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Some Questions Concerning Recent Agrarian
Reforms in China

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I. Introduction

Recent developments in the institutional set-up and organisation of production in China's rural sector have attracted a great deal of attention. This is not surprising, in view of the fact that the new changes being introduced appear to be far-reaching in their character, to the point of altering in a fundamental way the agrarian system which had evolved in post revolutionary China under Mao. Rather than being mere cosmetic changes, these new developments beginning in 1978 fall nothing short of a dismantling of the commune system -- with its commune, brigade, and production team components, -- and its replacement by a system closely resembling peasant agriculture with the household as its main decision making and income generating unit. This, indeed, appears to be the consensus emerging from observations of foreign visitors to China, as well as from the criticisms levelled by the Chinese themselves against the commune system, in justification of the current reforms.^{1/} Moreover, the available evidence suggests that these reforms are proving popular with the rural masses, and that the output performance of Chinese agriculture has shown a marked improvement in recent years. Most remarkable of all is the statement that "thanks to the introduction of the economic responsibility system, thanks to the emerging of a

large number of key households and specialized households, and thanks to the uninterrupted development of commodity production, about 100 million rural inhabitants have left their lands and entered into non-agricultural trades.^{2/} The magnitude of this apparent labour transfer out of agriculture may be gauged against the fact that this constitutes roughly 12 1/2% of the Chinese peasant population, and exceeds the increase in the rural labour force which took place between 1957 and 1975, estimated by Rawski at 98.2 million persons. All these facts raise serious questions regarding the nature of the transformation under way in the Chinese rural sector, about the difficulties which triggered the reforms and the prospects of the present reforms for resolving these contradictions.

At the heart of the matter, is the question of whether the Chinese effort to resolve its basic structural problem in agriculture, viz., the need to absorb a large rural population over a relatively narrow arable land base in an economically sound manner, by means of an innovative socialist reorganization of the agricultural system culminating in the 3-tier commune system -- must now in the light of recent developments be seen as a failure. After all, less than a decade ago the Chinese experiment was widely regarded as a success. The substantial restructuring of land ownership and of the organisational mode of farming that took place sequentially over the 1950's were credited with having achieved a number of aims: (a) the liberation of Chinese agriculture from its pre-liberation low-level equilibrium trap. As Timmer noted, "the contrast between the peasant's life then and now is constantly invoked as motivation for and justification of the enormous physical effort and

ostensible loss of personal freedom involved in the transformation of Chinese agriculture".^{3/} (b) The ability to step up agricultural mechanization following rural electrification, while at the same time to absorb vast quantities of rural labour for large scale capital construction projects such as restructuring farmland and water control works, as well as small-scale rural industry. (c) Apart from agricultural mechanization, Chinese agriculture witnessed an upgradation of agricultural technology in the form of biochemical inputs such as new seeds and fertilizer; and last but not least, (d) the Chinese system was widely acclaimed to have achieved substantial food security and the guarantee of minimal living standards for all citizens, keeping income disparities under check, and also to have raised substantially the capacity for local self-reliance. Why is it then, that despite such notable successes under collectivised agriculture, the Chinese have embarked upon a massive de-collectivization campaign?

In the succeeding sections, we shall consider first the key elements of the recent reforms and their impact on the performance of agriculture. This is followed by an examination of the emerging difficulties faced by the Chinese in the rural economy which underlay the adoption of the reforms. The paper ends with some speculative observations concerning the prospects of continued success under the reforms. The argument developed below broadly suggests that (a) the current reforms indeed amount to an almost total decollectivisation drive aimed at restructuring incentives; (b) that the commune system for all its successes could only provide a temporary resolution of the

fundamental problem facing Chinese agriculture, namely that of absorption of massive labour force, which paved the way for the decollectivisation reforms and (c) that while the immediate impact of these reforms has been impressive in terms of growth performance, there are reasons for caution regarding their ability to provide a long term resolution of the fundamental problem of labour absorption.

II. The Key Elements of the Reforms

The reforms underway in China are traceable to the Third Plenum of the Eleventh Central Committee which met in December 1978, marking a significant turning point in policy. The main ingredients of the new approach were: (a) Reform of the economic management system, including reducing over-concentration of authority, and separation of economic management from political administration; (b) reforms of the commune system and (c) the raising of living standards. With regard to agriculture, the main elements of the reform were the dismantling of the commune system, steps to increase economic incentives and the promotion of a diversified rural economy with a sharply increased role of "commodity production". The crux of the newly emerged system of production organisation is the so-called "household responsibility system", which, with some regional variations, has been adopted throughout China, virtually replacing the preexistent system within a relatively short period of time.

