

# OUTPUT vs. "SURPLUS" MAXIMIZATION: THE CONFLICTS BETWEEN THE SOCIALIZED AND THE PRIVATE SECTOR IN CHINESE COLLECTIVIZED AGRICULTURE

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## *Introduction*

COLLECTIVIZATION AS a model for developing subsistence agriculture in densely populated countries has been credited with some very attractive advantages by many economists. These same economists also imply that if only the governments in these countries are powerful enough to pull off such a structural transformation, the knotty problem of agricultural development and hence economic development would have been largely solved. The potential advantages of collectivization as opposed to land-to-the-tiller reform are conceived in the forms of larger and more economical operating units without massive labor displacement, capital formation through the use of surplus labor, entrepreneurships independent of ownership, and the redirection of surplus from exploitative activities in the hands of the landlord class to more productive activities in the lands of the collective [2, pp. 216-24] [9, pp. 263-64].

Although it is the developmental potentials of collectivization that interest these economists, collectivization has never been pursued purely for its developmental potentials. In Stalinist Russia, collectivization was implemented for its extractive potentials. In Communist China, collectivization was carried out both for its extractive and developmental potentials. Within the Stalinist model of development with its primary emphasis on industrial growth, it is believed among China experts that the extractive and developmental objectives of collectivization are inherently conflicting [21]. One is therefore tempted to think that collectivization would have been an ideal organizational strategy if development were the sole objective of agricultural transformation.

This paper attempts to analyze the nature of the conflicts between the developmental and extractive objectives of collectivization by examining the compatibility between the production relation as instituted in a Chinese collective and the productive forces on which production is based. If the production relation and the productive forces are compatible, then the developmental and extractive objectives in collectivization need not be conflicting. But if they are not compatible, then collectivization is not an optimum development strategy quite apart from the complicating introduction of the extractive objective.

This essentially Marxian approach is justified methodologically. The official

Chinese claim that collectivization gives full play to latent productive forces suppressed by the traditional arrangement should only be evaluated on its own terms.<sup>1</sup>

This analysis focuses on the period after the adjustment of the commune organization in the early 1960s. Collectivization, however, started in 1957 in the form of the higher-grade agricultural producer-co-operatives. Although essentially the same problems existed from the beginning of collectivization, organizational instability in the earlier years introduced many complicating transitional problems not relevant to the present analysis. The more stable organizational structure after the adjustment, therefore, permits a clearer perspective of the more permanent problems. To facilitate exposition and also in line of our present emphasis, we will assume that all parts of the system were performing at their highest attainable efficiency subject only to the more permanent constraints.

In terms of the availability of data, this is a difficult period for detailed analysis, especially since the beginning of the Cultural Revolution around 1967. But the problems of collectivized production were adequately detailed in the first half of the sixties as the adjustment process necessitated extended official discussion. And the few articles dealing with aspects of collectivized production at the turn of the seventies indicated that the same problems still remained. Wherever necessary and applicable, information relating to the earlier years of collectivization was also drawn up to fill the remaining gaps.

China is, of course, a vast country with diverse agricultural conditions. The following discussion is thus limited essentially to the primary food grain producing areas, the most representative of Chinese agriculture as a whole.

#### A. *The Economics of Small-Scale Labor-Intensive Subsistence Agriculture*

The essential characteristics of small-scale labor-intensive subsistence agriculture are that the farms are small, the farm household is the primary source of labor, and that production is at a subsistence level both in terms of the product per capita and in terms of the marketable portion of the total product. These characteristics are in turn the outcomes of a low land/man ratio and an almost exclusive dependence on intra-agricultural inputs for reproduction.

Whatever its shortcomings might be in terms of other efficiency factors [4, p. 279], small-scale labor-intensive farming in China maximized output per unit crop area. Even more significant perhaps, was the fact that neither the small size of the operating units nor the status of tenancy affected this conclusion. Buck's survey of 2,866 farms in seventeen localities of China in 1921-25 showed that farm earnings per unit crop area was 41 per cent higher in the small than large farms (Table I). And the net profits per unit local sown area was higher for tenants than for owners in seven out of eight localities.<sup>2</sup>

The explanations lay precisely in the fact that small-scale labor-intensive agri-

<sup>1</sup> Doubts about the compatibility between the socialist production relation and the social productive forces in general have been expressed by various important persons in China. Liu Shao-chi, for example, was accused of such a "reactionary" viewpoint [12].

