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—Formulation & Development of China's Rural Responsibility System

By Wang Guichen, Zhou Qiren and Others

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CONTENTS

Editor's Note

In the 26 years from 1952 to 1978, China's annual crop production increased slowly. However, in the five years since 1979, crop production has increased in an unprecedented way. Formerly, the annual average increase in grain output was 5.4 million tons, or 2.4 per cent; cotton was 33,000 tons, or 2 per cent; beef and mutton averaged 199,000 tons, or 3.6 per cent; and oil-bearing crops were at a mere 39,000 tons, an 8 per cent annual gain.

Since 1979, despite the annual diminishing of 2 million to 3 million hectares of growing area, the rate of grain output has increased to a record high of 4.9 per cent, or an average of 16.5 million tons annually; cotton has averaged 494,000 tons, an annual rate gain of 16.4 per cent; beef and mutton, 1.09 million tons or more, a 10.4 per cent annual gain; and oil-bearing crops, at an average 1.07 million tons, have gained at an annual rate of 15.1 per cent.

Unprecedented too is the 7.9 per cent annual average growth rate (3.11 million yuan) in annual output value of agricultural production, compared to the 3.2 per cent or 430,000 yuan averaged annually in the 26 years from 1952 to 1978.

The livelihood of the peasants has changed, too. Formerly they had always been the lowest income group in the country. But in the five years since 1979, a large and ever-growing number of individual peasant households and households of entire villages, where once people could hope only to make ends meet, are now earning an average net annual income of 10,000 yuan. In a country like China, which has had a system of low wages, this sum makes the peasants seem like "millionaires." The same peasants, who formerly wouldn't even raise a few chickens for fear they would be criticized for "growing a capitalist tail,"

are now in possession of China's few private airplanes and sophisticated computers, as well as most of its private cars, tractors and other motor vehicles, and are engaged in highly specialized commodity production and trades.

All these developments, though they may seem more like fairytales than an account of social progress, are actually what has been achieved in China's rural areas in the last five years. *Smashing the Communal Pot* represents the first English edition of a systematic and academic study of the responsibility system and the specialization of households which underlie all the above achievements and pictures for the reader the future of China's agriculture, forestry, animal husbandry and fishery. The book will be of great help to both specialists and readers who have a general interest in better understanding and studying the on-going economic reforms in China.

THE FORMULATION AND DEVELOPMENT OF THE RESPONSIBILITY SYSTEM IN AGRICULTURAL PRODUCTION

by Wang Guichen, Wei Daonan and Qin Qiming

Since the Third Plenary Session of the Eleventh Central Committee of the Chinese Communist Party in 1978, China has directed its major efforts towards overcoming long-standing "Leftist" mistakes in its guiding thought and adopted a series of policies and measures for agricultural development. As a result, marked changes have taken place in China's agriculture.

The universal adoption of various forms of the contract system of responsibility in production which links remuneration with output has helped overcome some major defects long existing within the collective economy (i.e., "rushing headlong into action" and doing things carelessly in production and allowing "everyone to help himself from the public pot" in distribution) and stimulate the peasants' enthusiasm for production. It has thus become one of the main factors in promoting the development of agricultural production. For this reason the responsibility system in agricultural production has become a subject much discussed by and of great concern to the people, and many comrades have explored and studied the responsibility system in agricultural production from different aspects.

Why is the responsibility system in agricultural production playing such a great role? What are the characteristics of the multifarious forms of the responsibility system created by the peasants in production, and what are the objective conditions for their existence? How did the present forms of the production responsibility system grow out of the agricultural cooperatives? How are we to understand the role, adaptability

and nature of the household contract system? What should be done in order to improve the production responsibility system? These are questions that are being studied carefully by many comrades. Here we would like to offer some answers to these questions, hoping to stimulate discussion and interest in this topic on the part of our readers.

I. THE RESPONSIBILITY SYSTEM DEFINED

1. The Basic Concept

To understand the responsibility system in agricultural production we must first clarify the meaning of a production responsibility system.

A production responsibility system usually refers to a managerial system under which the duties and rights of the production department, unit and individual in the process of production are clearly stipulated within an enterprise. The enterprise, of which the central task is to organize production, establishes the production responsibility system as an indispensable link in the organization of production, and an important component of enterprise management. Lenin said that the basic principle for management is that a person be "answerable for his own job."* It is in this sense that the production responsibility system can be described as a basic principle for the management of production.

In China, an enterprise has a certain number of labourers who join together to engage in production. This requires compact organization and management of production and, under the unified leadership of the enterprise, the development of an appropriate division of labour in accordance with the needs of production and the skills of each worker and the establishment of a strict system of division of labour with individual responsibility, so that each worker is clear about his own duty and can co-ordinate his work with that of others to ensure that production proceeds smoothly. The larger the enterprise,

* Lenin: *Collected Works*, Vol. 36, p. 52.

the higher the level of socialization in production and the more developed the division of labour and the necessity for co-operation, the greater the need is to establish a strict responsibility system in production. Therefore, the establishment of a production responsibility system is crucial to maintaining a normal production order in the enterprise and an objective requirement for large-scale, socialized production.

At present, the production teams of the people's communes and agricultural co-operatives in rural China vary in size, but each unit embraces an average of 20-30 households with a labour force of 40-50 persons, farming 200-300 *mu* (1 *mu* = 1/15 hectare) of land and engaging in other production tasks. To be successful in production, these units also need to strengthen management and establish a strict production responsibility system so that every commune member is clear about his own responsibility in collective production and strives to fulfil his own production task, thereby ensuring the normal progress of collective production and consolidating and developing the collective economy.

Therefore, the responsibility system in agricultural production refers to the production responsibility system of a socialist collective agricultural enterprise. It is a managerial system under which the duties and rights of the production unit and individual are clearly specified within a collective agricultural enterprise.

Here it is necessary to explain the distinction between the responsibility system in agricultural production and the organization of labour and system of remuneration in a collective agricultural enterprise and the relationship between them. The organization of labour refers to a rational division of labour and co-operation between workers within an agricultural enterprise which aims at the most effective use and co-ordination of their labour. Labour organization entails the arrangement and use of labour power and the adoption of diversified forms of organization within a collective agricultural enterprise. The basic unit in the organization of labour may be the work group, the household or the individual labourer; it may be provisional

or permanent; in the task it undertakes, it may be comprehensive or specialized. In short, the organization of labour is simply the way in which workers are rationally organized to engage in production. On the other hand, the production responsibility system is a management system under which the scope of responsibility of each production unit and individual labourer of an enterprise is specified. The former involves the organization of the labour force, the adoption of a suitable form of organization and a suitable way of grouping labourers together, whereas the latter concerns clearly defining the tasks and duties of the labourers (collective or individual) in production. Though the two concepts are different, they are interrelated. Only by grouping labourers together through appropriate forms of organization can we demand that labourers be held responsible for the tasks they are asked to perform. If a person is not properly placed, it is difficult to guarantee the fulfilment of his task; if the division of labour is not clearly defined, one cannot know his own responsibility. In this sense, an appropriate form of labour organization is a prerequisite for the establishment of a production responsibility system without which the production responsibility system cannot be implemented, and the form of organization must be tailored to fit the demands of the responsibility system.

Labour remuneration is the distribution of consumer goods to the individual commune member; it refers to that portion of income a commune member gains from the collective. The commune member who takes part in collective productive labour earns this in accordance with the principle of distribution "to each according to his work" depending on the amount of labour he provides for the collective. Again, the production responsibility system and labour remuneration are two different but closely related concepts. To effectively implement the production responsibility system, rural communes and brigades, in addition to strengthening ideological and political work and urging every member to concern himself with the collective and to conscientiously carry out his production task, should earnestly implement the principle of material benefit so that the

commune members will closely link their concern for collective production with their own material benefit and work harder to complete their production tasks. Lenin pointed out: "Personal incentive will step up production."* At the present stage when the social welfare provided by the state, the commune and brigade for the peasants is quite limited, the material benefits of individual commune members refer mainly to individual consumer goods derived from labour remuneration.

If the production responsibility system only stipulates duties and rights without linking these with the labour remuneration for commune members or without defining a system of material rewards and penalties, then commune members bear no economic responsibility for the quality of their work and the effective implementation of the production responsibility system will not be ensured. If the production responsibility system is linked with labour remuneration for commune members, then those who successfully complete their work will gain appropriate material reward while those who fail to complete their tasks will be given due material penalty. In this way, the responsibility system can be implemented more effectively.

2. Forms of the Responsibility System

There are many kinds of responsibility systems in agricultural production: perennial and seasonal responsibility systems depending on the duration of a specific responsibility; collective and individual responsibility systems depending on the number of persons undertaking the responsibility; comprehensive and specialized production responsibility systems depending on the scope of responsibility; and work and output responsibility systems depending on the completion of a task and production output. At present, the most common forms of production responsibility system adopted in China's collective agricultural enterprises (production teams or agricultural co-operatives) are various forms of the work and output responsibility systems related and unrelated to output.

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* Lenin: *Collected Works*, Vol. 33, p. 59.

(1) The work responsibility system or the contract system for a given task. This category includes what is usually considered a contract for work in a small sector with remuneration for fulfilling a fixed production quota. The work group or individual commune member who undertakes a task is responsible for fulfilling one or several jobs in the production process in a set amount of time and is paid a certain amount for doing so, as long as the quota is fulfilled and quality standards are met. Those who overfulfil the task are rewarded and those who fail to finish the job or whose work is not of sufficient quality are penalized.

Under this system the work can be performed by perennial, temporary or seasonal work groups or contractors. Some communes or brigades have adopted a variety of the responsibility system under which the production quota, time limit, quality standard and remuneration are fixed for a work group. Other communes and brigades have adopted a system under which a small work group is given a set of related tasks to be completed according to a plan and to be checked at different stages for fulfilment of production quotas and quality, with remuneration meted out according to a fixed quota. For example, during spring sowing, the whole set of tasks including seed selection, land levelling, application of fertilizer and sowing are contracted to a work group, and when seedlings sprout, labour remuneration is determined according to the quality of the seedlings. Some communes and brigades have instituted a collective (work group) perennial contract system under which temporary jobs or work on small plots of land has been contracted to individual commune members within the work group. Some communes and brigades in the north, for instance, use a method in which work on a plot of land is contracted to the work group while strips of land are then contracted to individuals, with work points determined by the work group according to the amount of land contracted.

Some communes and production brigades have contracted certain production tasks directly to individual commune

members and recorded work points according to the fixed quotas fulfilled.

(2) The output responsibility system, or contract system for fixed output. The basic characteristic of this system is that a work group or individual commune member who undertakes a production task is held responsible for the final result of production — the output (output value and profit). In some communes and brigades remuneration is calculated wholly in accordance with output. That is, those who fulfil the specified output quota (output value and profit) receive a predetermined amount of pay, those who surpass production targets are rewarded, while those who do not meet their quotas are penalized. In other communes and brigades, contracts are made based on the job, production quota and fixed production costs with provisions for awarding those who overfulfil their production quotas. In practice, there are many forms of the output responsibility system or responsibility system linking output with remuneration.

A. The contract system for a special production task, or a system which links the output of a specialized production task with remuneration. Based on a unified plan of management and in accordance with the characteristics and scale of the task and the technical skill and physical strength of individual commune or brigade members, specialized teams, groups, households or individuals are organized to undertake a special production task and are responsible for the output (output value) of the contracted production project. In some areas this is known as organizing specialized teams, groups, households or individuals and linking output with remuneration. The method of linking output value or profits with remuneration has been adopted in many communes and brigades to create a diversified economy.

B. Contracting a production quota to a group. Those communes and brigades which adopted this method usually divided the labour force into several work groups according to production needs and taking into consideration physical strength, while allocating a certain amount of farmland, draught

animals, farm machines and tools for each work group's use. Under the unified planning and direction of the commune and brigade, a certain production task is contracted to a work group as a unit, and the work group is held responsible for the output quota for which it has contracted. Those who overfulfil their production targets are rewarded and those who do not meet their quotas are penalized. A variety of this method has long been familiar to the masses as the system of "three contracts, one reward," where the three contracts are for labour, production and costs, or "four fixed quotas."

Contracting a job to a group is a form evolved from contracting a production quota to a group. The difference is that in the former the commune and brigade do not assign the work group "three contract" targets; instead, the work group must fulfil the state purchasing quota. After handing over public accumulated stocks and reserves to the collective, the remaining products and incomes are all placed at the disposal of the work group. This method was adopted by some production teams in Fengyang County, Anhui Province, as early as in 1978.

At present, those units which have introduced the contract system which links the output of specialized lines of production with remuneration have also adopted the method of contracting certain production tasks to work groups.

C. Contracting a production quota to an individual, or assigning a production quota to an individual labourer. This is an individual responsibility system under which qualified commune members contract a certain production task from the commune or brigade and undertake to fulfil a certain output quota (output value). This method also has the effect of organizing production under the unified planning, management, accounting and distribution of the commune or brigade and provides a framework for practising the system of "three contracts, one reward" and calculating remuneration in accordance with output, as in contracting a production quota to a group.

Some communes and brigades contract all production tasks

to individuals and allocate all cultivable land equally to individual labourers, thus organizing production under a comprehensive system of individually contracted production quotas. Other communes and brigades contract a portion of their production targets to individual labourers depending on the scale of production and management.

D. Contracting farm output quotas to households. Under this system commune member households contract for production tasks with the commune, brigade or the production team and bear full responsibility for fulfilling the output quota (output value) they undertake. In this system, production may be organized under the method of "three contracts, one reward" or "calculating work points according to output" under unified planning, management, accounting and distribution on the part of the commune or brigade. The only distinction between this and the previous forms of the system is that the targets are assigned to individual households within a commune. The methods of fixing farm output quotas of households vary from place to place, but they can be summed up as follows:

Contracting specialized production tasks to households. Some communes or brigades only organize commune member households with special skills to undertake certain production tasks, such as raising fish, ducks or pigs.

Contracting the cultivation of some crops to households. Some communes or brigades contract the production of small quantities of crops or miscellaneous minor cash crops to individual households. In those communes and brigades which mainly cultivate paddy rice, rice production is contracted to work groups while dry land crops are assigned to households. Some communes and brigades concentrate their labour force on the production of crops which need to be threshed such as wheat, paddy rice and beans, while contracting the production of crops which need not be threshed such as sweet potatoes, maize, peanuts and cotton to individual households. Some collective agricultural enterprises only contract remote, barren

land or small plots along the edges of villages to commune members in an effort to improve management.

Contracting the cultivation of all crops to households. Communes and brigades which adopt this method usually contract the cultivated land to households based on population or a ratio determined by the number of household members and manpower, and they are expected to cultivate various kinds of crops. Production targets are calculated on the basis of households. Before the farmland is contracted out it is necessary to appraise the fertility of the land and to set output quotas for the various crops through a democratic process. Some communes and brigades refer to this method as "setting fixed quotas for specific plots of farmland and assigning responsibility to households."

E. Contracting jobs to households. As in the system of contracting the cultivation of all crops to households under this system all farmland is divided into appropriate sections according to population or a ratio determined by household population and the number of adult labourers and contracted to individual households. The communes and brigades adopt neither the method of "three contracts, one reward" nor "calculating work points according to output." Instead, the contractors fulfil set output quotas, sell a fixed quantity of their product to the state and hand over another portion to the collective (commune or brigade) to be retained as accumulated stock and to cover miscellaneous expenses. The remaining product and income is left at the disposal of the individual households themselves. In those communes and brigades which have introduced the system of contracting work to households, land — the major means of production — is still owned by the collective, as are the large pieces of farm machinery and implements as well as water conservation facilities. But production is undertaken by individual households that keep separate accounts and bear sole responsibility for their own gains or losses. This form of the responsibility system, as compared with the aforesaid forms, has brought about considerable changes in the various areas of production,

exchange, distribution and consumption in the communes and brigades, and significant adjustments have also been made in various aspects of the relations of production.

The above classification of the forms of the responsibility system in agricultural production is only a very rough one. In fact, the forms overlap and are interrelated, complementing and supplementing each other. For instance, those communes and brigades which have adopted the method of contracting fixed production quotas to a group generally use the method of recording work points based on fixed quotas. Those communes and brigades which have introduced the contract system of responsibility in which output is linked with remuneration use the methods of contracting a production quota or task to a group or individual in dealing with the specialized teams, groups, households and individual labourers. Even where the form of the responsibility system is the same, the manner in which it is implemented will vary due to differences in local natural conditions, social and economic conditions and cadres' administrative and managerial skills. Moreover, the forms of the responsibility system will continue to develop and change with the development of the productive forces and with changes in social and economic conditions.

According to statistics, by December 1982, 92 per cent of the total number of basic accounting units of the nation's rural communes and brigades had adopted contract systems in which output was linked with remuneration. Of these 78.66 per cent had introduced the method of contracting fixed production quotas or work to households, and 10.9 per cent were contracting fixed production quotas to individual labourers. Other forms of linking remuneration with output and systems in which output and remuneration were not linked made up the remaining portion of the total.

3. A Comparison of Various Forms of the Responsibility System

As mentioned, the diverse forms of the responsibility system now in use in the communes, production brigades and teams

in rural areas fit different local conditions and have different scopes of adaptability. However, it is clear that those units that have established the production responsibility system have made more notable achievements than those that have not set up the system. Still, certain advantages and disadvantages and limitations in various forms of the responsibility can be pinpointed. What follows is a comparative discussion of some of the advantages and disadvantages of some of the major forms of the responsibility system:

(1) The work responsibility system and the output responsibility system. As mentioned before, under the work responsibility system, the contractor agrees to undertake one or several tasks in the production process and is responsible for the work quality. Its advantages include: (i) It can markedly raise labour productivity and overcome obstacles caused by poor organization. (ii) If proper arrangements are made and the special skills of the commune members are taken into account, it will take advantage of the benefits of the division of labour and co-operation in the collective production. (iii) Because the obligations of the contractor are clear, it is easy to implement and supervise.

The work responsibility system also has certain drawbacks. They are: (i) Quality in farm work is not easily inspected and, therefore, the quality of the output is not guaranteed. (ii) The commune and production brigade and team cadres spend much time on inspections that would be better spent on productive labour or on improving administration and management. (iii) Cadres and commune members are not always in agreement concerning the quality of farm work. (iv) Failure to adequately inspect the quality of farm work often enables those who have done a greater quantity of work but paid no attention to quality to obtain more work points than those who have done less but higher quality work. In general, the work responsibility system does not adequately reflect the principle of distribution according to work, nor does it stimulate the enthusiasm of commune members for farm production.

The work responsibility system played an important role

during a certain period in history, particularly in the early stages of the mutual aid and co-operation movement in agricultural production. Although it is still the form of the responsibility system employed in collective production in a considerable proportion of cases, it is gradually being replaced by the output responsibility system.

The main difference between the output responsibility system and the work responsibility system is that in the former the contractor is responsible for the ultimate results of labour — output (output value or net income). (i) By emphasizing the results of production, the output responsibility system motivates commune members to show concern for the quality of farm work and the whole process of production. Thus, the "counting of the number of work points instead of the quantity of grain," which occurred under the work responsibility system, is avoided. (ii) It better embodies the principle of "distribution according to work." As mentioned before, the quality of farm work is not always easily inspected, but it ultimately affects the output. Under normal conditions, the output reflects the quantity and quality of the labour that goes into it.

Because the production responsibility system in which payment is linked with output conforms to the characteristics of agricultural production and reflects relatively well the principle of distribution according to work, it also serves to unleash the commune members' enthusiasm for production. It increases both productivity and income. Therefore more and more collective economic units have adopted this form of the responsibility system in recent years.

(2) Fixing output quotas for groups and fixing production quotas based on groups with the production team conducting unified income distribution. They both are forms of the collective responsibility system. The year-round contracts of the two forms have the following advantages: (i) Tasks are, comparatively speaking, clearly defined and obligations are definite. (ii) Team leaders need not assign jobs every day, and work holdups caused by poor organization can be avoided. (iii) Land, draught animals and farm implements are fixed to the work

groups, so that commune members become familiar with the characteristics of the land and other means of production and use them effectively and carefully. (iv) Commune members benefit from the small size of the work groups, and the sharing of common goals. (v) Unified management, division of labour and co-operation are easily instituted under these systems.

Fixing production quotas to groups and fixing output quotas to groups also belong to the work responsibility system and the cutput responsibility system respectively and have the advantages and disadvantages mentioned before with relation to those categories. The latter thus has more advantages than does the former, but it ultimately gives rise to the following problems: (i) After output quotas for the production group are reached, the production results of the group directly affect the income of the group members. Therefore, the commune members may become entirely absorbed in their own interests to the neglect of the overall interests of the enterprise. (ii) The system solves the problem of an unclear division of labour and lack of clearly designated obligations in the commune and production brigades and teams. But, unless the division of labour and remuneration within the group are also clearly defined, it may only mean a change from very careless work to somewhat less careless work and from "sharing food from the big pot" to sharing food from a smaller pot, and the problem of firing the enthusiasm of commune members will still not be properly solved. It should be noted that some jobs must be fulfilled by the collective and cannot be linked with output. Such cases must not be indiscriminately labelled "less careless work" or "sharing food from a smaller pot." (iii) The distribution of the labour force, land, draught animals and farm implements among groups can easily bring about disputes and affect the unity and co-operation among work groups and among the commune members. (iv) Rigid control in some units and groups, denying individual commune members the necessary freedom and time to handle their household duties and sideline occupations, also affects the smooth implementation of the system. All these are important reasons for the recent sharp decrease in the proportion of the

use of fixing output quotas for groups among the forms of the production responsibility system (see table on page 46), although it made a rapid progress after the Third Plenary Session of the Eleventh Party Central Committee in 1978.

(3) The responsibility system in which production quotas are set for a group or an individual along specialized lines and remuneration is based on work accomplished. This is a form of the production responsibility system introduced whereby remuneration is determined by farm output in accordance with a contract for specialized work. It has greater benefits than the comprehensive output-related responsibility system. Its advantages include: (i) Since the contracting of production to individual commune members (or groups) is an integral part of the unified management by the collective agricultural enterprises, this system not only guarantees a principal part of the economy of the communes and production brigades and teams, but ensures the interdependence of the collective and the commune members so that the enthusiasm of the producers is closely linked with the superiority of the division of labour and co-operation under the collective economy. (ii) Because the responsibility system in which production quotas are set for a group or an individual along specialized lines has adopted the form of fixing farm output quotas for the most appropriate unit accordingly, which can be the group, household or individual, it has greater flexibility and adaptability than the other output-related responsibility systems. (iii) Work is divided according to specialization, and specific production quotas for groups or individuals are set, treating the various trades and professions in accordance with their specific conditions. This ensures the development of the diversified economy of the collective units. (iv) Contracts for the specialized enterprises allow individual commune members the chance to use their special skills and abilities. Special arrangements can be made for households with weak labour forces, so as to make the best use of every individual and give each one a role to play. (v) The responsibility system in which production quotas are set for a group or an individual along specialized lines and remu-

neration is based on work accomplished can make commune members more concerned about their output as well as income. In order to increase production and income, commune members are willing to make an effort to study and adopt more advanced production techniques. (vi) This system demands that the various trades and professions make important decisions regarding production, including the allocation of labour and the setting of quotas. Cadres must constantly improve their management skills.

Although this responsibility system has many advantages and great flexibility, it is only suited to the communes and production brigades and teams where a system of diversified enterprises is fairly developed and the cadres' level of management is comparatively high. Overly rigid control should be avoided, yet fair quotas for the various enterprises must be determined, ensuring a balance of incomes among commune members and an appropriate division of labour and responsibility in the specialized groups.

In recent years, in some localities where production quotas have been set for groups or individuals along specialized lines and remuneration is based on work accomplished, while adhering to the basic principle of unified management, a combination of unified and decentralized administration has been implemented. This overcomes the problem of overly rigid control and simplifies methods of remuneration and distribution.

(4) Fixing output quotas for households and fixing output quotas for labourers.

The advantages of the systems of fixing output quotas for households and for labourers are as follows: (i) Obligations are clear and benefits are direct, which serves to motivate commune members in production. (ii) During the busy season, use is made of the labour of all commune members, men and women, old and young alike. (iii) Commune members have the power to make their own decisions regarding production and management and to allocate manpower, materials and financial resources in the way they see fit in order to fulfil the terms of their contracts and achieve favourable economic results. (iv)

Household management promotes increased investment by commune members to improve production conditions and raise the level of production which is overly labour-intensive. (v) Peasants will be inspired to study science and utilize more advanced production techniques.

Nevertheless, the systems of fixing output quotas for households and for labourers also have their limitations. They are: (i) Large plots of land are often divided into odd pieces of land. If cultivation plans are not unified and the farm work, such as ploughing and harrowing, is not organized in a unified way, large and medium-sized farm implements cannot be used, creating a great disadvantage to cultivation. (ii) Under the comprehensive contract system each household will grow grain crops, cotton and oil-bearing crops, which denies some peasants an adequate opportunity to use their professional skills. (iii) Poor organization under household management can undermine the system of collective division of labour and co-operation.

(5) Contracting jobs to households.

As mentioned before, contracting jobs to households is a system of household management under which the main means of production, such as land, are owned by the collective. Although contacts with the communes and production brigades and teams are maintained and tasks are assigned by the collective, there are major changes in various aspects of the relations of production from the former systems based on the production teams. The advantages and limitations of this system will be discussed in detail in Part III.

We have seen that each form of the responsibility system has its advantages and limitations. But these advantages and limitations are also influenced by specific conditions; the system with the most advantages is not the best system under all conditions. Only if the form of the responsibility system which is best suited to the specific conditions of a unit is adopted will this form of the responsibility system be able to display its strong points and the unit to achieve satisfactory economic results.

4. Roles of the Responsibility System

The production responsibility system established in the rural people's communes and production brigades has demonstrated its efficiency in developing collective production and consolidating the collective economy, and this has been borne out in practice over the years. It performs this function in several ways:

(1) Facilitation of the fulfilment of the production plan. Under the guidance of state plans, rural communes and brigades carry out production, working out practical production plans in the light of specific local conditions and defining a clear direction for production and goals to be achieved. But the fulfilment of the plan depends on the efforts of all commune members. The most important function of the production responsibility system is to allocate production tasks. Under the unified leadership of the communes and brigades, the various tasks set down in the production plan are assigned to every production unit or individual member of the commune and brigade, so that every production task becomes somebody's responsibility. This stimulates their enthusiasm for production and lays a solid foundation for the fulfilment of the production plan.

(2) Strengthening of business accounting. The rural collective agricultural enterprise (such as production team) in developing production aims not only to increase the quantity of products but aims, through analysing economic activities and strengthening economic accounting, to increase income as well. That is, the collectives strive to achieve maximum economic results with the least labour consumption, so as to increase both production and income. To achieve this aim, it is necessary to work out feasible production plans, constantly tap production potential, rationally use human, material and financial resources in the production process and avoid excessive expenditure and waste.

The production responsibility system also sets production consumption targets for materials and labour for specific production tasks. These include the consumption of raw and semi-finished materials, production expenses and the number of work days. In order to encourage those undertaking production tasks to increase production and cut expenditures, the communes and brigades reward those production units and individuals who keep production consumption down by allowing them to keep the savings. Those whose production consumption exceeds specified targets are penalized by being held responsible themselves for that portion of their expenses. Therefore, under the production responsibility system the production process is carried out in a thrifty and industrious manner, striving to keep production consumption down and make the most effective use of human, material and financial resources. These conditions strengthen economic accounting and improve the collective economy.

(3) Raising of labour productivity. Raising labour productivity is the most important way in which rural communes and brigades save labour consumption. Labour productivity can be increased by improving production conditions and techniques, renovating production implements, strengthening labour organizations, and adopting better methods of remuneration. Perhaps most important is the improvement of production techniques, which enables labourers to turn out more agricultural produces in a certain period of time or, in other words, reduces labour consumption in producing a specific amount of agricultural produce.

The production responsibility system explicitly stipulates that those contracted to do a job must, within a specified time, fulfil a specific production task, meeting required standards of quality. That is, they must finish a certain amount of work or produce a definite output quota (output value). If a worker contracted to do a job lacks necessary skills or efficiency, he will not be able to fulfil the fixed production task. Therefore, with the establishment of the production responsibility system, labourers have been urged to study science and technology diligently in order to improve their production skills and raise labour productivity.

(4) Strengthening of democratic management. Democratic management is an important principle in the management of collective agricultural enterprises. It is based on the public

ownership of the means of production and the status of commune members as the masters of production. The collective economy can be run successfully only by giving full play to democracy and by relying on the wisdom and strength of commune members.

Democratic management not only requires cadres to perform their own jobs well and to go deep among the masses, both mobilizing them and listening to their opinions; at the same time, it also requires that commune members have the spirit of those who are masters of their undertakings and show concern for the collective by contributing their wisdom and efforts. For the collective economy to be run successfully, production targets, consumption quotas and the system of rewards and penalties under the production responsibility system must be carried out in the production activities of each commune member. Since each commune member is committed to a task, he will, out of his personal economic interests, necessarily care about the various production targets and will therefore take an active part in establishing the responsibility system. Therefore, the process of setting up the production responsibility system is a process of mobilizing the broadest section of the masses and giving expression to democratic management.

The production responsibility system not only assigns duties to contractors, but gives them the power necessary for fulfilling their production tasks. Generally, this includes the right to use the means of production, to organize and deploy labour power and to make concrete arrangements for production. With these powers in the hands of the contractors, their initiative and enthusiasm can be brought into play, thus putting an end to the passive situation in which production is run by cadres and commune members are entirely governed by others. Therefore, under the production responsibility system, commune members can exercise their rights as masters of the collective, and communes and brigades practise democratic management.

(5) Implementation of the principle of distribution "to each according to his work." The decisive factor for increasing productivity in the collective agricultural enterprises is to activate all commune members' enthusiasm for production. In order to encourage commune members to take an active part in collective productive labour, the principle of distribution "to each according to his work" must be implemented in calculating labour remuneration of commune members.

Under the production responsibility system, duties and rights of contractors are defined and labour remuneration is paid to those who have fulfilled a certain production task. The system of rewards and penalties is also introduced; those who overfulfil their production quotas are rewarded, while those who fail to complete their tasks under normal conditions are penalized. That is to say, the contractor assumes a certain economic responsibility for the production tasks he undertakes. Since labour remuneration standards are predetermined, generally on the basis of the amount of labour expended while performing one's production task, the principle of distribution "to each according to his work" can be applied, overcoming the defect of the system that makes no distinction between those who do more or better work and those who do less or poorer work, and thereby inspiring commune members' enthusiasm for collective productive labour.

It is clear from the above analysis that the production responsibility system is a management system which, by enhancing workers' sense of responsibility and giving full play to their enthusiasm and creativity, plays an important role in all aspects of the management of production in communes and brigades.