It is therefore worthwhile to examine a bit more closely the contents of the reforms. Under the preexistent system, the commune was the highest level of the three-tier organisatio

structure, combining the functions of a unit of local government with that of an economic organization. The communes operated workshops and enterprises and organised the larger capital construction projects. It also maintained local hospitals, educational institutions and other infrastructural facilities. The next level of organisation was made up by production brigades. Brigades managed small workshop and enterprises and also controlled heavy machines and equipment and irrigation facilities for agriculture. They also organised smaller capital construction projects. At the lowest level of the commune system were the production teams. These teams controlled all the cultivated land, most of the livestock, smaller machines and agricultural tools. By the late '70s, China was reported to have some 52,000 communes, 7000,000 brigades 5.15 million production teams and 135 million rural households, implying an average of 26 households to a production team, 7.4 production teams to a brigade and 13.5 production brigades to a commune.^{4/} This three tier system was believed by several economists to have successfully removed the problem of diseconomies of scale generally associated with private small scale peasant farming, and permitted the transition to a more rational and scientific mode of land utilisation.^{5/}

The relevant unit for the distribution of income - the "basic accounting unit" -- was generally the production team. As is well known, the system of payment was based on the amount of work done (measured by "workpoints") by each members of the production team. However, the value of a workpoint depended on the economic performance of the production team as a whole.

Naturally, this allowed for the possibility of divergence between the incomes of different production teams. During the Cultural Revolution period (1966-76), a tendency developed to change this type of arrangement in favour of one in which the "basic accounting unit" was to be raised to a higher level—the brigade. This was seen as a way of removing inter-team inequality. This actually occurred in the case of about 10% of the brigades, and even some 60 communes.^{6/} Other means of evening out incomes were introduced, such as in the calculation of workpoints, whereby piece rates were abolished and degree of physical difficulty of the task deemphasised in the calculations. Within the commune system a small fraction of the land, amounting to about 6%, used to be allocated to individual households, who were also allowed to engage in certain private sideline activities like poultry and piggery to be sold at rural fairs. During the Cultural Revolution period, these activities came under censure and faced curtailment. Proponents of the post Mao reforms argue that these tendencies played havoc with the structure of incentives in the rural areas.

"The raising of the level of basic accounting unit brought about two problems: First, it did not suit the management abilities of the rural cadres; and secondly, after the mergers, former poor teams shared the property and wealth of the rich teams, thus giving rise to a series of contradictions. Both problems adversely affected the peasants' enthusiasm for production".^{7/}

It is possible, however, to surmise that the policies observed during the Cultural Revolution period were themselves

a response to a gathering economic crisis in agriculture. While output performance during the 1960-61 famine, was reasonable, it would seem that internal differentiation of incomes within communes at the team level, was a serious problem with political overtones, and the trend towards private sideline activities and private plots was already posing a potential threat to the continued health of the commune system.^{7a/} It would therefore be useful to ask why such economic difficulties were emerging within the commune system and whether there was an objective basis for the policies proposed by the "Left" within the Chinese leadership. We shall deal with this question in more detail in a subsequent section. Here we may mention one striking fact which obviously has an important bearing on the matter, namely that the absorption of nearly 100 million new entrants into the rural labour force was accompanied by a marked decline in labour productivity in Chinese agriculture between 1957 and 1975. Rawski estimates that output per man-day may have fallen by as much as 36% over this period. Added to this, is the fact that the use of purchased inputs had increased markedly, as a result of which the net income generated per man-day is likely to have declined even further.^{8/} It is against this stark background that the policies pursued during the Cultural Revolution period as well as the subsequent dismantling of the commune system may be better appreciated.