<sup>2</sup> See [3, Table 3, p. 151]. Net profits are farm earnings with the operator's own labor as well as that of his family included as an expense.

TABLE I  
INTENSITY OF RESOURCE UTILIZATION BY SIZE OF FARM,  
1921-25, 1929-33: CHINA

	Small	Medium	Medium Large	Large	Very Large	Average
Farm earnings <sup>a</sup> (yuan per hectare crop area)	150.14	—128.78—		—106.66—		118.30
Fertilizers <sup>b</sup> produced on farm (lb. per acre sown area)	7,692	7,241	6,708	5,666	5,289	6,654
Fertilizers <sup>c</sup> applied (lb. per acre of sown area)	9,314	9,515	10,033	9,691	10,381	10,381
Index of multiple cropping	153	151	149	147	143	149
Acres of sown area per man-equivalent	1.5	2.1	2.6	3.2	4.0	2.6
Percentage of hired labor	4.1	—13.0—		—31.8—		19.0
Percentage of net income from nonfarm sources	21	14	11	10	9	14
Number of idle months per able-bodied man	1.6	1.7	1.8	1.8	1.8	1.7
Farm area in acres (average)	1.43	2.84	4.92	7.17	13.02	4.18
Percentage of farms	24	37	20	11	7	n.a.

Sources: [3, pp. 138-39, 236] [4, pp. 259, 271, 272, 274, 276, 295, 299].

<sup>a</sup> Farm earnings are the difference between farm receipts (including value of farm products used by the family) and expenses (including value of unpaid family labor but exclusive of the operator's labor). Such earnings on tenant and part owner farmers have been computed for the whole farm by including the landlord's expenses and receipts with those of the operator.

<sup>b</sup> Animal manures and night soil.

<sup>c</sup> Including chemical fertilizers.

culture depended almost exclusively on intra-agricultural inputs for reproduction, and that the land/man and land/animal ratios were much lower in small farms than in large ones. Thus the amount of manures produced per unit sown area was 45 per cent higher in small farms than in very large ones. Even when both manure and all other fertilizers are considered, the amount applied per unit sown area on the very large farms was only 11 per cent higher than on the small ones.

The higher man/land ratio also permitted more intensive cultivation in small farms than in large ones. Thus the multiple cropping index for small farms was 30 per cent higher than in very, very, very large farms. In the rice region where the climate is more favorable to multiple cropping, the index was 40 per cent higher [4, p. 247]. Although hired labor was more readily resorted to in large farms than in small ones, the limit to its use as set by the consideration for marginal productivity was soon reached. Where unpaid family labor was used almost exclusively on the small farms, the limit was set by the maximum output obtainable from the crop area.

Surplus labor over and above crop cultivation was also utilized to the maximum for subsidiary activities. Livestock raising and domestic handicraft were most

common, with retailing and labor services such as portering next. In small farms with higher man/land ratios, the percentage of net income from other than farm sources was 21 per cent, almost two and a half times higher than that for very large farms. As a result, the number of idle months per able-bodied man was even slightly smaller in the small farms than the large farms (Table I).

There was, however, no tendency for tenanted farms to be markedly smaller than owner farms [3, p. 15]. Their efficiency in terms of earnings per unit crop area could not therefore be attributed to a lower land/labor ratio. But unless the rent represented the difference between the total output and a fixed income for the tenanted farm, there was nothing to discourage the tenants from working harder than the owners. This was especially true when a majority of the inputs could be and was produced on the farm.

Small family farms and tenancy were therefore quite compatible with maximizing output per unit crop area when almost all inputs were produced in the agricultural sector by the family farms. Given the low land/labor ratio, this was also a production relation which maximized output from the relative scarce resource (land), and maximized economic participation from the relative abundant resource (labor). When this system approached its maximum efficiency with land and technology more or less fixed, the only slack resource was underemployed labor.