II. EVOLUTION OF THE RURAL PRODUCTION RESPONSIBILITY SYSTEM

1. The Formulation and Evolution of the Production Responsibility System During the Agricultural Co-operative Movement

The production responsibility system of China's collective agricultural enterprises was established and gradually strength-

ened along with the development of the movement to set up mutual-aid teams and agricultural co-operatives and the emergence of the collective economy. From a systematic knowledge of the past we can acquire a better understanding of the present situation and probe into the future.

The period from the early 1950s to the setting up of the people's communes in 1958 witnessed the rapid development of the movement to set up mutual-aid teams and agricultural co-operatives. However, in its later stages, the movement was carried out with excessive haste and the work was performed in an uneven manner. Nevertheless, the Party and government gave much concrete guidance to the management of agriculture during this period. The production responsibility system was adopted in many agricultural co-operatives and various forms of this system were devised by the masses which played a positive role in consolidating and developing the agricultural co-operatives and promoting the development of collective agricultural production.

The Resolution on Agricultural Mutual-Aid Teams and Co-operatives drafted by the Party Central Committee in 1951 and issued to various localities for trial implementation (officially published in February 1953) pointed out that it was imperative to establish simple and practicable systems of production management in the agricultural mutual-aid teams and agricultural co-operatives. Most of the early agricultural producers' co-operatives had gone through a period of poor management during their initial stage because of lack of experience in organizing collective production. Arrangements were made entirely by commune directors or by a few commune cadres, and assignments were given on the spot every morning, without a regular production order. As the movement to set up agricultural co-operatives developed, bringing about their rapid expansion and a steady increase in the farmland and labour force possessed by the collectives, cadres and commune members alike saw the need to change the method of assigning jobs by

commune directors on the spot, which often led to idleness and chaos.

While reorganizing the co-operatives and improving their management, some agricultural co-operatives introduced the method of contracting jobs to teams or groups, establishing a simple production responsibility system. Most began with a provisional contract system (called a "small job contract system" in some places), which gradually developed into a system of contracting jobs on a seasonal or perennial basis, passing first through a stage in which all seasonal farmwork was contracted to work teams or groups which were responsible for fulfilling the task (in some places this was called a "small-section contract system"), and finally reaching the stage in which regular teams or groups were organized to take charge of a fixed section of land and contracted to perform a perennial task and were held responsible for all the work involved in planting farm crops on that fixed section of land.

The contract system was a great improvement over the method of assigning jobs on the spot, but new problems cropped up in practice, most importantly that of guaranteeing the quality of the farmwork. Although quantity and quality requirements were specified when jobs were contracted, the quality of farmwork was difficult to inspect. The result was that some commune members concerned themselves exclusively with the quantity of work in terms of work points, without regard for the quality. To overcome this shortcoming, some co-operatives, while setting the targets for a contracted job, also specified output targets, rewarding those who overfulfilled production targets and penalizing those who did not meet the targets for output by adding or subtracting work points. By linking labour remuneration with output, commune members were made to concern themselves with the quality of their farmwork and the final results of their labour, ensuring output.

This method helped to overcome the shortcomings of the system of merely contracting jobs with no guarantee of output. But some teams or groups blindly sought to achieve above-the-norm output by such means as applying excessive fertilizer

and increasing production expenses. As financial management improved, some agricultural co-operatives began to hold themselves responsible for the production expenses of the work teams or groups so as to increase both output and income. That is to say, the agricultural co-operatives calculated production expenses deemed necessary for reaching fixed quotas in production tasks contracted to work teams and put that sum at the disposal of the work teams for their use in fulfilling their contracts, with overexpenses not to be refunded and any surplus to be retained by the work teams or groups. This method was combined with the above-mentioned method of contracting jobs while ensuring output to form the system of "three contracts, one reward," contracting jobs, output quotas and production costs (actually a portion of production costs), and rewarding overfulfilment of output quotas while penalizing reduced output. This was the method adopted by some of the most successful agricultural co-operatives in the mid-1950s.

The Party and government regarded the establishment and perfection of the production responsibility system as an important task in consolidating the agricultural co-operatives and improving their management. By constantly summing up the experience of the masses, the Party and government guided the co-operatives towards an orderly and step-by-step progress, proceeding from the simple to the complicated, in establishing a strict production responsibility system. Comrade Deng Zihui, then in charge of rural work for the Party Central Committee, was greatly concerned with the management of agricultural co-operatives and stressed the importance of establishing the production responsibility system. The responsibility system also figured as an important item in many Party and government documents on rural work and agricultural production.

The masses welcomed the efforts of those agricultural co-operatives that experimented with the contract system, especially by organizing regular work teams or groups and contracting perennial jobs and output quotas, because of their success in overcoming idleness and waste and their remarkable achievements in raising labour efficiency, improving the quality of

farmwork and increasing production. The Resolution Concerning Agricultural Co-operation adopted at the Sixth Plenary Session of the Seventh Central Committee of the Communist Party of China in July 1955 unequivocably called for the popularization of the success of co-operatives in various places in enforcing the contract system and required those co-operatives which could not institute a perennial contract system to introduce a temporary or seasonal contract system so as to create conditions for a transition to the perennial contract system. It also stated that as a part of the seasonal and perennial contract systems, it is necessary to adopt a system of rewarding those who overfulfil their output quotas and reducing remuneration for those who do not meet their quotas because of ineffective farming methods. Similar stipulations were also laid down in the Draft Model Regulations for Agricultural Producers' Co-operatives and the Model Regulations for Advanced Agricultural Producers' Co-operatives. By 1956, many agricultural co-operatives had instituted the contract system or the system of contracting jobs and fixing output quotas.

The systems then employed, whether perennial contract systems or systems of contracting jobs and fixing output quotas, were mostly collective responsibility systems under which production tasks were contracted to the production team or group as a unit. Although these systems helped overcome the rushed jobs and disorganization resulting from the practice of commune directors assigning jobs on the spot, they could not, however, completely overcome the phenomenon of idleness and waste in production and of irresponsible attitudes towards work because of the lack of a clear division of labour with clear responsibilities set for individual commune members within the production teams. Therefore, some co-operatives established individual responsibility systems alongside the collective responsibility system of the productive team or group and integrated the two systems. Some agricultural co-operatives adopted the method of contracting jobs to small work groups or individual commune members within the production teams. While other agricultural co-operatives set up systems of contracting

field management to households and linking output with remuneration.

At the Xiaoji Agricultural Producers' Co-operative in Xinxiang County, Henan Province, for example, after contracting jobs and output quotas to the production teams, the co-op set up regular work groups under the production teams and established a responsibility system of assigning fixed sections of field to be worked by households within the groups. Responsibility for management of the sections of land was divided in accordance with the tracts of land themselves, the special skills of commune members and the locations of their residences. Larger-scale tasks, such as carrying manure to the fields, ploughing and raking the fields, sowing, harvesting, threshing, small-scale capital construction and fighting natural calamities, were still organized by the production teams.

In Hebei Province during summer production in 1956, many agricultural co-operatives, while contracting perennial jobs and fixing output quotas for production teams, designated certain crop areas to co-operative members in accordance with their special skills and the number of days they could show up for work and assigned work such as weeding and field management to individual co-operative members. At that time, in Shenxian County, Shijiazhuang Prefecture, during the period of hoeing and intertilling, 205 of the 305 agricultural co-operatives adopted the method of contracting to groups pieces of land, the responsibility of which was further divided among individual co-op members within the groups. In Xingtai County, Xingtai Prefecture, more than 150 agricultural co-operatives contracted summer management of major crops to households, accounting for half the total number of co-operatives in the county. In Nanhe County agricultural co-operatives adopting this method accounted for 60 per cent of the total.

In September 1957, the Party Central Committee issued the Directive on Successful Production and Management in Agricultural Co-operatives, summing up the results of practical experience in this area. The Central Committee instructed that agricultural co-operatives in all areas universally enforce

the "three contract systems" of contracting jobs, output quotas and production expenses and adopt the method of rewarding those who overfulfil their output quotas and deducting work points from those who underfulfil their quotas. It also instructed that in production management the production teams conscientiously establish collective and individual production responsibility systems in which they may adapt the method of contracting jobs to groups and fielding odd jobs to households to their specific local conditions, stressing that this was an effective method for establishing the production responsibility system.

With the increase in tasks under a diversified economy and the agricultural co-operatives' increased experience in production management, many co-operatives instituted more flexible and diverse forms of the responsibility system. They contracted some tasks to work groups and other tasks to individual co-operative members or households, giving rise to a division of labour among different specialized groups and individuals and bringing the skills of co-op members into full play and promoting the development of production.

Some agricultural co-operatives in Liaoning Province, for example, contracted the growing of apple trees and cotton to production groups and the production of muskmelons and vegetables to individuals. In Xiaogan County, Hubei Province, some agricultural co-operatives put the cultivation of cash crops, the raising of animals and poultry (including sheep, pigs, cattle, and ducks) and some aquatic products, the management of orchards, vegetable gardening, and the planting of chestnuts and lotus roots in the hands of individuals and adopted the method of rewarding those who overfulfilled production quotas. The Liming Agricultural Producers' Co-operative in Lianhua Township, Haicheng County, Fujian Province, after opening up more avenues for production and developing a diversified economy, set up a special leadership for sideline production teams. Within these production teams, co-operative members were responsible for different lines of production according to their specific skills. The raising of

sheep, for example, might be contracted to a peasant household or the raising of pigs to five households.

The above-mentioned methods succeeded in changing the practice under which output quotas could only be contracted collectively to production teams and groups, while within the teams and groups only small-scale jobs could be contracted to individual households. But the method of contracting output quotas and production tasks to households was soon to be prohibited. This will be dealt with specifically in the next section.

During the period of the setting up of agricultural co-operatives, when the system of contracting jobs, output quotas and production expenses was universally popularized, some co-op members felt that when both jobs and output quotas were contracted, the relationship between jobs and output quotas was not clear and so gave rise to contradictions. They devised a method by which output quota was taken as the single standard for determining work points, i.e., the method of "calculating remuneration in accordance with output." When work points were recorded in accordance with the amount of output handed over by contractors, co-op members were led to show direct concern for the results of production. In 1956 a few agricultural co-operatives in Hubei Province adopted the method of calculating work points according to output. Summing up the results of the experience in 1957, the provincial Party committee decided to continue the experiment in selected areas. The system was tried out in some agricultural co-operatives in Shanxi Province in 1954, and after evaluating the results of the experience, the provincial Party committee decided to popularize this method in a larger area, beginning in 1958. In Heilongjiang Province as well, this method was employed in the Hongxing Co-operative in Huachuan County and the Sheli Co-operative in Acheng County, and as a result the provincial Party committee decided that the system be universally popularized throughout the province in 1958. By August 1958, about 80 per cent of

the province's agricultural co-operatives had adopted this system.

Comrade Deng Zihui told us: "It is necessary to effectively administer and manage the co-operatives. The change from an individual economy to a collective economy and from small-scale production to large-scale production is a great revolution. As in a factory, the lack of a concrete division of labour, a clear production responsibility system and a fixed-norm management system in a co-operative is bound to give rise to confusion and affect production."* In sum, we made great progress in the management of production in the agricultural co-operatives during the 1950s. Although the stipulations laid down at that time had their limitations, they did, on the whole, lay a sound foundation for the future management of the collective economy. Some forms of the production responsibility systems dating from this period are still thriving today.

2. The Production Responsibility System During the Setting Up of the People's Communes

In the subsequent period, China's countryside experienced the great change from the agricultural producers' co-operatives to the people's communes and the ten chaotic years of the "cultural revolution" (1966-76). As a result of the rise of the "Left" ideology, the production responsibility system of the collective economy was twice sabotaged. After the influence of the "Left" ideology was checked, the production responsibility system was re-established and improved.

On the eve of the establishment of the people's communes in 1958, agricultural co-operatives in some areas were continuing to improve production management and strengthen the production responsibility system. But as the "great leap forward" movement swept across the country, the practice of "large-scale communist co-operation" spread to all areas, and along with a trend towards extensive mutual support among communes, townships and even counties, the original forms of

* See *Gongren Ribao* (*Workers' Daily*), May 8, 1956.

labour organization were replaced by military forms of organization into squads, platoons, companies, battalions and regiments and agricultural production was carried out in the form of "large formation warfare." In Xushui County in Hebei Province, for instance, rural labour power was organized into 666 companies in 191 battalions of two regiments to engage in both agricultural production and military training. As a result, the system of management of its various agricultural co-operatives, including the production responsibility system, was almost entirely disrupted.

The case was the same in other rural people's communes in their early stages, where the method of unified accounting, distribution, production arrangements and allocation of labour power was adopted and the need to organize along military lines was stressed.

The National Conference of Directors in Charge of Rural Work convened in January 1959 proclaimed that to raise the level of administration and management of the people's communes, "it is especially necessary to institute the fixed-norm management system and implement the production responsibility system." The conference pointed out that the job responsibility system practised at various levels which proved effective in the operation of the agricultural co-operatives, including the system of fixing output quotas, labour power, costs, sections of land and remuneration in work points for field work, the system of assigning jobs to production teams and individuals and the system of acceptance based on inspection, should be popularized once more and be gradually improved through practice.* On February 17, 1959, *Renmin Ribao* published an editorial entitled "The People's Communes Should Establish and Improve the Production Responsibility System." In light of the situation since 1958, the editorial pointed out: "Last year's experience proved that the drastic measure of 'large formation warfare' is only a provisional form of labour organization for production," and that the communes should institute

* See *Renmin Ribao* (*People's Daily*), February 3, 1959.

a responsibility system based on regular specialized production teams and comprehensive production teams. It went on to say that even while the method of large-scale co-operation and large formation warfare is used in production, the responsibility system is still indispensable. In the spring of 1959 the Central Government decided that the production brigade should be the basic accounting unit in the people's communes and that the production team under the production brigade should be the unit assigned a fixed production quota. The production brigades adopted a system by which production teams were contracted to fixed production quotas, tasks and fixed amounts of production costs and those who overfulfilled production quotas would be rewarded ("three contracts, one reward"). As a result, this contract system was the form of the production responsibility system most widely adopted by the communes and production brigades.

In the period from 1960 through the first half of 1961, *Renmin Ribao* published several editorials encouraging the practice of the contract system. The editorials pointed out that the production teams should be assigned fixed amounts of farmland, labour power, draught animals and farm tools as a basis on which to institute the contract system. Under the contract system then in force the production teams, responsible for fulfilling the tasks contracted to them by the production brigades, were divided into temporary and permanent work groups to farm small sections of land or perform seasonal or perennial jobs or assigned jobs directly to individual commune members. This system resembled those adopted by some co-operatives during the agricultural co-operative movement which integrated contracting production quotas to the collectives and contracting jobs to individual commune members. Although the role of the responsibility system during this period was generally a positive one, the function of the production brigade as the basic accounting unit actually restricted the role of the responsibility system.

In the spring of 1962, the Central Government decided that it had become appropriate to make the production team the

basic accounting unit in the majority of the people's communes throughout the country. In the "Regulations for the Work of the Rural People's Communes (revised draft)," the Central Government also stipulated that the production team could be divided into permanent or temporary work groups which would be contracted to sections of land or to seasonal or perennial jobs and that a strict production responsibility system should be established.

In this spirit, the various forms of the collective contract systems were popularized, particularly in the production of field crops. It was stressed that labour quotas should be set and reasonable standards be set for remuneration and management. In many places, a collective production responsibility was set up in which tasks were contracted to the work groups with "four fixed requirements." A fixed production quota was assigned to the work group by the production team, the product was required to be of a fixed quality, the work was to be completed within a fixed period of time and the group was to be awarded a fixed amount of work points. Where practical, some places also adopted the method of contracting jobs to individuals. In 1962, a field production responsibility system was widely carried out in Guangdong Province, under which fixed tasks on a section of land were contracted to groups or individuals, depending on the nature of the task, and rewards were determined through comparative appraisal of the quality of the work.

Some production teams deliberately avoided contracting perennial jobs to regular work groups, organizing temporary work groups only, because they feared the effects of contracting fixed sections of land and fixing farm output quotas for such groups or households. But, remembering the success of the system of fixed farm output quotas during the agricultural co-operative movement, other production teams restored fixed output quotas, while some introduced a system of contracting production quotas, jobs and production costs to the work groups, and rewarding those who overfulfilled their output quotas, and others adopted the method of calculating work points according to

output. These methods were also adopted with regard to livestock, fruit trees and sideline occupations.

In 1961, production teams in many regions had instituted a system of fixing farm output quotas for individual households on what was sometimes called "contracted land." As in the period of the agricultural co-operative movement, this method went against the policies of the time and was soon banned. But during this period more extreme measures were taken than during the co-operative movement to prevent the emergence of the system of fixing farm output quotas for households, as some areas even prohibited contracting field management to households, although this had been encouraged for a while during the agricultural co-operative movement.

In short, from the early period of the people's communes to the period of readjustment in the early 1960s, the production responsibility system was repeatedly negated and then reaffirmed. But even at the times when it was being affirmed, there were many obstructions to its implementation.

During the "cultural revolution," management systems incorporating "material incentives" were criticized along with the policies of *"san zi yi bao"* (more plots for private use, more free markets, more enterprises with sole responsibility for their own profits and losses and fixing output quotas on a household basis) as "putting work points in command." Instead, the "Dazhai work point system" was enforced, completely negating the whole set of production management systems established gradually during the readjustment period of the people's communes. Under the "Dazhai method" a "standard person" was established according to Dazhai's political criteria with whom commune members were compared in assigning work points through self-assessment and public discussions. The masses called these "political work points," rather than "labour work points."

The Agricultural Conference of the Northern Regions held in 1970 reaffirmed the role of the 60-point policy in consolidating the collective economy and developing agricultural production in the people's communes. While expressing the need to elim-

inate the pernicious influence of "material incentives" and "putting work points in command," the conference also opposed egalitarianism by stressing the importance of adhering to the principle of distribution "to each according to his work." Although the conference emphasized the need to learn from Dazhai in agriculture, it pointed out that this referred to fundamental principles and not to indiscriminately copying Dazhai's methods of administration and management and production techniques without regard for specific conditions. Thus, this conference played a positive role in improving the administration and management of the people's communes and production brigades and in developing agricultural production.

However, the "Dazhai method of appraising work points," which was widely popularized after 1975, seriously stifled the commune members' enthusiasm for production. But, even during this period when the question of whether or not one was learning from Dazhai, which was taken at the time as the demarcation between capitalism and socialism, was continually raised, some communes and production brigades resisted the "Dazhai method of appraising work points" and still adhered to the principle of distribution "to each according to his work," energetically defending the production responsibility system and even the responsibility system of fixing output quotas. Examples could be found in Guangdong, Sichuan, Anhui, Zhejiang and some other provinces. The Xinping production team of the Lindeng Production Brigade in Magui Commune, Gaozhou County, Guangdong Province, for example, has, since 1967, persistently employed the method of dividing into groups and calculating work points according to output — that is, the responsibility system based on work groups and in connection with output.

Because of the influence of the "cultural revolution," however, the management of production in communes and production brigades in most areas of the country was still shackled by the "Left" ideas as late as 1978, and communes and production brigades throughout the country still had to follow the example of Dazhai. Between February and March 1978, the

provincial authorities of Shanxi, where Dazhai is located, continued to stress the need to learn from Dazhai's experience, pointing out that the fundamental principles and the whole set of administrative and management experience of Dazhai had been successful and effective and therefore should be widely popularized. The communes were not permitted to affirm the Dazhai experience in the abstract but negate it in practice under the pretext that their situation was different, and still less were they allowed to repeat the "mistakes" of "putting work points in command," and of "scholasticism." The Shanxi provincial authorities also stressed that the Dazhai method of appraising work points was at the heart of Dazhai's labour management experience and should therefore be popularized. At that time, any system of remuneration calculated according to set output quotas was rejected as "putting work points in command." Systems of fixing output quotas for work groups, contracting odd pieces of land to individuals and households and calculating work points in accordance with output, and rewarding those who overfulfilled their production quotas instituted in some communes and production brigades to generate enthusiasm for labour among commune members were all looked upon as erroneous tendencies. The negative influence of the "cultural revolution" was not checked until after the Third Plenary Session of the Eleventh Party Central Committee.

3. The Restoration and Development of the Production Responsibility System Following the Third Plenary Session of the Eleventh Party Central Committee

The Third Plenary Session of the Eleventh Party Central Committee in late 1978 marked a great turning point in Chinese history and a new starting point, as China entered a period of a full-scale socialist economic construction. The session reaffirmed that agriculture was the foundation of the national economy and laid down a series of policies and measures for speeding up the development of agriculture. Inspired by the spirit of this session, the peasants' enthusiasm for production rose to

unprecedented heights and the responsibility system in agricultural production was restored and improved.

Although the responsibility system in agricultural production was newly restored during this period, it made big strides forward in terms of popularity, diversity of forms and effectiveness. However, owing to the influence of the "Left" ideas over many years, some problems arose during the establishment of the production responsibility system, especially regarding which form of responsibility system should be adopted.

The adoption of the contract system by many communes and production brigades in 1978 helped overcome the problem of "working like a hive of bees and engaging in production carelessly." However, as in the period of the agricultural co-operative movement, as labour efficiency was being raised, there was a tendency among commune members to do their work in haste in a bid to get more work points, without regard for the quality of their work. To remedy this, in the autumn and winter of 1978 some communes and production brigades adopted collective production responsibility systems such as that of contracting jobs to work groups, along with the system under which the production teams assigned production quotas, jobs and production costs to the work groups and rewarded those who overfulfilled their production quotas ("three contracts, one reward") and the system of fixing tasks, quality, time limits and work points ("four fixed quotas"). Again these methods were identified with an incorrect political line, and some areas adopted measures to "rectify the deviation," ordering those communes and production brigades which had adopted these methods to give them up. As a result, confusion reigned for some time in the implementation of this responsibility system. The masses referred to this as a "spring frost." In the meantime, some communes and production brigades persisted in employing the method of assigning production quotas to work groups and thus achieved economic efficiency. This method once again proved the advantages of the responsibility system which linked output with remuneration. In some places, although the commune members changed the word "contract" to "fixed" (quotas), they

actually continued to implement the responsibility system linking payment with output. At that time the methods of "three fixed, one reward" and "five fixed, one reward" became very popular. These methods emphasized the role of the production teams in unifying the system, and a responsibility system known as "five unifications, five fixed and one reward" was adopted among work groups under the production teams in Guangdong Province. Plans for production, including the use of the means of production owned by the collective, allocation of the labour force, and distribution of product returns were all directed by the production team. In accordance with the needs of production, the labour force of the whole production team was divided into several work groups and the method of fixing the labour force, section of land, production costs, pay in work points and output, and rewarding those who overfulfilled their production quotas and penalizing those who did not meet their output quotas was adopted. Under the "four fixed, one reward" system then adopted by Jiashan County, Anhui Province, the means of production (including cultivated land, draught animals and farm tools), output, work points, and costs were fixed for the work groups, and again rewards were given to those overfulfilling production quotas and penalties to those who did not meet their quotas. Some communes and production teams in Jiangxi Province adopted the "six fixed" method, fixing cultivated land, the labour force, draught animals, farm tools, fertilizer and output quotas for work groups with the method of calculating work points in accordance with output.

The Party Central Committee's "Decisions on Certain Questions on Accelerating Agricultural Development" stated that the production team could adopt the method of contracting jobs to work groups and link output with remuneration. This was a form of the responsibility system which assigned output quotas to work groups. The "Summary of the Forum on Questions of Rural Work" by the State Agricultural Commission, transmitted by the Party Central Committee in 1979, also pointed out that on the premise of adhering to the several unifications of the production teams, the concrete methods for the

production responsibility system could be chosen by the commune members through democratic discussions and in light of the specific conditions of the localities concerned, and uniformity should not be imposed. With the support of the Party Central Committee, this form of responsibility system which fixed production quotas for work groups was quickly implemented. The production teams that adopted this method in the early summer of 1979 in Guangdong Province accounted for 41.7 per cent of the total number of production teams. By the winter of 1979, the number of such production teams in Anhui reached 61.6 per cent; 57.6 per cent in Sichuan, 52 per cent in Guizhou, 28.6 per cent in Inner Mongolia and one-fourth on the outskirts of Beijing. The method of fixing production quotas for work groups, though proclaimed erroneous at various times, still existed as an important form of the production responsibility system. More importantly, this method had paved the way for the adoption of other forms of responsibility system.

In the course of constantly improving the production management work of the communes and production brigades the masses created various forms of the production responsibility system. In those communes and production brigades where a diversified economy was quite developed and production levels were fairly high, the method of gradually developing a division of labour among specialized work groups, organizing specialized teams, groups, households and workers to engage in various lines of production, and of linking remuneration with output was adopted in accordance with the needs of production and the scale of business. Sichuan's Xindu County and Jiangxi's Yichang Prefecture were among the first to adopt this method of contracting out special production tasks and linking output with remuneration. The masses of these traditionally destitute areas, where the level of management of the communes and production brigades was low, the collective economic strength was weak and production items were monotonous, chose to adopt the system of contracting output quotas to households and the method of contracting jobs to households, which was easy to

implement. Communes and production brigades in Anhui, Gansu, Guizhou and other provinces also adopted this method, some earlier than others. Many communes and production brigades in Henan Province instituted the method of contracting output quotas to individual labourers. Each form of the responsibility was practised differently in different places, with different degrees of centralization. Some communes and production brigades adopted several forms of responsibility systems in a single unit.

In September 1980, in its document "Some Questions Concerning the Further Strengthening and Improvement of the Responsibility System in Agricultural Production" the Party Central Committee pointed out that because of the characteristics of agricultural production and the uneven economic development in different regions, there should be greater adaptability and more flexibility in the management of agricultural production, rather than rigid adherence to a single model of the production responsibility system. The document also stipulates: "It is wrong to forcibly adopt one form and prohibit the use of other forms against the will of the local masses in the work of establishing and perfecting the production responsibility system." The Central Committee demanded that local authorities give guidance to the local masses in accordance with their wishes and gradually popularize various kinds of responsibility systems suited to local conditions. The spirit of the Party Central Committee provided an important guarantee for the coexistence of a diversity of forms of the responsibility system.

However, the number of communes and production brigades which adopted the method of contracting production quotas to work groups began to decrease in 1981. An important reason for this was that many work groups, after undertaking a fixed output quota, could not properly allocate responsibility and determine remuneration for each member within a group. The number of communes and production brigades that adopted the method of contracting production quotas to households, on the other hand, quickly increased after it was no longer subject to the prohibitions that had existed ever since the agricultural

eo-operative movement. By the second half of 1981, the method of contracting production quotas to households was gradually replaced by the method of contracting jobs to households. According to statistics compiled in December 1982, the number of production teams which instituted the method of family management by contracting jobs to households and contracting production quotas to households accounted for 78.7 per cent of the nation's total.

CHANGES IN THE NATION'S RESPONSIBILITY SYSTEM IN AGRICULTURAL PRODUCTION

	Jan. 1980	Dec. 1980	June 1981	Oct. 1981	June 1982
Total percentage of basic accounting units that had established the responsibility system	34.7	90.8	91.4	97.8	99.1
Including:					
contracting fixed quotas for jobs	55.7	39.0	24.2	16.5	5.1
contracting of specialized tasks	—	4.7	7.8	5.9	4.9
contracting output quotas to groups	24.9	23.6	13.8	10.8	2.1
contracting output quotas to labourers	3.1	8.6	14.4	15.8	12.6
contracting parts of output quotas (jobs) to households	0.03	0.5	—	3.7	2.2
contracting output quotas to households	1.0	9.4	16.9	7.1	4.9
contracting jobs to households	0.02	5.0	11.3	38.0	67.0
other					0.3

The table here shows the changes in the most prevalent forms of the responsibility system in agricultural production in recent years.

The production responsibility system developed through the replacement of one form by another and the constant improvement of the forms themselves by incorporating elements of other forms. For instance, in some areas of Henan and Shandong, as well as other provinces, collective unified management was gradually added to the system of contracting given tasks to households in crop cultivation planning, ploughing and sowing, and irrigation and insect killing. In Yantai and certain other areas in Shandong Province, the system of contracting production quotas to specialized households and linking remuneration with output incorporated elements of the system of distribution of the method of contracting given tasks to households, and this was developed into a form of contracting production quotas to specialized households and contracting jobs to collectives or individuals for suitable remuneration. Under collective unified management and with a proper division of labour and specialization, a method of distribution for the contracting of large-scale jobs was adopted; in crop cultivation, the method of contracting a fixed delivery quota in kind was introduced (delivering farm produce to the state and the collective); in industrial and sideline occupations, the method of contracting a fixed output value was instituted under which a portion of the profits were delivered to the state, with the remaining part going to the contractors (units or individuals). Taking into consideration the prices of agricultural, industrial and sideline products, the collective retained different amounts of money from different specialized contractors, in order to balance the labour remuneration for different trades so that the contractors would receive roughly the same pay for equal amounts of labour.

In short, since the Third Plenary Session of the 11th Party Central Committee in 1978, the responsibility system in agricultural production has developed roughly according to the follow-

ing process: the form of responsibility system has gone from one of not linking output to one of linking output, from contracting production quotas to groups to contracting production quotas to labourers and to households and further to contracting given tasks to households, or, in other words, from a system of contracting workdays to a system of contracting production quotas and further to a system of contracting given tasks. The development occurred through a process by which the peasants chose through comparison in practice the form of the responsibility system which was best suited to the actual conditions of their own units and the concrete form of the relations of rural production became increasingly better suited to the development of the productive forces.

In the past few years, national and local Party organizations and governments at all levels have made the promotion and improvement of the production responsibility system a central task in their rural work. In the three years from 1980 to 1982, the Party Central Committee has held conferences on rural work every year, formulated documents and made important policy decisions concerning new problems that have arisen, especially problems concerning the production responsibility system in the countryside, and given timely and correct guidance in the work of developing the production responsibility system.

4. The Protracted Nature of the Production Responsibility System for Collective Agriculture

A fairly long period of time has elapsed since the production responsibility system of the collective agricultural economy was first introduced. A serious review and summing up of our experience during this period has highlighted the following points:

(1) The production responsibility system of the collective agricultural economy is a long-term, not an expedient, measure.

During the early period of the establishment of the people's communes and the "cultural revolution," the responsibility system in agricultural production was twice destroyed, and later on it was twice re-established. This fact shows that whether or not the production responsibility system should be established

for the collective rural economy and what kind of production responsibility system should be established is not a subjective matter to be decided at will. In a collective agricultural enterprise, the production responsibility system might be temporarily abolished and the method of "large formation warfare," or "political work points" may be adopted, but this inevitably entails the practice of doing work carelessly and "allowing everybody to help himself from the same public pot" in distribution, which seriously affects workers' sense of responsibility for production, dampens their initiative and enthusiasm and leads to stagnation and retrogression in production. If this practice were allowed to persist, the collective enterprise would inevitably be destroyed. If the enterprise is to continue to grow stronger and develop, it is necessary to implement a production responsibility system which is suited to the level of the productive forces and the managerial level of the cadres, and establish a normal order of production. This has been borne out by the experience of many communes and production brigades. Some commune and brigade cadres have said: "In the past we shouted for a while when we went out to work, walked around for a while when we went to the fields, waited for a while when we arrived in the fields, loafed for a while when we worked and quarreled for a while when work points were being appraised for each labourer. Three persons could not perform the work of one person. Were it not for the responsibility system, even if the cadres worked themselves to death, the work would not have been completed."