The changes introduced after Mao proceeded step by step. At first, the level of the "basic accounting unit" was brought back down to the level of the production team, and by 1973, the process of going below the level of the production teams was

already evident, which subsequently has come down to the level of the household. Around the same time, the role of private plots and side line activities was gradually expanded by allowing a maximum of 15% of the total cultivated area of a production team, and restrictions on what could be produced on a private plots were also eased. Furthermore, the rural private markets were re-established under official licenses, with substantial freedom of operation. Other measures designed to improve agricultural incentives and incomes included the raising of the prices of certain agricultural products and improving agriculture's terms of trade with industry. State purchasing prices for 18 key products, including grain, cotton, oil, hemp, sugarcane, animal products and silk cocoons were raised between 25 and 28%. On top of this, a 50% premium was given for above quota sales for grains and 30% for cotton. As a result the index of purchase prices of agricultural products rose from 217.4 in 1978 to 307.8 in 1982 (1950=100). In areas where peasants faced special difficulties meeting grain quotas, such as remote or poor areas, or cash crop growing areas, the government relaxed or removed its grain procurement quotas. Concomitantly with these developments, the political power of the commune was gradually reduced and it no longer served as the unit of local government.

At the level of production, the full significance of the decollectivisation process can be seen from the content of the household responsibility system. The fundamental logic underlying the new system was to ensure a direct link between production performance by an individual household and its economic return. In essence, the system involves a contract entered into...

between the team and groups, individuals and households. The contract specifies a target output. In actual practice, the contracts evolved numerous variants with regard to the specifics concerning distribution of output and terms of availability of land. By and large, after meeting the commitments to the State and to the team, the households are free to dispose of the surplus produce as they please. Khan and Lee (1983) distinguish eight different types of contracts. However, in terms of importance, two of ^{these} stand out, namely Bao chan dao hu (BCDH) and Bao gan dao hu (BGDH). Under the former, the land is divided among households on the basis of equal amounts per capita. Output quota, input targets and labour (measured in workpoints) are specified in the contract. An agreement (implying a 100% bonus) provides for the household's retaining any excess of the quota output or saving over targeted cost. The opposite (i.e. 100% penalty) is incurred for shortfalls on excess costs. The quota outputs are collected by the teams and distributed among households according to workpoints after deductions for welfare, accumulation and taxes. The latter type of contract, BGDH, represents a further retreat from collectivisation, by abolishing the system of work points altogether. Another difference lies in the fact that while under BCDH, plans for planting, irrigation and use of draft animals and machinery remain under team control, under BGDH, the draft animals, tools and equipment are divided among households. The responsibility of the team is confined to setting sales quotas and tax obligations. After meeting these obligations, the households, are free to dispose of surplus output as they wish. This system has obvious analogies

with peasant farming on rental basis. As the Chinese themselves put it:

"As the contract defines clearly the households' responsibilities to the state, it protects the peasants from any extra and unreasonable burdens. Under such contracts, the peasant households enjoy all the rights and benefits as independent commodity producers, their decision making power safeguarded in terms of economic interests. The responsibility system gives play not only to the initiative of the peasants but also to the superiority of the collective economy".^{9/}

The last sentence quoted above is difficult to comprehend, since it would seem that under BGDH, the last vestiges of collective organisation of agriculture have been removed. By the end of 1983 nearly 95% of all the peasant households in China were under some form of the household responsibility system, and within this the relative importance of BGDH has been growing more rapidly since mid 1981, and by 1983 the share of BGDH had become insignificant. Within the now prevalent BGDH form of household responsibility system, there are, however, two main variants, depending on the role played by the collective. In the more extreme form, the team ceases to perform direct production functions. Collectively owned assets are sold to the households and the team no longer operates non-agricultural enterprises. Its role is to make periodic adjustments in land distribution, tax collection and procurement quotas on behalf of the government. Under the lesser variant of BGDH, the team continues to own assets and sometimes operates team level enterprises.

An emerging practice within this new system is to allow individuals to operate equipment like tractors under contract. Such individuals operate like specialised workers who contract ploughing work with individual households at mutually agreed cost, and retain the surplus remaining after payment of rental to the team for the tractor. Another feature worth mention in the context of de-collectivisation, is the trend observable in certain areas towards the fragmentation of fields once again in order to ensure equitable sharing of land of varying quality. It is still too early to judge the extent of this trend, but its potential implications for productivity could well be negative.^{10/}

The dismantling of the commune system also implies that investment for land improvement must now be carried out at the household level. To make this attractive, the length of contract must be sufficiently long, so that in effect the household has "security of tenure". The general practice seems to be to enter into five year contracts, though three year duration contracts are also known. Very recently, contracts for 15 years or more have begun to be introduced. As noted above, in many cases teams are relinquishing ownership of means of production, and this has opened the way for private ownership of certain means of production like livestock and agricultural equipment, and private renting of such equipment through bank loans. Perhaps the most significant of all changes from the ideological viewpoint is the recent decision taken in 1983 to permit the hiring of labour. Upto 10 labourers can now be employed by owners of private enterprises. Generally this is confined in the rural areas, to non crop enterprises like poultry farms, though the use of seasonal hired labour in agriculture is also becoming common.