Underemployed labor could, of course, stretch other existing resources by increasing the intensity of their use such as the multiple cropping of land. But a high man/land ratio also forced the system down to a subsistence level with little surplus for reproduction. A higher density of livestock, for example, would have boosted the crop yields by increasing the supply of manure. But the high man/land ratio necessitated the production of the greatest amount of food energy possible per unit of crop area by growing crops for their seed and tuber products. Little land was available for pastures and crops for animals which would have supplied a smaller quantity of food in the form of animal products [3, p. 167]. Livestocks were not only seldom fed food crops, they must also compete with the household fuel requirements for crop stalks and residue [3, p. 225].

#### B. *Collectivization as a Developmental Strategy*

For all practical purposes, Chinese agriculture in the early fifties was fast approaching the intensive limit of traditional technology with a fairly high per capita output compared with other densely populated countries at similar stage of development [18, pp. 34-35]. This represented the result of six centuries of growth along the intensive as well as the extensive margin of traditional technology under the production relation of small family farms and land tenancy [18]. With cultivable land more or less fixed and population growing at about three times as fast as the six centuries before, there was little hope that agricultural production would be able to catch up with population growth unless some drastic departures from the existing practices were adopted. These departures would be successful only if a net increase in utilization of existing resources could be brought about.

In spite of the fact that land and labor were much better utilized through maximum labor participation in small family farms and equalization of the size of cultivating

units by tenancy under the system of private land ownership, land and labor remained underutilized because of excessive land fragmentation and the scattering of underemployed labor among individual households. Of the prewar farms surveyed by Buck, the average number of parcels of land per farmer was 5.6, while the average number of fields per farm was 11.6, and the average distance of parcels from the farmstead was about half a mile. The fragmentation in small farms in farms of average size of parcels was over three times as high as in very large farms, and over twice as high in terms of average size of fields [4, pp. 183, 279]. In the same survey, the average number of idle months per able-bodied man was 1.7 even after inter-farm hiring of hands and subsidiary activities had been taken into account (Table I).

The least efficiently used resource under uneven private ownership of land was the agricultural surplus. There was little incentive to plough back surplus for expanded reproduction once the technological limits of the system were reached. Instead the surplus was used for unproductive and exploitative activities by the landlord class. Myers's study of the peasant economy in Hopei and Shantung provinces in 1890-1949 showed that farm household invested a smaller percentage of farm income in variable capital as the optimum size of the farm was reached. Large landowners leased land they could not farm profitably to other households and invested their money elsewhere. Not the least important of which was the buying of land from households in financial hardship and moneylending at high interest rates [15, Chap. 10].

A more efficient utilization of these underutilized resources could most conveniently be achieved if land were collectively owned, labor were centrally deployed in larger operating units comprising of more than one household, and income were distributed only according to work done. These were the essential characteristics of collectivization.<sup>3</sup> Under collectivization, a more efficient use of land after consolidation and a more efficient use of labor by pooling underemployed labor for small-scale labor-intensive capital formation projects could stretch the intensive limit of traditional technology. But these gains, no matter how substantial, were nonrecurring in nature. The only sustained source of growth that could match the rapid population increase must depend on the successful redirection of the agricultural surplus into the production of modern farm inputs which promised high rates of returns.

There was little doubt that collectivization, if politically feasible, could mobilize these underutilized resources to a greater extent than any other alternative. But this improvement in the utilization efficiency of existing resources, though likely to be increasingly significant in the long run, must be viewed against the already high level of attained utilization efficiency of traditional resources and the necessary continual dependence of traditional inputs as modern inputs were introduced. It was, therefore, of utmost importance that this improvement under collectivized production represented a net addition to the efficiency already attained under private production.

<sup>3</sup> For a detailed description of the institutional arrangements of collectivized agriculture, read [10, Chaps. 2 and 3].

*C. Large-Scale Organization vs. Small-Scale Economy*

Collectivization represented an imposition of a large-scale organization on a small-scale economy. After the organizational adjustment of the people's commune in the early 1960s, the production teams which was the basic unit of production and distribution still consisted of fifteen to thirty households [6, Documents II and III]. This meant that an average production team must manage an operating unit about twenty times the size of an average family farm and the economic activities of just as many times of people.<sup>4</sup> Quite apart from the temporary difficulties of adjusting to a new management system and the more permanent difficulties arising from the disincentive effects which will be discussed in the following sections, the enlargement of the operating unit itself presented many management difficulties.