It is thus clear that the production responsibility system adopted for the collective agricultural economy was an objective requirement for the development of the productive forces and did not arise through the outcries of any group or individual. The production responsibility system co-exists effectively with the collective agricultural enterprises. In collective agricultural enterprises there must be division of labour and co-operation in production and co-ordination and collaboration between different departments. At the same time, labour remuneration for individual workers is necessarily linked with how well their

production tasks are done. Therefore, as long as the collective agricultural enterprises exist, the production responsibility system must be practised.

Aware of the repeated changes in the rural policies under the influence of the "Left" ideas, the peasants have been concerned that the policy on the responsibility system might change. To relieve the peasants of their worries, Premier Zhao Ziyang's report at the Fourth Session of the Fifth National People's Congress on November 30, 1981, the "Summary of the National Conference on Rural Work," transmitted by the Party Central Committee on January 1, 1982, and Comrade Hu Yaobang's report at the Party's 12th National Congress on September 1, 1982 all emphasized that the production responsibility system adopted for the collective agricultural economy would remain unchanged for a long time to come. This policy of the Party Central Committee sums up the experience and lessons drawn from the development of the collective agricultural economy and is based on Marxist theory of political economy. The continuance of this policy has had major significance in stabilizing the enthusiasm of the peasants for production and the excellent situation in the rural areas.

(2) The concrete forms of the production responsibility are changeable.

When we say the production responsibility system practised in the collective agricultural economy will remain unchanged for a long time to come, we mean that as long as the collective agricultural economy exists, the production responsibility system must be instituted. But this in no way means that the concrete forms of the responsibility system will not change. Everything in the world is in a state of development and change. As explained earlier, the concrete forms of the responsibility system in agricultural production have gone through many changes, developing from the temporary workday contract system in the early stages of the mutual-aid teams and the agricultural co-operative movement to the present household contract system, as the system has been improved and in accordance with the principle that the relations of production must be

suited to the development of the productive forces. Obviously, the changes in form of responsibility system must not be determined by a person's subjective will, but by objective requirements of economic development. In other words, change takes place only as objective conditions mature and the workers feel the necessity for change.

It is particularly noteworthy that the forms of the production responsibility system that emerge through this objective process are not changing all the time. A form of the responsibility system that conforms to the conditions of the productive forces will experience a period of relative stability. This is because, as far as the unit is concerned, changes in the means of production and other production conditions, such as developments in the division of labour and co-operation or improvement in the cadres' managerial levels, require a fairly long period of time before they become apparent. Within this period, only by stabilizing the responsibility system which best suits the level of the productive forces then and there can we protect and promote the development of the productive forces. Even improvements in one form of the responsibility system can be made only on a stabilized basis. From our past experience we have seen how putschism, commandism and enforced uniformity that surpasses objective requirements and is divorced from local reality can cause disastrous consequences, and we must never forget this lesson.

III. THE FAMILY CONTRACT SYSTEM AND ITS ADAPTABILITY

1. A Creation of the Chinese Peasantry

The form of the responsibility system known as the family contract system has several forms: contracting jobs to households without unified income distribution by the production teams, contracting output quotas to households with unified income distribution by the production teams, and contracting output quotas to individual able-bodied labourers (*bao chan dao lao*). In each of these forms, the single peasant household

is taken as the contracting or management unit. Among all these forms, the first form is the most widely practised. When we refer to the family contract system, we are usually referring to this form, contracting jobs to households without unified income distribution by the production teams.

Although this form of responsibility system appeared only after the Third Plenary Session of the Eleventh Party Central Committee, which was convened at the end of 1978, the family contract system had already been in existence, having had a rather long and tortuous history.

After the agricultural co-operative movement reached its completion in 1956, and especially after the people's communes were created throughout the country in 1958, various defects in China's collective agricultural economy began to become more apparent by the day. By the time of the "cultural revolution," because of the Party's "Left" errors, these defects manifested themselves even more conspicuously. They are:

(1) The power to manage the collective economy belonged exclusively to a few commune or brigade leaders. The low level of business management of a number of commune and brigade leaders and their undemocratic work styles brought chaos in management, which slowed down the development of production and caused economic inefficiency. On the other hand, as the commune members had no decision-making power in work and management and were placed in an entirely dependent position in which they simply followed orders, they lacked a sense of responsibility, creativity and enthusiasm.

(2) The undue emphasis on concentrated labour, and the lack of flexibility of labour forms and a reasonable division of labour made it difficult to establish a strict production responsibility system, especially a system based on the work team or the individual. Such being the case, duties were often ill defined and rewards and penalties not fairly meted out, and this in turn resulted in low efficiency and poor quality in farm work because of the phenomenon of "coming to work like swarms of bees, yet loafing on the job."

(3) Remuneration of commune members was not directly

linked with the fruits of their labour — production output (or output value) — and this gave rise to the phenomena of showing up for work, but not putting out any effort and paying attention to quantity at the expense of quality. Egalitarianism in which no distinction was made between those who did a good job and those who did shoddy work or between those who did more work and those who did less could not be effectively overcome. This, and the tendency of some cadres to take more than their shares, made it difficult to implement the principle "to each according to his work." This seriously dampened the labour enthusiasm of the peasants.

The peasants summed up these defects as: "Making a terrific din in work, yet doing a sloppy job; eating from the same big pot and being poor together." One of the fundamental reasons for China's slow progress in agricultural production and the lack of any notable improvement in the peasants' living standard for many years was the overly centralized management of the collective agricultural economy.

The productive forces will invariably find avenues for their own development. The task of opening up such avenues is accomplished by labourers who represent the demand for the development of the productive forces. In the birth of contracting jobs to households and its tortuous historical advance, we can see the unremitting efforts of China's peasant masses and cadres at the grass-roots level to overcome past defects in the management of the collective economy and to find concrete forms of the collective economy of socialist agriculture which conform to China's specific conditions.

As early as 1956, many agricultural co-ops learned from their experience that after the responsibility system of the collective production had been established, production could be carried out successfully only after an individual responsibility system was formed as well, reducing the scale of labour organization and placing responsibility with the household. Some agricultural co-ops divided up the work and assigned field management plot by plot to the peasants who would be held responsible for the work, and some even linked output to the household.

The production teams were given work, output and production cost quotas by the co-ops, and divided these three quotas among the work teams and individual households. Generally speaking, the work team or the household was to be held responsible for the plot assigned, the field management and the output of the plot. That is to say, within the system of collective farming, co-op members were encouraged to look at production partly in terms of their personal material interests.

The Liaoyuan Agricultural Co-op in Yongjia County, Wenzhou Prefecture in Zhejiang Province used the method of dividing up the work and contracting output quotas to the household. After the production teams contracted with the co-op for a certain amount of output, each household would volunteer, based on its own specific conditions, to take care of the crop on a certain plot and be held responsible for the output. The production team then announced the work quota of each plot and handed out a quota ticket to the person who was to supervise the quality of the farm work. The team still made unified arrangements concerning the farm work. When a household finished its required work, it would get the appropriate quota ticket. This was generally called contracting output quotas to households. In the summer of 1957, about 1,000 agricultural co-ops in the counties in Wenzhou Prefecture practised this method, and about 15 per cent of the households who joined the co-op worked under this method. Co-ops in Jiangjin (Sichuan), Yuci (Shanxi), Zhongshan (Guangdong), Jiangyin (Jiangsu) and Fuyang (Anhui) followed suit and introduced the practice of household contract system.

However, beginning in the latter part of 1957 when the socialist education movement was being conducted in the rural areas, the method was criticized and then banned. It was said that it reflected the needs of the well-to-do middle peasants, that it was a step towards individual farming, and that it was a capitalist method that deviated from the socialist road.

During the drive to improve the management of the people's communes in 1959, some areas again instituted the method of contracting output quotas to households. Agricultural co-ops

in Qinyang County, Xinxiang Prefecture and those in Linru County, Luoyang Prefecture (all in Henan Province) allocated all or most of their farm work to peasant households and held individual households responsible for the work and the output quotas.

In the anti-Rightist deviation movement of 1959, the method was even more severely criticized. It was alleged to be "extremely backward, retrogressive and reactionary," "a way of peddling anti-socialist wares to the bourgeoisie and a portion of the well-to-do middle peasants," "the most vicious sabotage and slander of the people's communes" and "a programme of Rightist opportunists to restore capitalism in the rural areas and a venomous scheme to undermine the rural productive forces." Therefore, the method was to be "thoroughly exposed and smashed." As the method of household contract system was being criticized, an effective method of allocating field management to households was also being repudiated, and this created much confusion in theory as well as in practical work.

Nevertheless, in the winter of 1960 when reforms of the work of communes and brigades were carried out, some communes and brigades in Anhui, Guangxi and Henan again began to practise the method of contracting output quotas to the household. By the spring of 1961, nearly 40 per cent of Anhui's production teams were using this method. Hunan also adopted the method in the spring and autumn of 1961 and again in the spring of 1962. In Anhui, the production teams fixed output quotas and work points for each plot according to the crop planted on it and then contracted the plots to households according to their labour force. There were rewards if a household overfulfilled the output quota and penalties if it failed to meet the quota. This was termed the responsibility system of "fixing output for each plot and assigning responsibility to each person" or simply the "responsibility field" system. In 1962 when the emphasis was again placed on overcoming difficulties by depending on the collective, the method was again looked upon as heresy, and Anhui's system was criticized as "representing the interests of the well-to-do middle peasants," "draw-

ing the peasants back to individual farming" and a move towards the "capitalist road." Because it was considered to be on a par with individual farming, which was to be opposed all over the country, Anhui was forced to stop the practice.

After the autumn of 1962, when there was an emphasis on class struggle, the method was seen as a reflection of class struggle in the rural areas. Later, during the socialist education movement which began in 1963 in the rural areas, and especially during the "cultural revolution" which started in 1966, the method was equated with capitalism and repeatedly criticized.

During the "cultural revolution," the rural family contract system was severely criticized, together with free markets, plots for private use and enterprises with sole responsibility for their own profits and losses. It was called "part of the scheme to restore capitalism," "out-and-out revisionism" and "an evil union of the capitalist forces of the urban and rural areas to launch a ferocious attack on the socialist position in the countryside."

However, although the method was severely criticized during the "cultural revolution," it re-emerged staunchly. After 1970, some communes and brigades in Fujian, Jiangxi and Guangdong provinces again practised this method, in spite of the fact that it was still considered reactionary.

In 1978 some communes and brigades began to revive the output responsibility system and various concrete forms emerged. Therefore the method once again came out into the open from the underground and spread all over the country instead of being limited to a few areas.

From the fact that the method, though repeatedly criticized and banned, was reborn again and again, we can see that there is objective inevitability for the family contract system to exist in China's rural areas. It was only due to the shackles of the "Left" ideology that it was forbidden for a long period of time.

Inspired by the thinking of the Third Plenary Session of the Eleventh Party Central Committee, the peasant masses emancipated their minds and came up with new forms of the family contract system, such as contracting jobs to households and

fixing output quotas for individual labourers. Compared with the other forms, contracting jobs to households gives the peasants more autonomy in production and greater material incentives. It is the simplest form and better suits the present level of the productive forces in most rural areas and the level of business management of the rural cadres and peasants. This has become the most commonly practised form of the production responsibility system in the countryside.

2. The Extensive Adaptability of the Family Contract System

In September 1980 in the document "Some Questions Concerning the Further Strengthening and Improvement of the Responsibility System in Agricultural Production," the Party Central Committee reaffirmed the method of contracting output quotas and jobs to households. The document points out: "In out-of-the-way mountainous areas and poor and backward places and in production teams which have for a long period of time 'depended on the state for grain, on state loans for production and on relief money,' if the peasant masses have lost faith in the collective and asked for contracted output quotas they should be supported. Both forms, contracting output quotas and jobs to individual households, should be stabilized over a fairly long period of time." This was the first time since the agricultural co-operative movement that the Party made an express policy decision allowing family contract system to exist legally. This decision was warmly acclaimed by the peasants.

At that time, the various forms of the family contract system were viewed as ways of solving the problem of feeding and clothing the peasants in poor and backward areas. Later it would be seen that the system could not only solve the problem of poverty and backwardness, but could make the peasants well-off. The system not only wrought great changes in a rather short period of time in the economically backward areas, but also spread to some of the most economically developed areas, sometimes skipping over those places with medium economic levels. At the same time, the method of contracting output to households itself was evolving towards contracting jobs to

households, which is now not only the essential form of the family contract system, but also the main form of the agricultural production responsibility system as a whole.

How could the family contract system be popularized so quickly throughout the country? The main reasons are that it is fairly effective in overcoming defects long present in the collective economy and that it has extensive adaptability.

There are two main reasons that the peasants have welcomed the family contract system: (i) They have autonomy in labour and management. They are in a position to plan for their work and their lives and to adopt measures suitable to the time and local conditions, without arbitrary orders from above, becoming the real masters of production. The relationship between labourers and the land, farm animals and farm tools is also much closer than before. (ii) The peasants' incomes are directly linked with the fruits of their labour. They have benefited from the knowledge that, "After I've contributed my share to the state and retained enough for the collective, I can have all that is left." This has also effectively checked malpractice of some of the cadres of making use of unified distribution to take more than their shares and to squander collective funds.

The method of contracting jobs to households has also eliminated the complicated and over-elaborate procedures involved in unified distribution. The peasants prefer its simpler methods of distribution. By guaranteeing the material interests and democratic rights of the peasants, the family contract system is able to mobilize the productive initiative of the peasant masses. This has been the underlying force in the swift development of China's agriculture and the main reason for the acceleration of China's agricultural productivity over the past few years.

The adaptability of the family contract system can be seen in the way, on the one hand, it suits the comparatively lower levels of the productive forces in most rural areas, while, on the other hand, it also suits the development in areas in which the productive forces are at higher levels. That is to say, it not only suits the present-day situation in most rural areas, but will suit future conditions when the level of the productive forces

has been greatly improved all over the country. The extensive adaptability of the family contract system is a result of its ability to combine unified and separate household management.

To show how the system is suited to the present-day situation in most of China's rural areas, let us make a simple analysis of the present-day levels of the productive forces in the rural areas.

Since the founding of the People's Republic in 1949, the conditions of China's agricultural production have been much improved and the level of the productive forces in the rural areas has been increased greatly. However, no fundamental change has been made in the material and technical conditions in the countryside. Generally speaking, China's agriculture is in a transitional period through which traditional agriculture will be transformed into modern agriculture, and the level of the agricultural productive forces is still comparatively low. The transitional nature of agricultural production in China today can be seen in terms of the conditions in four areas.

(1) Although modernized material techniques have made some headway in the rural areas, traditional farm implements operated by hand or cattle are still dominant. In 1982, every 10,000 *mu* of China's farmland had 1,505 hp of power generated by machines, 5.4 large or medium-sized tractors, 9.2 small tractors, 9.2 machine-drawn farm implements and 1.4 trucks. The average amount of electricity consumed by each *mu* of farmland was 26.5 kwh, and the average amount of chemical fertilizer applied was 10 kg. Ninety per cent of the communes were linked by highways. This level of mechanization and modernization is much higher than that of the years prior to the agricultural co-operative movement. However, insufficient quantities of necessary accessories, fuel and spare parts and maintenance technicians have led to only a partial use of the existing farm machinery. In 1982, only 35 per cent of the country's farmland was ploughed by tractors. In the country as a whole, the main labour power in agricultural production comes from cattle, and the most commonly used production tools are still hoes, hand sickles, shoulder poles and shares drawn by cattle. Even in those areas or units where the level

of productive forces is comparatively high and more farm machinery is employed, manual labour and farm implements operated by hand or drawn by cattle still occupy a comparatively important place. These farm implements are not socialized means of production as they are not operated through the concerted efforts of many people.

(2) Although there has been much progress in agro-science and technology, agricultural production still operates on the basis of traditional experience and techniques. Since the establishment of the People's Republic in 1949, China has made some achievements through research in agro-science and the popularization of technology. However, because of defects in the system of the people's communes in the past, the peasants have lacked motivation to employ the results of scientific and technological research. Inadequate popularization work and the peasant's low educational level are other reasons why the results of scientific and technological research were not fully utilized. The traditional production techniques still employed in numerous villages are often linked with underdeveloped farm tools and an underdeveloped division of labour in society.

(3) Although specialization and socialization of production have made some advances, they are still not well developed. During the development of production, a certain division of labour came about in China's collective economy. There is a basic division between crop planting, animal breeding and processing work. Crop planting is divided into the planting of grain and of industrial crops, and the breeding and use of cattle, the operation of farm machinery, water control and transportation are all assigned to specialized personnel. Yet, in the country as a whole, the single-product economy dominates as the diversified economy is not well developed. In crop planting, there is little division of labour and co-ordination in the production process from sowing to harvesting. Instead, the planting of crops is performed through simple co-ordination in which many labourers are doing the same kind of work in the same place at the same time. Given the present-day level of the productive forces, individual peasants or a few peasants together

can complete most of the work involved in the different processes independently without such simple co-ordination. This indicates the low degree of socialization in agricultural production today, and in fact there are only a very small number of institutes serving socialized farming.

(4) Although the skills of cadres at the grass-roots level in business management and the peasants' educational and scientific and technological levels have been raised somewhat, they are still quite low. Among the 400 million young and middle-aged people in the rural areas, 30 per cent are illiterate or semi-literate and 40 per cent are at a primary school educational level. Only a tiny proportion are at a senior-high educational level. About two-thirds of the 17 million technicians for farm machinery across the country are not qualified personnel, having inadequate scientific knowledge and technical know-how. Statistics concerning the 5,052 cadres at the commune and brigade level of 91 people's communes in Chuxian County, Anhui Province, show that 9.7 per cent of them are illiterate, 50 per cent are of primary school educational level and only 7 per cent have an educational level of senior high or above. The educational levels of cadres at the brigade and team levels are even lower — 11.8 per cent are illiterate, and 55 per cent have a primary school educational level. In some areas, it is not an uncommon occurrence to find that accountants for the production teams do not know bookkeeping.

The low level of China's agricultural productive forces, as detailed above, calls for smaller management units in China's collective agriculture and a not too highly concentrated system of business management. In the past, the actual situation of the agricultural productive forces was ignored as the collective agricultural system one-sidedly emphasized unified management and concentrated labour, which kept the peasants under strict control but stifled their initiative. Therefore, to conform to the present-day level of the agricultural productive forces, the past management system of collective agriculture which embraced too much concentration and unification should give way to a system which has a necessary component of unified management

as well as an adequate system of separate small-scale management, incorporating the advantages of the collective while mobilizing the initiative of individual peasants. The family contract system meets these needs quite well.

Practice has shown that the family contract system has much flexibility in accommodating different levels of productive forces because it combines unified and separate household management. The system is applied to different degrees, with slightly different procedures and using different forms of unified and separate household management to suit the levels of the means of production in different areas or units, the development of specialization and socialization of production and the level of the cadres' management ability. As production becomes more highly developed, "small yet complete" household management may eventually turn into "small yet specialized" household management, and at the same time, specialization of production will bring an increased demand for the socialization of production. Some enterprises which peasants need but are not able to run themselves may be run by the original collective (communes, brigades or teams), jointly by several households, by state departments or organizations, or jointly by the state, the collective and individuals. Such enterprises have already been established in quite a few areas.

By pointing out the extensive adaptability of the family contract system, we do not mean to deny the importance of other forms of the responsibility system. Each form of the responsibility system has its own scope of adaptability. The extensive adaptability of the family contract system often presupposes its use as a complement to other forms of the responsibility system, and therefore it should not be conceived of as a replacement for all other forms of the responsibility system.

3. The Family Contract System as a New Form of Co-operative Economy

The practice of contracting jobs to households implies a major readjustment of the relations of production in agricultural collective ownership. The collective economy based on production

teams in the people's communes must undergo a certain transformation to fit this system.

First, the role of the production team as the production and management unit in agriculture is assumed by the individual household. As the peasant household changes from a consumer unit in the collective economy into an economic unit with independent management and accounting and the responsibility for its own profits and losses, the status of the individual peasant changes from that of pure labourer to that of labourer-manager. Under the guidance of state plans and the unified management of the collective, each individual household has the right to define its own orientation and form of management (whether it will be independent management or joint management with others), to set its own management and production plans, to adopt various measures to boost output, to buy materials for production, to accumulate funds, to make investments and to allocate the labour forces of the family. All of these functions originally belonged to the production teams.

Second, as independent producer-managers, the peasants acquire the right to use and manage the collectively-owned land, water conservancy projects, large pieces of farm machinery, farming equipment and other important means of production —the ownership of the collective means of production is separated from its use and management. In addition, apart from possessing small farm tools, many peasants now own other means of production which they never had before, such as draught animals, trucks, tractors, diesel engines, motors and machinery for processing sideline products, as well as seeds, chemical fertilizer and pesticides. Where the system of family contract is practised, apart from the collective ownership of the means of production, there is also individual ownership. In the future, the proportion of the means of production owned by individuals will increase, and gradually, an inequality in possession of these items, both quantitative and qualitative, will emerge among peasant households.

Third, the principle "to each according to his work" loses its place as the sole method of distribution. This is not to say

that the principle was always practised in the past. On the one hand, the distribution method resulting from the family contract system overcomes the problems of egalitarianism and cadres who also took more than their share from the collective, thus making it more possible to implement the principle of "to each according to his work." On the other hand, due to the existence of private ownership of part of the means of production, the peasants, apart from providing their labour in production, also provide the means of production which they own. Thus, their income from production cannot be calculated entirely by the distribution method of "to each according to his work." As long as the potential for increasing agricultural output has not been fully tapped, different amounts or uneven quality in the means of production (for example, draught animals, machinery, good strains of crops, chemical fertilizers and pesticides) will give rise to different soil fertility and output will be different on plots of land that are the same size with the same amount of labour employed. This is known as differential land earnings.

The readjustment in the relations of production inherent in the family contract system is necessary in mobilizing the initiative of the peasants, developing agricultural production and activating the rural economy. It becomes clear that the system has connotations which far exceed those of the agricultural production responsibility system generally. It is not just a labour management system within the production team; it bears the characteristics of an economic form.

Yet in no sense can the household management under this system be called a form of individual farming, of private economy. The reasons are:

(1) This kind of household management is established on the basis of the socialist public ownership of the basic means of production. It upholds the socialist collective ownership or state ownership of the basic agricultural means of production such as land, water conservancy facilities and large agricultural machinery. The peasants only have the right to use them. This

prevents the monopoly of the means of production by a few people.

(2) In distributing their output, the peasants under the family contract system take into account the interests of the state, the collective and their own private interests. The contract says that it is the peasant's duty to his country to fulfil his quota of agricultural tax to the state and to hand over a certain amount of agricultural and sideline products to the state. In the meantime, his duty to the collective requires him to contribute to the accumulation fund and public welfare fund and pay an administration fee to the collective. What is left belongs to the peasant himself after the depreciation costs of the means of production are deducted. When compared with what commune members formerly got from the collective, generally speaking, what is left for the peasant and his family's consumption is more than what he got under the previous form of distribution.

(3) Unified management exists alongside household management. Under the household contract system those items or projects suited to unified management, including capital construction in agriculture; care of the dependents of soldiers and martyrs, families having difficulties, widows, widowers, orphans and old people with no offspring; and cultural, public health and welfare projects, are still looked after by the collective. However, the degree of unified management is different in different places. Where diversified cultivation is performed successfully, the level of socialized production and division of labour and co-ordination is high and cadres' management ability is high, more items will fall under unified management, and it will be a higher level of unified management.

(4) In this system of management, the household, with the production team as an intermediary, is put under the guidance of state plan through economic contracts. The contracts in the system of contracting jobs to households not only state the acreage and the period for which the land is contracted to the peasant household and the means of production and technical services provided by the production team, but also sets forth

the state quota for the variety and quantity of agricultural products the peasants are to produce, their contribution to the collective and their duties in agricultural capital construction and other public labour. Thus, with the production team as intermediary, production by the peasant household is guided by state plans through contracts.

Viewed as a whole, the implementation of the family contract system does not divorce peasant households from the collective and the management of the collective; the state and the collective do not lose their control and regulatory function over the peasant's household management. A basic property of the production and other economic activities of household management is that they are conducted under the guidance of state plans and follow the path of the socialist economy.

These four points make it clear that the system of contracting jobs to households is established on the basis of the public ownership of the basic means of production, yet it allows for private ownership of part of the means of production; it embodies unified management to a certain extent, yet relies mainly on household management; it upholds the guidance of state plans and necessary unified management of the collective and at the same time gives the peasants greater initiative than before in production and management; it incarnates the principle of "more work, more gain; less work, less gain" as well as an element of distribution which is not according to labour. In sum, this form of family contract system retains the most important aims of the agricultural co-operative movement, while incorporating elements of an individual economy. This system has provided a breakthrough in the system that has existed ever since the development of the agricultural co-op under which the collective economy practised public ownership of all means of production, unified management, working together and the distribution by work points, and it has reformed the system of "three levels of ownership with the production team as the basic accounting unit" in the people's communes, but it is not the case that the individual economy takes priority over the collective economy

in this new form of co-operative economy based on household management.

The Resolution on Certain Questions in the History of the Chinese Communist Party Since the Founding of the People's Republic of China, adopted by the Eleventh Party Central Committee on June 27, 1981, pointed out: "There is no fixed pattern for the development of the socialist relations of production. At every stage our task is to create specific forms of the relations of production that correspond to the needs of the growing productive forces and facilitate their continued advance." The family contract system is the specific form of the relations of production in the rural areas created by the Chinese peasants under the Party leadership based on many years of experience, which upholds the Marxist orientation on co-operative agriculture and at the same time conforms to the present conditions in China's countryside.

However, in the wake of the growth of production, the early system of contracting jobs to households practised in more than a few places, characterized by the slogan "after I've contributed my share to the state and retain enough for the collective, I can have all that is left," with little or no unified management by the collective, has encountered the following problems: (i) A system that limits itself to the labour force, farmland and funds of the individual household without unified management is not conducive to developing production and improving the conditions under which production is practised. (ii) Farmland has been contracted on an equal basis with each household selling the state a set quota of agricultural products, so that each peasant family has had to engage in growing grain, oil-producing crops and cotton. This is not conducive to a specialized division of labour. (iii) The farmland is divided into overly small sections when it is contracted to individual households. This is not practical in terms of the further development of production. (iv) Because of the absence of collective unified management and adequate co-ordination and mutual assistance between households, there is no provision for natural or man-made disasters when production suffers and the peasants will have dif-

ficulty making a living. Therefore, it is important that in stabilizing the family contract system we do not accept all forms and all methods, but rather, according to the wishes of the masses and the requirements for the development of production, conduct adequate guidance and make necessary improvements and adjustments. This has already taken place in many localities and units. Excellent results have been achieved in those places in which the collective takes care of areas in which the masses request unified management, supports the specialized households, key households and the expansion of those organizations serving socialized production and encourages voluntary co-ordination and integration on the basis of mutual benefit.

IV. FUTURE IMPROVEMENT

1. The Necessity for Gradual Improvement

At present, the period of turmoil is past and various forms of the responsibility system for farm production have been established in the communes, production brigades and teams in China's rural areas. This is a profound and complicated change which will affect millions of people. Historical experience has shown that after any great change in the relations of production, there must be a period of relative stability so that the productive forces may continue to grow under the new relations of production.

In the 1950s the formation of elementary agricultural producers' co-operatives, established on the basis of mutual aid groups characterized by labour exchange and co-operation and drawing profits on land shares, should have been able to stabilize the relations of production over a relatively long period of time. However, because of the "Left" errors, we failed to realize this aim. Instead, we hurriedly turned the elementary agricultural producers' co-operatives into advanced agricultural producers' co-operatives in which the land, draught animals and other large farm implements (the basic means of production) were owned entirely by the collective. Then, following the

establishment of the advanced agricultural producers' co-operatives, there should have been a period of consolidation. However, after just a year or so, when the advanced agricultural producers' co-operatives were just beginning to run smoothly, the people's communes appeared, "large in size and having a higher degree of public ownership." Under this "Left" guiding thought, the constant changes in the relations of production brought great disorder to the rural productive forces.

Since the Third Plenary Session of the Eleventh Party Central Committee held in 1978, agriculture in China has been thriving because of the implementation of the responsibility system for production in the rural areas. But we cannot expect perfection from such a newly emerging system right away. Some problems have occurred under the responsibility systems which have been adopted in various parts of the country because of rapid change, lack of preparation on the part of some cadres and misunderstandings on the part of the masses.

The most important of these problems are as follows:

(1) The contract system has not been set up in some localities and not perfected in other localities. Therefore, the obligations, rights and interests of the collective and commune members are not clear.

(2) Some contracted arrangements are not effective. For instance, the period of the contract for land cultivation is too short, leading to predatory administration of the land. The targets set for various forms of specialized tasks are not reasonable, and there are great disparities in the remuneration for labour.

(3) The property, facilities and industrial sideline occupations of the collective have not been appropriately protected. The result has been that some of these have been damaged or appropriated.

(4) The relationship between unification and separation has not been properly understood or implemented, meaning that those that should be unified have not been unified, and those that should be separated have not been separated.

(5) The relationships between the state, the collective and

the individual have not been properly handled. Free planting has taken place with a failure to fulfil the quota for purchase by the state and no guarantee of the portion of profits to be retained by the collective.

(6) There has been inadequate care for the households receiving the "five guarantees" (childless and infirm old persons who are guaranteed food, clothing, medical care, housing and burial expenses by the commune) and families experiencing material difficulties.

(7) As compared with the responsibility system in farm production, the responsibility systems in forestry, animal husbandry and fishery are comparatively weak.

(8) Leadership at the grass-roots level is inadequate. In some cases no organs for leadership have been established at all. The initiative of the cadres in some units has been affected by unreasonable pay and inadequate conditions.

At present, emphasis should be placed on solving these problems and stabilizing the various forms of the responsibility system. The great majority of the peasants have, after several years of trial and comparison, selected the form of the responsibility system which is suitable to their localities and units. Only when the peasants are satisfied with a particular form of the responsibility system, should it be stabilized and no longer changed. In this way, the morale of the peasants is also stabilized and their doubts about "change" will be overcome. Their attention and initiative can then be concentrated on production. The stability and improvement of the responsibility system for production form a dialectical unity. Only such forms of the responsibility system as are based on the premise of stability, can be improved upon; yet, on the other hand, it is only on the basis of improvement that they can be further stabilized.