Thus we can see from this brief overview of agrarian reforms that the nature of organisation of production has altered fundamentally. Chinese agriculture is now essentially decollectivised. Neither accumulation, nor resource allocation, and not even the distribution of income now takes place under collective auspices. Apart from these organisational changes the Chinese have introduced certain other policy changes. These have to do with steps to increase the diversification of the rural economy. The earlier policy of "take grain as the key link" has been relaxed. There is now a greater encouragement of cash crops, which seems to have benefited certain areas, as well as of noncrop activities such as forestry, animal husbandry and cash crop production. Another aspect of this involves steps to revitalize the rural non agricultural enterprises. These include former commune and brigade owned enterprises as well as cooperative and individual enterprises. It is claimed that village and town enterprises are expanding in recent years. Finally, there seems to be some expansion of private trade in the rural sector. "To unclog circulation, the State has adopted a series of measures which include putting an end to State monopoly of commerce, allowing the coexistence of various prices, and encouraging both collective and private business to engage in commodity circulation along with state commerce".^{11/}

Impact of Reforms on Output

By most accounts, the output performance of agriculture has shown a marked improvement within a relatively short period of time, though it is still too early to come to a firm assessment about the robustness and long term durability of these improvements. According to official figures, the index number

of value of gross agricultural output (with 1978 = 100, measured in constant 1980 prices) rose to 133.4 in 1982, which is a dramatic rise implying an average annual growth rate of 7.5%. This includes, however, the impact of the shift in cropping pattern from low priced grains to high priced cash crops and side line activities. Within the agricultural sector, there ~~some~~^{were} noticeable shifts. In particular, the rate of growth of sideline activities has been about double that of agriculture as a whole, and animal husbandry has also grown quite rapidly at 10.2% per year. It is worth noting that side line activities include industries run by brigades and teams, which have grown rapidly during this period. There has been a general weakening of the proportion of GVAO accounted for by agriculture which has dropped 5 percentage points from 67.8% in 1978 to 62.7% in 1982. It should not, however, be forgotten that the decline of the relative share of "agriculture" in GVAO has been a secular feature of Chinese development. It declined from 83.1% to 75.8% between 1952 to 1965 and thereafter to 67.8% in 1978. Among agricultural products, as might be expected from the preceding discussion, rapid improvement, in growth rates have been registered in the per capita availability of items such as cotton, edible oil, pork, beef and mutton. And, perhaps a bit surprising, there is the apparent increase in the per capita availability of grain itself, which is said to have risen annually at 2.5% per year between 1978-82, as compared with the near stagnancy (0.2% per year) obtaining during 1957-78.^{12/} Some part of this may however be accounted for by grain imports.

It would appear from such evidence as is available that the

rural economy has responded very dramatically to the new package of policies and institutional changes.

III. Reasons for De-collectivisation Reforms and Prospects for their long term success

A number of questions arise concerning these reforms, most of which cannot be answered adequately on the basis of evidence currently available. An important one among these is why fundamental changes on this scale were deemed necessary. It is obvious that the main thrust of the reform is on incentives at the household level. As far as price incentives are concerned, it is entirely conceivable that these could have been introduced within the preexistent commune system. The same may be said of the drive for rural diversification. However, such a course was not pursued. It is interesting to note in this connection that the idea of the household responsibility system was not a fundamentally new concept introduced in the late 1970's. It figured in internal discussion within China as an alternative to collectivisation as early as 1955, but found no political backing. Collectivisation was implemented.¹³ The fact that the idea has had such a glorious resurrection after twenty years indicates the existence of deep rooted difficulties within the rural economy. While some of the claims made by the present leadership regarding these problems may be discounted as being ideologically motivated, it seems clear that the government was increasingly unable to redistribute income to deficit areas, and that quite a few regions were impoverished. There are a number of explanations of what went wrong in rural China during the 60's and 70's. These include various imbalances and disproportions, such as neglect of agriculture, light industry, housing, and a neglect of living