Most important of all, these difficulties arose from the fact that there had been little change in the productive forces that justified the change in the production relation. If production had been more specialized, the scale of production had been enlarged and more modern inputs had been introduced, a larger operating unit in terms of land would have been economically justifiable. Peasants would then be reduced to pure and simple wage earners charged with specialized and routine duties. And since labor would also have been replaced by mechanization, the management problems were further reduced.

But these changes would be entirely inconsistent with the purpose of increasing labor utilization to compensate for the shortage of capital in a collective. Thus production must still be geared to self-sufficiency to minimize transportation and to maximize the utilization of land and labor. Fields must still be small to match the capacity of draft cattle and primitive farm tools. Livestock raising, especially hogs, must still be decentralized to farm households to save feed and reduce mortality. The supply of fertilizers must still largely depend on domestic manure. And the family household must still be a producer as well as a laborer.

Thus the simple enlargement of the operating unit without any corresponding change in the productive forces meant that the management problem was multiplied at least as many times as the unit was enlarged.

Compounding these difficulties was the nature of agricultural production. Activities were conducted over a large area. And the quality of the work performed often could not be fully evaluated until it was too late. These factors made supervision and quality control difficult in a large operating unit relying on external supervision. These difficulties were either nonexistent or easily solved in small family farms where the profit and survival motive operated directly [14].

The only justification for collectivization seemed to be its organizational advantage in mobilizing surplus labor for labor intensive capital formation projects and the redirection of the agricultural surplus for expanded reproduction. Unlike small farms under private ownership where the producer and landowners had prior claim on labor and income over any governmental organ, the collective took pré-

<sup>4</sup> The farm area of a collective would be less than the sum of the average farm area of a pre-war family farm of a given number of farm households because of the rapid increase of population. See [6, Part 1, III].

cedence of its members over labor deployment and income distribution. But even here the dual role of the household as a producer as well as a laborer drastically reduced this organizational advantage because of the disincentive effects.

#### D. *The Role of the Private Sector in the Collective*

The existence of the private sector depended on the availability of factors of production outside the collective sector. They were the private plots, labor time after collective labor, household manure after delivery to the collective, small farm tools, odd fruit trees around their houses, productive animals, skills not related to collective labor, and other resources which the collective could not conveniently use but permitted the private sector to exploit, plus whatever distributed income there might be over and above bare minimum subsistence [7].

The availability of these factors of production to the private sector was by no means certain. The existence of the private sector was increasingly threatened from the mutual aid team stage to the people's commune during the great leap forward [10, Chap. 2]. It was only after the adjustment of the commune structure that the role of the private sector was properly recognized and its existence tolerated. But because of its inherent conflicts with the collective sector, its position had never been secure.

Since the private sector competed with the collective sector for scarce resources, its existence could only be justified by its indispensable contribution to the collective sector. The most important contribution was that it reduced the supply cost of traditional farm inputs to the collective sector. The most often mentioned input was fertilizers in the form of animal manure.

Animal manure provided more than 60 per cent of the plant nutrients coming from organic fertilizers which were the chief sources of added nutrients [5, p. 137]. The importance of the private sector as a supplier of manure was pointed out in one investigation. About a third of the manure used in the rural areas was generally household manure of commune members and, in places where the commune members raised especially large numbers of pigs, 50 per cent of the manure used was household manure provided by commune members [19].

The reason why the household was such an important supplier of manure was because livestock could not be profitably raised in large scale by the collective sector. Collective livestock raising in large scale required full time labor to take care of the livestock, supervision of labor performance, the use of more expensive fodders, the construction of more elaborate pens, and professional veterinary attention. On the other hand, the household could take much better care of their own livestock in their spare time, expensive fodders could be reduced by using household food waste, and pens could be inexpensively constructed.

The private sector not only reduced the supply cost of fertilizers but also the supply cost of labor.

The supply cost of labor to the collective sector was the amount of distributed real income. If the private sector could produce supplementary income from resources or activities which could not conveniently be exploited by the collective sector, then distributed real income from the collective sector could be reduced to

a minimum. A survey of income distribution in 228 collectives in 1957 showed that income per head from the private sector ranged from 18.6 per cent to 33.6 per cent of the total net income per head, the higher percentage was typical of the agricultural region as compared with the pastoral region [22, p. 34]. In 1960, an article in *Jênmin jihpao* suggested that the annual income derived by commune members' families from private production should be controlled so that it might not exceed 20 per cent of their total annual income [7].

