a constant wage, the rate of profit on capital cannot fall. On the contrary it must increase, since all the benefit of technical progress in the capitalist sector accrues to the capitalists.[11]

Building on this, Kaldor explained that technology is regularly applied in tandem with agricultural capital in ways that increase the productivity of both labor and land:

> Since land is scarce, increases in production, using the same technology, are subject to diminishing returns to capital and labour, but with the passing of time, agricultural output per acre rises as a result of land-saving changes in technology (which does not exclude that many of the inventions or innovations are labour-saving as well as land-saving) and their adoption requires capital investment for their exploitation (a tractor, or a combine harvester, or even a new type of seed which promises higher yields but it more costly than previous types). [12] [Parenthesis in original text]

The problem of increasing land scarcity resulting in ever-rising rents to landlords had worried David Ricardo who observed that economic development inevitably increases the relative scarcity of land – a phenomenon we certainly see in post GLF China (see Graphics C and D).[13] According to Kaldor in a land scarce country with unlimited labor unless "offset by land-saving innovations," increasing capital investment in agriculture will cause marginal productivity to decline.[14] Thus, assuming that most surplus labor is employed in agriculture, the objective of technological innovation is to increase output per unit land. Agricultural economist Bruce Stone further operationalized this concept, arguing that "the principal criteria for judging technical change at the initial stage of modern agricultural development in a large but land-scarce peasant economy include yield growth of principal staple foodcrops."[15] Expanding on Lewis, Kaldor argued that innovations that increase output per unit land are the *only* type of technological progress necessary to explain, "a constant rate of growth [when] labour exists in super-abundance."

> The critical factor in continued economic growth is the persistence or continuance of *land-saving innovations* – man's ability to extract more things, and a greater variety of things, from nature. Thus, in the simple model just presented, land-saving technical progress in agriculture is the only kind of technical change assumed, and this is sufficient to keep the system growing at a constant rate of growth, at least as long as growth is not hampered by the scarcity of labour – so long as labour exists in super-abundance. [16]

In both the neoclassical and classical models discussed above, increased savings rates are essential to generate capital accumulation. The problem confronted by countries with scarce capital and land but abundant labor near subsistence levels is thus how to generate the savings rates necessary to take advantage of high returns to capital? If an economy has unlimited workers living at subsistence and virtually no capital – as China did when the communes were created – where can it derive the investment necessary to kick-start development? Thus "the central problem in the theory of economic development," according to Lewis, is how can an economy with an unlimited labor force living at or just above substance cut consumption and save more. "People save more because they have more to save," he concluded. "We cannot explain any industrial revolution until we can explain why saving increased."[17]

II. Agricultural Modernization under the Commune

Political Context

So far I have merely set the stage. Now the play begins. It is time to apply the insights from the neoclassical and classical models to explain how China increased savings rates and channeled resources into productive investments that generated substantial increases in food output.

In 1966 China had abundant and quickly growing rural labor stocks, and scarce land and capital with high depreciation rates. Figures 3 and 4 help illustrate the extent of these challenges, which are discussed in detail in Chapter 3. To counter these trends a nationwide plan to shift investment from heavy industry towards agricultural capital and infrastructure was announced on the eve of the Cultural Revolution at the Eleventh Plenum of the CPC in August 1966. The basic points stipulated that agricultural modernization would receive "special priority," semi-mechanization would be introduced as a stopgap measure, farm tools would be locally

manufactured, and communes and their brigades (rather than a state bureaucracy, companies or trusts) owned and managed all agricultural machinery. Although implementation of these policies was delayed by the Cultural Revolution disorder of 1967-68, once the new leadership (i.e. the Revolutionary Committees) were formed in 1969 investment began to flow into agricultural capital and technology at an unprecedented rate.[18]

In 1969, Premier Zhou Enlai took charge of China's agriculture modernization program, signaling to cadre at all levels that agricultural modernization should now unquestionably be placed at the fore. The Ministry of Agriculture and its provincial and county organs were reestablished and administrators instructed to develop an ambitious nationwide scheme to maximize land productivity using agricultural capital and technology. In September and October 1969 conferences on agricultural modernization were held in provinces including Gansu, Inner Mongolia, Anhui, Shandong, Hunan and Guangdong.[19] At them a consensus emerged among Chinese agricultural experts in favor of a nationwide agricultural modernization program, the production team as the basic accounting unit (i.e. the level at which collective income is distributed) and maintaining the work point remuneration system, while expanding its breadth to include various task, time and piece rates as acceptable remuneration methods.

Once consensus was reached the official media was deployed to apply the required Maoist overtones and broadcast the news into localities. The October 1969 issue of *Red Flag*, for instance, carried an article emphasizing agricultural capital investment and technical improvement:

> Every county must positively set up a farm machine repairing station and manufacturing plants, establish an industrial network for serving agriculture, and contribute greater strength to speeding up the technical reform of agriculture.[20]

Radio Shanghai's November 10, 1969 broadcast also emphasized the importance of investments in agricultural capital and technology for increasing rural productivity and strengthening the commune system…

> Today, our worker-peasant alliance has entered the new stage of realizing agricultural mechanization. Agricultural collectivization without agricultural mechanization cannot consolidate the worker-peasant alliance because it is impossible for such an alliance to rest forever on two diametrically opposed material and technical foundations. The development of agricultural production lies in mechanization. The realization of agricultural mechanization in turn will consolidate agricultural collectivization and eliminate differences between workers and peasants, towns and countryside, mental and manual labor.[21]

Before discussing the watershed 1970 Northern Agricultural Conference and its outcomes it is important to briefly review how the consensus on increased agricultural investment emerged. The Chinese politics literature generally divides post-commune (after 1958) political divisions between two camps: a Maoist (leftist) and a Liu or Dengist (rightist). Writings of top economic officials Chen Yun and Deng Liqun, however, reveal three concurrent *economic* lines among the leadership: the leftists, supporters of "overall balance," and advocates of "planned proportionate development."[22] In the late 1960s, leftists including Chen Boda and other ideologues opposed the expansion of agricultural mechanization, which they claimed would increase unemployment and could not improve production in mountainous or swampy areas. Mechanization, they argued, would divert attention from the heightening of socialist consciousness through class struggle thereby opening the way for capitalistic impulses.[23]