standards. There was an acknowledged inability to raise the level of technology, and so on. But it is clear that Chinese policy makers have focussed on "equilitarianism" and "overcentralisation of economic power" as the key factors responsible for the inability to achieve "economic results".^{14/} while it is true that the dampening of material incentives under the commune system may have had some degree of a demoralising effect on work, it is legitimate to ask whether this was the whole story and indeed, whether the dampening of material incentives did not itself reflect structural factors operating at a deeper level. With the enormous boost given to agricultural incentives through a multitude of devices, the impressive growth recorded in Chinese agriculture is perhaps not altogether surprising. But whether such a performance will be sustained into the future, or prove to be a one-shot affair, depends on whether those more fundamental problems can be resolved.

What might such fundamental factors be? I would argue that the critical issue confronting China's rural sector has been, and continues to be, the problem of absorption of surplus labour. It is on this critical question that the long term success of the current reform will ultimately hinge. The commune system appeared to provide a solution, partly through a greater degree of labour absorbed in agricultural activities themselves, partly through the capital construction and water conservancy projects which were undertaken on a massive scale, and partly through the growth of rural enterprises. The system of distribution through work-points was a convenient means of financing such activities. As pointed out by Raj, the mobilisation of rural labour for the

capital construction and irrigation projects constituted the main rationale for the commune system.^{15/} But this phase of labour absorption through capital construction appears to have ended by the early 1970s, since then the number of persons absorbed has been stable. The scope for further increase of labour absorption in agriculture proper is also distinctly limited. Indeed, the prevalence of labour intensive cultivation in China is a practice of long standing which predates the revolution.^{16/} Over the period upto the mid 70s, the Chinese adopted various farm practices which greatly enhanced labour absorption in agriculture even beyond already high levels. Substantial increases occurred for example in land preparation, particularly through the use of organic fertilisers (which increased by 40% between 1957-71) and which required enormous labour input. It is estimated that perhaps more than one third of the increase in labour absorbed in agriculture between 1957 and 1975, came from this source alone. Other agricultural practices such as "close planting" have been tried. It has been estimated that in the advanced farming regions, labour requirements per sown hectare have risen to "roughly five times the pre war level for wheat and maize, 2.3 times for cotton and 1.5 times for rice".^{17/} To this should be added the contribution due to increase in the index of multiple cropping, which rose from 1.41 in 1957 to somewhere between 1.50 and 1.60 in 1978. Indeed some agricultural economists suggest that multiple cropping had been pushed too far, perhaps beyond the point of diminishing returns (e.g. Wiens). There had also been growth of intercropping as well as a distinct shift in the cropping pattern in favour of labour intensive crops and agricultural

activities, which grew faster than grain crops.

It would appear that such intensification of the use of labour allowed rural China to absorb nearly 100 million new entrants to the labour force between 1957-75. However, this occurred at the cost of labour productivity. Labour productivity, in gross value (yuan per man day) may have declined by as much as 36% during 1957-75.^{18/} Thus, the sharply enhanced absorption of inputs - labour, as well as current and capital inputs has been accompanied by decreasing efficiency. This has been at the core of the failure to achieve economic results. Thus, the estimated index of "total factor productivity" appears to have been declining in China from 107.0 in 1952 to 91.4 in 1965 and to between 64 and 74 in 1975.^{19/} Therefore, the resolution of the problem of absorption of surplus agricultural labour within the commune system was achieved at increasing cost. In this connection, the earlier efforts at raising significantly the level of agricultural mechanization in order to release surplus labour for capital construction projects which occurred during the 60's and early 70's must now in retrospect appear questionable. It would seem that such processes might have been pushed too far and too fast. Indeed, it would not be surprising to see a degree of de-mechanization in the coming years. The tensions encountered during the Cultural Revolution period have their material basis in these factors, and cannot be seen simply as mismanagement or ideological excesses, because inter commune and intra commune inequalities are politically more disruptive under such conditions of declining productivity.