The direct effect of lower supply costs of inputs was a higher realizable surplus from the collective output. In the case of fertilizers, this mechanism needs no elaboration. In the case of labor, the realized surplus was obtained by rationing in basic foodstuffs and daily commodities. Buck's study of food and agriculture in Communist China showed that there was a decline in the quantity of food grains available per capita rural population between 1929-33 and 1949-58 [5, pp. 68-72]. The unfavorable terms of trade between products sold to (under compulsory sales quotas) and brought from (sometimes under rationing) the socialized commercial agencies due to price control and taxation further reduced the real income from cash distribution.<sup>5</sup>

The private sector also permitted a higher total realizable surplus from agriculture as a whole because of its contribution to a higher total output. At least half of the marketable products was sold to the socialized commercial agencies.<sup>6</sup> Since products sold to the latter agencies were generally those not allowed to be traded in the rural fairs, the element of taxation implicit in the controlled prices represented realized surplus. Where delivery quotas were assigned, the household could not even decide how much to sell.<sup>7</sup>

The importance of this indirect contribution to the total realized surplus could best be gauged by the variety of products offered by the private sector. Surveys showed that a typical rural trade fair at every meeting offered over a hundred kinds of products [11], although the number of items required to be sold entirely or chiefly to the socialized commercial agencies was much fewer than that. They were mainly subsidiary products, including subsidiary crops, ill suited to collective management either because they were too small and varied or because they required

<sup>5</sup> Official prices fixed for compulsory sales of agricultural produces have been considerably below free market prices [10, pp. 361-63]. Perkins estimated that by 1953 income from sales of industrial products was over three times that from the agricultural tax [17, pp. 42-43]. Although the official terms of trade between agricultural produces and industrial goods improved over the years, it is not known whether allowance had been made for the suitability or availability of industrial goods in rural areas [10, pp. 448-49].

<sup>6</sup> This estimate is based on the statement that the income from collective subsidiary production only accounted for a little more than 30 per cent of the total income from subsidiary production [16], and that of the gross income from rural sideline occupations in 1963, that from marketable products represented 80 per cent. Of the income from marketable products, 68.3 per cent was accounted for by products sold to the state-owned commercial agencies and supply and marketing co-operatives [24]. I assume that the service component represented the same proportion of the collective and private income from total subsidiary production and that all of the marketable products from collective subsidiary production was sold to the socialized commercial agencies.

<sup>7</sup> For a detailed discussion of how the private sector was drawn into the system of compulsory sales, see [10, pp. 351-53].



resources that were difficult to mobilize collectively, such as spare time and domestic waste products, or both. Unlike major food crops by the collective sector, subsidiary products were major export items. Realized surplus in the form of subsidiary products, therefore, assumed special significance in expanding national reproduction.

The indisputable role of the private sector in diversifying the collectivized economy was highlighted by the fact that income from collective subsidiary production only accounted for a little more than 30 per cent of the total income from subsidiary production [16]. The reopening of the rural trade fairs in 1961 in which private households and collective production units were allowed to exchange surplus products not subject to compulsory purchase by socialized commercial agencies was an open admission by the authorities that socialized production and exchange failed in achieving diversity and that diversity was important both for the livelihood of the people and for private and collective reproduction.<sup>8</sup>

#### E. *The Conflicts between the Collectivized and Private Sector*

Since the private sector was quite capable of handling production which was too small and/or too scattered to be economical and manageable by the collective sector, the existence of the collective sector could only be economically justified if its production was concentrated on areas which enjoyed economies of scale. Then a mutually beneficial complementary relation governed whereby each sector maximized their separate output from the common pool of resources.

There was, however, no evidence that the production of major food crops with which the collective sector was chiefly concerned enjoyed any major economies of scale. And the member households as a whole were not deriving any greater benefit from collectivized production. On the contrary, the farm inputs which the private sector was required to deliver to the collective sector were a form of ransom in exchange for the ration of basic foodstuffs as well as other daily commodities not produced by the agricultural sector itself.<sup>9</sup>

Although state levies and compulsory purchases of food grains could have been designed to allow for increasing ration as increased production the low margin above subsistence to start with plus the increasing consumption need of a rapidly expanding population meant that the ration was often reduced to the minimum subsistence level.<sup>10</sup> Low state purchasing prices for food grains plus deductions in the form of tax to the state and funds for public accumulation, welfare and administration to the collective also meant that there was little distributed income in the form of cash. The private sector therefore naturally viewed the collective sector

<sup>8</sup> For a detailed discussion of the role of the rural free markets in general, see [10, pp. 291-301].