The improvement of the responsibility system involves the productive forces, the relations of production and the realm of the superstructure. Once this difficult task is performed, certain problems will be resolved for a fairly long period of time. Then, with the development of the productive forces, new contradictions and problems will arise, which must be further solved.

"Some Questions Concerning Rural Economic Policies," issued by the Central Committee of the Chinese Communist Party in 1983, states: "The stabilization and improvement of the responsibility system for farm production is still the main task in rural work at present." Only if we put great efforts into further research and study, carefully summing up the experience of the masses and taking into account their great sensitivity, even to the most subtle issues affecting their interests, will the various forms of responsibility be gradually and constantly improved.

2. Principles for Improving the Responsibility System

What principles should we follow in improving the responsibility system for farm production? The following principles are suggested in the documents of "Summary of the National Conference on Rural Work" (1982) and "Some Questions Concerning Rural Economic Policies" (1983), issued by the Central Committee of the Chinese Communist Party.

(1) We should follow the principle of "adherence and constancy." "Adherence" refers to the idea that Chinese agriculture must adhere to the socialist road; "constancy" means that the public ownership of land and other basic means of production will remain unchanged for a long time to come, as will the responsibility system for the collective economy. Not long ago, some among the cadres and masses had the misunderstanding that the responsibility system was confined to the single form of contracting jobs to the household, and that that meant a complete change of ownership with "land returning to the households," and that individual farming was to be achieved by dividing up the collective land and properties. Influenced by this erroneous ideology, some cadres abandoned their leadership responsibilities, collective properties in some localities were divided up or damaged, some peasant households made demands for contracted land in accordance with the ownership of the land at the time when they joined in the communes, asking that the "land be returned to the households," and many economically successful industrial and sideline occupations were suspended. This illustrates the importance of educating the

cadres and the masses in the principle of "adherence and constancy."

(2) We must follow the principle of benefiting production. The purpose of implementing the production responsibility system is to unleash the initiative of the commune members and expand agricultural production in all areas. Therefore, whether in the establishment or improvement of the responsibility system, we should always keep these goals in mind, "never slackening our efforts in grain production and energetically engaging in diversified enterprises," thus promoting the vigorous growth of the commodity economy in the rural areas. The implementation of the responsibility system will not only promote the growth of farm production, but also the development of all the diversified enterprises such as forestry, animal husbandry, sideline occupations, fishery, industry, commerce and transport, whether operated by collective or conducted by the commune members themselves. Any form of the responsibility system which is not suited to local conditions or is not favourable to the mobilization of the initiative of the commune members and to the all-round development of farm production and the rural economy should be modified.

(3) We must adhere to the principle of the "three considerations." The "three considerations" refer to the interests of the state, the collective and individual commune members. Adhering to the "three considerations" means taking into consideration the interests of the state and collective as well as the vital interests of the peasants, thus correcting the past practice of stressing the interests of the state and collective to the neglect of the material interests of the peasants. But in some localities, there have been cases in which state quotas and requirements for turning a certain proportion of profits to the collective were not met. Although not immediately apparent, the practice of looking out only for the interests of the individual and neglecting the interests of the state and collective runs counter to the fundamental and long-term interests of the peasants. In areas of the countryside in which the family contract system has been implemented it is important to speed up our education of the

peasants and improve the responsibility system in light of the principle of the "three considerations."

(4) We must follow the principle of suiting measures to local conditions and giving different kinds of guidance in different situations. This is true for improving the responsibility system once established as well as the initial selection of a form of responsibility system. In improving the responsibility system, we should adhere to the principle of "proceeding from reality" and analyse the actual situation in a particular locality or unit. This should be emphasized in our ideological work.

(5) We must adhere to the principle of "unification and separation." All forms of the responsibility system are a combination of unification and separation in various areas, and the establishment of any such system entails finding an effective way to deal with the relationship between unification and separation. "Unification" can refer to unified administration, unified management, planning and distribution or unified operations (or centralized labour) in farm work. "Separation" can refer to decentralized administration, decentralized management and planning, decentralized distribution according to households or decentralized labour in farm work. When "unification" and "separation" in the responsibility system are discussed and compared, we must be sure to make clear which of these areas we are referring to. Unified administration may be compared with decentralized administration, but not with decentralized labour. Indeed, under a unified administration, labour may be centralized or decentralized. The degrees of unification and separation vary under the different forms of the responsibility system and, because of different production conditions and managerial levels in the various localities and units, there are also local differences in handling the relationship between unification and separation under a single form of the responsibility system.

Generally speaking, units that have mainly adopted a form of the responsibility system that entails collective administration should lay particular emphasis on solving those problems concerning overly rigid control; those units that have adopted

forms of the responsibility system that entail household administration should lay particular emphasis on overcoming and preventing too much separation in certain areas. The basic principle for handling the relationship between unification and separation is that "unification" should not be allowed to handicap the unleashing of the enthusiasm of the individual commune members, whereas "separation" should not jeopardize the superiority of the collective.

(6) We must follow the principle of improving economic efficiency. From the point of view of economic management, the establishment of the production responsibility system is intended to improve economic efficiency by raising agricultural labour productivity and land productivity so that each labourer and each *mu* of land (including cultivated land, grassland, forest land and bodies of water) turns out a greater product, whether in agriculture, forestry, animal husbandry or sideline occupations. In the words of the peasants, we should increase production and incomes and reduce production costs. The responsibility system is intended to change the former situation in which the peasants "increased production without increasing their incomes" and attained "high yields" but still remained poor. Any practice that is economically unfavourable should be revised.

(7) We must adhere to the principle of democratic management. As in the selection of the form of the responsibility system, any improvement or revision of the responsibility system should follow the mass line. The masses should be aroused to hold discussions and their wishes should be respected. The leadership should assist the masses in evaluating their experiences and seeking ways to improve the responsibility system. Where the leadership has put forward the correct views, but the masses are still not convinced, the leadership should take special pains in their guidance as the situation demands. The leadership should also help the masses create the proper conditions for making necessary improvements where they do not already exist, rather than trying to make improvements when the time is not yet ripe.

In short, the establishment and improvement of the responsibility system is a matter of the masses' own free will. The task of the leadership is to give correct guidance and support to the masses, but not to make decisions for the masses.

The above-mentioned principles are both criteria for evaluating the success of the responsibility system and guiding principles for improving the responsibility system gradually and according to local conditions.

3. Carrying Out the Improvements

There is much work to be done in carrying out the improvement of the production responsibility system. The following are several important areas upon which we should concentrate our efforts.

(1) We should adhere to the collective ownership of the land, and pay close attention to the protection of farmland and other natural resources.

Natural resources are the indispensable conditions for agricultural production. Land, forests, grasslands, and bodies of water all need to be properly utilized and their fertility maintained. The utilization of collectively owned farmland, garden plots, forest land, grasslands, bodies of water, shoals and barren hills must follow the unified planning and arrangements of the collective. Such resources may not be used for other purposes or bought, sold or leased. The collective retains ownership of the small plots of land and hilly land allocated to commune members for their long-term private use as well as of the land allotted to them for building houses.

In order to prevent the predatory administration of cultivated land, farming and maintenance of the land should be combined. Investment in the contracted land by the commune members is to be encouraged in order to increase its productivity. The contract period for the land should be extended from one or two years to four or five years and longer for barren hills and wasteland. In some areas the period for the latter has extended to 50 years.

Measures should be taken to protect and maintain public

buildings, production facilities, trees and other public property on the collectively owned land.

(2) We must protect and make good use of the collective enterprises and fixed assets.

The collectively-run enterprises and collectively-owned farm machinery, industrial and sideline facilities and other installations should be administered with an eye to increasing production and enhancing economic returns. Means such as the contract system for specialized lines and the management responsibility system should be employed for this purpose. The collective fixed assets should be sorted out and registered. Such fixed assets as have been mistakenly distributed should be recouped or paid for, and those which continue to be used should be paid for based on their depreciation.

(3) We must establish and perfect the contract system.

The contract system refers to the definition in contract form of the economic relations between the production teams and the work groups (specialized groups), peasant households or workers in specialized enterprises as well as the obligations, rights and benefits of the two sides. It sets forth the internal economic relations of the collective economy and recognizes the interests of the state, the collective and the individual. Perfecting the contract system is an important step in perfecting the responsibility system.

Experience in various localities has illustrated the necessity of paying close attention to the contract, from its signing to the fulfilment of all commitments. In making the contract we must follow the mass line. The various production quotas, the amount of farm produce and sideline products to be given to the state and the collective or the portion to be retained by the collective, the major measures to be taken in fulfilling the tasks, remuneration, rewards and penalties as well as the number of workers to be used in capital construction projects undertaken by the peasant households, should be examined and discussed by the commune members to ensure that the content of the contract is reasonable and clear. The contract should clearly stipulate the rights and duties of both the collective and the contractors rather than becoming a unilateral written pledge. We must also recognize the seriousness of the contract. Once a contract is signed, it has legal implications, and both of the parties who sign the contract must abide by its terms and the stipulated rewards and penalties must be enforced. Cadres should play an exemplary role in implementing and honouring the contract. Certain special problems, such as cases of contractors who encounter natural and man-made calamities, should be practically and realistically handled in the course of honouring the contract.

Some commune members have noted: The more perfect the original contract is, the better the responsibility system will work; the more closely the contract is honoured, the more consolidated the responsibility system will be. Without the contract system, the perfection of the responsibility system for farm production would be empty words.

(4) We must integrate the improvement of the responsibility system with the promotion of the all-round development of farm production.

The implementation of the agricultural responsibility system has greatly boosted labour efficiency, and a surplus labour force has emerged in the rural areas. This surplus labour can be used to develop production in diversified enterprises, industrial and commercial, and play an important role under the responsibility system. Therefore, the rural communes and production brigades and teams should, based on local conditions, work out an all-round plan for the growth of agriculture, forestry, animal husbandry, sideline occupations, fishery, industry and commerce, and allocate labour under the responsibility system in accordance with the needs of production. Those units engaging in household management will also, wherever possible, gradually begin to engage in diversified enterprises such as tree farms, tea plantations and breeding farms, and a specialized division of labour will gradually emerge.

We should give consideration to both large and small projects in developing a diversified economy, and collectively- and individually-operated projects should be carried out simultaneously. Those projects which are suited to the collective should be

operated by the collective or through the development of associations of various sizes and forms; those projects which are suited to individuals should be operated by the commune members, and the development of specialized households should be encouraged.

(5) The financial side of the collective economy must be reformed. Whichever form of the responsibility system is adopted, it will be necessary, in the course of improving the responsibility system, to overhaul and consolidate the financial work of the units. We must sort out the fixed assets, cash, materials, debits and credits and square old accounts and establish new accounts in order to establish a financial system which meets the needs of the responsibility system of a particular unit and maximizes the management of materials and cash. Only in this way can we fully implement the responsibility system.

(6) We must strengthen our ideological and political education of the peasants.

The establishment of the responsibility system doesn't mean that we shall, in the slightest degree, slacken our efforts in ideological and political work. Conversely, because of the new problems that have occurred since the implementation of various forms of the responsibility system and because of the decentralization of administration under the system, ideological and political work is all the more important. Political work is the lifeblood of all economic work. Good ideological and political work is an important guarantee for success in economic work. Through the practice of socialism over the past three decades or so, the Chinese peasants have become socialist labourers and new-type peasants under socialism. But, it also should be noted, they have not completely done away with their small production mentality and habits and the influence of feudalism and capitalism. The education of the peasants is still a long-term and arduous task. Therefore, while perfecting the responsibility system, we must strengthen our ideological and political education of both cadres and commune members in socialism, patriotism and collectivism and teach them to give consideration to the interests of the state, the collective and individuals, to

become rich through labour and to take the road of common prosperity.

(7) We must develop strong leadership organs at the grass-roots level.

Cadres are the key to the future improvement of the responsibility system. After the implementation of the responsibility system in the rural areas, and in particular the household contract system, the staffing and the structure of the leadership organs at the production brigade and team level have been appropriately simplified and reorganized. After the leadership organs are well established, close attention must be paid to ideological as well as professional education to instil the leadership with a sense of responsibility and honour befitting the new circumstances. We must also establish the personnel responsibility system for cadres, linking remuneration to efficacy in their work. However, the standard of the remuneration for cadres should not be set so high as to burden the commune members and cut themselves off from the masses.

In addition to the above-mentioned work that must be done involving the general character of the responsibility system attention should also be paid to the peculiarities of the various forms of the responsibility system.

In the contract system for specialized lines and the system of responsibility for production in which payment is linked with output, we should pay special attention to the following areas: (i) Labour co-operation should be organized where necessary in accordance with the characteristics and requirements of various trades. Such co-operation relations should ordinarily be written up in contract form early in the contract year. In organizing such co-operation we should adhere to the principles of equal value and mutual benefit. (ii) In specialized groups remuneration should be reasonable and egalitarianism should be overcome. (iii) We must strengthen accounting procedures and pay close attention to economic efficiency. Where unified business accounting exists under the production teams, the various contracted units should also set up ledgers.

Under the system of contracting output quotas to production

groups, special attention should be paid to the following areas: (i) Necessary co-operation between groups should be well organized. (ii) Close attention should be paid to the division of labour and determining individual responsibilities and to payment for labour in the work groups. (iii) Accounting procedures of the contracting groups should be strengthened. (iv) In units where power is highly centralized, essential decision-making power must be given to the commune members.

In the forms of the responsibility system of contracting output quotas to households or individual labourers the following areas should be stressed: (i) The contracted farmland should, as far as possible, be joined together so as to facilitate farming and drainage. (ii) The relationship between "unification" and "separation" should be worked out. (iii) Farm machinery and implements, draught animals, industrial and sideline installations, public buildings and sunning grounds which belong to the collective should not be dismantled or divided up equally. We must regulate their use and provide for their preservation. (iv) Collectively-owned industrial and sideline occupations, tea plantations, orchards, fishing ponds and pastureland should be operated by the collective through contracts with specialized groups, households and individual labourers.

With regard to those households implementing the system of contracting jobs to households, special attention must be paid to these areas: (i) We must avoid dividing the land into small sub-plots. (ii) We should protect and utilize the production capabilities already in existence rather than to discard or destroy them. (iii) Industrial and sideline enterprises formerly owned by the collective should continue to be operated by the collective, if they are suited to collective management, or be jointly managed by the commune members. Those enterprises that are not suited to collective management may be contracted to specialized households. (iv) We should protect the collective ownership of the land. We should adopt a prudent attitude towards adjustment of contracted land, making such adjustments only if the masses consent. (v) The relationship between "unification" and "separation" should be worked out. (vi) Where

needed we should organize new economic associations adhering to the principles of voluntariness and mutual benefit in which members are truly equal and enjoy the full rights of democracy and the freedom to join or withdraw at any time.

CONCLUDING REMARKS

Since the Third Plenary Session of the Eleventh Party Central Committee, the production responsibility system has been set up throughout China's rural areas. This is an important beginning for the structural reform of the economic system in the countryside, and its direct and indirect impact far surpasses the scope of the production responsibility system itself.

As the different forms of the responsibility system have been implemented in various localities, communes and production brigades and teams, various forms of economic co-operation have taken shape, based on the collective economy of the former people's communes and production teams (and some production brigades which are taken as the basic accounting unit). They can generally be divided into two categories: those that are essentially under unified management and those essentially under individual management. In the former case, land, draught animals, farm machinery, water conservancy facilities and other agricultural means of production are owned by the collective, and the collective remains an economic entity. Decision-making in production, distribution, exchange and consumption is mainly controlled by the collective, although the production groups and peasant households may enjoy a certain amount of power in decision-making in matters of administration and labour. In the latter case, economic forms based on individual management, although the basic agricultural means of production, such as land, are owned by the collective, the peasant households have begun to own more means of production needed for administration and production, including draught animals, tractors, motor vehicles and other farm implements. In such production teams, the previous functions of the collective administration and management have, more often than not, been taken

over by the peasant households. The peasant households now carry out independent accounting, assuming sole responsibility for their profits and losses, and accumulate funds for increased reproduction.

Although both of the above-mentioned economic forms belong to the co-operative economy of socialism, the former retains the centralized and unified administrative system of the production teams in the past, while the latter has largely rejected the centralized and unified administrative system of the former production teams. Which form of management is appropriate is determined by local conditions. The second form is by far the more widespread, fitting the conditions in most parts of the country.

Although the two forms of the co-operative economy differ in the forms of the agricultural means of production and administration as well as in the methods by which specialized production and socialization of agriculture are to be realized, they share a common goal, the modernization of agriculture in China. As Lenin pointed out that, we will never claim, and no sensible socialist who has written on future prospects has ever thought, that we can at one stroke establish and compose the forms of organization of the new society according to some pre-determined set of instructions. It can be said with certainty that under the leadership of the Chinese Communist Party and guided by Marxist theories, the Chinese peasants will be able to create through practice new forms of socialist agricultural co-operative economy with rich, diverse and unique Chinese features.

A STUDY ON SPECIALIZED HOUSEHOLDS

by Zhou Qiren and Du Ying

I. ORIGIN OF SPECIALIZED HOUSEHOLDS

The household contract system with remuneration linked to output has done more than to passively meet the needs of the already existing systems of division of work in the rural areas, for it has also pushed forward the division of work and trade in all parts of the countryside and created new patterns in the division of work. With the universal adoption of the household contract system linking remuneration with output, large numbers of specialized households and key households have appeared in both developed and backward areas. This heralds the formation of new patterns in the rural division of work and trade.

According to statistics, by the end of February 1983 there were 15,637,000 specialized and key households in China's 28 provinces, municipalities and autonomous regions (not including Tibet and Taiwan) or 9.4 per cent of the total farm households in these administrative areas. The specialized and key households made up 17 per cent of the total farm households in Shanxi Province, 16.4 per cent in Liaoning Province, 16.7 per cent in Jiangxi Province, 3.1-3.6 per cent in Gansu, Qinghai and Yunnan provinces, and 2 per cent in the Guangxi Zhuang Autonomous Region. Though still small in number, the specialized households have already appeared in many places.

The birth of specialized and key households was a natural development out of two types of households, contracted specialized households and households engaging in sidelines.

The contracted specialized households operated in some of the more developed communes and production teams under the system of "contracting specialized production tasks and their remuneration." Contracted under this system are the specialized production tasks that emerged in the course of division of work and skills. Production is entrusted to a fixed group of commune members, and remuneration is linked with the output. The only difference here is that a household, not a group of people, signs the contract at the basic level. The specialized households also cultivate land (at least the land for their own food grain) in most places, which eliminates the complex problem of balancing earnings from different sources under the system of "contracting specialized production tasks and their remuneration."

In Yingcheng County, Hubei Province, a young man named Wang Huazi is a member of the Gangshang Production Team under Hongtang Brigade at Hongqi Commune. He signed a contract with the team in the spring of 1981 to raise fish in a 25-*mu** area of water. While taking good care of the land under his responsibility, he also bred fish. At the beginning of the contract year, he put 6,000 fry in the ponds. At the end of the year, he had earned 800 yuan** from the full-grown fish. If the half-grown fish in the ponds, worth 600 yuan, are included, his income would have totalled 1,400 yuan. After deducting his costs of 200 yuan and 100 yuan payment to the team, a sum of 1,100 yuan was left for himself. In 1982 Wang returned the land he had cultivated to the team and together with his wife contracted 36 *mu* of fish ponds from three production teams. They put 36,000 fry in the ponds and earned 12,000 yuan in a year. After they deducted their costs of 5,200 yuan and their 750 yuan payment to the teams, their net income was 6,050 yuan.

There are now 212 specialized fish-breeding households like that of Wang Huazi in Hongtang Brigade, making up 36.8 per

* Measure of land, one *mu* equals 6.6666 ares and 0.1647 acres.

** The monetary unit of China, which equals about 0.4 dollar U.S. presently.

cent of the brigade's total households. They manage 413 *mu* of ponds which account for 91 per cent of the water area suitable for raising fish.

Because the economic relations are simple and clear and most of the specialized rural work (mainly cultivation and breeding) is suitable to be undertaken by households, the system of contracted specialized households has spread more rapidly and widely than the system of "contracting specialized production tasks and their remuneration."

The self-managed specialized households that developed from the households engaging in sidelines passed through the following stages: declining household sidelines (the period in which household sidelines were considered capitalist activities), developing household sidelines (after the Third Plenary Session of the 11th Party Central Committee in 1978), diversified household management (at the early stage of the household contract system with remuneration linked to output), the formation of major specialized lines in the household and finally self-managed specialized households.

The division of work in rural households, in which household members specialize in one or several activities, has made remarkable progress in the wake of the adoption of household contract system linked with output. Stimulated by the proper external economic conditions, division of work within the household will naturally concentrate labour and funds on the operation of one or several productive activities. Then, as the narrow limits of traditional household sidelines give way, major or specialized operations take shape in the household, and the "sidelines" become major lines.

Chinese peasant families, for example, have long had the tradition of raising a few chickens. Even when this was labelled a capitalist activity, many small expenses were paid by the earnings from eggs. Now the chicken-raising specialized households in the rural areas have gone far beyond the traditional limits. Chicken-raising has become a specialization that helps people to get rich.

A survey in Gansu Province has shown that a specialized

household keeping 100-200 chickens can generally earn back its investment in the first year and earn 1,000-2,000 yuan in the next year. There are 6,000 households specializing in raising chickens in Qiqihar City, Heilongjiang Province. Of these, 2,432 households have 50-100 hens each and 289 households have more than 100 hens each. On the average one household supplies about 600 kg. fresh eggs a year. Together they contribute 68.3 per cent of the marketable chickens and 83 per cent of the marketable fresh eggs in the city. The 9,833 specialized chicken-raising households in Siping Prefecture, Jilin Province, accounting for 1.1 per cent of the total farm households in the region, supply 1,945,000 kg. of fresh eggs a year. This fulfils the state's purchase quota for the prefecture. For the state to produce the same amount of eggs, it would have to set up a farm of 390,000 chickens.

Pig-raising is also developing in the same direction. Many households are each selling 10, 20, or even 100 well-fed pigs a year.

All this demonstrates the inevitable decline of traditional farm sidelines in favour of the larger-scale self-managed specialized households. Because of the solid social foundation of China's rural household sidelines, the appearance and growth of self-managed specialized households was never a scattered deviant phenomenon, but quickly spread, taking on various patterns. It has been proven in practice that the transformation of Chinese farm households engaging in sidelines into specialized on key households better suits their experience and outlook. Therefore, it is a practical means of attaining socialized farm production.

The difference between contracted specialized households and self-managed specialized households lies only in the initial conditions of their origin. The former used the collective's means of production while the latter used their own. After one or two production cycles, however, the distinction with regard to their roles in the rural division of work and trade gradually disappears.

The contracted specialized households previously engaged

in home sideline production. After they become specialized households, they generally divert the labour, tools and funds they used in these sidelines to the specialized lines or merge them into these lines. In the wake of adopting the contract system, the task of capital accumulation for expanded reproduction is mainly shifted to the contracted households, and their income, including loans, the interest on which is paid from the earnings of farm households, becomes the major source of funds for investment in reproduction. With the steady expansion of the specialized operations, the original production facilities come to play only a partial role in the entire production process of the specialized households, and the original funds for expanded reproduction derived from centralized accumulation are merged into those provided by the households themselves.

The self-managed specialized households also engage in contracted operations, mainly involving land. After they become specialized households, their contracted land continues to provide their food grain. This, in fact, is the basis of any specialized operation not based on land or grain cultivation. Moreover, the land is also partially integrated with their specialized cultivation and breeding by directly growing industrial crops or indirectly supplying part of the feed grain. In other words, these households also make use of the conditions of collective production.

The distinction between contracted and self-managed specialized households disappears in the process of their maturation. This trend is reflected in the standards for defining specialized and key households in the rural areas.

These standards differ from place to place. In our surveys, the following requirements were generally included. Qualitatively, specialized operations are undertaken by a single household. Commodity production forms the household's major activity and the majority of its labour and funds are devoted to one specialized line. Quantitatively, some places measure the marketable rates of specialized production, some emphasize the ratio of income from specialized production in the house-

hold's total income and others judge the quantity of commodities. The quantitative standards vary widely in different places although uniform standards exist within some counties and prefectures.

No matter how widely their standards differ, all areas proceed from the total results of the household operations rather than looking at whether the results are derived from factors attributable to a particular type of ownership, which cannot be estimated anyway. This is dictated by the fact that although these factors can be attributed to the collective or the individual at first, in the actual operation they are used in combination by the specialized households in the stages of planning, decision-making, production and marketing until they produce wealth. If there is a relatively clear demarcation line between contracted and self-managed operation in the generally contracted farm households, this line becomes obscure in the specialized households. Special attention should be devoted to this situation and its implications in terms of the theory of ownership and the relationship between operation and ownership under socialism. The subject of our theoretical examination here is the more generalized concept of "specialized households."

II. TYPES OF SPECIALIZED HOUSEHOLDS

In our examination of specialized households, the distinction between contracted and self-managed households is becoming insignificant. But there is another distinction that must be duly considered, that of the functions performed in various types of specialized production in the rural division of work and trade. We will first examine the two types of specialized households that are of decisive significance in forming a new pattern of rural division of work and trade: the grain-producing specialized households and the specialized households that are leaving the land.

The grain-producing specialized households are an important new development in the rural areas following the adoption of the contract system with remuneration linked to output. They are mostly found in economically active areas. For instance, Yixing County is a relatively developed county in Jiangsu Province's Taihu Lake region which provides over 150 million kg. of marketable grain to the state per year. Of its 230,000 farm households, 10 per cent are grain-producing specialized households each of whose contracted farmland exceeds 10 *mu* and whose labour force is mainly devoted to farming. They cultivated only 25 per cent of Yixing's farmland in 1982, but produced 80 million kg. of marketable grain or about 40 per cent of the county's total.*

The 390,000 grain-producing specialized households in Jiangxi, a province known for its grain cultivation, make up 45 per cent of the province's specialized households. Jiangxi's Nanchang County is one of the nation's base areas for marketable grain. Its 20,000 grain-producing specialized households, 13 per cent of the total farm households, supplied about 110 million kg. of marketable grain in 1982, or 37.7 per cent of the county's total. The marketable rate of these specialized households ranged from 60-80 per cent. Among them, 14,000 households each provided at least 5,000 kg. of grain, 2,694 households each supplied between 10,000 and 40,000 kg. and two households each sold more than 50,000 kg.**

Yanbei Prefecture of Shanxi Province produced 260 million kg. of marketable grain in 1982, an increase of 149 per cent over 1978. The number of households selling over 5,000 kg. of grain jumped from 1,031 to 22,000, or about 4 per cent of the total number of farm households, in 1983, thanks to the contract responsibility system. It was estimated that those 4 per cent of households would sell 170 million kg. of grain, making up 75 per cent of the prefecture's marketable grain in 1982. The greatest amount sold by one household was 21,000 kg. in 1982, and several households each planned to sell 50,000 kg. in 1983.

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* *Renmin Ribao*, April 13, 1983.
** *Renmin Ribao*, April 19, 1983.

The grain-producing specialized households are usually those with a greater amount of manpower, a condition present in quite a few households, that have been able to cultivate large areas of land as a result of the initial improvements in the forms of contracting farmland. For the convenience of our analysis, we will cite as examples a few such households elected from our surveys.

The household of Zhang Quan at Zhujiazhuang Brigade in Shuoxian County, Shanxi Province, contains 15 persons, seven of whom can work in the fields. In 1982, apart from cultivating 53 *mu* of contracted land and their land for personal use, the Zhangs also contracted to farm 47 *mu* of the collective's "reserve land" for supplying the brigade's fine strains of seed. By the end of the year, the 100 *mu* yielded about 40,000 kg. of grain and the household sold to the state one half of their grain or 1,300 kg. per household member.

In the Xianghu Brigade of Jiangxi Province's Xinqu County, Zhang Guiji's household has nine members, five of whom make up its labour force. A nearby fishing team has large tracts of paddy fields, but because they are scattered and far away the fishermen do not like to cultivate them. Zhang contracted to grow rice on 72.5 *mu* and had a harvest of 51,500 kg., of which he sold 47,000 kg., for a 91 per cent marketable rate.

Zhu Bingxin lives in the No. 2 Brigade of Jiangbei Commune in Zhejiang Province's Yongjia County. In terms of full manpower, his five family members can supply the labour of two and a half persons. The household cultivated 5.25 *mu* of paddy fields for itself and another 22.95 *mu* on behalf of seven other households. Out of its annual output of 20,000 kg. of grain, Zhu's household sold 10,500 kg., or an average of 372 kg. per *mu*. The family earned a net income of 3,000 yuan from its grain.

Although Liu Peiqing's family has seven members, its labour force is the same as Zhu Bingxin's. The Liu household specializes in growing grain and oil-bearing crops at the Baojiabo Brigade of Tingjiang Commune in Shandong Province's

Xixia County. Of its 46.8 *mu* of contracted land (two crops a year), 38 *mu* were planted with grain crops in 1982. The Liu family harvested 18,640 kg. of grain and 2,450 kg. of peanuts in that year.

In the No. 14 Team of Dagang Commune in Jiangxi Province's Nanchang County, the Xiong Bingqi household sold 50,000 kg. of grain. With six of its ten members able to do farm work, the household contracted 38 *mu* of paddy fields in the autumn of 1981. In a bid to contract the brigade's unprofitable farm composed of 89 *mu* of paddy fields and 23 *mu* of land, the family acquired the cultivation of the 112 *mu* on the condition that it give the brigade 7,000 kg. of grain and 1,700 yuan in cash. It also acquired the use of the brigade's two buffaloes, a 1,000-hp diesel engine and a threshing machine. The household was given a loan to buy a walking tractor and 1,000 kg. of chemical fertilizer. In 1982 it produced 62,700 kg. of grain which brought in 19,000 yuan.

There is nothing unusual about the two main factors, land and a labour force, that have given rise to the grain-producing specialized households. It is only their method of combination that has undergone changes with the adoption of the contract system linking remuneration with output. This has brought noteworthy results for China with its rising population, diminishing areas of farmland and a less than affluent supply of grain.

It is of particular significance that the grain-producing specialized households appeared at the time of the readjustment of the price system for farm products, and especially that for grain crops. This shows that if the potential of contracted household operation is fully tapped, the Chinese countryside can depart from the pattern of "flat cultivation" and, at a time when the growth of other kinds of specialized households has enormously raised the demand for grain and fodder, achieve a new balance in the rural division of work and trade through the rapid increase of grain-producing specialized households.

Along with the rise of grain-producing specialized households, there have emerged the specialized households leaving the land, farm households whose main lines of operation are

not connected with land. This is a higher-level phenomenon among rural economic activities and a further development of the division of work and trade after the adoption of the contract system linking remuneration with output. It is also an occurrence of great significance.

At the early stage of the contract system, almost every household in the rural areas engaged in the cultivation of land. In other words, nearly the entire rural population and labour force was equally involved with the land. Therefore, the switch from contracted households or peasants to non-agricultural households or individuals required changes in the initial relations of contracting land.