The question that now arises is how the Chinese economy will cope with the problems of labour absorption in the post reform period. The policy makers are obviously hoping that within the new set up, a considerable expansion of non agricultural employment will occur. It is difficult to judge how wide the scope for increasing rural employment in non-agricultural activities is likely to be. The new incentives to agriculture are intended to increase agricultural incomes considerably and thereby to create a market for nonagricultural commodities and this enable the absorption of workers in town and village enterprises. There is also the hope the side line activities and private trade and other services will absorb more workers. It is in this connection that the startling statement, alluded to earlier, that as many as 100 million peasants have left the land since the institution of the household responsibility system, assumes relevance. The need for creating an expanding market for non-agriculture products is evidently so strong under this strategy that policy makers are willing to condone the reemergence and deepening of rural inequalities and to jettison the social security system. At the moment, "out of net income of peasants coming from production, 13.7% come from industry, transportation, commerce and catering trade, a proportion which is estimated will increase in the future".^{20/}

The key question for the future is how such diversification will be accomplished on a large scale . As a matter of fact, the shares of China's output value contributed by animal husbandry, side line activities including village factories still do not show any marked increase between 1978 to 1983.^{21/} It would seem that a key ingredient of the long term success of the reforms would have to depend on the ability to attain sustained increases in the growth of labour productivity in agriculture without generating open unemployment or politically unacceptable levels of inequality. Barring large scale inflow of foreign savings -- an unlikely prospect relative to the scale of requirements -- this is the only way in which substantial structural diversification can be sustained in the long run. At the moment, judging by the performance recorded in the agricultural sector over 1979-82 the picture looks good. Labour productivity is estimated to have increased at an impressive average annual rate of 5.2%.^{22/} But there are reasons to believe that this rate may come down somewhat in the future. The present rates reflect the large scale internal readjustments and reallocation of resources underway since the reforms, and will soon taper off. In part, there is the likelihood that the present rates exaggerate growth performance because of earlier under-reporting of land and output. It is in any case difficult to see what might be the sources of growth of productivity in the future on such a scale, unless further technological breakthroughs occur.

On the negative side, the recent tendency towards a creeping back up of the rate of population growth to rates comparable to those seen in the early '70's (caused mainly by increasing rural

birth rates) may be noted. The population age structure is also biased towards younger age groups, and this has serious implications for the future. It has been suggested that the household responsibility system, together with the weakening of the system of social security, may be responsible for this change in fertility behaviour. Another feature of long term significance is the fact that collective accumulation appears to have drastically declined, and in some areas have been abolished in farming activities. Private savings seem to have been utilised to a large extent, for housing and durable consumer goods. While this to some degree may be seen as correcting previous imbalances, the question of how future large scale land improvements and capital construction will be financed remains to be settled. A final observation, of some relevance in so far as the problem of labour absorption is likely to be critical, has to do with the labour absorptive capacity of rural industries themselves. From data available upto the mid 70's, the balance of the evidence seems to indicate that capital labour ratios in rural industries are not significantly lower, particularly for the more successful plants. Thus while labour productivity relative to agriculture is high, the employment generation capacity of rural industrial enterprises per unit of capital invested has not been historically very high.^{23/}

Conclusion

All of these factors suggest that despite remarkable successes achieved on the output front and the popularity of the reforms with the rural masses, there is a need for caution about the longer term prospects for Chinese agriculture. The fundamental long term problem of absorption of labour force has not yet been adequately resolved, and the failure of the commune system in sustaining itself beyond two decades is closely allied to this contradiction, which came back to haunt it in the form of declining labour productivity. The Chinese leadership has now chosen to attack the problem of low labour productivity by drastically altering the system of incentives, but it remains to be seen how far increases in labour productivity can be combined with a high level of labour absorption.