<sup>9</sup> For a detailed description of how the supplies of food ration might be used as a means to enforce the satisfactory delivery of farm inputs, see [6, Document I, p. 56].

<sup>10</sup> Paradoxically, the state remained a residual claimant on agricultural output because of the low product per capita. But the disincentive effect of such an extraction policy in the form of a progressive tax on current production with nearly confiscatory marginal rates was still freely operative [21, p. 495].

as its exploiter and tried its best to deliver as little farm inputs as possible to the collective sector.

This centrifugal tendency of the private sector was reinforced by the inefficiency with which resources were utilized in the collective sector and the uneven incidence of taxation upon the two sectors.

The most obvious indication of inefficiency was the failure of the collective sector to diversify production even with its prior claim to the available resources. Not only did it fail to venture much beyond crop growing, it also failed to diversify its crops. The reasons for this failure were many as well as complex. First, there was the basic problem of centralizing management of the essentially small-scale operation of a diversified economy (see Section C). Second, high compulsory purchase quotas of major food crops left little room to diversify. Unless the production unit was able to raise the yield of major food crops, high purchase quotas implied a high percentage of sown area devoted to them.<sup>11</sup> Third, the cropping pattern implied by the compulsory purchase quotas might not be the one most conducive to higher yields of food crops as well as economic crops. If the management was capable of devising a more suitable and diversified cropping pattern, it could not be adopted unless the production unit was able to sell the crops which were not specifically required by the purchase quotas to exchange for crops which were. But fourth, the production unit was not allowed the freedom to exchange one crop for another either in the rural markets or with the socialized commercial agencies.<sup>12</sup> And since such a rearrangement of the cropping pattern made sense only if the crops offered for exchange commanded a higher price than the ones in return, any attempt to circumvent the purchase quotas would be viewed by the higher authorities with extreme disfavor. This was especially so if such a maneuver resulted in a shift away from the lower-priced food crops to the higher-priced economic crops.<sup>13</sup>

Under such constraints, the safest way to fulfill the purchase quotas was to allocate resources directly in proportion to the purchase quotas even though the marginal returns of resources devoted to food crops might be much lower than alternative activities. The result was, of course, a much lower output than it would be if production could be more diversified.

Another inefficiency in resource allocation was that too much labor was spent in capital formation. Labor spent on capital formation, even if the projects were carefully selected, did not add to current output. And if the labor could be used for current production, labor-intensive capital formation subtracted from the current output. In mobilizing labor for capital formation, the collective sector often went

<sup>11</sup> The percentage of sown areas devoted to food grains (rice, wheat, coarse grains, and potatoes) in China increased from 71.8 per cent in 1929-33 [4, p. 209] to 79.4 per cent in 1952-58 [8, p. 286]. The earlier figure tended to be too high as it excluded almost all of the pastoral regions.

<sup>12</sup> The production unit was allowed to deliver one crop for another only in case of natural disaster. And only surplus products over and above the delivery and sales quotas not required to be sold entirely to the socialized commercial agencies could be sold in the free markets. For a detailed description of internal exchange and state procurement of agricultural produce, see [10, Chaps. 11 and 13].

<sup>13</sup> The difficulties of diversifying the cropping patterns were hinted at in [20].

beyond the actual surplus so that not only private but also collective subsidiary production usually conducted in slack agricultural seasons were adversely affected. Worse still, with limited availability of cooperating nonfarm inputs, increasing application of raw labor often resulted in rapidly diminishing returns. There was also evidence that projects were often carelessly selected. And in all cases, projects started in one year were seldom followed up in the next year. Instead the limited surplus labor was deployed for new projects [23].

This was, of course, more true before the commune readjustment. But there was no mechanism introduced after that date to prevent such a wasteful allocation of scarce resources. The very ease with which resources could be mobilized and re-allocated not only led to inefficiency of allocation between the present and the future but also inefficiency between present choices. The rapid introduction of often untried technological changes on a large scale before the commune readjustment was a case in point. Although such cases of recklessness were seldom reported after that date, the conditions for their repetition still existed.