One change has been to readjust the land contracting method on the basis of stabilizing the contract system linking remuneration with output by reducing the proportion of land contracted according to population and increasing that contracted according to labour force and then according to agricultural labour force. Consequently some farm households have been able to divorce themselves from the land.

By the end of 1981, for instance, 60 per cent of the production teams in Shanxi Province's Qinxian County contracted out land in proportion with the population and the rest according to population and labour force. In early 1983, only 1 per cent of the teams followed the population principle, 84.7 per cent took both population and labour force into consideration and 14.3 per cent contracted out land according to labour force. Of the 1,044 production teams that contracted out land on the basis of the labour force, only 49 or 4.7 per cent took the entire labour force into account, while the remaining 995 or 95.3 per cent considered only the farming labour force. This enabled the people not engaging in agriculture to leave the land and concentrate on specialized lines. There are now 8,079 such specialized households in the county, making up 22.4 per cent of the county's total farm households.

Yingxian County practises the system of contracting according to ability. This has freed 4,060 farm households or 6.9 per cent of the county's total from cultivating land.

The system of transfer of contracted land among farm households has helped some specialized households leave land cultivation while still retaining a flexible relationship with the land. Let us look at some examples of the transfer of contracted land.

In recent years 4,700 specialized and key households have appeared in Xinjian district of Jinyun County in Zhejiang Province's Lishui Prefecture. Most of them raise ducks. In 1982 such specialized households kept 1.2 million ducks, averaging 754 per household. This rapid expansion owed to the "nomadic" method of raising this water bird. Ordinarily four people, including two assistants, take care of a group of 400-800 ducks and herd them to markets where the demand is high and the price better. On the way the ducks get their feed from ponds, streams and harvested paddy fields. The markets extend as far south as Fujian and Guangdong provinces, north to Shanghai and Jiangsu Province, and west to Hubei Province. This method entails low costs and brings big returns, but one cycle takes from one to three years. All or most of the working members in the duck-raising households are generally on the road and therefore cannot cultivate the land contracted under the names of their households. Hence a transfer of contracted land is performed.

For example, there are 800 households containing 3,200 people in Dongchuan Commune's Jianchuan Brigade. Apart from the 50 families that raise ducks in their own households, more than 600 members of the 200 duck-breeding specialized households herded 200,000 ducks to various places in 1982. Eighty-one families or 10.1 per cent of the total number of households transferred their contracted land. Forty-nine households transferred 150 *mu* to peasants of the same brigade, and 32 households transferred 81.9 *mu* to the local agro-technical station. The transfers involved 11.6 per cent of the brigade's farmland. The contracted land of the other 119 specialized households was cultivated by their elder members with extra outside help during the busy farming seasons.

Two methods of land transfer were employed in Jianchuan

Brigade. In the first, the land-cultivating household becomes responsible for the quota of grain to be delivered or sold to the state and brigade for the transferred land and sells the original contracting household a quota of food grain previously fixed by the production team at the production team's internal price. In the second method, besides assuming the responsibility for grain delivery and sales, the land-cultivating household gives 150 kg. of rice per *mu* to the original contracting household without charge. The second method appears to be prevailing, but it has also touched off much controversy.

To illustrate the merits and drawbacks of the two arrangements, we have chosen from our survey several households in the different positions and made some calculations.

(1) The land-using household. The household of Shi Rubi contains three members, all of whom can work in the fields, and they also have an ox. In addition to its 4.8 *mu* of contracted land, in 1983 it accepted the transfer of 6.37 *mu* of land contracted by two duck-raising families under the first method of compensation. The Shi family was to sell 2,300 kg. of rice as food grain to the two families at the production team's internal price of 19 yuan per 100 kg. This income totalled 437 yuan, whereas if Shi Rubi sold the same amount of grain to the state as above-quota grain, he could get 805 yuan, or a price of 35 yuan per 100 kg., and if he sold it at a rural fair, he could get even more. In other words, Shi cultivated 6.37 *mu* of the contracted land of other households at a cost of at least 368 yuan or 57.7 yuan per *mu*. When food grain is sold at the internal price, the arrangement for the transfer of land use should be regarded as an equal exchange.

Under the second method, Shi would give 150 kg. of rice for every *mu* he cultivates, coming to 52.5 yuan based on the price of 35 yuan per 100 kg. of rice. This works out to 5.2 yuan less than the compensation under the first method. Shi Rubi has decided: "If they still want me to cultivate their contracted land next year, my calculations tell me it would be better to give them 150 kg. of rice per *mu*."

That year the Shi family cultivated 11.17 *mu* which yielded

8,500 kg. of rice (including 500 kg. of glutinous rice). Including earnings from other crops, its per-*mu* income was 202.7 yuan. For the 6.37 *mu* of transferred land, the per-*mu* net income was 145 yuan after deducting the cost of 57.7 yuan for using the land. The family devoted an average of 29 work days to each *mu* of farmland, which gave them a net income of 5 yuan per work day, 30 per cent higher than the wages of those who work for other peasants on a daily basis.

Because the Shi family is adept in farming, it was worthwhile for them to add 6.37 *mu* to their cultivated land to raise their net income by 923.65 yuan. The enlargement of the cultivated area from 4.8 to 11.17 *mu* also brought other benefits. The Shi family sold 3,720 kg. of grain (excluding the 2,300 kg. of food grain it sold to the two specialized households) in 1982, recording a marketable rate of 43.7 per cent. When the three households concerned farmed the same 11.17 *mu* in 1981, they sold 3,416 kg. of grain. In 1982 the amount of marketable grain was up 8.9 per cent.

(2) The household that transfers its contracted land. The Ding Xudeng household has eight members, six of whom are counted as full or half labourers. In 1982 it raised 1,800 ducks and earned 36,516.78 yuan by selling 920 kg. of eggs and 1,716 ducks. After deducting 27,344.29 yuan in expenses, its net income came to 9,172.49 yuan. Calculated on the basis of six persons working for eight months on the road raising ducks, the net daily income per person comes to 6.37 yuan. When the Dings cultivated land in 1981, the corresponding income was only 3.29 yuan. Then they transferred their entire 6.2 *mu* of contracted land to others, following the second method of remuneration. The cultivators gave the family 930 kg. of grain, which was used as food grain of its members at home and as winter feed for the ducks. On the road, they bought food grain and feed from rural fairs or exchanged eggs for feed.

(3) The household that pays others to cultivate its contracted land. Ding Yuju, 67, lives with the six members of her daughter's family. Her daughter, son-in-law and their 14-year-old daughter were on the road for two years raising ducks.

She and her three other grandchildren (all under 10) stayed at home. The household's 5.56 *mu* of contracted land were mainly cultivated by short-term hired farm workers. The gross income from the land amounted to 1,074.5 yuan in 1982. Outside help totalled 150 work days which cost 500 yuan at the rate of 5 yuan in the busy farming seasons and 4 yuan in other seasons. After deducting another 141 yuan in expenditures, the net income came to 433.5 yuan or 77.97 yuan per *mu*. This is equivalent to the remuneration the short-term workers gave the Ding Yuju household, the original land contractor, for cultivating the latter's land.

The above examples from Jianchuan Brigade show that the lowest cost for cultivating one *mu* of land contracted to another household is 52.5 yuan under the second method of transfer, followed by 57.7 yuan under the first method of transfer, and the highest is 77.97 yuan under the form of short-term hired farm workers.

The transfer of contracted land in Zhejiang Province represents one type of arrangement enabling peasants to leave the land. Another type of land transfer in the suburbs of cities and towns serves to restore the former scale of social division of labour. For example, in the 15 urban production teams of Chengguan Commune in Yunnan Province's Chengjiang County, 68 households had completely divorced themselves from the land by the end of January 1983. They accounted for 4.2 per cent of the total number of households and were composed of 214 people of whom 96 were in the labour force. In the other 173 households, 216 people, including 191 in the labour force, gave up land cultivation. People in the two categories together made up 6.3 per cent of the population of the 15 teams and 9.7 per cent of their labour force. Many of these people were former urban residents.

Three arrangements have been worked out for such a separation from the land. (i) While keeping their residence registration in the production teams, such households return their contracted land to the teams, stop taking part in the teams' economic activities and do not ask the teams to supply

their food grain. (ii) The households use their income from industrial and commercial activities to buy certain quotas of food grain at negotiated prices on the presentation of a certificate issued by the local grain department. (iii) The teams put aside 136.6 *mu* of reserve farmland which is temporarily contracted out to households with a strong labour force. The specialized households or individuals wanting to leave the land and cease their operations may contract their land back to the teams, paying a management fee and contributing to the teams' welfare labour service.

These measures are workable in Chengjiang County because of the following three conditions: First, the county seat is a local economic centre providing a big market and many profitable opportunities. There were over 400 non-agricultural households in the town in the 1950s and some 300 in the 1960s. There are now only 226 such households, containing 349 people or 13.8 per cent of the total number of households in the town, which resembles a rural village. The growing urban and rural commodity economy in recent years requires a large number of industrial and commercial workers. Second, Chengjiang is a major grain-producing county. It purchased 4.5 million kg. of grain at negotiated prices in 1981 and the figure increased by over one million kg. in 1982, thereby accumulating a huge amount of reserve grain. Third, most of the peasants leaving the land were former small merchants and peddlers who are not adept at farming but are skilful in industrial and commercial enterprises and can afford to buy food grain at negotiated prices.

Another example comes from Chengguan Brigade of Honghe County, Yunnan Province. Only one of its present 181 households cultivated land before liberation. The 255-*mu* of paddy fields which were allocated to the brigade in 1966 when it was founded has become an obstacle to the development of its members' specialities in recent years. Since 1981 the production teams under the brigade have entrusted under contract the cultivation of their land to the six teams of Menglong Brigade, Menglong Commune, who have supplied the

Chengguan Brigade's quotas of food grain at low internal prices. This has promoted the growth of the productive forces enormously. The total industrial and sideline income of Chengguan Brigade was 264,000 yuan in 1982, 288 times that of 1980 when its members were engaged in land cultivation. Per-capita income went from 94 to 340 yuan, with each member also receiving an average of 209 kg. of food grain at low prices. The six teams of Menglong Brigade earned 28,000 yuan by selling 162,500 kg. of rice to Chengguan Brigade and 2,500 kg. of surplus rice — all harvested on Chengguan's land. This constituted 33 per cent of their total income in 1982. Altogether 128 households with 700 members cultivated Chengguan Brigade's paddy fields; their per-household income increased by 213 yuan and per-capita income 54 yuan.

According to a survey of 40 counties and cities in 21 provinces and autonomous regions conducted by the China Research Centre of Rural Development, by the end of April 1983, the peasant households that transferred the cultivation of their contracted land to others accounted for 0.9 per cent of the total number of households and the land involved made up 0.7 per cent of the contracted land. The transfers took various forms, but in 85 per cent of cases remuneration was made and 30 per cent of cases arose directly from the growth of specialized production.

The two principles of voluntary arrangement and remuneration in transferring the cultivation of contracted land are crucial to the development of specialized operations divorced from the land.

The growth of any such specialization, in the final analysis, must coincide with rising productivity of the land. Therefore, the transfer does not simply mean that some people are divorced from the land, but also ensures higher output of the land involved.

The reimbursement may be compensation for: (i) The original land contractor's investment in the farmland (this requires comparison of the present conditions of the land with

those at the time of contracting and classification of a plot as being of a particular grade; Wuxiang County in Shanxi Province adopts the method of "first deciding the output of a plot, then determining its grade according to the output and finally setting its price according to the grade). (ii) The additional cost of buying grain at market prices by the peasants leaving the land. This may also include a partial compensation for the risk taken by those who cease to engage in traditional land cultivation and take up new economic activities.

Transfer with remuneration also stimulates the rise of land productivity. Because only skilled farmers can profitably cultivate the land with remuneration obligations, low efficiency in land use after the transfer is prevented. This is a necessary condition for the rural division of work and trade.

At the same time, the transfer must be voluntary with the land returning to the original contractor after the term of transfer. In addition to the required insurance of land productivity and provision for grain, rural specialization involving leaving the land is restricted by such factors as resources, techniques, demand, transport, marketing and communications; it requires the proper combination of many complex factors in production. The mono-production structure existing in our rural areas for a long period of time has made it difficult to find the proper combination and there continue to be many obstacles. During this transition period in the growth of new industries and specialized production in the countryside it is inappropriate to completely cut off the peasants' link with land. The risk involved in leaving the land under such conditions would be so high as to hamper the division of work and trade. It is also inappropriate to centralize the new system at this point because this would increase the risks and obstruct the making of flexible, quick and accurate policy decisions. In our opinion, large-scale specialized production in the countryside must go through this transition period in which certain risks must be faced in making choices and which calls for bold attempts and advances and retreats before it can move on to genuine specialization and socialization. The new division of labour must remain

flexible in order to gain the support of the peasants, and society should exercise effective supervision to ensure that the voluntary principle is upheld in the transfer of contracted land.

Following the universal adoption of the contract system with remuneration linked with output, a number of people from peasant households have stopped cultivating the land, passing through the stage of transfer of contracted land on the basis of increased farmland output. Therefore, the number of non-agricultural people and households has been growing rapidly in the rural areas. Nearly 100 million peasants, according to Xinhua News Agency, have become disengaged from land cultivation, among them many belonging to specialized households. In statistics based on 5,289,300 specialized households that left land cultivation in nine provinces (Anhui, Jiangxi, Liaoning, Shanxi, Hebei, Fujian, Qinghai, Gansu and Heilongjiang), two autonomous regions (Inner Mongolia and Ningxia) and Tianjin municipality, 32.5 per cent engaged in breeding, 13.6 per cent were in commercial, service and transport trades and 11.7 per cent took up various kinds of processing, numbering 3,057,200 or 57.8 per cent of the total number surveyed. There may be 8-9 million such specialized households in the nation. Unlike the previous model of non-agricultural households that had previously been farm households, these specialized households do not change their residence registration, nor do they live on state supplied grain and wages. They remain living in rural areas and maintain flexible links with the land as they explore production areas other than land cultivation. The emergence of this new generation of rural residents indicates that China is looking for a suitable route by which some of its peasants may leave land cultivation.

III. BUSINESS OPERATION OF SPECIALIZED HOUSEHOLDS

Grain-producing and land-leaving specialized households concentrate their efforts on a particular area of production,

but rarely devote all their efforts to a single specialized line. Generally speaking, when income from any one item — grain production or any activity that is divorced from land — reaches 50-70 per cent of the total earnings (which must add up to a certain amount in absolute terms) of a household, the household is considered a specialized household. This means that a household can have two specializations, with another 30 per cent or more of its total income coming from a secondary production item. In our survey, a large number of specialized households engaged in different minor lines of production. The fact that specialized households are not completely specialized merits our attention and further study.

This characteristic can be illustrated with examples of specialized households each earning at least 10,000 yuan or selling 5,000 kg. of grain a year, in fairly developed areas.

The suburban counties of Nanjing universally adopted the household contract system linking remuneration with output in 1982, and their number of specialized and key households has grown rapidly since then. At the end of 1982, 499 households each sold more than 5,000 kg. of grain (averaging 6,835 kg. per household, 1,179 kg. per capita or 1,700 kg. per working peasant) and the marketable rate for their grain surpassed 90 per cent, and 310 households each earned more than 10,000 yuan a year (averaging 13,400 yuan per household and 1,830 yuan per capita) and the marketable rate for the products of their diversified undertakings also exceeded 90 per cent. These two kinds of households earned, on the average, 3.5 yuan from every one yuan of investment, and their net income averaged 9,600 yuan per household or 1,300 yuan per capita. Their labour productivity, marketable rates and economic situations generally were outstanding among the specialized households and far better than ordinary farm households. The vast majority of these households did not engage in a single line of production or devote themselves entirely to commodity production. They concentrated their main labour force and funds on three or four areas in which the marketable rates are

fairly high and supplemented this with self-sufficiency in other areas.

One example is the Du Jiaying household of Jiefang Brigade, Xingxun Commune, Jiangpu County. With a labour force consisting of five of its seven members, the household contracted 44.7 *mu* of land and a 40-*mu* reservoir and also engaged in sidelines. It harvested 16,100 kg. of grain (of which 10,100 kg. were sold), netted 3,500 kg. of adult fish, collected 550 kg. of eggs from its 280 ducks and geese, and raised three pigs. Together with the earnings of 1,460 yuan from Du Jiaying's son, a carpenter working in another place, the household's net income amounted to 11,000 yuan, averaging 1,500 yuan per capita. Du's is typical of households in Nanjing which stress a main line of production while engaging in sidelines and whose income exceeds 10,000 yuan a year.

A survey of 12 households each earning more than 10,000 yuan a year in Dangyang County, Hubei Province, shows that the key to their success lies in "devoting their main efforts and funds to one or two major items" and in gradually creating good-quality commodities and forming a capacity for batch production. According to the county's unified stipulation, any family that earns more than 50 per cent of its total income from one source of operation is a specialized household. Judged by this standard, all 12 of these households are specialized ones. Among them, 3 specialized in grain production, 1 in pig raising, 2 in fish farming, 4 in duck breeding and 2 in machinery and transport. They all engaged in sidelines as well. The five specialized breeding households developed their business from a previous sideline until their income from breeding totalled 45,582 yuan, making up 79.2 per cent of their total earnings. At the same time they also contracted land for cultivation and made their contributions to the collective as did other households. Although what they earned from the land only constituted a tiny fraction of their total income, many surplus by-products from their land became indispensable raw materials for their household breeding, and their breeding business in turn provided very favourable conditions for their land cultivation. This complementary relation cannot be completely revealed in the ratio between the incomes for the two activities. Some households have a clear internal division of labour. The Yang Jiyun family of Changban Commune's Qunli No. 5 Team has 12 members of whom seven make up its labour force. Yang himself took care of the contracted land, his wife sold bean sprouts she sprouted herself, and their sons engaged in cart transport. The family's total income reached 10,000 yuan in 1982.

Feixi is a recently developed county of Anhui Province. Its 14 households earning at least 10,000 yuan in 1982 had a combined income of 184,564 yuan, averaging 13,183 yuan per household or 1,864 yuan per capita, which is 4.5 times the per capita income for the county as a whole. Of the 14 households, 3 engaged mainly in crop cultivation, 5 in breeding and 3 in transport (including the sale of transported goods). All together they engaged in 21 lines of specialized production. Of the total income of the 14 households, 30.7 per cent came from agriculture and 69.3 per cent from diversified undertakings. While taking one line as their major operation, they also worked in two or three other fields. Exceptions were the Xie Guangye household specializing in raising bees and the Zhang Fuhe household specializing in making wooden articles.

For example, the Liu Dajiang household of Gaodian Commune's Shuangban Brigade had a total income of 21,154 yuan in 1982 which came from three sources: agriculture (6 per cent), raising ducks (10.28 per cent) and hatchery (81.7 per cent). In Sigang Brigade, Guanze Commune, the Hu Hongshan household's total 1982 income of 11,614 yuan was also derived from three sources: agriculture (29 per cent), flowers (51.5 per cent) and transporting and selling saplings and flowers (17 per cent). The Lu Zhuxin household lives in Fenchang Brigade of Huagang Commune. Only 6 per cent of its total income of 19,319 yuan in 1982 came from agriculture, while the rest came from the truck transport business which it ran with a partner on an equal basis. These households put their main

efforts into one or two items, but they did not give up other lines of production.

In these examples, the family labour force is flexibly used in light of seasonal and farming needs. It may be concentrated on farming or sidelines at one time and divided up with each person responsible for one job at another time. The Liu Bangming household, for instance, has eight members and specializes in breeding in Gaoliu Commune's Zhangwu Brigade. In addition to contracting ten *mu* of land in 1982, it raised 3 sows, 61 piglets, 8 sheep, 1 marketable ox and 45 chickens managed 30 peach trees, 50 pear trees and 0.3 *mu* of vegetable garden, and kept a pond of 1,000 fry. Ordinarily, Liu Bangming took care of the orchard and vegetable garden, his wife fed the animals and poultry, his eldest son and daughter-in-law did the farming, and his two younger sons herded the ox and sheep after school. They did not need any outside help. In 1982 the family's income totalled 11,020 yuan of which 37.5 per cent came from agriculture and the rest from other sources. Their net income came to 10,075 yuan, averaging 2,878 yuan per working person (based on 3.5 full-time working persons). The Liu family may be representative of a fairly common type of farm household containing members of various ages.

Even the households that earn more than 10,000 yuan a year whose incomes are mainly derived from one source tend to take up other production activities. The previously mentioned Xiong Bingqi household of Nanchang County sold 50,000 kg. of grain in 1982. But 18.3 per cent of its total income of 23,710 yuan came from cash crops (2,740 yuan) and breeding (1,600 yuan). In Aishang Team, Luling Brigade of Jianning County's Huangyang Commune, the Li Guangdong family sold the state 20,500 kg. of dried grain in 1982, exceeding all the other farm households in grain sales in Fujian Province. This was an average of 2,928.5 kg. per member of the Li family. Among its 7 members, 2 had full working power and 3 could do auxiliary work. The household contracted 74.5 *mu* of land and harvested 26,000 kg. of dried grain that year. However,

a portion of their income still came from breeding pigs, chickens, ducks and fish.

Among the small number of specialized households that completely leave land operation, most will transfer the cultivation of their contracted land to others rather than return the land to the production team. This is because they want to keep a flexible link with the land so that they can come back to renew land cultivation when they meet setbacks in their specialized operations. In most places where the collective readjusts the scale of land operation, there are stipulations recognizing the specialized households' right to contract land whenever they want to switch to land cultivation. This ensures that they can engage in non-specialized fields of production in the future.

Somewhere in between the grain-producing and land-leaving specialized households are those specializing in cultivation. They generally cultivate cash crops, but their activities cover agriculture in the narrow sense, forestry and sidelines and their products are multifarious. They tend to be less specialized than the other specialized households.

Various places have large numbers of key households. Their proportions of income derived from specialized operations, marketable products and labour force devoted to specialized production are lower than those of specialized households. Therefore, they also engage in other fields of production to a greater degree. In many places such households account for 60-70 per cent of the total number of specialized and key households, and they number about 10 million among the nation's 15 million specialized and key households.

It should be noted that total income, including that from specialized production, does not completely reflect the economic activities of specialized households. Most of these households must devote a certain amount of products and labour to their own consumption. Generally speaking, their consumption is higher than that of ordinary farm households. For example, a household specializing in breeding must reserve large amounts of feed grain. In rating the specialized households in

various places, the products and labour for their own consumption are either not counted at all or are only partly included in the total income. If they are fully included, the specialized household's rate of income from the specialized line and marketable rate of specialized products will be lowered and the rate occupied by other production activities raised. This also reveals another characteristic of our rural specialized households: turning out both marketable goods and products for their own consumption.

From what has been said, we may conclude: The different kinds of rural specialized households in China also take up, in various degrees, other lines of production. They not only engage in several kinds of commodity production but also in production for their own consumption. The difference between ordinary and specialized households is the latter's concentration of family labour, funds and operations on several fields that provide high rates of marketable products. Other production, including that for their own consumption, makes up only a small fraction of their economic activities.

A better knowledge of the activities conducted by specialized households in their minor fields is of great significance in understanding their direction of development and the prospects of the rural division of work and trade in China. Therefore, we think it is necessary to make some theoretical and preliminary statements on the characteristics of this division.

The rural division of work develops with the continuous transformation of integrated labour into an entity composed of partial labour at many levels. This means that the whole of rural labour is divided into mutually independent and interlinked parts and that rural labourers are allocated to perform different labour functions. The features of the rural division of work and trade are not fully expressed in the levels which are divided differently than in the industrial system, nor are they seen clearly in the most common regulations governing the division. In examining this rural division, attention must be paid to the conditions and process of its development and the independent character of its different levels and their links.

The rural division of work and trade is based on agricultural labour, which possesses some fundamental features that are different from other kinds of labour. These features themselves limit the progress of this division. In other words, different kinds of productive forces give rise to different features of division.

First, the process of agricultural labour cannot be broken down into so many steps as industrial labour, thus reducing the opportunity for division of work in agriculture. This is mainly caused by differences in the objects of labour. No matter how advanced are the means of labour, agricultural labour takes living animals and plants as its objects of labour. This inevitably brings about "indivisible" space. For instance, the continuous planting process must follow the fixed growth cycle of living things, and the production period cannot be reduced by the division of the process into stages. There are intervals between sowing and harvesting which are necessary for the natural growth of crops and during which no human labour is required. They provide the basis for rural sideline labour that is constantly restricted by the growing conditions of crops. The growth of crops is subject to the complex changes in the environment and soil, which bring uncertainties in the periods for sideline labour and make it impossible to programme and standardize the alternation of agricultural and sideline labour. Since these two kinds of work are difficult to separate and make independent, they need to be handled flexibly at a certain level of management (for example, household operation).

Because of its vast population, relatively limited farmland and abundant species, China has long maintained a high multicropping index, made good use of complex crop rotation techniques and thus depended on the planting of different crops. Therefore, planting and breeding themselves or their specialization will give rise to minor lines of production or intermittent labour with seasonal spells of leisure. This is different from specialization in the industrial sense. Since industrial labour is not restricted by living objects of labour, technically every industrial process, procedure or even operational step

can be made continuous and independent and the final products can be mechanically combined. Thus there is no indivisible space.

Second, the efficiency elasticity of division of work and trade in agricultural labour is lower than that of industry. By efficiency elasticity is meant the extent to which changes in labour efficiency are brought about by a certain division. Specialization of work in industry can raise labour efficiency as many as several tens or hundreds of times, but the situation is much more complex in agriculture. For instance, owing to seasonal differences, one group of agricultural labourers may specialize in transplanting rice seedlings and another group in harvesting. Although this specialization can raise the efficiency of the two kinds of work respectively, the total production efficiency will be enormously reduced because the continuity of the labour process is broken. Therefore, even the most advanced farm machines also seek to preform multi-purpose functions instead of doing a single job. The division of work and trade is often prevented from following the industrial model by the limited increase of efficiency or the negative results.

Third, agricultural activities with the same efficiency elasticity of division of work often involve higher costs than industrial activities. This is mostly a result of the immobility of land. A basic feature of farm labour lies in the fact that labourers must carry their tools to attend to plants and animals in fixed places. As a result, the division of work and trade generally creates higher expenses, whereas the same division in factories could save on expenses for equipment and buildings. When the number of large farm machines and implements for our state reclamation system was insufficient, it adopted the method of using a group of machine ploughing teams to serve its farms across the country: taking advantage of regional temperature differences, the teams started from Hainan Island in the south in early spring and gradually moved towards Beidahuang in the far north. Their efficiency was evidently raised, but the costs of transport and management jumped tremendously. Moreover, the objects of agricultural

labour require a fairly long period of growth, which causes prolonged idle periods of more specialized manpower and implements and thus rapidly pushes costs up.

Fourth, farm labour is directly influenced by the natural environment and many uncontrollable factors. If the environment changes, the stability of division of work and trade will be affected. This means that the limits of division can be easily changed and that any major changes in farm labour engaging in food production will give rise to changes in the system of rural division of work or even in that of the division of work in the national economy. All this is clearly different from industrial labour.

In short, because of the differences in the size of technically indivisible space, in the efficiency elasticity and costs of division of work and in the stability of division of work and trade, the agricultural division of work and trade, unlike the industrial division of work, has to preserve the practice of engaging in sidelines.

This doubtlessly seems backward from the industrial viewpoint. It is precisely this backwardness that has caused nearly all agricultural nations to lag behind in modern times. Unless this backward pattern of division of work is altered, there can be no basic change in the low international status of large agricultural countries. Thus, expanding the rural division of work and promoting rural commodity production become tasks of historic importance.

However, the necessity for transforming the rural division of work and how to perform the transformation are two different questions. The rise of modern industry provides the basis for the former but fails to solve the latter completely. No matter how much modern industrial equipment and how many advanced methods are used, even the most developed countries like the United States have not been able to create an agricultural system based completely on factory-like production. The agricultural practice of sideline production is still preserved. Even as agriculture has developed into quite non-traditional

forms, evidently it has not advanced along the lines of the industrial division of work. At the same time, it is the most developed countries that help us to understand the huge costs and the nearly insurmountable obstacles in terms of energy and the environment brought about by transforming the rural structure of division of work with industrial models.

We must give serious consideration to this fact. China has neither the ability nor the need to follow the road in transforming the rural division of work which has been unsuccessfully taken by the developed countries. We do not have the resources to spare, and modern science and technology are providing and will continue to provide new, alternate technical possibilities.

From the technical point of view that strives for the full mechanization of agriculture, the practice of sideline production must be completely shattered and the division of work must be thoroughly carried out. But the emergence of modern biological techniques taking life as their object of study and of ecological techniques dealing with the interactions taking place in nature calls for a re-evaluation of the practice of sideline production in agriculture. First, because labour which takes life as its object of work is basically comprehensive in nature, and the need of doing sideline work merits full and particular attention. Second, by preserving the practice of sideline production, not only can the transformation of the traditional agricultural system be carried out, but better results with fewer expenses may be expected.*

Modern farm techniques no longer strive to adapt the live resources to machines and their systems. They set great store by organic links and increasingly put machines and other in-

* Modern science has devoted considerable attention to the interdependent nature of living things. For example, at the environmental research laboratory in Tucson, Arizona, U.S.A., river shrimps are bred in rectangular channels enclosed in greenhouses in which cucumbers and lettuce are raised and the former's excrement is used to fertilize the vegetables. In Vermont, similar experiments are undertaken in raising trout and cultivating vegetables. The water in fish ponds absorbs solar heat in the daytime which is used to raise temperatures at night. The excrement of the fish becomes fertilizer for the vegetables.

organic things in a subordinate position in the production process. Therefore, they share a common characteristic with traditional agriculture: in that there is no need to eliminate the comprehensive activity of sideline production. Of course, we are not ignoring the fundamentally different technical bases of modern agricultural techniques and ancient traditional agriculture. Entirely different results are produced by the purely natural and passive adaptation to the organic links of existing species and by the full exploration of the secrets of nature, the understanding and creation of new species and the use of their organic links, which has scientific, cultural and technological implications. Our point is that through the co-ordination of techniques for creating new species, energy technology more suited to the rural areas, and related communications and comprehensive ecological technology, it may be possible to modernize rural sideline production within the framework of traditional farm sideline production with relatively low costs and in a relatively short period.

For us, this is by no means an insignificant choice. China is a big country widely known for its traditional agriculture. Whether it can accelerate the development of agriculture depends to a large extent on its ability to integrate aspects of its old civilization with more advanced modern technology.