Notes and References

1. See for example A. Vaidyanathan, "Economic Reforms in China: Some Impressions", *Frontline* January 26, 1985. Vaidyanathan was a member of a team of scholars representing the ICSSR which visited China in late 1984. See also the paper by Chinese Scholars
 /Sun Peijun, Zhang Baomin and Zhang Bouyi, and Dong Fur ng, presented at the recent India-China Seminar, under the joint auspices of the ICSSR and the Chinese Academy of Social Sciences, January 7-9, 1985, New Delhi.
2. Sun Peijun, "Agricultural Development in China and India: Experiences and Problems", Paper presented at ICSSR + CASS Seminar, op.cit. The precise verification of this figure is rather difficult. It may also be interpreted to mean that the total number in non-agriculture has grown to 100 million gradually, helped by the responsibility system, but not abruptly since 1979. (Carl Riskin, personal communication). The magnitude of the shift, however, is remarkable.
3. C. Peter Timmer, "Food Policy in China", *Food Research Institute Studies*, Vol.XV, No.1, 1975.
4. Azizur Rahman Khan and Eddy Lee, Agrarian Policies in China after Mao, ILO-ARTEP, 1983.
5. K.N. Raj, "Agricultural Growth in China and India: Role of Price and NonPrice Factors" Economic and Political Weekly, January 15, 1983, Also Joan Robinson, "The Organization of Agriculture" Bulletin of Atomic Scientists June 1980, and "China Today: Economic Organization" Journal of the Royal Society of Arts, July 1968
6. Khan and Lee, op.cit.
7. Zhang Baomin and Zhang Houyi, "China's Agricultural Reform and "Development", Paper presented at ICSSR-CASS Seminar, op.cit.
- 7.a) Several conclusions regarding weaknesses in China's food-grains situation emerge from Walker's comparison of the mid-1950's with the late 1970's. (See Kenneth R-Walker, Foodgrain Procurement and Consumption in China, Cambridge University Press, 1984). Among these are: (1) Though there was some improvement, there still remained in 1978-80 a high degree of regional inequality in per capita grains output at the provincial and lower levels. This had also been a key problem in the 1950's. While there was an overall increase of about 11% in the national per capital foodgrain output between 1955-57 and 1978-80, 8 provinces were in the 'poor' category in the latter period, and in 11 provinces grain output per capita was, in fact, lower in 1978-80 compared with the earlier period. Instability of output continued to affect several provinces. Walker also suggests that local level inequality at the district level was quite considerable: "For example, in 1979, 338 hsien (around 15% of the total number) produced 36% of China's grain.

(In 1951-52, 252 hsien (11.4%) produced 19.3% of output). It follows that many poor villages and production teams continued to exist in the 1970's (p.176).

(2) The pace of procurement could not keep pace with output growth due at least in part, to incentive problems. Between 1953-57 and 1977-80 total foodgrain output rose by 70%, whereas gross procurement rose by only 18%. In per capita terms, gross output rose by 11% compared with a 22% decline in gross procurement. Part of the implied increased retention of grain is due to its use as feed to sustain increased livestock, particularly for piggery. The number of pigs in China rose from 103 million to 309 million over the period. Along with the decline of the procurement ratio, there were (a) a reduction in the volume of interprovincial grain transfer and (b) increased resort to foodgrain imports - 9 million tons a year for the late 1970's, compared with exports of 2 million tons a year in the 1950's.

8. K.N. Raj, op.cit. See also S. Ishikawa, "China's Food and Agriculture: A Turning Point", Food Policy, May 1977. The figure of 36% cited above is from T.G. Rawski, Economic Growth and Employment in China, World Bank and Oxford University Press, 1979.
9. Zhang Baomin and Zhang Houyi op.cit.
10. Carl Riskin, China's Political Economy, forthcoming Citations by permission.
11. Zhang Baomin and Zhang Houyi, op.cit.
12. Source, Carl Riskin, forthcoming, op cit, data compiled from official sources by him.
13. Khan and Lee, op cit. On the question of whether price incentives could have been introduced earlier within the preexistent commune system itself, Raj, op cit, makes the observation that it might have raised a number of complications, including high subsidies and complex wage adjustments to soften the effect on vulnerable sections.
14. Dong Fureng, "The Transformation of the Strategy of Economic Development and the Reform of the Economic System in China", Paper presented at ICSSR-CASS Conference, op cit.
15. K.N. Raj, op cit, Raj points to the interesting possibility that Mao himself may have formulated the policy of the commune system as late as 1958, after witnessing some spontaneous local level experiments organized by cadres for capital construction in Hopei and Hunan.
16. See Rawski op cit p.73, who cites the observations of F.H. King, Farmers of Forty Centuries, Organic Gardening Press, and C. Geertz, Agricultural Involution, University of California Press, 1966.
17. Rawski, op cit. p.98.