Advocates of "overall balance" – including Chen Yun, Li Xiannian, Deng Zihui and lesser officials in the Ministry of Finance – opposed overinvestment in heavy industry at the expense of agriculture and prescribed "a more productive and sustainable" pattern of resource allocation among economic sectors. David Bachman notes that Chen Yun never directly attacked the leftist line, although he did argue against some of its tendencies.[24] Instead, "overall balance" advocates generally clashed with supporters of "planned proportionate development," including top economic officials Li Fuchun, Bo Yibo, Wang Heshou, Huang Jing and cadre in the planning

and heavy industrial bureaucracies who wanted to keep resources flowing their way. The former called for more resources to be directed into agriculture and light industry, while the latter supported continued extraction from agriculture to support investment in heavy industry. As early as 1957 Chen Yun had warned that excess resource extraction from rural households without appropriate reinvestment in agriculture meant "the pace of agricultural development would be slow." Thus, Chinese economic planners had long agreed on the need to extract increased savings from rural households to support capital investment and technological innovation – but not on *where* to spend the money.[25]

With leftist support "overall balance" prevailed, resulting in a decision to increase investment in agriculture, but within the commune system and using Maoism as its central unifying collectivist ideology. This shift was proclaimed at the North China Agricultural Conference, which opened in Xiyang, Shanxi on August 25, 1970. It committed China to a capital investment and modernization agenda akin to what "overall balance" advocates had supported – but did so using a leftist institution: the commune. The Conference was thus a turning point for China's commune; it at once reaffirmed the institution's authority and reformed it in ways that expanded its longevity and viability. It had three primary outcomes: first, it endorsed the commune as the primary political, economic, and military institution of rural China; second, it expanded the breadth of acceptable income remuneration policies permitted within the commune's work point system; and third, it launched a nationwide "green revolution" in agriculture involving expanded investments in seeds, fertilizer, electrification, and mechanization, etc.

During a speech to the Conference's 1100 delegates at the Great Hall of the People in Beijing, Premier Zhou "set a modernizing direction while hewing to the collective." He endorsed

the work point remuneration system and stressed the need to "increase local investment in modernizing and mechanizing agriculture."[26] Friedman et al. summarized the crux of China's post-1970 plan to fund agricultural modernization through increased household savings in this way:

> Villagers were to get rich by tightening their belts for a while, investing more, and working harder. The line evoked vague memories of the Leap. But this time, Zhou stressed the state would invest in such suitable technology as fertilizer and irrigation and would not tolerate the squandering of precious resources.[27]

According to Harry Harding, China's new agricultural modernization campaign aimed to reverse China's under savings problem and produce "super-optimal investment generated by appeals to ideology or sheer coercion." Moreover, the post-1970 approach was careful to avoid *over* extraction of household resources as occurred during the GLF, as Harding observed in late 1970:

> The Chinese newspapers these days are full of appeals to avoid waste, to recycle industrial by-products, to work harder. But the appeals lack the sheer fanaticism of the Great Leap Forward. The demands being made on the Chinese people today are very high indeed, but they are not impossible to meet.[28]

Harding, like Freidman et al., observed more investment in agriculture.

> Mao Tse-tung changed China from the politics of distribution and regulation to the politics of redistribution. To remedy the economic inequalities, resources had to be transferred from the more privileged sectors of Chinese society (primarily the towns) to the less privileged sectors (the countryside).[29] [Parenthesis in original text]

In 1970 alone over 150 separate official Chinese press stories and radio broadcasts appeared in almost every province stressing the importance of agricultural capital and technology.[30] This new agricultural modernization campaign harkened back to the GLF rhetorically, but without the harmful "red over expert" policies pursued against agricultural specialists, engineers, and skilled peasants of "black" class backgrounds that occurred at that time. Those policies, which are discussed below in the Investment section, had not only proven socially destructive, but most important for this analysis, had left skilled workers disgruntled (or worse) and produced large amounts of quickly depreciating capital.

Instead, during the 1970s the status of those with agricultural and mechanical expertise

was elevated; they became highly valued specialists and teachers tasked with helping China's communes build their physical capital stocks, train workers and conduct agricultural testing. These agricultural experts and engineers built the backbone of China's rural economy. They designed and created the machines, infrastructure, and technological advancements in agricultural chemicals and seed varieties, etc. necessary to increase grain production per unit land. Despite a rise in population, a fall in arable land, and quickly depreciating capital stocks these investments generated unprecedented increases in agricultural output outpacing what many, including Chen Yun himself, had imagined possible.[31]

Remuneration (Increased Savings Rates)

The commune's extraction of households' resources funded the post-1970 agricultural modernization scheme. The institution sat at the nexus of the state and society allowing it to subject households to coercive control and resource extraction. It removed resources from total income *ex ante*, that is, prior to commune members' remuneration. This forced austerity prevented overconsumption and ensured the high savings rates necessary to support agricultural modernization.

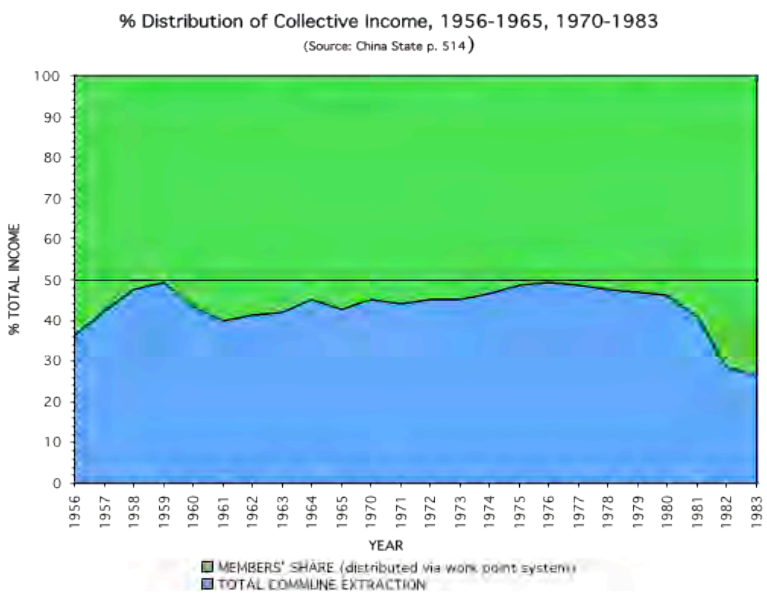
Commune members were informed of relevant agricultural modernization plans – such as mechanization, infrastructural, educational and technological improvements – during team meetings and were obliged to "vote" for them unanimously. The only agricultural investments households' controlled were those on their small sideline private plots, which accounted for a mere 5-7% of total agricultural lands. The objective of these household administered private plots – which were first granted after the GLF – was to guarantee a consumption floor for households by preventing over-extraction that would push their consumption below subsistence

levels. Placed in terms of the neoclassical model, see Figure 2, during the GLF overzealous policymakers had gone beyond s_1 and pushed c below minimum caloric levels thus causing a massive famine. Small household-controlled private plots helped ensure that mistake did not happen again.