Therefore, we hold that the long-term preservation of rural sidelines will become a universal trend in the development of specialized households. Future trends may be towards a reduced number of unitary management items and an increase in new items. Examples can be easily found among the existing special households. In Liuyang County, Hunan Province, after their major production items have developed to a certain point,

At a research institute in Massachusetts, chicks have been bred along the surface of fish ponds where their eggs fertilize the water weeds that become fish food. (*The Third Wave*, pp. 414-415.) Molecular biologist Haim Aviv of the Sinai Peninsula has put forward a joint industrial and agricultural project cultivating cassava and sugarcane using advanced techniques, turning them into alcohol for motorcar fuel, using the by-products from the sugarcane as cattle and sheep feed and supplying the fibre waste to paper mills. A complete ecological cycle is thus formed. (*The Third Wave*, p. 414.)

some specialized households began to diversify their management while keeping their major production items. Grain-producing specialized households also went in for breeding pigs, chick-raising specialized households bred pigs with chickens' excrement and fish-breeding specialized households set up piglet farms, thereby giving rise to a comprehensive household system of keeping fish, pigs and chickens. Clearly this is not an advance along the lines of industrial specialization, nor can it be considered to represent the traditional practice of attempting all-round development within small units. Making use of funds derived from their major items of production, many specialized households in Guangdong Province also engaged in different kinds of agriculture with a variety far exceeding the traditional method of combining the cultivation of mulberry trees with fish breeding, using mud from the fish ponds to fertilize mulberry trees and the silk-worms' excrement to feed the fish. However, no generally applicable conclusion can be made by simply collecting individual cases. We must still seek new ideas through the thorough and all-round study of the vigorous growth of rural specialized households.

IV. BUSINESS SCOPE OF SPECIALIZED HOUSEHOLDS

The vigorous growth of specialized households indicates the proper orientation for the new combination of rural productive factors following the universal adoption of the contract system linked with output: we must seek the proper and most effective scale on which to conduct household operation without leaving the framework of household management.

This contract system, especially the contract system that allows a household to keep all remaining output after giving a fixed amount to the collective, breaks away from the framework of "bigger size and higher socialist nature" with its concentration of labour and creates universal small-scale groupings and turns peasant households into the basic units of rural management in China. Because this profound change suits the needs of agricultural management under China's specific conditions, it has enormously liberated the rural productive forces and brought about a rural reform that has won much praise in society. The change represents a first step in finding a successful combination of rural productive factors in order to achieve fruitful results through small-scale management.

No matter from which angle our rural modernization effort is looked at, it is clear that a first successful step cannot solve our fundamental problems. After the first step has effectively helped the peasants to lead comfortable lives and substantially developed the rural economy comes the need to take another step to expand the rural productive forces. Then, in which direction should we proceed in finding a better combination of the rural productive factors? Will we need to start seeking a new effectiveness of scale on the basis of developing the peasants' enthusiasm? If so, should the framework of household operation be surpassed? These are questions that must be answered.

One opinion holds that household operation cannot be discussed in terms of effectiveness of scale for it is always linked up with small-scale operation. Interesting enough is the fact that this traditional opinion is often expressed in two extremely conflicting forms. Although the household contract system has proven effective in China's rural areas, according to one form of the argument, modernization requires large-scale production. By citing the declining ratios of small-scale operation in developed countries, it pits the economy derived from scale against household farm operation. Judging by the trends of centralized production and capital, it predicts the destined doom of household operations and the inevitable outcome of organizing big companies, thereby opposing the principle of the "perpetual existence of small-scale or household operations."* Another form of argument admits that household

* *Brief Introduction to Agriculture in Foreign Countries and the Question of Parity Prices Between Industrial and Agricultural Products*, p. 43; *State Monopoly Capitalism — Common and Special Features*, edited by Dlajuieph, Chinese translation published by Shanghai Yiwen (Translation) Publishing House, p. 445; *General Introduction to the U.S. Economy*, Shijie Zhishi (World Affairs) Publishing House, p. 92.

operation is universally suitable in agriculture. In order to refute the first argument, however, it denies the "inevitable link between modernization and scale of production," claiming that small-scale household operation may also take the road of socialization and modernization.* These two arguments appear to be diametrically opposed, but their basic premise is the same: household operations are always small-scale ones.

But the development of specialized households shows that the rural household operation may also pursue effectiveness of scale, enlarging the scale of combined operations. This trend is obscured by the phenomenon of specialized households undertaking minor lines of production in the course of their growth, and therefore, an analysis is necessary.

This trend would have been unimaginable in the times of traditional agriculture. Under modern conditions, the concept of the scale of operation has acquired broader meaning so that it not only denotes manpower and space but also includes the intensive degrees and combination proportions of many modern productive factors.

Operation, as we all know, refers to the activity of organizing various productive factors to achieve certain economic aims. The scale of operation is nothing but the scope of organization of these factors. Under traditional agriculture, where the major productive factors were land and labour, the expansion of production scale meant the increase of land area and the concentration of labour, while household operation could only be carried out on a small scale. But modern agricultural production extends the length of economic chains by incorporating more productive factors in the process of turning out the final product. Factors other than land and population — factors endowed by nature — are playing an increasingly

* Lin Zili, "On the Road of Development of Socialist Agriculture with Chinese Features," *Zhongguo Shehui Kexue (Social Sciences in China)*, No. 2, 1983, pp. 116-117.

greater role. These include industrial factors (chemical fertilizers, insecticides and farm machines and tools), scientific factors (technology and information), factors related to the development of social contacts (information of different kinds and transport), and factors determined by vision, mettle and organizing ability that play a role following the introduction of the above factors. The composition of factors is richer and more important than during the era of traditional agriculture, and the scale of operation cannot be judged by a few simple standards.

For instance, high-power tractors with multi-purpose attachments enable a family farm in the U.S. to cultivate 100-500 acres of land. Although managed chiefly by a family, this is not a small-scale operation. In 1981 an average farm in the U.S. managed 429 acres or 2,347.6 *mu*, more than double the 1950 average of 213 acres. The number of farms run by individual families in 1978 accounted for 87.3 per cent of the national total (another 9.7 per cent were managed by several families of near relations).* Thanks to advances in intensive farming techniques, a farm household may invest large sums in a few acres in undertaking a "micro-operation," that is, garden agriculture or scientific research whose composition of capital may far surpass that of modern industrial enterprises. Such a farm may sell more than 100,000 U.S. dollars worth of products a year and become a large farm from the point of view of sales.

Therefore, modernization and scale of production have internal links, and household operation is not in conflict with the scale required for modern agriculture. It is crucial that we give up the traditional agricultural viewpoint of assessing the scale of production solely by the concentration of human labour.

The transformation of our agriculture from its traditional mode into a modern operation cannot but involve corresponding changes in the scale of rural operation. But the relations

* Lu Wen, "Family Farms in the United States," *Shijie Nongye (World Agriculture)*, No. 6, 1983, p. 4.

between scale of operation and efficiency are fairly complicated. They call for theoretical discussions and new conclusions based on practical experience.

In discussing the relations between the scale of operation and economic effectiveness, we proceed from the following basic viewpoint: Effectiveness is affected by fluctuations in a series of internal and external conditions which influence the scale of operation. The scale of operation is only a subsidiary factor.

As we have previously mentioned, an operation consists of a combination of productive factors. Therefore, any scale of operation always includes several factors of different qualities and can never be the quantitative piling up of a single factor. The effectiveness is affected primarily by the specific factors entering into the process of operation, the resources and techniques behind them, the continuous introduction of modern factors and the mechanism to carry out the operation. If an operation consists entirely of traditional factors, the resources to provide these factors have already been exhausted or the related techniques are rather backward, and the combination is very conservative and refuses to take in new factors, then it is destined to have low effectiveness of operation no matter how big its size is.

However, the continuous introduction of modern factors (even if they have relatively better resources and techniques behind them) alone cannot ensure effectiveness because the combination of factors requires that the proper ratio exist between the newly introduced and the existing factors. This touches a basic concept of operation scale — proportions. Without proper proportions of various factors, the practical operation will not be very effective. For instance, "excessive" application of chemical fertilizers will kill crops. "Excessive" means not proportional to a certain area of land with specific qualities, a certain crop and certain irrigation conditions.

The proportions of combination constitute a standard by which to measure the scale of operation. For example, 100 persons cultivating 200 *mu* and two persons cultivating four

mu are on the same scale of operation. Unfortunately we often regard the "big size" as an extension of scale.

The mutual adaptation of different factors should also be considered. For instance, the adaptation of the higher educational level of people to the introduction of modern biological technology and the breeding of good strains suited to local climates are things that cannot be reflected in the size of scale, but they can exert enormous influence on effectiveness.

The above considerations are limited to the internal structure of the scale of operation. It is also necessary to consider the relations between the combination of operation and external activities.

The functions of the agricultural system are becoming increasingly complicated. No farm, no matter how big, can perform all of the functions ranging from basic scientific research to actual operation, processing, marketing and forecasting. There is a worldwide tendency for various organizations at different levels to interweave agricultural and non-agricultural functions and their performance in an ever increasing social scope. Thus, the relations between scale and effectiveness in a combination for agricultural operation are more and more dependent on the forms of connections with many other organizations and combinations at different levels. Whether the division of functions is optimal, whether the interflow between materials and energy is smooth, and whether the channels for communicating information are well developed, are no longer irrelevant external affairs. They all exert strong influence on the effectiveness of scale. The scale of operation has an internal structure, but the structure that exists between combinations of operation also affects the effectiveness. We may use the new concept of "structure of scale" to describe the relations between combinations of operation with different functions, sizes and at different levels. This structure affects the scale of operation, and the changes in scale will in turn affect effectiveness. This is a complicated process worthy of study.

Finally, the way in which the system of combination of

operation deals with changes in the production environment also exerts tremendous influence on the relations between scale and effectiveness.

An outstanding feature of the agricultural production environment is the presence of many uncertain factors, which increase risks in operation.* Special requirements for the scale of agricultural operation arise from the need to reduce risks. Generally speaking, larger scale enhances the ability to overcome risks and leaves open the possibility for retreat while smaller scale diffuses risks and facilitates the flexible use of tactics. Thus, an "appropriate scale" is necessary to ensure both sufficient strength and the ability to overcome flexibly and to diffuse risks. Another requirement relating to scale is that decisions should not be made at places far from the place of activity so as to realize a highly effective operation in agriculture and overcome the many uncertainties involved. On one hand, agriculture has to suit itself to local conditions, because any slight change in seasonal, spatial, mechanical and biological factors calls for quick and proper handling. On the other hand, the modernization process of agriculture requires the continuous input of new and high-grade factors and products of intellectual development and close attention to the feedback signals after such input. Decisions made at far-away places cannot make full use of available information.** Only when operators can give overall consideration on the spot will the maximum reduction of mistakes in decision-making be effected. This sets strict limits on scale, especially on the area, scope and size of operation.

In short, any change in the scale of operation and the way of adapting to the environment may result in a change in effectiveness. Numerous factors affect the scale of operation. They include the features and proportions of the component

* "The Historical Need for 'Recombination' and Its Realization in the Contract System Linked with Output," *Xuexi Yu Tansuo* (*Study and Exploration*), No. 5, 1983.

** Theodore W. Schultz, *Transforming Traditional Agriculture,* Chapter 8.

factors, the distribution of functions at various levels, the connections between different combinations, and risks and uncertainties. Moreover, these factors exert influence in a comprehensive way. Isolated discussions of the scale of operation have little theoretical or practical meaning.

The previous discussion, though rudimentary, may help us to understand the changes taking place in the scale of operation during our agricultural modernization and sum up the practical experience of specialized households seeking scale effectiveness on the basis of household operation.

Judging by collected materials, special households generally use the following methods in developing their traditional scale of operation.

(1) Specialized households have generally increased their input of funds and technology and improved their management ability in the original combination of productive factors and, when conditions were available, expanded the areas of cultivated land (especially to barren hills and slopes), thus creating an intensive operation by farm households centring round one productive factor.

It is clear that specialized households tend to make larger investments than ordinary contracting households. According to the material we have collected from Zhejiang, Jiangsu, Shanxi and Guangdong provinces, a specialized household whose annual output value exceeds 10,000 yuan needs 2,500-4,000 yuan for production expenses. Some specialized households breeding aquatic products in the region along the coast near Ningbo invested more than 14,000 yuan each, and many grain-producing specialized households in Shanxi spent over 5,000 yuan in production costs. In addition to investing their own funds, specialized and key households generally take out more loans. The amount in loans borrowed from the agricultural bank and credit co-operative by such households in Haicheng County, Liaoning Province, averaged four times that borrowed by ordinary farm households. Preliminary figures indicate that seven provinces including Shanxi, Shandong and

Hubei issued 120 million yuan in loans to specialized households in 1982.*

Another major factor contributing to the economic effectiveness of specialized households is their study and application of science and technology as an intellectual investment. Examples demonstrating the extension of land area have already been cited in our discussion of grain-producing specialized households. Some contract households specialize in forestry, each taking care of several thousand *mu* of barren mountain land in Fujian, Jiangxi and Yunnan provinces.

The growth of specialized households has absorbed large amounts of rural surplus labour and introduced the use of outside labour in various forms. Although the decision-making in the operation is done by the specialized households, the use of labour has gone beyond household limits. This has drawn a great deal of attention.

All these factors indicate that the scale of operation by specialized households is different from that of contracted farm households and tremendously exceeds that of traditional small peasants.

(2) Specialized households have accelerated their pace of operation and actually enlarged their scale of operation through the full utilization of timing.

In the suburbs of Nanjing, the construction of a large ranch will take at least two years. The investment costs are more than 4,000 yuan for a milch cow, 500 yuan for a sow, 100 yuan for a fat pig and 40-50 yuan for an egg-laying hen. The ranch cannot make any profit for several years after its establishment. However, without state investment, specialized households can set up a ranch with a small amount of loans. Moreover, the ranch can return a profit within a year. For instance, Pan Jihua is a member of the Panying Team under Getang Commune in Dachang distirct. He set up a family chicken farm in 1982 with an investment of 202 yuan, and its 200 hens laid eggs worth 1,270 yuan in the same year or an average of

* *Jingji Ribao* (*Economic Daily*), January 10, 1983.

6.28 yuan for every yuan of investment. This is only one of many such examples. Household-run poultry farms are generally regarded as small undertakings. Now the time element and investment cycles have made people reconsider the scale of these farms.

Even more convincing examples may be found in Guangdong Province. By the intensive investment of funds and use of proper techniques, households specializing in breeding enormously shortened the cycle of production. Their output rose several-fold using the same fields, barns and other equipment, which is tantamount to enlarging their scale of operation. Many pig-raising specialized households bred two batches of pigs (with about 100 in a batch) in a year, with the highest record for a household at 300 pigs or 20,000-25,000 kg. of marketable pork. Chicken-raising specialized households could sell their indigenous breeds in 120 days and fine breeds in some 60 days. The Liu Yaolin household of Maobian Brigade in Wanjiang Commune, Dongguan County, raised batches of 7,000 chickens for 20 days. Other breeders worked out accounts after having bred a batch of chickens, but the Liu family calculated the calories, protein and nutritional value every day and knew their gains and losses at all times.

Households specializing in cultivation, especially those planting vegetables, fruits, medicinal herbs and flowers, generally use fine strains and have a high turnover. Turnover is even greater in households specializing in handicrafts or trade.

The growth of commodity production increasingly provides the possibility of changing time into space which is unimaginable under the natural economic conditions. Its beneficial influence on raising the effectiveness of scale is just emerging in the countryside. There are great prospects for specialized households to make the increasingly good use of the time factor.

(3) Specialized households have an example that has encouraged the appearance of specialized villages.

In Yangcheng County, Shanxi Province, the standards for a specialized village are: 40 per cent of its households and

over 60 per cent of its labour force must be mainly devoted to a particular kind of production, and more than 60 per cent of its total income must come from this source. Yanshan Brigade, Dongfeng Commune, is a silkworm-raising village. From this activity 24 of its households earned an average of more than 500 yuan a year and anohter 170 households earned an average of over 300 yuan. The village has 140,000 mulberry trees along the ridges of fields, averaging 150 trees per capita. There are also villages specializing in growing sweet potatoes and making fire-proof bricks or machine parts.

On the outskirts of Nanjing, a specialized village may be a brigade with over 30 per cent of its households or a production team with more than 50 per cent of its households mainly specializing in a line of production and turning out large amounts of commodities. At present there are villages each selling annually several hundred pigs, 10,000 piglets, tens of thousands of poultry, tons of eggs, several thousand kilograms of silkworm cocoons or several hundred thousand saplings.

In Beizhen County, Liaoning Province, there are 22 specialized villages whose specialized households in the same field of production exceed 50 per cent of the village's total number of households, and net income from this source surpasses 50 per cent of the village's total.

With the exception of one household that lives on welfare funds, all the other 425 households at Yuanjuesi Brigade in Baojia Commune cultivate grapes, and the brigade has become known as a grape village. More than 100 households each produced over 1,500 kg. of grapes in 1983. In 1982 the brigade's total output was 200,000 kg., and it was estimated to reach 350,000 kg. in 1983 with a total income of 250,000 yuan, averaging 160 yuan per capita. Vine cultivation has spread rapidly in the commune, and 61 per cent of its households have taken up this branch of horticulture. In a few years Baojia itself will become a specialized commune in grape-growing. Even more interesting changes have taken place in Xishahe Brigade, which specializes in making tiles. Thirteen

households take care of marketing, 96 handle transport and 110 produce tiles. Close links have been established among these households.

There are milch cow villages in Anda County, Heilongjiang Province. At Yangcao Commune's Huoxing Brigade, 380 of its 430 households, or 84.4 per cent of the total, bred 613 milch cows in June 1983. The brigade sold 1,150 tons of fresh milk and earned 460,000 yuan in 1982, a sum higher than its total agricultural income. Each cow-breeding household sold an average of 3.2 tons of fresh milk and per-capita income averaged 170 yuan or twice the brigade's per-capita income from the collective. If the state wanted to raise the same number of cows as the brigade does, it would need to set up two large ranches each containing 300 cows, with an investment of at least one million yuan.

Specialized villages develop both the local strong points and the special skills of households. Even if the specialized villages maintain their present scale of operation, their batch production of commodities makes the spread of new techniques in processing, transport, marketing and communication of information much easier than before. It also strengthens the specialized households' ties with the outside and improves the "structure of scale" determining relations among households, thus enhancing the effectiveness of scale. The special villages are blazing a new trail which differs from the system of setting up agricultural production bases with state investment, and promoting the rural division of work and trade in a more extensive and effective way.

(4) Specialized households have gradually given up the operating method characterized by small size but all inclusion, and paid attention to the need for socialized economic links before and after production. This will qualitatively improve their structure of scale and effectiveness.

As the scale of operation of specialized households is extended, they will tend to concentrate their efforts on the direct production of one or more products and have to depend, to a large extent, on society to provide the operating links serving

direct production. This is one of the most urgent problems to be solved in the development of specialized households, which also reflects the increasing need for the inclusion of more socialized economic factors into the specialized households' combination of operating factors. The enlargement of the scale of division of work and trade by changing the structure of the specialized households' links before and after production will exert far-reaching influence upon the new patterns of division of work. Now it is becoming necessary to establish various forms of joint rural organizations to solve the pressing needs of specialized households for funds, techniques, pedigree animals and poultry, feed, fertilizers and insecticides, building materials, equipment and tools, veterinary service, plant protection, processing, transport and market information. At the same time, by making full use of the available resources of the state, collective and farm households, many places are setting up rural technical and economic service centres which form a new network linking contracted and specialized households with the rural technical and economic organizations. This network is a relatively complete system of socialized service to meet the needs arising from the growth of specialized households.

The socialized service system does not alter the basis of farm household operation because the service provides only the conditions for operation and cannot replace decision-making in the operation. In the actual operation the farm households decide what services they will accept and to what extent and take the risks involved in decision-making. A good socialized service system is necessary for the economic effectiveness of specialized households and the agricultural system as a whole.

For instance, on the basis of rapid increase of goose-breeding specialized households in Xiangshan County, Zhejiang Province, the cold storage plant of a local food factory supplied fine pedigree geese and goose eggs to households and provided them with funds and feed. It regarded them as its "No. 1 workshop." Then, it would purchase the geese at

reasonable prices and export them after processing. Since 1978 the number of geese raised in the county has gone up from 120,000 to 300,000 a year, and the plant has processed 250,000 frozen geese, exporting 384 tons and earning 1.8 million U.S. dollars. The county's goose-breeding households earned a total of one million yuan. During this period the plant turned nearly one million yuan over to the state in the form of taxes and profits and built a feather-processing mill which made a profit of 80,000 yuan in 1982. There have been similar cases throughout the nation.

The scales of specialized production obviously cannot be limited to household operation. It must be considered as part of a wider range of activities connected through socialized economic links.

The system of specialized households has played a meaningful role in leading the peasants who have engaged in rural specialized and socialized production. It provides a form for engaging in minor lines of production that can be practised for a long time to come as we are continually renewing the structure of specialized production and improving its effectiveness of scale. These are the features that make the specialized household a foundation for extensive development in our rural areas. The specialized household has been incorporated into our programme for socialist agricultural modernization with distinct Chinese features. It may be predicted that this form will show still greater vitality in the course of future rural division of work and trade as continued study of the progress of specialized households will remain a basic topic in the overall study of the rural division of work and trade.

A DEVELOPMENT STRATEGY FOR CHINA'S AGRICULTURE

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I. POINT OF DEPARTURE FOR FORMULATING A DEVELOPMENT STRATEGY FOR AGRICULTURE

In formulating a development strategy for Chinese agriculture, we should, firstly, consider China's specific conditions and its actual capabilities, and, secondly, summarize our experience — both positive and negative — gained since the founding of the People's Republic in 1949. We should, in particular, summarize the positive experience we have accumulated over the structural reform of national economy since the Third Plenary Session of the Eleventh Central Committee of the Chinese Communist Party held in late 1978. It is, of course, also necessary to use as reference the advanced experience of other countries.

Generally speaking, the following specific conditions of our country can be regarded as most closely related to its agricultural development: (i) the socialist ownership in agriculture; (ii) the vast territory, rich natural resources, the existence of 800 million peasants out of a total population of one billion, and the markedly different natural conditions in the various regions; (iii) the preliminary foundation laid during the past three decades of national construction. But industrial and agricultural production remains at a low level, as does scientific and cultural development. China's level of economic management is particularly low, its material foundation poor and

commodity production undeveloped. Economic growth in the different regions is notably uneven.

From the above-mentioned conditions derive the following three advantages: (i) a superior socialist system; (ii) a vast source of rural labour power invested with infinite creativity; (iii) fairly rich resources for farming, forestry, animal husbandry, sideline occupations, and fishery as well as an extensive market for their products.

Meanwhile, there also exist the following three contradictions or difficulties: (i) A shortage of arable land and a low level of productivity. This poses the problem of how to bring about an abundance of agricultural products to meet the needs of China's one billion people, and how to achieve prosperity for the 800 million peasants. (ii) The various economic units and the country as a whole are materially poor, and a huge investment is required by China's modernization programme. This poses the problem of how to harmonize the relationship between industrial and agricultural production and circulation, etc., and of how to continuously increase — with agriculture as the basis — the necessary capital for agricultural modernization. (iii) Along with the progress in farm mechanization and the production responsibility system, more and more rural labour power is released from production. This poses the problem of how to make effective use of the enormous labour power in the urban and rural areas so as to develop production both in breadth and depth.

Due to lack of experience and, in particular, due to the "Left" errors in our work, for a long period we have been unable to fully exploit the three advantages and to properly deal with the three contradictions and difficulties we have just mentioned. For years we were subjective and impetuous in directing production. Disregarding the specific conditions and capabilities of the country and the uneven economic development of its various regions, some people set excessively high targets, used uniform methods, issued arbitrary orders, often setting out like a gust of wind and then leaving everything to take its own course. We preferred a unitary economic structure,

stressing economic units under the ownership of the whole people at the expense of collectively-owned ones and to the exclusion of those run by self-employed labourers. Agriculture was adversely affected by industry, and cultivation of economic crops, forestry, animal husbandry, sideline occupations, fishery and other diversified undertakings by grain production. In administrative structure, we tended to substitute government functions for enterprise management and create barriers between higher and lower levels. In labour organization, there was a tendency to rush headlong into mass action. Egalitarianism prevailed in matters of distribution while state commercial establishments monopolized the sphere of circulation. All these errors had the following results: The enthusiasm and creativity of the 800 million peasants were seriously hindered, which caused an appalling waste of labour power. Some natural resources lay unused while some were exploited predatorily. There was damage to various resources, as can be seen most readily in the water and soil loss and the reduced soil fertility. Natural calamities became more frequent than previously, the ecological balance worsened to a grave degree, and commodity circulation was hampered and even obstructed. Consequently, agricultural growth slowed down for many years after 1957, and for a time it even retrogressed. Quite a few production teams were unable to carry out expanded or even simple reproduction.

The recent nationwide economic reforms put an end to the protracted period of "Left" errors and set guidelines for economic construction based on China's actual conditions and capabilities and conforming to the principles of seeking truth from facts and of advancing step by step. The reform with an aim to readjusting, restructuring, consolidating and improving the national economy, has virtually given top priority to agriculture. The central authorities have issued a series of major documents on agricultural production and set forth policies and measures respecting the decision-making powers of the production teams, introducing varied forms of the production responsibility system, developing a diversified economy, restoring fair trade and raising the purchase prices of farm products. These policies have yielded notable results. There has been an all-round expansion of farming, forestry, animal husbandry, sideline occupations and fishery, production in all of which has risen extensively. In 1979-82, total output value of agriculture rose at an annual average of 7.5 per cent as compared with 4.5 per cent for the period from 1953-57. Greater increases were expected for the year 1983. The peasants' standard of living has risen markedly, as witnessed by the unprecedented average increase of 18 per cent in the net income of peasant families over the years 1979-81. A great increase in the monetary income of the peasants was recorded in 1982, which came to a total of 170.5 billion yuan, that is, an increase of 18.6 billion yuan (or 12.3 per cent) over the preceding year. Another indication of this trend was the sharp rise in the number of peasant families earning far more income than in 1981, as against the striking decrease in the number of those still having difficulties due to less income. According to surveys of over 20,000 families in 28 provinces, municipalities and autonomous regions, the percentage of well-off families reporting a per-capita income of more than 300 yuan went up from 2.4 in 1978 to 36.2 in 1982, while that of needy families with a per-capita income of less than 100 yuan fell from 33.3 to 2.7. The overwhelming majority of China's 231 most economically backward counties have basically solved the problem of food and clothing.

We must, however, keep in mind the fact that only a few years have elapsed since the rural economic reform started and that the comprehensive readjustment of China's economic structure is just beginning. A radical change for the better has yet to take place in the serious disproportions between industry and agriculture and between production and circulation, in the incapability of agriculture to practise expanded reproduction on its own, and in the grievous disruption of the ecological balance and natural resources. As regards the reform of the administrative system, basically speaking, the restructuring of the circulation and people's commune systems

is still in a stage of experimentation, even though remarkable successes have been scored in the responsibility system for farm production and good preliminary results have been obtained in the integrated operation of farming, industry and commerce. In any case, the experience that has been gained is valuable and should be summarized and studied from a strategic point of view. It will be particularly beneficial to study this experience in connection with the experience — positive and negative — gained during the previous two decades or so.

We have carried out a policy of instituting reform first in agriculture because of the following: (1) Agriculture is particularly backward, and there is a general shortage of food so that reform has become a pressing need. (2) The susceptibility of agriculture to the elements of nature has determined the need for adaptation of human efforts to specific local conditions, and made the disadvantages of centralized management of agricultural production stand out most clearly. (3) Economic reform calls for a greater use of commodity production and circulation, and China's agriculture, being mostly under collective ownership, is more conducive to commodity production and hence militates less against reform than industry. (4) Agriculture is more capable of operating on its own than other economic areas.

We should consciously make use of the initial results and experience in agricultural reform and push forward reforms in industry and other spheres. The latter reforms, in their turn, will impel further reforms in agriculture and the development in the agricultural branch of the national economy.

II. SOME TENTATIVE IDEAS ON THE STRATEGIC OBJECTIVE OF AGRICULTURAL DEVELOPMENT

In view of China's specific conditions and actual capabilities, the strategic objective of its agricultural development should be the building, through readjustment, restructuring and expansion, of a modern socialist agriculture which is intensive, rational, economical and practical and characterized by large-scale commodity production — an agriculture whose purpose is to satisfy the needs of the country's one billion people and its industries for grain and other farm products, to greatly increase the income of the 800 million Chinese peasants and so improve their living standard, and to build a new, rich countryside which engages in a combination of farming, industry, commerce and transport service, integrating the urban and rural areas, and goes in for comprehensive development.

By intensive agriculture we mean the increase in output and income from a unit area by expending more living and materialized labour, and the securing from limited arable land of as much material wealth as possible to meet the needs of society. The same applies to forestry, animal husbandry, sideline occupations and fishery. Only by carrying forward a tradition of intensive and meticulous farming can China put to good use its vast resources of labour power, make up for its lack of arable land and thus quicken its agricultural development.

Given the current level of development of our productive forces, the first step strives mainly to achieve labour-intensiveness, and the second step to apply science and technology intensively. It is, of course, necessary to simultaneously increase investment in agriculture to an appropriate extent and to undertake some farmland improvement projects which can yield practical results in order to lay the material foundation for advanced agriculture.

By rational agriculture we mean: (i) the effective preservation and rational utilization of agricultural resources, and a favourable ecological cycle; (ii) the combination of farming, forestry, animal husbandry, sideline occupations and fishery, the integrated operation of farming, industry, commerce and transport service, and a rational economic structure; (iii) a favourable cycle of production, distribution, exchange and consumption; the co-ordination of production, supply and marketing; and a developed commodity production; (iv) the capability of agricultural enterprises to engage in expanded

reproduction and continuously increase accumulation, and a favourable cycle of the turnover of funds; (v) allocation of decision-making power of agricultural enterprises in matters of operation so that the peasants are really their own masters, and full scope is given to their specialized skills and creativity.

By economical and practical agriculture we mean the securing of substantial economic results with low investment, i.e., low expenditure of living and materialized labour, so that we can bring about an agricultural production system characterized by high and stable yields, good quality, low costs, increased earnings, fast-improving livelihood for the peasants, increased material benefit for society, and a favourable cycle of materials and energy.

By developed commodity production we mean the development of commodity production and exchange under the guidance of state plans, and the full exploitation, through specialized and socialized productive undertakings, of the abundant human and natural resources of the various regions.

By modern agriculture we mean socialized, large-scale agriculture which is based on socialist collective ownership, armed gradually and at selected points with modern industrial equipment and modern science and technology, and run by modern scientific methods.

By greatly increasing the peasants' income and improving their living standard we mean the creation of an abundance of farm products per capita and enabling the peasants to be comparatively well-off by the end of the present century, then to approach the living standards of workers and other employees in the cities and then go a step further to attain the living standard reached in the advanced countries.

By building a new, rich countryside that combines farming, industry, commerce and transport service, integrates the urban and rural areas and is capable of comprehensive development we mean developing in the countryside industrial, commercial, general service and transport enterprises, developing cultural, educational, public health, physical culture, scientific and other public undertakings, and developing market towns and

other small towns and gradually modernizing them. In a word, we mean the all-round social, economical and cultural development of the countryside and gradually narrowing the difference between town and country.