The prospects of increasing output from a more efficient collective sector were, therefore, limited at best even if additional nonfarm inputs were more available. On the other hand, the exemption of the private sector from taxation plus the opening of the rural markets and the increasing availability of consumer goods to the rural areas made private production all the more attractive [10, pp. 82-88]. Further, allocation of resources in the private sector was relatively unrestrained by purchase quotas. It was therefore not surprising that private production including the complete abandonment of production for retailing was found more profitable than collective production.

In view of the inefficiency of resource allocation in the collective sector relative to the private sector and the uneven incidence of taxation between the two sectors, a higher total output would have been possible if the resources were used over a larger range of activities and crops, both outside and inside the collective sector, so that the marginal productivities of the resources were more equalized among various activities subject to the constraints imposed by the compulsory purchase quotas.<sup>14</sup>

Such an alternative pattern in resource allocation could never hope to be adopted by the cadres under the existing performance criteria. Although a more balanced allocation of resources would have led to higher production of other products which the state also desired as in the case of private production, the success of the cadres was only judged by the higher levels on their performance related primarily to the major food crops and secondarily to other activities managed in the collective sector [17, pp. 67-68]. Unless their performance was judged on their ability to maximize total, collective and private, output resources would continue to be allocated inefficiently. Such a change in performance criteria would also undermine the whole system of collectivization, and is therefore unlikely to be adopted.

Barring such a change in policy, the cadres naturally restricted the availability of

<sup>14</sup> Sales quotas were applied only to some products and some areas. Even where they were applicable, the emphasis on incentive was dominant, see [10, pp. 351-53].

resources to the private sector to no more than what was absolutely necessary for maintaining the level of delivery of farm inputs from it. Any surplus availability of resources over and above this level to the private sector would aggravate their management difficulties. A higher income from private production would reduce the dependence of member households on the collective sector and leave a surplus which might become the material basis for expanded reproduction of individual operations.

There was also the personal reason for the cadres to restrict the availability of farm inputs to the private sector. Since cadres must participate in collective labor to effectively supervise the performance of members and to earn a normal income,<sup>15</sup> this meant that they might still be busy with either collective labor or office work during after hours when other members were free to engage in private production. It was to be expected that the cadres did not particularly entertain the prospects of being among the lowest income households with enthusiasm.

After the organizational adjustment in the People's Communes, regulations were laid down as to the proper division of farm inputs between the collective and the private sector. But within the general percentage guideline, there were still plenty of rooms for the cadres to manipulate the quality of the farm inputs available to the private sector. For example, they could substitute less fertile fields for the private plots which had become more fertile as a result of the intensive care given to them by the households. Or they could demand more of the better quality domestic manure while leaving the overall percentage shares between the two sectors constant. Or free days off were not allowed when the members most needed them for private production.

#### F. *Can the Conflicts be Resolved?*

If the collective sector were just as efficient as private production when resources were decentralized, then given the level of surplus required by the state in the form of taxes, compulsory purchases, rationing, and other restrictions in consumption, the only disincentive effect of collectivized production would be a more equal income distribution between more and less efficient households. Income produced and distributed would be much higher as the collective could also have larger resources to exploit production where economies of scale were significant. Further, there would no longer be any justification for the existence of the private sector. The conflicts between the collective and the private sector by definition disappear.

But if the collective sector were by its nature of operation less efficient than private production, then collectivized production with a restricted private sector would surely lead to lower income produced and distributed. The absolute amount of

<sup>15</sup> If the compensatory work-points given to the cadres stayed within the limit, they must work to earn a normal income. Also there might not be enough compensatory work-points to appoint an adequate number of management cadres. "The concrete requirements were that in a production brigade with under 100 households, the number of man-days of labor the remuneration is given in subsidies does not exceed 2 per cent of the total work done . . . ; and in a production brigade with over 200 households, the limiting percentage is one" [1]. For a general discussion of rural cadres, see [10, pp. 65-71].

surplus would also be lowered. Further, the competition for resources between the collective and the private sector would be inevitable.

We have demonstrated that because of the incompatibility between centralized management and small-scale production, the collective sector was necessarily less efficient than private production. Thus the conflicts between the collective and the private sector were inherent in collectivized production.