With the commune's establishment coercive extraction of rural households' savings began in earnest. The *Nongye jingji ziliao* (1949-1983) includes extensive tables on the distribution of total income within the commune. It reveals a multi-step resource extraction process: first costs – both managerial and production – were removed, next state-taxes, then a portion was set aside for public services and good works. Only after the collective extracted its share was the remainder distributed to members based on the number of work points they had earned that season.

Between 1956-59 coop and commune members' saw their share of total collective income (i.e. consumption) fall *13 percent* in just three years – from 63.7% in 1956 to 50.7% in 1959.[32] By 1961 households had returned to consuming over 60% of total income and between 1962 and 1965 household consumption remained relatively high, averaging 57.3%. Data is unavailable from the 1966-69 period but by 1971 the members' share of gross income had dipped to 55.9% and it continued to fall to a low of 50.7 percent in 1976 – the same rate as in 1959 at the height of the GLF. Consumption remained low at 51.4% in 1977, but beginning that year – the year after Mao's death – the percentage of income allocated to commune members rose quickly until it peaked at 73.9% in 1983, the communes' last year.[33] See Graphic E below.

7.5



GRAPHIC E

According to official figures the primary reason for the reduction in the members' percentage was the increase in production costs *(shengchan feiyong)*. For a decade, between 1956 and 1965, production costs remained constant at about 25-26% of total income. Statistics are unavailable for 1966-69 but they were 27.9% in 1970, before jumping from 27.3% to 30.1% between 1971 and 1972. Production costs continued to rise, peaking in 1978 at 32.3%, before falling precipitously to a nadir of 22.9% in 1983, when the communes closed.[34]

Decollectivization, begun in earnest in 1979, marked a return not only to traditional patterns of organization (i.e. village, township, county) but also to traditional rates of rural undersaving and overconsumption. Between 1979 and 1983 the percentage of household consumption of total collective income rose 20.8%, from 53.1% to 73.9%! As early as 1978 agricultural economist Lau Siu-kai identified resurgent traditional rural norms favoring overconsumption and undersaving as well as the austere nature of commune life as important causes of "resistance to innovations:"

> One of the most important reasons for the resistance to innovations encountered in the rural areas in China is the preference of many peasants for immediate consumption as against collective savings to be devoted to agricultural innovations in the future and this phenomenon can be readily evidenced in the controversy over agricultural mechanization within the communes. Given the low standard of living of the peasants at the present moment, it is understandable that they would opt for a higher consumption/saving ratio.[35]

The over-extraction of rural households' resources – including both labor and output – coupled with large-scale investments in poor quality capital and techniques caused the GLF catastrophe. This meant that when GLF mistakes were redressed in the 1970s commensurate increases in household savings were needed to pay for them. Consumption was thus pushed back down to GLF levels in the mid-1970s, but unlike during the GLF the funds were put towards *productive* investments and sideline private plots prevented over-extraction of household resources. After decollectivization was begun in earnest in 1979, however, household consumption increased quickly as a percentage of total income. In terms of Figure 4 this change is illustrated by a return from s_1 to s, which boosts per capita consumption from c_3 *to* c_4.[36]

Work point System

The work point system in the 1970s Chinese commune served as both a scheme for distracting households' attention from the extraction of their savings *and* a "cure" for collective action problems common to communes everywhere. The latter function is dealt with in the following chapter as it is among the organizational and incentive-generating mechanisms adopted to counter members' impulses to shirk collective labor or slack off. The former function, however, was essential to extracting household savings to fund China's 1970s agricultural investment scheme.

During the 1970s the value of the work point was a function of income *after* the commune extracted all costs, taxes, fees and community funds. Regardless of how many work points were awarded to members or which method was used to disburse them, about half of total

collective income was extracted before members were allowed to squabble over the remainder. Work points were important to members because what they could control of their household incomes depended on their point allotment relative to other members. Commune funds, however, remained unaffected by the relative allocation of work points among members, that is, unless the allocation process itself became overly raucous and disrupted production, which was rare.

After 1970 commune work point remuneration systems began to vary considerably among localities. Material incentives and compensation in proportion to labor performance were again allowed to determine the size of each member's slice of the collective pie. This, essentially, was a return to the policies of the early 1960s, as Leslie T.C. Kuo observed:

> Material incentive schemes that had been branded a "capitalist trend" during the Cultural Revolution were officially vindicated and recommended as a means to boasting peasants initiative and production in rural areas. Also, much was said about concern for people's livelihood and the rights of the peasants.[37]

The *baogong* (contracted work) system, which had been repudiated with the leftists' introduction of Dazhai in 1965, was reintroduced in some areas in 1971.[38] Commune farm work, unlike factory work, included dozens of different tasks during different seasons that varied substantially in complexity. As such, the post-1970 work point system allowed communes to choose the mixture of task, time, and piece rates, overtime rates, and countless other impromptu compensatory arrangements that best fit local conditions.[39] While the Dazhai remuneration system, which factored collective commitment and enthusiasm into work point calculations, remained the Maoist ideal, its implementation was accepted as an evolutionary process that could vary considerably among communes. Commune cadre continued to tinker with their remuneration systems throughout the 1970s and most adopted systems that varied between Dazhai and pure contract work.[40]

After 1970 work points could be awarded based on output, for instance, the amount of grain produced on a plot of land or on income earned by doing a particular job, such as driving a

tractor or truck.[41] A piece rate awarded work points based on the amount completed, such as seed planted, corn husked, or baskets made, whereas a time rate awarded them for the amount of time spent on a specific job, like tending cattle or herding sheep. A task rate would award points based on a specific assignment, e.g. plowing a field or moving a pile of earth. The most difficult tasks received the most points making it possible for stronger or ambitious members to volunteer to earn more income. Some tasks were more highly rewarded than others so competition for assignments that allotted more work points or were considered relatively easier could become heated.[42] Work points could also be awarded on an *ad hoc* basis using an individual labor contract (*lianchan daolao*) or a specialized task agreement (*zhuanye chengbao*).[43] Any work or training that might increase agricultural productivity could be eligible for work point compensation, e.g. road or canal construction, attending tractor repair or driving lessons, testing seed varieties, or serving as a schoolteacher for a neighboring team.[44] After the work was finished recorders would review it to determine exactly who did what, for how long, and at what piece, time, or task rate.[45] All told the contract system produced an endless and "bewilderingly complex array of accounts"[46]