We estimate that it will take about 30 to 50 years to realize the above-listed goals.

Hu Yaobang, General Secretary of Central Committee of the Communist Party of China, pointed out in his report to the Party's Twelfth National Congress convened in September 1982, that, while steadily working for more and better economic results, China aims to quadruple the total annual value of its industrial and agricultural production in the two decades before the end of the 20th century. This represents a big, decisive step in China's effort to reach the long-term objective it has set for itself. Based on this goal and the real potential of Chinese agriculture for expanding production, it is estimated that the total value of China's agricultural production will jump from 222.3 billion yuan in 1980 to over 600 billion yuan in 2000, 2.8 times the 1980 figure, which represents an average annual rate of 5.2 per cent, a rate which compares favourably with relevant figures abroad. As the national economy undergoes readjustment and restructuring during the first decade, agriculture may develop at a somewhat moderate speed, while a much higher rate of growth is expected for the second decade.

Progressing in the pattern given above, China's agriculture will take on a new appearance by the close of this century, with both its labour productivity and rate of marketable products registering a fairly big increase. Compared with 1980, the average amount of grain, cotton, edible oils, meat and sugar produced by or attributable to each able-bodied peasant will be multiplied by a factor of 1.5-2.8. The proportion of marketable agricultural products will rise by 60 per cent over the present level. Assuming that China's population will reach 1.2 billion by the end of the century, the annual per-capita amount of farm products will be 425 kg. of grain, 30.2 per

cent more than in 1980; edible oils, 6 kg., a 2.3-fold increase; pork, beef and mutton, 25 kg., a 2-fold increase; aquatic products, 9 kg., a 96 per cent increase; and sugar, 7.5 kg., a 2.7-fold increase. There will also be much greater supplies of fruits and vegetables. Judged by the change in the pattern of consumption, people will not only have decent food and clothing but will also be able to be more nutrition-conscious. The income of the peasants will increase and their material and cultural life improve — all markedly. Their net per-capita income will go up from 191.33 yuan in 1980 to about 700 yuan in the year 2000, recording an average annual increase of 6.7 per cent. Deducting a factor of price increase, their level of consumption could rise at an average annual rate of over 4 per cent. Housing conditions in the countryside will improve considerably; education will become universal, and cultural, scientific and technological undertakings extensively developed. All the peasants will be able to enjoy a relatively comfortable standard of living.

III. SOME STRATEGIC MEASURES

To achieve the aforesaid strategic objective, it is essential to adopt a series of effective strategic measures.

1. Improve the Economic Base of Socialism

One of the major factors that has adversely affected the growth of Chinese agriculture has been its unitary economic form. From now on, it should take the basic form of a co-operative economy under collective ownership, the management and operation of state-owned agriculture should be improved, household sideline occupations should be actively promoted, and individual households should be allowed to engage in and develop productive endeavours that meet certain conditions. This is intended to bring about a dynamic situation where diverse economic forms promote and supplement

one another and the initiatives of the state, the collectives and the individuals are given full scope to act in the interest of the quickened development of China's agriculture.

Under the conditions obtaining in our country, co-operative economy based on collective ownership is the main form of socialist agriculture. This is so not only because collectively-owned enterprises account for 80 per cent of the total value of China's agricultural production and the bulk of our agricultural population and labour power is found in these enterprises, but — and more importantly — because co-operative economy under collective ownership is comparatively well suited to the current level of the productive forces in our agriculture. Its administrative system — as manifested in democratic management, close combination of labour remuneration with production results, and greater decision-making power and flexibility in management and operation — greatly helps to mobilize the energy of the collectives and individuals and to tap production potential and rational use of the resources available. In the past, however, many people under the sway of "Left" ideas often regarded co-operative economy under collective ownership as incapable of promoting the growth of the productive forces in China's rural areas and, consequently, tried to effect as soon as possible a transition to ownership by the whole people. Experience has shown how harmful their view and efforts were. We should, therefore, affirm the long-term, stable policy of establishing a co-operative economy under collective ownership as the main body, and systematically reform the ineffective system featuring the integration of government administration with commune management and the replacement of the functions of agricultural enterprises by those of government. As regards the manner of operation, it is necessary to respect the decision-making power of the co-operative economic units under collective ownership and to allow the grass-roots units and the contracting parties to become associated enterprises which practise independent cost accounting and are responsible for their own profits or losses and whose participants can join efforts in one particular

production process or in all processes. Such associated efforts may take on varied forms that are decided on in line with the actual circumstances instead of conforming to a uniform pattern imposed from above. Co-operative enterprises should introduce different forms of the production responsibility system, especially the contract system that links remuneration with output. There should also be a responsibility system for specific jobs of cadres, a system that is closely connected with personal economic interests. We should constantly study and try to solve the new problems that crop up in the process of implementing the output-related contract system so that it will improve as production advances.

Varied methods of management should be used in the state farms. Farms in which ownership by the whole people is upheld can take bold steps to adopt the methods of democratic management and the output-related contract system practised in co-operative economic units based on collective ownership. They should, however, proceed from reality and never copy other enterprises mechanically.

A strong effort should be made to develop household sideline occupations, provided that the dominant position of the public economy is ensured. The development of household sideline occupations will naturally give rise to some contradictions with the collective or state economy, but these contradictions are not difficult to resolve so long as we can improve management and guidance, and in fact the sound development of household sideline occupations can actually promote that of the co-operative economy based on collective ownership. In keeping with the actual conditions in China's countryside, such occupations should be allowed to take up an appropriately increased portion of the total output value of agriculture. To this end, we should go a step further and work out some feasible policies and measures for, among other things, increasing the amount and scope of privately-farmed cropland and of household sideline occupations. Since China abounds in undeveloped hills and land, in grass hills and slopes and in large water surfaces, the commune members, under the appropriate

circumstances, may be allowed to own more hilly land and bodies of water. The state should formulate specific policies with regard to price, credit, taxation, marketing and supplies of products so that household sideline occupations can benefit from their expansion.

On the condition that the public economy continues to occupy a dominant position, it is necessary to permit a certain proportion of individual economy to exist and develop. This is because China has many mountainous areas where, the productive forces are often underdeveloped, natural economy prevails on the whole and the peasants live in scattered settlements. Individual economy can better mobilize the initiative of these local peasants for production than co-operative economy based on collective ownership, and it can better utilize the rich natural resources in such places. Of course, individual economy has the limitations common to small-scale production. We, therefore, suggest that special research and study be conducted on this subject so as to make clear under what conditions individual economy may be allowed to exist and develop, and how we should support, guide and manage it. All this calls for the drawing up of a series of concrete policies.

2. Achieve a Favourable Ecological System

A favourable ecological environment constitutes the basis and a most important prerequisite for agricultural development. Due to the influence of "Left" ideas, we have for many years seriously violated the objective laws governing agricultural production, and this has led to the grievous disruption of farming, forest, animal husbandry, sideline and fishery resources. We have to be earnestly willing to learn a lesson in this respect.

It is imperative to carry out as an integral whole the policy of the simultaneous development of farming, forestry, animal husbandry, sideline occupations and fishery. There can be no attempt to develop grain production at the expense of the latter four, or vice versa. In crop cultivation, we need a ra-

tional farming system combining land use and land conservation. We should avail ourselves of the achievements of modern agrobiology to transform our agriculture, and benefit from China's traditional experience concerning the organic side of agriculture, such as the use of human and animal excreta, green manure and pond silt, the ploughing under of stalks, and crop rotation. By integrating modern science and technology with age-old skills we can achieve the best possible results with low consumption and relatively little cost.

Attention should also be paid to ecological balance in our effort to build water conservancy works. Although we have scored significant successes in such projects, we failed to combine conservation through engineering projects with conservation by biological methods. One of the major consequences has been damage to the forests and vegetal cover and the upsetting of the ecological balance. It is a small wonder that a number of reservoirs have silted up to a serious extent and extraordinary floods have occurred in some provinces in recent years. We should, for a number of years, stress the building of supporting works for the existing water conservancy projects so as to improve their effectiveness. Meanwhile, we should give greater weight to the biological side of the question (particularly water and soil conservation) and increase the vegetal cover. Farmland improvement programmes should be both forward-looking and feasible in order to obtain practical results and make the maximum use of China's existing water resources. Reservoirs should be put to use in fishery and the cultivation of aquatic plants of economic value.

Forestry is an important enterprise that helps transform nature and benefits both the present and future generations. We must plant enough trees and grass so that there will be a fine ecological environment. Our tentative plan is for forest cover to increase from the present some 12 per cent of China's total land area to some 20 per cent by the year 2000. This requires an enormous effort, first of all to gradually reduce overcutting in order to halt as soon as possible the current destruction of forest resources and, then, to extend the vegetal

cover by effective afforestation and forest protection. In this respect, it is of key importance that we solve the fuel problems of peasant households and the problem of timber for private use. Apart from vigorously promoting the use of biogas and solar energy and the construction of small hydro-electric stations, special efforts should be made to cultivate fuel forests and fast-growing and high-yield trees. (These are characterized by great adaptability, short growing periods, multi-purpose use and quick effectiveness.) Since the most serious shortage of household fuels and timber is felt in the plains, where the problem of ecological balance has also assumed worst proportions, the current afforestation programme should also stress the building of farmland shelterbelts in these areas and the planting of trees on the fringes of villages, along rivers and roads and around cottages. Due attention should be given to the potential role of dry fruit and oil-bearing plants in the development of forestry in mountainous areas. Estimates reveal that the fullest use of all the suitable land in the hilly and mountainous areas and alongside other plots of land for growing dry fruit and oil-yielding plants, fruit trees, bamboo groves and medicinal plants would be tantamount to doubling the existing acreage of cultivated land in China. In other words, the country could thus increase, under the present circumstances, the total output of edibles by 25-50 per cent, equalling or even surpassing the objective of an annual per-capita grain yield of 500 kilograms.

Fundamental to quickening the pace of afforestation is the enthusiasm of the millions upon millions of commune members and of the workers and other employees concerned for tree planting and tending. More effective methods of management, such as contracting the afforestation of state and collectively-owned undeveloped hills and land to specialized groups and households, and allotting to commune members plots of unused hilly land belonging to the state or collectives, should be implemented. Mobilizing the peasant masses for tree-planting will ensure quick progress and a high rate of survival for the trees.

A favourable ecological environment is also essential for animal husbandry and fishery. At present, nearly half the area of China's pastureland suffers from degeneration due to excessive stocking density and neglected cultivation. From now on, livestock should be grazed on the right kind of pastures, the proportions of grazing animals should be correct, and the stocking rate for each section of pasture should be fixed precisely. More man-made pastures should be cultivated in conformity with specific local conditions, and forage bases should be created gradually. Where possible, pasturelands in areas with large amounts of privately-owned livestock could be divided into sections determined by the actual conditions so that a responsibility system might be introduced for management. Where grass hills and slopes do not permit grazing, yard-feeding should be encouraged so as to prevent damage to the vegetal cover and consequent water and soil losses. There should be scientific planning for the rational use of grassland and grass hills and slopes not yet adequately developed, and unplanned exploitation should be strictly forbidden. Studies should be performed to seek ways to increase the maturation rates of domestic animals, their percentage of meat and their marketable rates and to lower the rate of feed consumption.

In recent years, terrible damage has been done to China's offshore and fresh-water fishery resources, with the result that some of the eight principal species of marine fish of economic value have been stripped of reproductivity. We should take long-term measures to preserve our fishery resources, and specify closed seasons and fish sanctuaries in order to protect the offshore fishing areas that have already suffered damage. Development of fishery should be performed mainly through artificial aquiculture and the combination of fish-breeding and catching, with the former receiving priority. Special emphasis should be placed on the development of fresh-water aquiculture inasmuch as it can not only confine offshore fishing to a reasonable scope, thus helping to preserve and revive our fishery resources, but also help to regenerate and sustain some areas of fresh water, thus facilitating farm irrigation and drainage, readjusting micro-climate and supplying agriculture with pond silt which makes a fine organic fertilizer. Some southern provinces have experimented with planting mulberry trees along fish ponds so that the silt of the ponds fertilizes the trees while the excrement of the silkworms in the trees feeds the fish. Practised in these areas are also the methods of raising fish by sugarcane fields and in paddy fields, as well as combining fish farming with vegetable growing and pig raising. We should popularize these experiences insofar as they organically combine fishery with crop cultivation and stock-breeding in such a way that the three promote one another's growth.

3. Readjust the Structure of the Rural Economy

We should, on the basis of ensuring a steady growth in total grain output, gradually and rationally increase the proportions accounted for by economic crops, forestry, animal husbandry, sideline occupations and fishery in output value and in the amount of labour force assigned. In 1980, the ratio between the value of grain output and that of the output of economic crops was roughly 7:3, the same as the ratio between the output value for farming and that of forestry, animal husbandry, sideline occupations and fishery taken together. Our own statistics and those from other sources reveal the following general picture: In production teams with a per-capita income of 150 yuan or more from collective undertakings, forestry, animal husbandry, sideline occupations and fishery occupy over 40 per cent of the figure; in production teams with a per-capita income of 300 yuan or more, forestry, animal husbandry, fishery and industrial and sideline production take up about 60-70 per cent; in production teams with a per-capita income of more than 400 yuan, forestry, animal husbandry, fishery and industrial and sideline production take up 80 per cent or more. On the other hand, in production teams with a per-capita income of less than 50 yuan, forestry, animal husbandry, sideline occupations and fishery occupy less than 20 per cent of the figure. The above statistics reveal that the proportion

of total income occupied by diversified undertakings has a close bearing on the well-being of the peasants. A higher portion accounted for by such undertakings also means greater capability to resist natural disasters. In Shandong Province, for instance, despite the fact that grain production fell by 3.55 per cent in 1980 due to natural inclemency, the per-capita income from collective pursuits rose by over 28 per cent as a result of the increased proportion taken up by economic crops in the total agricultural output value (from 28.7 per cent in 1978 to 37.1 per cent in 1980). The best proportion between the growth of diversified occupations and that of grain production should, of course, be determined in the light of the prevailing local conditions. In the country as a whole, however, we should act in compliance with the principle formulated by the central authorities of actively developing diversified undertakings without neglecting grain production. This constitutes a major policy decision in the development strategy for China's agriculture, and there should be no wavering on our part in this connection.

In the readjustment of the structure of the rural economy in the years to come, we should concentrate our attention on the correct handling of the following three relationships:

First, the relationship between grain production, on the one hand, and the production of economic crops and forestry, animal husbandry, sideline occupations and fishery, on the other. Despite the fact that the country's grain acreage has been cut by 110 million *mu* since 1979, total grain output has been increasing steadily. This is thanks mainly to the following: (i) Land unsuitable for grain cultivation has been shifted to economic crops which call for less manpower, water and fertilizer. What has been saved is now used to increase yields of grain crops beyond those that resulted from extensive cultivation. (ii) Inter-cropping or rotation of grain and fertilizing plants has increased soil fertility and thus raised grain yields. (iii) Further developments in the production of economic crops and forestry, animal husbandry, sideline occupations and fishery have resulted in more fertilizer and funds

for grain production. (iv) The peasants and cadres at the grass-roots level have taken effective measures in order to ensure an adequate supply of food grain for themselves and adequate fodder for the growing amount of livestock, boosting the yield per unit area and total yield of grain to compensate for the reduction of grain acreage.

We must, of course, recognize the fact that there may be some contradictions between the allotment of land for grain production and for developing production of economic crops and forestry, animal husbandry, sideline occupations and fishery. That is why we must pay close attention to grain production while developing all the latter. As agriculture is an important component of the socialist economy as a whole, it is essential for us to persist in following the principle of "planned economy supplemented by market regulation" after the introduction of the system of production responsibility. Where it is difficult to increase the per-unit output of grain by a substantial margin, there should be no further reduction in grain acreage. Moreover, to satisfy the needs of urban residents, the suburban areas should be made bases for the supply of vegetables, meat, milk, eggs, poultry and other non-staple foodstuffs. This is a problem that merits special attention over the coming years.

The second is the optimal use of farmland and the exploitation of mountainous and hilly land, grasslands and water surfaces. There have been many irrational practices in the use of arable land, such as blind investment in high-yield fields, resulting in excessive costs yet failing to produce proportionally more, while inadequate attention was paid to medium- and low-yield fields. In the coming years, while ensuring output from the high-yield fields, we should focus our efforts on raising output from the medium- and low-yield fields as well as from dry land. Since the medium- and low-yield fields (which altogether make up two-thirds of the total acreage of farmland) and dry land have rich unexploited production potentials, greater results can be obtained from them with less investment. China's mountainous and hilly land, bodies of

water and grasslands are also far from being fully utilized. Though 74 per cent of them can be made to serve agriculture, less than 20 per cent have been put to proper use. About three billion *mu* of land suitable for afforestation have yet to be planted with trees; so far less than one-fifth of the 250 million *mu* of inland fresh-water surface has been used for fish farming, and output remains very low; and 3.3 billion *mu* of grassland and one billion *mu* of grass hills and slopes in the southern provinces have been used only to a small extent. In the years to come, we should stress the utilization of hilly land, water surfaces and grasslands so that they can provide society with large quantities of nuts, dried fruit oil, fresh fruits, meat, milk and fish and thus the peasants can prosper quickly.

The third relationship is that between agriculture and industry, marketing and transport. The integrated management of agricultural production and the processing, marketing and transport of farm products does away with the barriers between departments at different levels under the old, irrational management system. It restores the inherent economic links between these branches of the rural economy and rationalizes its structure and management system. In view of the underdevelopment of commodity production in the Chinese countryside and of the low degree of specialization and socialization of our agriculture, the integrated management of agriculture, industry, commerce and transport should not be carried out on too large a scale. It is advisable to aim first at a loose association without change in ownership, an economical and rational association which conforms to the principle of cooperation in specialized jobs and which will gradually develop firm economic links. This will materialize slowly, over a long period, along with the expansion of the productive forces. Administrative interference or impetuosity will be of no use.

4. Develop Commodity Production in Socialist Agriculture

Developing commodity production in agriculture and increasing the marketable rate of farm products are of vital importance in swiftly expanding China's agriculture and enabling the peasants to be well-off. According to data on some typical units, production teams with a per-capita income from collective undertakings of over 150 yuan report a 55.2 per cent rate of marketable farm products while teams with a per-capita income of less than 50 yuan register a rate of merely 18.5 per cent. Taking Chinese agriculture as a whole, the rate is only a little more than 30 per cent, which is far smaller than that in the advanced countries. In order to develop commodity production and increase the rate of marketable products, it is essential to correctly handle the following questions:

First, in working out the pattern of production, we should take into consideration the specific local conditions and stress concentration to an appropriate degree. We should gradually realize regionalized, specialized and intensive production, and build bases of marketable farm products. All this will facilitate the improvement of production techniques, and crop strains and the increase of yield per unit area, labour productivity and the rate of marketable products. For instance, China's 157 counties which are goat-raising bases supply 60 per cent of the state purchases of goatskin. Fujian Province's 17 bases of sugarcane production supplied 99.4 per cent of its sugar output in 1979.

Second, we should vigorously develop diversified undertakings and industries processing farm and subsidiary products. In our effort to develop commodity production, we should stress diversified undertakings which are largely of the nature of commodity production.

Third, we should use the system of contracted responsibilities for specialized jobs with remuneration linked to output as a powerful stimulus for commodity production. Characterized by little investment, low costs and notable returns, the productive activities of the specialized households are capable of greatly increasing the rate of marketable products in animal breeding and other pursuits. For example, the 30,000-odd households specializing in pig-raising in Liaozhong city, Liao-

ning Province, supply 30 per cent of its live hogs. The households specializing in chicken-raising in a production brigade of Rushan County, Yantai Prefecture, Shandong Province, provide one-seventh of the county's unified purchases of eggs. It may be said that the specialized households and their associations are a promising economic form for developing socialist commodity production.

Fourth, we should unclog the channels of circulation. Due to the protracted period during which we felt the influence of "Left" mistakes, production, distribution, exchange and consumption were cut apart from one another in the process of reproduction. Planned economy was set in complete opposition to the growth of commodity production, causing confusion and having many deplorable effects. Since the Third Plenary Session of the Eleventh Party Central Committee in December 1978, multi-channel circulation has begun to function side by side with multiple forms of operation in some places, and the rural market has become more vigorous than before. Generally speaking, however, we have yet to solve once and for all the problems in the circulation system and structure. We should, with better state planning and unified state guidance, permit the co-existence of varied forms of commerce with state commerce playing the dominant role, and coordinate their economic advantages, while increasing circulation channels and reducing links in the chain of circulation so as to invigorate the market and ensure supplies.

Fifth, we should reform the structure of the supply and marketing co-operatives; restore their co-operative nature; make them organizationally more suited to the needs of the masses, more democratic in management and more flexible in operation; and extend the scope of their business and of their service to the masses. In this way, we plan to gradually turn them into rural economic centres offering comprehensive services with respect to supply and marketing, processing, storage, transport and technology. The supply and marketing co-operatives at the grass-roots level should also reform the composition of their personnel so that they can serve both commerce and agriculture and help establish a closer relationship between these two spheres. Federations of supply and marketing co-operatives should be established on the basis of economic regionalization with a view to making them economic associations of the grass-roots co-operatives. Collectively- and individually-owned commercial establishments should also be consolidated in the interest of developing the rural economy.

Sixth, we should reform the price system, rationalize the selling and purchasing prices of farm products so as to give them greater leverage in the regulation of production and circulation. In view of the country's current financial capability, it is necessary to keep the general price levels of farm and animal products stable in the coming few years, with the exception of the extremely unreasonable prices of a small number of farm products, which should be adjusted. We should develop a rational system of price differences for farm products and create conditions for solving the problem of the selling price of grain being lower than its purchasing price. State commercial establishments and the supply and marketing co-operatives should actively engage in purchasing and marketing products at negotiated prices and take part in market regulation. Farm and subsidiary products left over after fulfilment of the delivery and sales quotas to the state may be freely transported for sale, and their prices may be determined according to the changing market conditions. Fundamental solution of the problems of prices of farm products, of course, presupposes the gradual narrowing, on the basis of developed production, of the wide difference between prices of industrial and farm products.

Seventh, we should energetically develop transport service in the countryside. Backward transport is responsible for the underdevelopment of commodity production in some localities. We should mobilize the resources of the state, the collectives and the individual, giving special attention to the rich potential of the non-governmental quarters, in improving transport services. There should be simultaneous development of railway, highway and water transport, and particularly the last of these, which is capable of handling a large volume of freight at low

cost and possesses a vast potential which is far from being fully tapped. Attention should also be paid to developing transport service in the mountainous and remote areas.

Eighth, we should speed up the construction of market towns and other small towns, gradually making them links between the urban and rural economies in the various localities. They are to become centres of trade, industrial and sideline production, catering and service trades, and cultural and technical services, and will promote the development of rural commodity production. We must engage in overall planning in the construction of small towns, and at all times avoid proceeding blindly.

5. Actively Promote Agricultural Science

Thanks to the readjustment of the various rural policies, the enthusiasm of the peasant masses has been greater than ever before, and there has been an unprecedented development in which the masses have been studying and applying scientific knowledge. Our task is to guide the development of this situation and vigorously promote agricultural science and heighten the level of scientific farming and scientific management.

The biggest problem in incorporating more methods in farming lies in the shortage of agro-technical forces and in the low level of the scientific and cultural knowledge and lack of management skills of the broad masses of commune members and grass-roots cadres. In data collected for a representative sample, 26.4 per cent of the able-bodied peasants surveyed were illiterate, 18.3 per cent were of the level of students in literacy classes, 31.5 per cent were of primary school level, 23.7 per cent were of middle school level, and 0.1 per cent had reached the level of college education. The villages have an acute shortage of technical personnel, with many communes having none at all.

Such being the case, we should pursue the following policies:

First, we should make a great effort to wipe out illiteracy. We must, above all, strive to make the young and middle-aged peasants literate. Primary education and, in some areas, secondary education, should be made universal.

Second, we should reform the structure and system of agricultural education. At present, the ratio between the enrolment in higher agricultural education and that in secondary technical education is 1:2; spare-time education for peasants is almost non-existent. In France, the ratio between enrolment in agricultural higher, secondary and spare-time education is 1:20:20. Conditions in China dictate that equal attention should be paid to these three categories of education, and that expenditures for the latter two should be increased appropriately. To suit the needs of China's agricultural development, it may be necessary that part — or the greater part — of our regular secondary schools be changed into secondary technical schools which would attach equal importance to technical and management courses.

Third, we should establish and improve the network of agricultural scientific research and of popularization of agro-technology. China is rather backward in agricultural research, and particularly so in the dissemination of agro-technical knowledge. Although several thousands of agricultural research projects have had successful results since liberation, these results have not been put to extensive use. Special effort is, therefore, called for in the coming years to popularize agro-technology. Attention should not only be paid to modern agricultural scientific and technological studies and the popularization of their results, but also to the evaluation of China's traditional agricultural techniques and how they can be improved — indeed, these two aspects should be well combined. In recent years, the technical responsibility system under which remuneration is linked to actual output has appeared. A certain number of peasant households demonstrating the use of new agro-techniques and exemplary households in scientific farming have been selected below the commune level to be-

come part of a new network to provide agricultural scientific and technological guidance, a departure from the former practice of guiding production through the administrative system. This new, effective approach in spreading agricultural science and technology should be popularized on a wide scale. Personnel should be trained in different types of agricultural schools, and indigenous experts and specialized craftsmen should be trained from among the peasants.

Fourth, we should give free rein to our present scientific and technological personnel. China suffers from a shortage of agricultural scientific and technological personnel, and yet a large proportion of our present personnel have been unable to apply the knowledge they have gained. Statistics indicate that only a little more than one-third of our graduates of higher and secondary agricultural schools since the birth of the People's Republic are working in agricultural departments. This appalling waste is attributable principally to the following: (i) departments do not understand the importance of science; (ii) working conditions in the agricultural departments and the political treatment and material well-being of their personnel are inferior as compared with other departments; (iii) graduates have not been assigned jobs which require the skills they have learned. We propose the following: to draw up special policies to bring agricultural scientists and technologists back to the profession for which they were trained; to adopt the necessary measures to improve their political treatment and material well-being and solve difficulties they are experiencing; to institute a system whereby they can pursue advanced studies at regular intervals; to make workable plans for agricultural education while endeavouring to make accurate forecasts of the country's agricultural growth, so as to avoid the prospect of creating agricultural personnel unable to use their specialized knowledge.

Judging from the experience of advanced countries, we can see that the increase in their agricultural productivity has invariably presupposed technical breakthroughs in one sphere or another. It is, therefore, necessary to allocate adequate funds for research in agricultural science, and we should be able to expect impressive results.

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A DEVELOPMENT STRATEGY FOR CHINA'S FORESTRY

by the Research Group on a Development Strategy for China's Forestry, Institute of Agricultural Economics, Chinese Academy of Social Sciences

Forestry is a major component of China's national economy. In our country, which has a total population of one billion and a total area of 9.6 million square kilometres and which is dotted by mountains, forestry is of immense strategic importance in our effort to quadruple the total output value of industry and agriculture by the end of this century. Development of forestry has been made an important state policy. The strategic significance of forestry has two components: First, the increase of forested areas will lead greater benefits for society and a greater improvement of our country's ecological environment. Second, the increase of forest reserves and of the economic products of forests can gradually help satisfy the ever-increasing requirements of national economic construction and the everyday life of the people, and can also help bring about a thriving economy in the mountainous areas, transforming both their physical features and economic outlook. The direct and indirect benefits accruing from forests constitute a unity of opposites. For a fairly long period in the past, we made the increase of timber output a major objective of forestry development and neglected afforestation and other aspects of forest production, particularly the important role of forests in creating an ecological balance. More trees were felled than were planted, and serious consequences have been felt in our economic development and the people's livelihood.

Since the Third Plenary Session of the Eleventh Party Central Committee in December 1978, the Party and the State Council have devoted a great deal of attention to forestry work. They have formulated a series of important directives and decisions, pointing out the significant role of forestry and the important role of forests in protecting the ecological environment. These directives stress the necessity of protecting forests and developing forestry and then, on this basis, gradually increasing the use of forest resources and pushing up the output of timber and the various forest products. Their general objective is to keep the forest areas green and to ensure the continuous use of the forest reserves. These directives and decisions have brought China's forestry onto the path of healthy development.

I. THE PRESENT SITUATION OF CHINA'S FORESTRY

China has little forested land and suffers a serious shortage of forest resources. Surveys show that China's total forest area is 1.73 billion *mu* (an average of 1.7 *mu* per capita) or 12 per cent of the country's territory; and that its forest volume amounts to 9.02 billion cubic metres, or less than 10 cubic metres per capita. China is below the world average in forest cover and per-capita forest area and volume. In fact, its proportion of forest cover is only half of the world average, or one-fifth that of Japan, Finland or Sweden, or one-third that of the Soviet Union, the United States or Canada; it is also lower than that of the third world countries like India. Indeed, in terms of forest cover China places 121st among the more than 160 countries and regions of the world. Its per-capita acreage of forest land and forest volume are, respectively, only one-eighth and one-seventh of the world's average figures. And of its present forest volume of 9.02 billion cubic metres, only 3.4 billion cubic metres are suitable for cutting and utilization. Forest resources are mostly distributed in the remote border areas, namely, the northeast and the southwest,

which combine to contribute about 50 per cent of the country's forested land and three-fifths of its forest volume. This contrasts with the vast agricultural areas on the plains and the pastoral areas with their extensive grasslands, which are forest-poor. Gansu, Ningxia, Qinghai, Xinjiang and Inner Mongolia (excluding the Dongjiao forest area), which altogether make up 39 per cent of China's total land area, only have 1.1 per cent of its forest cover.

Work over the past three decades or so has put China's forestry on a fairly strong material basis, and has provided us with much experience, both positive and negative. These are favourable conditions for forestry development in the coming years.

II. THE STRATEGIC OBJECTIVE AND FOCUS OF CHINA'S FORESTRY DEVELOPMENT

Under the present conditions, taking a certain total output as our strategic objective cannot properly reflect our achievements in forest production and may induce people to seek output value and timber yield exclusively, regardless of the actual state of our forest resources. This would mean repeating the practice of stressing felling to the neglect of afforestation in contradiction to the principle of basing forestry development on tree planting and cultivation. A strategic objective that is in conformity with the actual conditions would be to increase forest cover and forest products. Taking into account the development level of forestry and the overall functions of the forests, this objective can harmonize various relationships, i.e., the relationship between forest area and forest volume, between quantity and quality, and between direct and indirect effects.