18. Ibid, p 120
19. Ibid., which extends the calculations of A. Tang, "Input-Output Relations in the Agriculture of Communist China 1952-1965" in W.A. Douglas Jackson ed, Agrarian Policies and problems in Communist and non Communist Countries, University of Washington Press, 1971. The base year for the index 1957=100.
20. Zhang Baomin and Zhang Houyi, op cit.
21. Sun Peijun, op cit, Table 5
This could be partly due to the change in fixed prices in which GVAO is calculated. The 1980 prices are much less favourable to industry and sidelinesthan 1970 prices, thus understating the growth in their share.
22. Carl Riskin, forthcoming, op cit, chapter 12.
23. T.G. Rawski, op cit, p.48 and Jon Sigurdson, Rural Industrialisation in China, Harward University Press, 1977 Chapter 4

Table 1: Gross Agricultural Output Value and Components

Indexes 1978 = 100

Year	GVAO (Bill of 1980 Yuan)	CVAO	Agri- culture	Forestry	Animal Husbandry	Brigade and team industry	Fishery
1978	197.03	100.0	100.0	100.0	100.0	100.0	100.0
1979	213.98	108.6	107.2	101.4	114.6	116.4	96.6
1980	222.30	112.8	106.6	113.7	122.6	141.2	103.9
1981	236.92	120.2	112.9	118.4	129.8	158.4	108.5
1982	262.92	133.4	124.3	128.5	147.0	173.5	121.8
1983	288.18	146.3	134.6	141.6	152.7	211.3	132.2
Average Annual Growth Rate (%)							
	7.9	7.9	6.2	7.3	8.9	16.2	5.9

Sources: C. Riskin China's Political Economy, forthcoming, Ch 12.

Table 2: Per capita Output of Major Agricultural Products, 1952-82
(Kg divided by mean annual population)

Year	Grain	Cotton	Edible Oil	Pork, Beef and Mutton	Aquatic Products
1952	288	2.3	7.4	6.0	2.9
1957	306	2.6	6.6	6.3	4.9
1965	272	2.9	5.1	7.7	4.2
1978	319	2.3	5.5	9.0	4.9
1979	343	2.3	6.6	11.0	4.5
1980	327	2.8	7.8	12.3	4.6
1981	327	3.0	10.3	12.7	4.7
1982	351	3.6	11.7	13.4	5.1

Source: C. Riskin, China's Political Economy, forthcoming, Ch 12.

Table 3: Growth Rates of Farm Output and Input, 1979-82

	Average Annual Growth Rate (per cent per year)
<u>Output</u>	
Gross value of agricultural output (Yuan, constant prices)	7.5
Foodgrain	3.9
<u>Inputs</u>	
Labour (Agricultural labour force)	2.2
Land (sown area)	-1.1
Farm Machinery (horsepower)	9.1
Draft Animals(end-year stock)	3.2
Chemical fertilizer	14.6
Organic fertilizer	0.5
Labour Productivity	5.2
Total Factor Productivity	4.6 - 5.4

Source: Carl Riskin, China's Political Economy (forthcoming),
Ch 12.

Table 4: Estimates of China's Labour Force, 1957 and 1975
(Million of Persons)

	"Version A"		"Version B"	
	1957	1975	1957	1975
Labour Force				
Urban Employed	30.4	87.5	30.4	87.5
Rural Employed	241.2	325.4	243.4	341.6
Urban Unemployed	7.8	1.0	7.8	1.0
Total Labour Force	279.4	413.9	281.6	430.1
Agricultural Labour Force*	229.3	312.6	231.5	328.8
Population				
Population Total	628	898	633	934
Population Urban	92	175	92	175
Population Rural	536	723	541	759

Source: T.G. Rawski, *Economic Growth and Employment in China*, 1979.

*Agricultural Labour Force is defined as Total Labour Force minus non-agricultural employment (Urban and rural) and military personnel.

Table 5: Labour Productivity in Agriculture, 1957 and 1975

	1957	Est. A	1975	Est. B
Gross value of Agricultural output (billions of 1957 yuan)	53.7		83.9	
<u>Labour Input</u>				
Millions of Man years	231.5		328.8	
Billions of Man Days	36.9	89.4		67.9
<u>Labour Productivity in Gross Value</u>				
Yuan per man year	232.0		255.2	
Yuan per man Day	1.46	0.94		1.24

Source: T.G. Rawski, Economic Growth and Employment in China
Chapter 4.