In some areas the Dazhai remuneration system remained in place until the commune was disbanded, while in others a mix of rate systems prevailed. In Guangdong, for instance, commune cadre fearful of political reprisals were slow to return to task and time rates until in 1973 the provincial government broadcast a new slogan: "Repudiate Liu Shaoqi's task rates; permit Mao Zedong's task rates."[47] Gordon Bennett observed that in 1970 many teams in Huadong Commune abandoned Dazhai, and Jonathan Unger noted that by 1973 Chen Village had also moved back to task rates.[48] Meanwhile, however, Steven Butler reported that Dahe Commune in Hebei used Dazhai until 1979.[49] Regardless of which remuneration system was

used, however, commune leaders extracted an average of 50%-55% of total income *ex ante* before members saw their share (see Graphic E).

The work point system constituted a "kabuki theater" that distracted commune members' attention from the extraction of their savings. Various methods were used to focus members' attention on the size of their individual slice, that is, their work points relative to other team members. Job allocations, work evaluations, and the final exchange of points for cash payments required countless hours of extensive, mind-numbing team meetings all of which directed members' attention to their work points and away from total collective income. Printz and Steinle's 1973 account describes how this process took place in Guang Li commune's Sui Kang brigade in Guangdong. First, agricultural workers were ranked in three grades: A, for the best workers, B, for slower workers, C for the elderly. Those in the same category made the same amount for an average day's work in the fields. During the busy season workers assigned the same proficiency level would earn varying amounts of work points depending on how much labor they performed and what they did. The assignment of these grades and specific jobs was done four times a year at "self-education sessions." According to Printz and Steinle who attended one such session: "It was a painstaking process. The leaders would read aloud the name and work grade evaluation of each worker, and a lengthy discussion would follow." Furthermore, twice a year members would also have to gather at lengthy mass meetings to assess each job's work point value.[50] In Nan Huang commune in Weihai, Shandong these marathon sessions were sarcastically known among members as "inflicting harm by meeting" (*huihai)*.[51]

The post-1970 work point system was as nebulous as it was tedious. It required reams of subjective evaluations, which regularly came under criticism at long, dull, numerous and mandatory, team and brigade meetings. These meetings' served to divert members' attention

away from total collective income relative to the members' share and direct it towards the size of their own portion relative to others. But no matter which remuneration method was employed the choice among them was essentially a false one because roughly half of total income had already been removed from the "communal pot" before it was applied. The real question for commune leaders was which rate system – time, task or piece – best incentivized workers; a decision generally taken based on the type of work being performed.

Redistributive Policies

Policies ostensibly to promote more equal resource distribution gave commune cadre an additional smorgasbord of mechanisms to ensure every possible *fen* of household savings was extracted for agricultural modernization. Although there were countless local schemes, two that appear to have been particularly common were arbitrary income limits and requisition of household or team resources by higher units. Everyone had to work but authorities could also require wealthier households' to contribute funds based on the principle of "mutual benefit and equivalent exchange" (*ziyuan huli, dengjia jiaohuan),* which required large-scale capital construction projects be done based on "voluntary participation," "mutual benefit," and "equivalent exchange." In practice, however, each commune's extensive autonomy and official mandate to build productive capital increased cadre's temptation to violate the "equal exchange" principle and beggar on households' resources in the name of "mutual benefit."[52]

Arbitrary income limits lowered disparities among households by capping the incomes of relatively better off families and investing the excess resources in collectively owned capital. Nolan and White explain how the requisitioning of household resources in the name of

redistribution known as "equalization and transfer" (*yiping erdiao*), which liberals and rightists alleged in the 1980s was "widespread" throughout the 1970s, occurred in Laixi, Shandong:

> Alarmed by a pattern of uneven per-capita income distribution ranging from 150 yuan in the rich brigades to 60 yuan in the poor. They therefore set an upper limit of 150 yuan and ordered that the residuum be channeled into public accumulation.[53]

Similarly, in the Beijing suburbs, a 150 yuan limit on per capita income was placed on grain growing communes and a 180 limit on those growing vegetables. Again, Nolan and White note: "The residual income of the rich brigades was fed into their public accumulation funds. If these funds were well invested and managed, they would in fact lay the basis for even higher future incomes." After decollectivization, by contrast, households with higher incomes were allowed to keep them, which increased inequality and reduced the funds available for agricultural investment.[54]

RCCs

After the growing season and any *ad hoc* income equalization schemes were applied, members exchanged their work points for cash or kind. To ensure their savings' "safety" households were strongly encouraged to deposit any excess funds with their local RCC, which aimed to soak up any resources that remained after the collective extracted its share and households consumed theirs.[55] The RCC, according to Barry Naughton, was one of the commune's "surrounding institutions which both supported and taxed the rural economy." It was a functionally independent sub-institution within the system that accepted household deposits and lent them to the commune and its administrative units for productive investments.[56]

The RCCs "played a vigorous, continuous, and increasing role in the development of rural economy since the 1960s," according to Naughton. He observed that before 1979 RCCs received about three percent of household income. [57] This suggests that if households consumed

about half of total income (50.7% in 1976) then only about 1.5% of total collective income passed through RCCs that year; less if a portion saved came from income earned on the household's private plot. The RCCs' small size compared to the overwhelming percentage of total income captured by the work point system underscores the commune's effectiveness at extracting rural resources. This system, which as Harding observed, stressed, "the mobilization of every possible available resource – be it human, monetary or material," simply did not leave much behind for members to deposit in their RCC accounts.[58]

Since their creation in the 1950s and throughout the 1970s, RCCs always held more deposits than outstanding loans with excess deposits placed in the Agricultural Bank (AB). During the 1950s RCCs kept 80 percent of their deposits with the AB, making them collectively the largest source of AB deposits. But the AB usually loaned more back into rural areas than it received. Naughton explained this relationship:

> The AB takes money out of rural areas with its left hand (controlling the net deposits of the RCCs) and returns it with the right hand (by lending to the rural economy). [59] [Parenthesis in original text]

In 1963, as communes shrunk in both size and power (see Chapter 2), each locality was allocated an agricultural credit fund to support productive capital investments. As long as resources remained in the fund the provincial AB could undertake new lending. Loans were essentially "good" if they could be paid back and "bad" if they could not be. "By the late 1960s," Naughton observed, "the rural credit system had become fairly linked to rural savings. Both the RCCs and AB were dependent on increased rural saving to increase lending."[60] In 1971 the AB management system was localized and instructed to increase loans in areas apace with local deposits. This gave localities an incentive to repay loans and to increase deposits. RCC loan disbursements surpassed AB loans for the first time in 1973 and remained larger thereafter. This localization of lending is consistent with the implementation of the post-1970 agricultural

modernization campaign, which sought to decentralize agricultural investment decisions in order better to utilize local knowledge.[61]

Research and Extension

According to White, China's "industrial and green revolution" was a product of various kinds of agricultural extension.[62] The scale of China's nationwide, vertically integrated agricultural extension system was unprecedented. Stavis described it as…

> …a complex network of research and experimentation stations with sophisticated research centres at the national and provincial level, coordination at the commune and county level, and research groups at the team and brigade level.[63]

The system integrated capital accumulation and technological innovation into a single investment process, which by 1976 managed the distribution of inputs and collected feedback for 13 million members, an average of 200-400 in each commune or about 2-5 people in each of China's roughly 5 million production teams.[64] In practice, however, human capital was centered on the outskirts of urban areas and the eastern seaboard. Throughout the 1970s until the commune was abandoned, technicians successfully aided in the development, testing, registration, production and dissemination of agricultural capital, technology, seeds, and planting techniques.[65]

To avoid the misapplication of inputs and/or adoption of inappropriate techniques as occurred during the GLF, beginning in the late 1960s China's agricultural research and extension system was expanded and decentralized in an effort better to match inputs to local conditions. As part of this effort to prioritize direct communications and to deemphasize formal, bureaucratic channels many agricultural institutes were removed from the oversight of the Chinese Academy of Agricultural Sciences and placed under provincial administration. The new system of agricultural scientific research and

implementation that existed after 1970 sought to improve research institutes' responsiveness to local needs and develop crops appropriate for local conditions. In Jimo County, Shandong, for instance, 244 of 1016 brigades had experimental teams to test new seeds and farming techniques in 1966. By 1972, the number of experimental teams had increased to 695 and they employed 4043 people; by 1974, there were 851 experimental teams. In Jiangxi, by 1976, 80 percent of the communes had agricultural research stations, about 60 percent of the brigades had research teams, and about 60 percent of teams had research groups.[66]

China's post 1970 research and extension system rewarded applied, results-driven science over theoretical work. To familiarize themselves with local problems and conditions, researchers spent one year in the lab, a second in a commune, and a third traveling among rural areas to teach and learn various planting techniques. Agricultural scientists were ordered to work closely with commune members to identify incremental advances that could increase output, a process that required them to go beyond making lab discoveries to include their observation, testing, modification and popularization of innovations. In the field, information passed directly between scientists and farmers without bureaucratic barriers and was shared with higher administrative levels at regular conferences organized at the country, province or national level. The goal was to identify marginal improvements made by farmers so they could be tested and quickly popularized. [67]

Taken together, agro-technical experimental stations at the county, commune, brigade and team level constituted an integrated multi-tier agricultural research network. Vertical integration was intended to improve communication and empowered local

levels. Testing units were semi-autonomous, not mere extension units that blindly implemented instructions from above as occurred during the GLF. County units were generally smaller, and primarily coordinated meetings and distributed information and seeds. Commune experimental stations, by contrast, were the critical link in the unified research and extension system.

Often the commune would use the profits from its test fields or another enterprise to employ dozens of staff and experts with the incentive, training, and means to test and improve a wide variety of capital and technology. They controlled test plots and planting schedules throughout the collective and sometimes developed their own seed varieties. Brigade and team level agro-technical small groups usually included high school graduates and experienced farmers, who received work points for their efforts. The small groups worked to improve their teams' output through the testing and application of capital and technology. They collected the unit's output statistics, passed on information and inputs, sent representatives to commune meetings, tested seed varieties, disseminated techniques, and allocated land and other resources for experiments.[68]

Han's recollections and research in Weihai, Shandong show how the agricultural research and extension system worked there in practice. He recalls that educated youth left South River to study how to cultivate and graft fruit trees. After returning to their teams the youths formed a Forestry Team (*linye dui*) that planted a range of apple, pear and peach trees. The team planted watermelons between the fruit trees in the spring and peanuts in the fall. They also planted poplars, elms, pepper trees, Chinese parasols and Chinese scholar trees to break the wind in the spring and protect against flooding in the

summer. They used twigs and tree branches to make baskets in the winter and sold them.[69]

To improve vegetable cultivation, South River established a vegetable team led by the unit's two best vegetable farmers and dedicated 20 mu specifically to test new varieties. Previously residents had only cabbage, turnips, and pickled mustard, and only households with irrigated sideline plots could enjoy fresh vegetables while others had to buy on the market. The vegetable team taught members how to grow a larger variety of produce for local consumption, and sold the remainder at market. Meanwhile, the commune also supported animal husbandry by creating sties that supplied piglets for households to raise on their private plots and sell at market. [70] There were also specialized *ad hoc* research and extension programs intended to increase output. Irrigation District Management Committees responsible for water allocation within a commune, county or province, for instance, conducted their own research on irrigation and field tests on chemical fertilizer.[71]

Despite an emphasis on local organization, high-level agricultural research centers remained active throughout the 1970s. Unlike the communes they served, China's agricultural scientists did not work in isolation. Top research units received publications from around the world and had communication with foreign agricultural institutes. Between 1973 and 1978 China received and sent about 80 delegations to exchange information on agricultural technology. After the U.S.-China rapprochement began in 1972 American and other countries' scientists visited at least 25 agricultural research institutions and reported that they were large and maintained substantial equipment. The Peking Institute of Genetics, for instance, which conducted advanced genetic research

including pollen culture, boasted five laboratories, 13 hectares of experimental fields, 375 staff including 200 researchers, and numerous local trial centers. High-level institutes in other regions were comparably equipped and staffed.[72]