Some economists believed these conflicts will be lessened if the dependence of the collective sector upon the private sector for farm inputs is reduced by increasing availability of nonfarm inputs [13, p. 358] [22, p. 98]. Unless nonfarm inputs were available in such large quantities as to completely transform agriculture from one characterized by small-scale production to one characterized by large-scale production, collectivized production is unlikely to be efficient. This structural transformation also required that displaced labor could be profitably employed by the nonfarm sector. In view of the immense cost and the long time needed for the transformation, such a resolution of conflicts had little practical significance.

What is more likely is that nonfarm inputs are increased to such an extent as to be able to significantly increase collective output within the framework of small-scale labor-intensive production. Insofar as the limited availability of farm inputs is a constraint, the increasing availability of nonfarm inputs will make the diversification of collective production easier. Even then the collective sector would still be inefficient and collective production far from being diversified. But if the collective output is high enough to generate surplus adequate for the needs of economic development and to permit an improving standard of living to the member households, then the private sector can be suppressed without undue political consequences and economic hardship. In this case, neither surplus nor output need be maximized. There is then no justification for collectivization except to maximize political control for non-economic purposes.

In fact, the attainment of such a high level of output will be impossible without the cooperation of the private sector. In Taiwan and Japan where the supply of chemical fertilizers per unit sown area was thousands of times higher than that in China, organic fertilizers (mainly animal manure) still represented from 33 per cent to 71 per cent of the total estimated fertilizer used in terms of various plant nutrients [5, p. 135]. The cost advantage of domestic livestock raising means that the collective sector must still depend on the private sector for fertilizer. The limited range of activities that the collective sector can manage with any degree of efficiency also means that the private sector must be depended upon to diversify production both for their multi-livelihood needs and for sale to the state commercial network. Increasing output in the collective sector is also likely to generate additional opportunities for private production if only because of the increasing availability of by-products. Under such circumstances, it is hard to conceive that the gradually increasing availability of a few basic livelihood items from the collective sector is going to lessen the competition for resources between the two sectors.

If, however, all the resources are collectively owned but most of them are allocated to member households for private production in exchange for the delivery of fixed

quotas of specified products at official prices plus taxes and contributions to the reserve, welfare and administrative funds, resources would be so allocated as to maximize output subject only to the constraints imposed by surplus requirements. The collective would only be engaged in production and the provision of services where centralized management offers decided advantage. It can also prevent exploitation of the less fortunate households by providing credit and other services. The system of household contract production resorted to briefly in the early sixties to tide over the difficulties brought about by the collapse of the commune experiment was in essence such an arrangement. The only reason why such a resolution in the conflicts between the collective sector and the private sector was not adopted was primarily ideological.<sup>16</sup>

### *Conclusion*

Given the low margin above subsistence to start with, the suppression of individual consumption was, of course, inevitable if the agricultural surplus was to be maximized. But since there was an absolute limit below which subsistence could not fall permanently and a rapidly expanding population required a larger total consumption, even the most ruthless suppression of consumption necessarily left the state the residual claimant on the collective output. Thus unless the form in which the surplus was withdrawn was consistent with the incentive to maximize production, neither the surplus nor the total production could be maximized.

Insofar as the surplus extracted through compulsory sales and rationing was higher than that obtainable under a free market system, production of the affected crops would be adversely affected due to the disincentive effect. But collectivization has brought about reduction in total output over and above the minimum necessitated by the extraction policy. Instead of concentrating on production and activities where economies of scale were substantial the collective competed with the private sector in small-scale production. The management difficulties arising from the competition for resources between the two sectors and the ease with which resources could be mobilized by the collective sector often resulted in the overconcentration of resources in the collective sector. This meant that not only existing resources but also any additional resources would be inefficiently utilized.

Although collectivization might have been historically instrumental in the establishment of the extraction machinery, there is no reason why the machinery should fall apart if the role of the collective sector is limited to activities more amenable to centralized management. It is conceivable that when most of the collectivized resources are assigned to the households for use in production under delivery contracts, the collective would no longer be able to mobilize resources as freely as before. But it would also mean that the element of arbitrariness would be largely eliminated if they are so mobilized.

<sup>16</sup> For an official version of the arguments against household contract production, see [6, Document V, pp. 99-107].

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