During the 1970s, at any one time about one-third of the staff was at the institute with the remainder working in communes or travelling to compare results in various local conditions. While in the lab agricultural scientists coordinated research programs, applied the knowledge they and their colleagues gathered in the field, and published manuals summarizing planting experiences with particular crops or inputs that circulated throughout the network.[73]

The 1970s system prioritized applied science over academic research and methodology, thus deemphasizing scientific theory and placing a premium on short-term research with practical payoffs. While this strategy did succeed in increasing food grain output, the decision to take scientists out of the lab was not costless. Spending only one-third of their time in the lab and two-thirds "learning from the peasants" proved insufficient to train and motivate a new generation of imaginative, well-informed scientists. Furthermore, the highly localized agricultural network created during this era suffered from a lack of uniform, systematic and replicable experimentation processes. Experiments were generally demonstrations of new techniques or the testing of several different methods to see which performed best under local conditions, not controlled tests that would have yielded more precise estimates of an input or technique's true value. This lack of consistency extended to test plots, record keeping, and data analysis, resulted in a dearth of standardization across communes.[74]

"The county-township-brigade-team research-extension system network in the collective system was very effective in promoting new technology," Justin Yifu Lin observed. Despite its success in increasing output, however, decollectivization crippled the system, with one consequence being the slowed adoption of hybrid seed varieties. One report on the Guangdong Conference on Science and Education Work held in October 1977, published in the Beijing-controlled Hong Kong newspaper *Ta Kung Pao*, expressed the urgent need to reinvest,

> reorganize and strengthen the four-tiered agricultural research network so as to promote agricultural development in the province. Inadequate equipment and funding on the part of the counties' agricultural science institutes must be dealt with by the counties' revolutionary committees. Some of these institutions were deficient in their performance and this situation has to be remedied.[75]

The system continued to wither throughout the 1980s such that by 1991 Lin echoed the *Ta Kung Pao's* call from 15 years earlier arguing that: "In the interest of efficiency of resource allocation and social welfare the government should take measures to restore the function of the original network."[76]

Conclusion:

The key question for a developing country with unlimited labor, as articulated by Lewis, is how to increase savings rates to the level necessary to take advantage of high returns to capital? Thus, before launching a nationwide commune-based agricultural modernization scheme China first needed a strategy to pay for it. During the GLF, China undertook a disastrous over-extraction of household savings and invested them in poor quality capital that depreciated quickly. In the 1970s, by contrast, China extracted household savings without pushing per capita consumption below subsistence levels, and channeled investment into productive agricultural capital and innovations that increased output. Households' savings were extracted *ex ante* using the work

point remuneration system, which captured resources for collective investment *before* households received their share. *Ad hoc* measures (ostensibly to increase income equality) were also used to increase savings rates, and households were encouraged to deposit any unconsumed resources in the commune-run RCC.

This chapter explains how post-GLF China – an economy with unlimited and fast growing labor stocks, scarce and fast-depreciating capital stocks, and low savings rates – successfully answered Lewis' question and funded a nationwide agricultural modernization program that substantially increased agricultural output. After the 1970 Northern Agricultural Conference, policies were adopted that increased savings rates while investing in land- and laborsaving capital improvements and technical innovations. Commune era investments amid unlimited labor supplies produced commensurate increases in output without suffering diminishing marginal returns. Post-1970 policies increased household savings rates and kick-started a continuing process of investment in productive capital and technological that produced rapid growth in agricultural output throughout the 1970s and early 1980s. China's economic success was not primarily the result of "big-bang" reforms begun in 1979; instead it was built on the previous decade of painful, forced household austerity that underwrote investments in agricultural modernization.

China's increased agricultural output came from the vastly expanded application of improvements in agricultural inputs. Setting aside arguments about the relative contribution of various inputs, when used together they contributed substantially to increasing output. Speaking directly to the quality of these investments and their consequences for agricultural output, John Wong observed in 1976: "There can be no doubt that over the long run such labor intensive works of the communes as land improvements, flood control and water management, have borne fruit."[77] Nevertheless, "in the face of extraordinary success," observed J.Y. Lin, "the

government's investment in agricultural infrastructure, research, extension, and other activities fell from 11 percent of the government's budget to only 5 percent in 1984."[78] Between 1976 and 1979 rural investments averaged 3.2 billion yuan annually but fell precipitously to 1.8 billion yuan in 1982. By 1986, Nicolas Lardy observed, the level of state support for agriculture was the lowest in PRC history. He noted that this precipitous decline in funds for rural development meant that investment "is one factor that can clearly be ruled out as a source of growth acceleration in agriculture since 1978."[79]

As the previous chapter demonstrates, the commune was productive. It was destroyed because doing so had the important *intentional* consequence of increasing rural consumption just as the new post-Mao leadership was consolidating its political power. Under conditions of free labor mobility, workers will leave agriculture and move into another sector if the wage is worth more than they would be able to consume if they remained on the farm. During the commune era rural wage rates were suppressed through coercive measures (e.g. restrictions on labor mobility) that kept labor at essentially "unlimited" levels. The commune increased savings rates by forcing household consumption below the average product per unit labor and channeling the extracted funds into productive capital investment and technical innovations. Investments that increased output per unit land also freed rural labor to move into urban capital and export sectors after decollectivization. After the commune was abandoned, the state's coercive powers substantially diminished, which required Beijing to either increase rural household consumption or face the unwanted movement of laborers to the industrial cities.

Unified by anti-leftism and a desire to solidify their tenuous grip on power, Deng's coalition set out to boost rural household consumption. This was done with the aim of securing the support of rural Chinese households and officials, both of which benefited in the short-run from the disbursement of commune capital, the withering of commune extractive powers, and a rise in

agricultural prices that occurred after decollectivization. In this way increased rural consumption secured the grassroots legitimacy of the new liberal-right coalition's leadership at the time China was facing a crisis of confidence in 1979 known as the *Democracy Wall* Movement.[80] By adopting policies that increased consumption rates above the marginal product per farmer, Beijing was temporarily able to entice residents to remain on the farm. Thus, increases in household consumption provided a timely reprieve for the coalition, buying them the time necessary to undertake sweeping anti-leftist *political* reforms throughout 1979-83 – a period known as the "early Reform Era." In the next chapter we will examine the political changes that accompanied decollectivization and how they substantially altered the social contract between members and the collective.

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[80] Baum notes that in March 1979 that rival wings of the CPC were engaged in an intense political debate with Deng himself caught in the middle. Richard Baum, *China Watcher: Confessions of a Peking Tom* (Seattle: University of Washington Press, 2010) 98.

Chapter 8: Conclusion: Rethinking Commune Abandonment

This study offers a top-down, political explanation for commune abandonment that challenges the generally accepted contention that rural households deserted the institution because it was an economic failure. According to the data presented in preceding chapters, the Chinese commune succeeded in improving rural development and agricultural productivity. Instead, this study finds that a new liberal-right leadership coalition, led by veteran party leader Deng Xiaoping, destroyed the institution for a distinctly *political* reason, that is, to gain control over China's government.

China did *not* experience a V-shaped economic growth line with economic collapse narrowly avoided by life-saving new reforms begun in 1979, as the common wisdom suggests. Conversely, agricultural policies pursued beginning in 1970 effectively increased household savings rates and kick-started a continuing cycle of investment and growth that produced sustained growth in agricultural output. Capital investments and technical innovations that increased output also freed rural labor to move into urban-based capital and export sectors after decollectivization. After decollectivization commune physical capital (e.g. farm machines) was distributed to households or remained as in-field infrastructure (e.g. irrigation systems), or as human capital (e.g. agricultural and industrial techniques and vocational skills). These investments made under the Maoist system remained productive long after the commune dissapeared. Rural China's economic success in the 1980s was not primarily the result of rural reforms begun in 1979; instead it was built on the previous decade of painful, forced household austerity that underwrote agricultural modernization.

The commune was destroyed by an alliance of rightists and liberal reformers in order to

consolidate their newfound political power. After Mao Zedong's death in late 1976 the campaign to abandon the commune began; slowly and quietly at first, then after 1978 it gradually gained momentum and publicity culminating with the institution's complete elimination by 1983. Unified by anti-leftism and a desire to solidify their tenuous grip on power, Deng's coalition set out to boost rural household incomes, end Maoist indoctrination, and "modernize" the military. Each of these three interrelated policy goals removed one "leg" of the commune's tripartite economic, political and military support structure detailed in chapter 1: its mandate to extract household resources for agricultural capital investment; Maoism – its cohesive collectivist ideology; and military backing via the People's War military strategy (PWS), respectively. During decollectivization, Deng's new liberal-right political coalition intentionally eroded these three support pillars at both the national and provincial levels until the institution collapsed.

Eliminating the Commune's 'Three-Legs"

(1) Policies to increase rural household incomes were adopted

Deng's liberal-right political coalition used reduced rural income extraction rates, the one-time distribution of commune capital and land to households, and increased procurement prices, to boost rural consumption and generate grassroots support for its broader reform agenda. After the commune was abandoned its productive capital was either distributed to households (as was the case with tractors and other agricultural machines) or remained as in-field infrastructure (e.g. irrigation, wells, dams) that contributed to future production. Meanwhile, Beijing's decision to raise the state procurement prices for agricultural products provided rural households a sizable income boost for the first time in eight years. Using an index of state procurement prices for grain that takes 1950 as the base year (100) grain prices grew from 222 to 222.8 between 1971

and 1977 then jumped from 224.4 to 271.8 between 1978 and 1979, and to 283.5 in 1981. These and other ad hoc capital and income transfers from the commune and its subunits to households, particularly those of local cadre, were part of the "reaping" that took place when the commune was dismantled.

When the commune system was abandoned localities' ability to obtain resources from households for agricultural modernization was greatly diminished. Regular team meetings came to an end, as did the work point remuneration and agricultural research and extension systems, which had worked in tandem to extract household income for agricultural investment. By increasing rural household incomes, distributing commune property among households, and reducing extraction rates the liberal-right coalition provided a long-overdue consumption increase to rural households. This strategy was ultimately successful in winning grassroots political support and in maintaining a high degree of social stability throughout the transition from collectivized to household-based agriculture. However, it also contributed to China's ballooning fiscal deficit, which after a 10.7 million RMB surplus in 1978 showed a 170.6 million RMB deficit in 1979, and steady defects nearly every year thereafter until 1985.

(2) Maoism was repudiated

The leadership's decision to decollectivize agriculture occurred amid the *Democracy Wall* political crisis, which featured millions of "sent-down" urbanites returning to Beijing and demanding the reinstatement of their urban residency. Throughout October, November and December 1978 petitioners flooded Beijing and began posting virulent attacks on the Maoists, whom they blamed for their plight, on the *Democracy Wall.* Meanwhile, within the *Zhongnanhai* leadership compound just off of Tiananmen Square critical policy debates concerning the

commune's fate were underway in the lead up to the 3rd Plenum.

After winning the day at the Plenum the rightists (with their liberal coalition partners turning a blind eye) crushed the *Democracy Wall* movement in early-mid 1979. In September 1979, Vice Premier Wang Renzhong, in charge of agricultural affairs, explained that rapid urbanization was an important driving force behind rural industrialization:

> Agricultural mechanization must be commensurate with the development of industry. Labor efficient mechanization could cause a movement of laborers to the industrial cities in your country. But China, with her high population, must not let this happen as the factories could not employ so many people in cities. Arrangements should be made, as part of agricultural modernization, to utilize the excess laborers of the 80% of the population that live in the country in the local rural areas in medium and small size industry.[1]

Meanwhile, down on the commune Maoist ideology had been the spiritual adhesive that glorified and rewarded those who placed the collective above the individual. Soon after Mao's death, however, his name and image were gradually removed from public areas and ceremonies. This effort included an end to Maoist ideological indoctrination and the Chairman's cult-of-personality. In 1981, Maoism was officially removed from China's constitution. "Potential entrepreneurs in the early 1980s," observed Yasheng Huang, viewed "the political and policy signals that they would not be imprisoned as credible."[2] By conveying such "signals" at a time when the commune's institutional strength was receding China's new leadership fundamentally undermined its legitimacy and hastened its demise. Maoist ideology's stress on collectivism, egalitarianism, and austerity helped alleviate collective action problems common to commune movements the world over, i.e. the tendency to shirk (moral hazard), the tendency of more productive members to leave (brain drain), and the tendency for weaker individuals to join (adverse selection). Without its collectivist ideology, the Chinese commune's group ethos was quickly eroded and collective action problems began to pull the institution apart from the inside.

(3) "Military Modernization" replaces People's War Strategy

Until Mao's death the military's support for PWS and the commune-based militias ensured its support for the larger institution. To persuade the Maoist old-guard military elite to step aside the new leadership created "Old Cadre Bureaus" to ensure retired military continued to receive the perquisites of their offices, including housing, car service, access to party documents, and deference in party meetings. Often military leaders would refuse to retire until their children, in-laws, and other relatives received acceptable jobs in the party, government, or business. Incentives provided to military officials to retire in the late 1970s and early 1980s became a source of nepotism corruption within the military for more than a decade afterward.[3] Those remaining Maoist generals that were not prepared to adopt military modernization over PWS were removed in the wake of the failure in China's Vietnam War in March 1979. The army's turn away from PWS in favor of a strategy of military modernization ended its support for the commune-based militia defense system and, hence, for the institution itself.

Challenging the Conventional Wisdom

The explanation for commune abandonment and the supporting data provided in this study challenge three principal aspects of the "Reform and Opening up" thesis detailed in chapter 1.

First, *Chinese communes were not abandoned because of poor economic performance*. In fact, communes fed people and employed them surprisingly well. After the institutional reforms made at the 1970 Northern Agricultural Conference in Shaanxi and Beijing the commune produced unprecedented agricultural output increases in seven highly populated provinces and China as a whole. Rather than undermining its institutional legitimacy, throughout the 1970s the commune's ability to feed and employ the fast-growing rural Chinese population contributed

greatly to its institutional staying power. This economic *success* was accomplished primarily through productive investments in human and physical capital (e.g., vocational education and farm machinery) and improved agricultural technology (e.g. mechanization, seed varieties). Improvements in political and economic organizational structures, increased efficiency via economies of scale, and reduced barriers to mobility of productive factors (land, labor, and capital) within and among commune subunits also contributed to increased productivity during the 1970s and early 1980s.

Second, *the decision to abandon the commune was not taken by the farmers*. Mao's death allowed Deng and his allies to eliminate the commune, an institution they had opposed since its creation, for their own political gain. The decision to eliminate the institution was taken at the highest levels of China's political leadership as part of a larger plan to consolidate the liberal-right coalition's newfound political power and gain grassroots support.

Third, *China's rural reforms were not "big-bang,"* that is, achieved "in less than three years," as Zhao Ziyang noted in his memoirs.[4] If we contrast the slow pace of reform in other sectors of the Chinese economy and their small size relative to the massive and diverse agricultural sector, the proposition that a marketized rural economy of plenty arose in only three years time is difficult to believe. The contention that post-1979 market incentives explain the lion's share of subsequent rural productivity increases is too short-sighted – akin to only calculating the time spent reaping the fields, while ignoring extensive investments in sowing and planting. This argument also overlooks well-documented evidence of regularized, officially sanctioned, rural markets or trade fairs held at regular intervals throughout much of China throughout the early and mid 1970s.

This study, by contrast, argues that China's rural reforms 'harvested' the fruits of capital

investments made under the commune system such that, as Lynn White III convincingly argued: "reforms *followed* agricultural mechanization and its main result, rural industry."[5] China's rural productivity increases in the 1970s and early 1980s were not "big-bang," they were slow, painful, and built on two decades of forced household austerity and capital investment and under the commune. The post-1978 'harvest' would not have been possible without the commune's mandate to extract household income and invest it in machines and new technologies that improved food grain production and rural industry. Commune capital investment and infrastructure came at the expense of its households' short-run consumption, but did achieve long-run increases in agricultural productivity.

This rapid extension of agricultural machines and technologies may help explain how – despite numerous favorable reports about Chinese agriculture from American and European agricultural experts – so many social scientists got it wrong. Foreign visitors to Chinese communes in the 1970s or those interviewing exiles in Hong Kong might be forgiven for mistakenly assuming that excess or slow workers were shirking or slacking on their collective duties and that collective work was uninspired and thus unproductive. In fact, what at first blush might have appeared like 'free-riding' was actually evidence of the institution's success in using modern agricultural capital and technologies to reduce the need for backbreaking field labor. More people simply had less to do. Investments in irrigation and water storage systems, for instance, reduced the need for members to transport water by bucket from far off sources. The sight of commune members living just above subsistence belied the full grain stores extracted from unwitting households paid in nebulous work points.

Conclusion

During the 1970s an increase in the rural labor supply, a fall in arable land, and increased agricultural productivity caused by agricultural modernization combined to free up large amounts of rural labor. Much of this excess labor was given vocational training and put to use in commune and brigade industries and by households in their private sideline enterprises. Despite extensive job creation and training programs, however, China's communes could not keep up with the growing population and were forced to cope with large numbers of excess workers, a large percentage of which later migrated to urban areas soon after the commune was abandoned. In this way, the decade of mass rural workers urbanization (*liudong renkuo*) that followed the commune's abandonment was made possible by investments in rural capital and infrastructure and basic and vocational education that occurred under the commune. These developments were comparable, although on a much larger scale, to the advances in agricultural production that England experienced prior to its industrial revolution.[6] The Maoist system's productive investments in rural localities' physical and human capital and technological advances in agriculture underpinned China's economic success throughout the 1970s and 1980s.

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[1] Speech by Wang Renzhong to U.S. agricultural experts in Merle Esmay and Roy Harrington, *Glimpses of Agricultural Mechanization in the PRC*: *A Delegation of 15 Members report on their technical inspection in China Aug. 18-Sept. 8, 1979* (St. Joseph: American Society of Agricultural Engineers, 1979) 7.

[2] Huang Yasheng, *Capitalism with Chinese Characteristics* (New York: Cambridge University Press, 2008) 36.

[3] Benedict Stavis, "Communist Reform and Reaction China, 1986-89," Unpublished paper (Aug. 1989).

[4] Minxin Pei, *China's Trapped Transition: The Limits of Developmental Autocracy* (Cambrige: Harvard University Press, 2008) 26. Zhao Ziyang, *Prisoner of the State: The Secret Journal of Premier Zhao Ziyang* (New york: Simon & Schuster, 2009) 142.

[5] Lynn T. White III, *Unstately Power: Volume I Local Causes of China's Economic Reforms* (Armonk: ME Sharpe, 1998) 86.

[6] E.L. Jones, *Agriculture and the Industrial Revolution* (Oxford: Basil Blackwell & Mott, Ltd., 1974).