The basic problem of China's insufficient forest resources makes this objective impossible to realize in a short period. Thus our task is to revive, develop and expand forest resources, to increase forest cover, to wrest more benefit from

forests for society, and to increase the output of timber and the various forest products so as to meet the needs of social production and the everyday lives of the people. For the above purpose, we must, by 1985, halt the devastation of our forest resources, reduce excess felling, reduce the occurrence of forest fires, and increase afforestation and the survival rate of trees. By 1990, we aim to increase the forest area and volume to a certain degree, expand the forest cover to about 15 per cent of China's territory, basically fulfil the afforestation programme for the plains and hilly regions, increase timber output by a certain margin, complete the first-stage plan for building shelterbelt networks in northwest, north and northeast China and properly readjust the patterns of the forestry industry so as to achieve a balance between felling and conservation. By 2000, we should have built a fairly stable foundation for China's forestry which will thus have entered the initial stage of vigorous development: the forest cover will have reached 20 per cent of the country's territory; the pattern of forest resources and production will have become much more rational; the rate of afforestation will have surpassed that of felling; and the output of timber and the various forest products will have risen substantially. By that time, China's forestry industry will have taken a fundamental turn for the better, and positive cycle will have commenced.

According to our tentative development strategy for China's forestry, the main targets for the end of the present century are as follows, as compared with 1980: forest cover is to expand from 12 per cent of the country's territory to 20 per cent, or an average annual increase of 2.3 per cent; forest area is to expand from 1.73 billion *mu* to 2.914 billion *mu*, also an average annual increase of 2.3 per cent; forest volume is to increase from 9.53 billion cubic metres to 12 billion cubic metres, or an average annual increase of 1.2 per cent; the annual yield of timber is to rise from 53 million cubic metres to 100 million cubic metres, or an average increase of 2.7 per cent

a year; the annual amount of tree growth is to go up from 270 million cubic metres to 400 million cubic metres, or an average increase of 2.6 per cent a year; the output of boards from man-made materials is to increase from 900,000 cubic metres to 3 million cubic metres, or an average annual increase of 6.2 per cent; per-capita forest volume is to increase from 9.7 cubic metres to 10 cubic metres; and per-capita timber consumption is to increase from 0.05 cubic metre to 0.08 cubic metre.

At present, forestry is one of the weakest links in our national economy. As the meagre forest resources have not been able to fulfil both the needs of the environment and the requirement for forest products, the felling of forest trees has exceeded growth, reducing the amount of exploitable forest resources and the benefits to society provided by forests. This is why the strategic focus of China's forestry must be on developing and enlarging the forest resources. To this end, it is imperative to effectively protect the existing forests, strictly control the felling of trees, and develop forestry through varied measures designed to mobilize initiative in all quarters.

III. STRATEGIC MEASURES FOR FORESTRY DEVELOPMENT

In order to achieve our strategic objective in forestry, it is necessary to develop forestry in conformity with the principle of firmly curbing the devastation of forest resources and basing our efforts on tree planting and cultivation. We should also, on the condition that attention is paid to ecological balance, gradually satisfy the needs of various quarters for timber and different kinds of forest products. To make the best use of the various functions of the forests, we should adopt effective measures which take into account long-term development as well as the current situation.

1. Protect the Existing Forests and Improve Forest Management

For a long period, our protection of the existing forests has been far from adequate, and forest management has been poor; there has been overcutting in certain forest areas while mature or overmature forests in the remote border regions remain to be exploited and are experiencing serious natural decay; the growth of young and middle-aged woods has been insignificant due to lack of effective protection and management, and this, plus forest fires, tree pests and diseases and unplanned cutting, has led to the serious destruction of our limited forest resources. Therefore, prerequisites for realizing our strategic objective include better forest protection and management, restricted use of the existing forest resources so that cutting may gradually be brought to below growth, and reduction of waste in all forms.

We must have unified planning to strictly control the cutting of forest trees and gradually do away with excess felling. First, illegitimate cutting should be controlled by implementing a policy of unified felling and strengthening unified management, so that the disposal of timber for all uses is regulated by unified state plans, and strictly abiding by the regulation that felling can be done only by permit issued by the forestry departments. We should practise the principle of "planned economy supplemented by market regulation," and adjust timber prices utilizing the law of value, in order to tap the reservoir of enthusiasm among the forest workers and promote the development of forestry.

Second, we should reduce in a planned way the cutting by the existing forestry enterprises. We plan to establish 169 forestry bureaus in the state forest areas in northeast China, Inner Mongolia and southwest and northwest China, to cover a combined territory of 28.3 million hectares. Only 131 such bureaus have been set up so far, embracing altogether 22.1 million hectares, or 78 per cent of the planned figure. Resources on 42 per cent of the forestry farms under the existing

bureaus have yet to be exploited, with the result that the 26 million cubic metres of timber produced annually by the state forestry bureaus are cut from a little more than 13 million hectares of forested land. According to the 1980 statistics, 61 bureaus overcut 7 million cubic metres of forest trees, and the exploitable forest resources on 26 of them have by and large been exhausted. Unless the situation is remedied quickly, all 61 bureaus will be forced to close down by around 1990 because of a lack of usable forests. To solve the problem of overcutting, we should overhaul the current production pattern, hasten the development of new forest areas and the establishment of late-stage forest farms and so gradually enable the old areas to rehabilitate. We should also foster the second growth of trees. There should be strict control of above-quota felling in the collectively-owned forest areas in southern China, and indiscriminate felling should be halted.

Third, we should actively cultivate young and middle-aged forests and imporve their management so as to better the quality of trees and increase forest volume. Such forests now amount to 60 per cent of the area of timber woods, and they occupy 30 per cent of the total forest volume. But overemphasis on afforestation to the neglect of management has meant seriously inadequate care of most of the artificially cultivated young and middle-aged forests and hence their slow growth and poor quality. They have been referred to as "beards" decorating the mountains on which they stand, or "hemp stalks," because they remain so slender. Statistical data indicate that they average less than 2.5 cubic metres per *mu*, and that their annual per-*mu* increment is only an average of 0.1 cubic metre. At present, China has 400 million *mu* of young and middle-aged forests that require special care. If we can increase their annual per-*mu* increment to 0.35 cubic metre, the country would gain an additional 100 million cubic metres in terms of tree growth. The key to improving the cultivation of the young and middle-aged forests is the raising of funds, which can be done by: increasing investment; incorporating the expenses for their cultivation into the cost of timber

and deducting them from the quotas of profit delivery to the state; and raising the prices of trees under cultivation, with the price difference to be borne by the user departments.

We should bring to less than 0.1 per cent the damage attributable to forest fires, diseases and pests. Estimates reveal that the country lost a total of 690 million cubic metres of forest reserves in the years 1949-80 owing to fires, forest diseases and pests and other natural disasters. Statistics compiled for the same period count more than 4.9 million forest fires which destroyed over 25 million hectares of forests, the last figure equalling the planned cutting area for the corresponding years; while the cumulative forest area afflicted by diseases and pests totalled more than 85.7 million *mu*, less than 30 per cent of which received treatment — and with unsatisfactory results. Since the frequent and serious forest fires were mainly due to human factors, we should in the coming years strengthen education among the masses in forest protection and fire prevention. At the same time, planes should be used to reconnoitre, forecast and put out forest fires over large areas. The increasing threat to China's forests from disease and pests is chiefly due to the unitary forest composition and the fact that more and more areas are planted only with trees. Apart from adopting better preventive measures and more effective treatment, we should take steps to plant trees that are better suited to the specific local conditions and silvicultural traditions and seek, as much as possible, to mix broad-leaf and coniferous trees or various forest types.

We should make more effective use of our forest resources. China has only limited forest resources which, moreover, are utilized inadequately, meaning great waste to the country. By our estimates, only some 37 per cent of the country's standing timber is used; 30 million cubic metres of materials are annually left over from the planned felling, 50 per cent of which can be of use in industrial production although their utilization rate is only some 9 per cent, because they are widely scattered and because of limited facilities. Provided the rate of utilization of the leftover materials from felling and timber

production and processing can be raised to 50 per cent — a level attained in some advanced countries — by the end of this century, we will be able to manufacture 5 million cubic metres of boards from fibre and shavings, more than the total output — 900,000 cubic metres — of artificial, fibre and shaving boards for 1980 5 times over. They will provide good substitutes for nearly 20 million cubic metres of timber. To increase the timber utilization rate, logs should be used as little as possible and, except for a few special uses, they should be processed in a unified way to supply lumber and finished and semi-finished products. At the same time, best use should be made of leftover materials to produce such wood substitutes as fibre and shaving board which are to be supplied as extensively as possible with a view to saving forest resources. Use of burnt, abandoned and naturally decaying wood in forest areas should be encouraged. Estimates for a forest area in western Sichuan Province indicate that it can supply as much as 400,000-500,000 cubic metres of burnt wood and far more of the other two types of wood. It is wasteful to let this wood decay without being put to proper use.

2. Encourage Enthusiasm for a Diversified Economy and Accelerate Forestry Development

Existence of varied economic forms is an objective necessity and meets the needs of the development of production at the present stage. Enthusiasm for a diversified economy is of great practical significance to the development of China's forestry. It is important that we carry out the various policies on forestry, especially the policies on stabilizing ownership rights over mountainous and hilly land and forests, allotting plots of such land for private use and working out a system of responsibility in forestry. It is necessary to take into consideration the interests of the state, the collective and the individual so as to tap the initiative on all sides. China still has two billion *mu* of land suitable for afforestation, 55 per cent of which is scheduled to be covered with trees by the close of the 20th century. This means that we are faced with a strenuous task

of afforestation over the next two decades, which is 2.5 times more planting than what we have done in the previous three decades. The fulfilment of this task depends mainly on the efforts of China's 800 million peasants. We have, in recent years, adopted a more flexible policy with regard to forestry, worked to wipe out the influence of "Left" mistakes in this sphere and introduced varied forms of the responsibility system to promote afforestation and forest cultivation. All this has inspired the enthusiasm of the masses for forestry, resulting in quicker afforestation, higher survival rates and lower costs than before. Especially noteworthy are the new forms of forestry operations based on the output-related contract system, forms such as those in which large peasant households undertake contracted jobs or specialized teams contract responsibilities that traverse county or commune boundaries, and the combined operation by forest farms, communes and production brigades and teams. The result has been that some mountains or hills, barren for many years, have been covered with trees within two or three years. These forms need to be further explored and improved so that we can find new ways of quickening the pace of afforestation. In view of the long cycle of returns in forestry, the forestry departments in the various localities should extend financial support and the banks should provide medium- and long-term loans at low interest, which is to be borne by the local forestry departments without adding to the burdens of the masses. Individual households should be given the same consideration as are the collectives in the contracting of afforestation jobs without discrimination, and they should be entitled to subsidies in terms of funds and materials according to specific policy stipulations.

We should bring into full play the leading role of state forestry. Taking the country as a whole, state-owned forestry enterprises encompass the main portion of the country's total forest area and reserves, and they supply most of the need for timber and forest products. The state should make use of aerial and artificial broadcast seeding in afforestation, cultivate, import and domesticate good species of trees and

popularize new technology. The state should set an example and test new methods to modernize production and management. The state forestry enterprises, therefore, should be further consolidated and developed.

3. Strive to Plant More Trees and Quickly Increase Forest Resources

The emphasis of China's forestry development strategy determines that we must plant trees on a large scale, especially fast-growing and high-yield trees and fuel forests.

Coupled with the building of new timber bases, such planting can alleviate the shortage of timber supplies and gradually meet the demands of national construction and the people's everyday lives. In favourable sites with transport facilities, fast-growing and high-yield trees should be planted over connecting stretches of land. The national standard for such forests is an average annual growth of one cubic metre per *mu*. Planning and experimental work for this project should be completed before 1985, and the cumulative acreage of such forests should reach 10 million *mu* by 1990 and 50 million *mu* by the end of this century. In this way, overcutting will be avoided and our forest pattern rationalized.

Some foreign countries have been able to improve an unfavourable situation regarding forestry by planting fast-growing and high-yield trees to cope with shortages of timber and forest products because of reduced forest resources. Italy, for instance, was able to supply about 80 per cent of its timber needs for domestic use mainly by growing poplars. Such foreign experiences merit our attention. China has also made successful efforts to cultivate fast-growing and high-yielding forests in many regions. The eucalyptus forests (the strain of Leilin No. 1) grown over large areas by the Leizhou Forestry Bureau, Guangdong Province, mature in six years, yielding six cubic metres of timber per *mu*. After felling, they regenerate fast enough to give four cubic metres of timber in another four years. This means that two crops can grow in 10 years, giving

altogether 10 cubic metres of timber. Compared with Chinese fir, eucalyptus takes 100-200 per cent less time to mature while its per-*mu* timber output is 50-100 per cent higher.

Increasing our efforts to cultivate fuel forests is a necessary measure for solving the fuel shortage in town and country, and also for protecting timber forests and shelterbelts. At present, China suffers from a fuel shortage in both the urban and rural areas, and this problem stands out most glaringly in forest-deficient villages where coal is also scarce. Estimates show that, of the 173 million peasant households, 82.55 million, or 47 per cent, are short of fuel more than three months a year; and that 38.12 million households, or 22 per cent, are short less than three months a year. Many use roots, tree bark and fallen leaves to cope with their fuel scarcity. China needs huge quantities of fuel every year, and this means the consumption of an estimated 80 million cubic metres of forest volume. Fujian Province planned to produce 3.83 million cubic metres of timber in 1980, but the amount of timber consumed as fuel in the same year reached 4.1 million cubic metres. Vigorous cultivation of fuel forests can both help to improve the lives of the people and serve to protect timber forests and shelterbelts.

Many favourable conditions exist for planting more fuel forests. Barren mountains, hills and wasteland suited for afforestation can be found almost everywhere in the country, and the peasants have nearly 200 million *mu* of private plots of mountainous or hilly land. Many species are available which are fast-growing and good for fuel, and the various localities have found those most suitable for their climatic and soil conditions. For instance, Taiwan acacia, broad-leaf acacia, eucalyptus and the albizia family can grow on Hainan Island, and are capable of regeneration after felling. Drought-resistant shrubs such as tamarisk, caragana korshinskii and prunus spinosa flourish in the arid northwestern regions. Fuel trees should grow fast enough that two *mu* can grow enough to supply, within three years of planting, 30 per cent of the fuel needed by a peasant household, 70 per cent within five years,

and 100 per cent within 10 years. If, within 10 years, 200 million *mu* can be planted with fuel trees and a little more than 100 million *mu* of disfigured and unpromising secondary forests can be set aside as fuel forests, there will be an average of two *mu* of fuel forest per peasant household. Supplemented by some other energy resources, this can be expected to solve, by and large, the fuel problem in China's countryside. The communes and production brigades and teams can contribute to this effort, but the chief source of fuel for the rural areas should be the peasants' private plots of mountainous or hilly land. In addition to the efforts by commercial departments, fuel trees should also be planted wherever possible, under unified plans and in conjunction with the nationwide campaign for voluntary afforestation to help meet the fuel requirements of the residents, enterprises, government offices and non-governmental organizations in the coal-poor urban areas.

4. Develop Forestry Through Diversified Undertakings and Make the Best Possible Use of All Favourable Conditions to Make up for the Unfavourable Ones

With its long production cycle, huge investment and slow returns, forestry yields no material benefits for at least the first 10 years. The state or collectively-owned forestry enterprises, or the individuals concerned, should, therefore, engage in diversified undertakings, use the full potential of the land and develop the processing of forest products. This way of utilizing the favourable conditions to make up for the unfavourable ones and of using sideline pursuits to support the principal ones is in the interests of forestry development. Since the afforested land has vast potential, we can grow medicinal plants, fruit trees and oil-bearing and grain crops and also engage in stock-breeding and fishery, all by turning to good account the vacant plots in the forests or on their fringes as well as areas covered by water. Many of these productive activities can yield returns in the first year or, at most, within three to five years. The products which sell readily can bring in profits to

gradually offset expenditures for forestry. Moreover, they can help accumulate funds for forestry development. We must overcome the practice of relying excessively on state help. Rather, we should make the most of all local advantages, accumulate funds through related undertakings and thus expand forestry in a self-reliant manner.

5. Carry Out Special Policies to Facilitate the Expansion of Forestry

Forestry has suffered from the protracted practice of taking more from the forests than we have put in. To enable the industry to recover quickly, we must adopt appropriate policies in accordance with the requirements of the development of forest production at specific stages. More flexible policies have been carried out in the forest-deficient regions (regions where timber is marketed), and timber prices have been allowed to fluctuate within certain limits so as to expand commodity circulation and promote forestry development. These policies have yielded tangible results in several localities. Eastern Henan Province, known for having suffered the most from floods caused by breaches of the Huanghe (Yellow) River dykes before liberation, had very few wooded areas and some sections were nearly devoid of trees. Beginning in the early 1960s, shelterbelts and timber forests interspersed with paulownia trees were planted. This has quickened the pace of afforestation, reduced sandstorms, improved soil and helped local agriculture. Furthermore, it has facilitated the circulation of marketable timber, making more and more of it available at rural fairs. The result has been a more prosperous rural economy, soaring mass enthusiasm for afforestation and the accelerated development of forestry. The Huaibei region of Anhui Province furnishes another example. Formerly deficient in forests, it has now become a region with a surplus of timber that serves the needs of other places in the province, thanks to the measures adopted in the past two decades to mobilize the masses for tree-planting and to permit trade in

timber at country fairs where it can be sold at prices fluctuating within specified limits. Enabling the peasants to profit from afforestation, these measures have spurred their enthusiasm for forestry. It is thus clear that more flexible policies with regard to the circulation of timber will greatly help the realization of the strategic objective of China's forestry — provided we mainly rely on peasant effort and follow the policy that whoever plants the trees owns them, that inheritance of ownership of forests is permitted and that felling must follow specific stipulations.

The state should raise funds for developing forestry. Although diversified undertakings should be operated in the forest areas to accumulate funds for forestry, the state should readjust the portions of products distributed to the various departments and enable the forestry enterprises to make more profit, which will leave them with more funds for the necessary projects. As things stand at present, the value created by forestry is mostly shifted to other departments through commodity circulation and distribution, making it impossible for a great number of the forestry enterprises and production units even to carry out simple reproduction. There is a provision in many other countries that 60-85 per cent of the proceeds from timber sales should accrue to those engaged in forestry. The figure, for instance, is 67.4 per cent in the United States and 83.6 per cent in New Zealand. In China, however, the figure is only 30 per cent for collectively-owned forestry enterprises, and 20 per cent for state-owned ones. Sticking to such unreasonable percentages in the distribution of products will hinder quicker accumulation of funds for forestry.

The state should work out special policies regarding silvicultural science and technology so that forestry may develop apace. Correct policies and better use of scientific knowledge are the factors that determine forestry development. Comparatively speaking, China's silvicultural science lags behind other sciences, and chiefly for two reasons: (i) backward organization of scientific research which is, moreover, divorced

from production; and (ii) lack of vigorous effort. We are of the opinion that reform should be carried out with determination, and that scientific research should be integrated with production. Scientific personnel should be directly involved in production in order that they will be able to solve urgent production problems and make relevant new theoretical contributions towards the improvement and domestication of fine-quality and fast-growing species of trees. Although we have in recent years introduced into our country some foreign species of poplar and eucalyptus, we have yet to cultivate such species adapted to Chinese conditions. To enable silvicultural science and technology to develop at an accelerated tempo, it is necessary to draw up a policy that encourages their pursuit. Special treatment should be given to scientists and technologists who have made notable contributions, and, in particular, those working in the forest areas should be provided with greater special subsidies so that more scientists will be ready to devote themselves to work there.

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A DEVELOPMENT STRATEGY FOR CHINA'S ANIMAL HUSBANDRY

by the Research Group for a Development Strategy for China's Animal Husbandry, Institute of Agricultural Economics, Chinese Academy of Social Sciences

I. THE STRATEGIC OBJECTIVE OF CHINA'S ANIMAL HUSBANDRY

To define a development strategy for China's animal husbandry, we must take into account such factors as natural resources, the market, funds, technology and ecological balance. Specific Chinese conditions require that the following three problems be considered:

(1) Satisfaction of the needs of China's one billion people for nutrients. At present, there are two problems in this connection. One is that the protein supply is about 20 per cent lower than the set standard. The other is that animal protein makes up only 19.1 per cent of the total supply. Although we should strive to increase the variety and quantity of vegetable protein which figures prominently in the total protein supply, it is of great importance that we gradually increase the amount of animal protein, which is referred to as complete nutrient because it contains all eight kinds of amino acid and nearly all the vitamins essential to the human body. In modernizing China's agriculture, it is necessary to create conditions for meeting the minimum protein requirement of the one billion Chinese people and for appropriately raising the percentage of animal protein supplied to them.

(2) Establishment of ecological balance. With respect to

the ecological balance, a serious phenomenon is now taking place by which the pasturelands are degenerating and more and more of them are being covered by shifting sands. The establishment of an favourable ecosystem is of immense significance in beautifying the environment, ensuring the maximum and continuous increase of animal and vegetal products and bringing prosperity to future generations. The development of China's animal husbandry cannot follow a predatory path but must integrate stock-breeding with farming and forestry and conserve the pasturelands by growing more grass on them. This being so, we must attach due importance to ecological balance in defining the strategic objective of China's animal husbandry.

(3) Ability to serve the structural reform of the rural economy. Influenced by "Left" guidelines, in the past we paid attention only to agriculture but cared little about industry, transport and commerce. And in agriculture, we one-sidedly paid attention to grain production to the neglect of animal husbandry, forestry and fishery. In circulation, the influence of the Soviet model made us draw a hard and fast line between production and circulation, and impose a uniform pattern on and exercise rigid control over the exchange of marketable animal products so that the production departments could not market or process what they produced. All this was responsible for creating a one-product rural economy, reducing the countryside to a mere supplier of raw materials. Economic prosperity in the rural areas was thus impeded. From now on, we should relate production to circulation while vigorously developing animal husbandry, and establish integrated pastoral-industrial-commercial enterprises. We should combine the modernization of animal husbandry with the development of a diversified rural economy, striving to develop, on the basis of expanded animal husbandry, rural industries processing animal products and rural transport and commerce. Our general objective is to change the one-product rural economy step by step.

II. THE STRATEGIC EMPHASIS OF ANIMAL HUSBANDRY

Considering the potential of China's animal husbandry and the daily needs of the people, the strategic emphasis of our animal husbandry in the years to come should be on working for the maximum increase in the number of herbivorous animals, the expansion of cow's milk production and the greatest possible rise in productivity.

1. Maximum Increase in the Number of Herbivorous Animals

Two glaring contradictions exist in our land use and the product mix of animal husbandry as they now stand: On the one hand, the per-capita acreage of arable land is small; on the other, there are close to 700 million *mu* of grass mountains, hills and slopes in south China that have yet to be fully utilized. Of our meat products, pork occupies a much bigger percentage than do beef and mutton. Of the total meat production in 1981, for instance, pork made up 94.3 per cent as against 2 per cent for beef and 3.7 per cent for mutton. This poses the question of whether we can increase the total number of such herbivorous animals as cattle and sheep by making use of the grass mountains, hills and slopes in south China (which altogether account for nearly half of the country's acreage of arable land) so as to open up the prospect for high-yield production of foodstuffs in the context of a huge population and insufficient farmland. Looking at China's pastureland as a whole, we can see that its current problems consist mainly in the low level of production and the unstable output. These are chiefly due to scarce precipitation and severe winters, which mean the lack of water for a long period each year and hence a shortage of grass. The southern grass mountains, hills and slopes, however, are richly endowed by nature with an abundance of water and, hence, of grass for grazing herds. So, from a long-term point of view, they should be developed into high-yield bases for foodstuffs obtained from animals. The main reason for their current underdevelopment are the principles which have stressed lopsided development and paid too little attention to forestry and the raising of livestock.

The following problems exist with regard to animal husbandry: First, grassland improvement has been neglected. Many pastures have been left alone until they have become exhausted; there are few artificially cultivated grasslands and, in particular, little has been done to grow leguminous forage grass. Second, no effective effort has been made to improve animal breeds so that degeneration has become widespread. Third, the proportion of reproducing cows, ewes and she-goats constitutes only about 30 per cent of the livestock population in many places, while there are too many male and old animals that cannot contribute to the need for expanded reproduction. Fourth, the administrative system does not suit the actual needs. As things stand now, production is divorced from circulation, and domestic trade from foreign trade. The animal husbandry departments take charge of pigs but not cattle; the departments for purchasing animal products buy skins and hides but not meat, while the food companies do the opposite. This irrational administrative system has held back the development of China's animal husbandry so that for years it has remained at a standstill. Taking this problem into consideration and proceeding from the actual conditions in our country, we should take the strategic measure of developing animal husbandry by using south China's grass mountains, hills and slopes.

The following advantages warrant such a measure: (i) Grass can be planted to protect the slopes and gradually bring under control the serious loss of water and soil. (ii) The output of meat, especially beef and mutton, can be increased. (iii) Use can be made of the favourable conditions to make up for the unfavourable ones, and the peasants can increase their incomes by developing animal husbandry. This will solve the current difficulties in their living conditions and speed up the development of forestry. (iv) The mountainous or hilly land that is only thinly covered with soil and is thus no good for forestry can be put to proper use. (v) A change can be brought about in the economic structure of the mountainous or hilly

areas which have long been inaccessible to modern transport and whose industry and commerce have remained backward. Once their one-product economic structure is changed through the development of animal husbandry and industries processing animal products, they will experience economic prosperity.

Some people contend that we should use the grassy mountains, hills and slopes in south China mainly for developing forestry. Upon analysis it appears that, generally speaking, the southern mountainous and hilly areas which have plentiful precipitation and a warm climate should be used mainly for stock-breeding, which may be combined with farming and forestry. Experience has shown that focusing on grain production there can lead us nowhere. But it is likewise at variance with China's specific conditions to ignore the people's needs and close off the mountains and hills for afforestation as has been done in some economically developed countries, placing a one-sided emphasis on forestry to the neglect of the grasslands.

2. Redoubled Effort for Milk Production

Milk merits such priority because of the following: (i) Milk contains 120 kinds of nutrients (including protein, fat, carbohydrates and nearly all the vitamins needed by the human body). In particular, it contains rich supplies of lactose, which contributes to the development of infants' cerebrums. (ii) Milch cows are capable of attaining the highest feed conversion rates among domestic animals. Protein conversion is 25 per cent as opposed to 4 per cent in the case of beef cattle and mutton sheep, 14 per cent in the case of pigs, and 23 per cent for chickens. In terms of feed energy conversion, the milch cow has a rate of 17 per cent as opposed to 3 per cent in the case of beef cattle, 14 per cent in the case of pigs, and 11 per cent in the case of chickens. (iii) The milch cow can live on a greater variety of fodder. Unlike the monogastric animals such as pigs and poultry, which consume a large amount of grain, it eats various kinds of forage grass (green grass, hay, stalks and subsidiary farm products), grain, vegetables and

materials left over from food processing. Grass occupies 70-80 per cent of the digestable dry matter in the diet of the milch cow, and grain occupies only a very low percentage. This means that by raising more milch cows we can reduce the amount of grain currently used as fodder. (iv) Draught cattle can also provide milk. Yongjia, Rui'an and Pingyang counties of Zhejiang Province have been successful in this respect. In recent years, China has imported Simmental cows which can provide both milk and labour. The first generation of crossbreds between this stock and the Chinese common ox can have been able to produce up to 1,500 kg. of milk a year, and they have great draught power. Water buffalos that result from crossbreeding the Indian Mola strain and the Chinese water buffalo can give 1,000-1,500 kg. of milk annually. By importing large numbers of these foreign strains to crossbreed with China's farm cattle, which number more than 70 million head, we can both increase the physical power and milk yield of our cattle. Clearly, this is of strategic importance to a country with a huge population and insufficient farmland. (v) Adult milch cows can bring in a reliable daily income in cash. If each one has a lactation period of 305 days a year, with a daily yield of 15 kg., it can bring in more than 10 yuan a day. This will help speed up the turnover of funds and better the peasants' livelihoods. (vi) Milch cows provide large quantities of manure. Each cow provides 7,500-10,000 kg. of manure a year, equal in value to more than 150 kg. of ammonium sulphate plus more than 100 kg. of phosphate and potassium fertilizers. Manure from grass fed milch cows is more effective and economical than cultivated green manure or stalks ploughed under, even though green manure is not completely replaceable by cow manure. (vii) Raising more milch cows can help alter the present meat mix in our country. More such cows mean an increased supply of beef, and milch bull calves provide tender meat with a low fat content. The Western European countries depend on milch cows for most of their beef supplies, and the United States, one-fifth. Raising milch and beef cattle is a most economical way of providing

more meat since it is low in cost, high in dressing percentage and capable of producing a large proportion of lean meat.

Chinese peasants, and peasants of the Han nationality in particular, have almost no tradition of raising milch cows (those in Rui'an County of Zhejiang Province and the suburbs of big cities are exceptions), and people in many places do not drink milk. Despite the post-liberation development of milch cow breeding, it is mostly confined to the suburbs and some pastoral areas, while in the vast agricultural areas cattle are raised mostly for use in farming. This is a glaring defect of Chinese agriculture.

China's total milk output produced by cows and goats amounted to 15,500 million kg. in 1982, averaging out at 1.55 kg. per capita. In contrast, 470 billion kg. of fresh milk was produced in the whole world that year, or 105 kg. per capita. Milk shortages are felt in all our major cities, with Beijing, Tianjin and Shanghai producing only one-third to one half of what is needed locally, and most provincial capitals only one-third. Agriculture without milch cows is not agriculture in the full sense of the term. It is both necessary and eminently practicable for us in China to raise more milch cows (including pied cows and cattle for both milk and draught) and to use their manure in the fields.

3. Increase Efficiency

China's animal husbandry enterprises are marked by long production cycles, slow liveweight gains, low egg and milk production, poor-quality animal products, high costs and low efficiency. Pig maturity rates of about 150 per cent in those countries with advanced animal husbandry industries contrast with China's figure of some 60 per cent. In those countries, about 3.5 kg. of all-round mixed feed (containing 60-70 per cent grain) are generally needed for every kilogram in body-weight gain, while China uses double the amount of grain to produce a lower percentage of lean pork. The average amount of meat provided by a penned pig after one year is 31 kg. in China, while the American figure is 116 kg. Mechanized

poultry-farming is fairly advanced in Beijing by domestic standards, yet the average amount of feed per egg produced is 12 per cent greater than that in countries with developed animal husbandry industries. That is to say, if the annual egg yield per hen is 10 kg., a Chinese farm of 200,000 hens will have to use 600 more tons of feed annually. This backward condition is mainly due to inferior poultry breeds and the fact that the feed used does not meet actual requirements quantitatively or qualitatively. In the use of feed we attach greater importance to calories than to protein. Since protein is not supplied proportionately, the calories in the feed are not fully absorbed by the animals and more feedstuff is needed to produce the same amount of meat. At the same time, lack of protein-rich and balanced feed leads to a greater output of fat meat. The production of more protein-rich feeding stuffs, therefore, is a chief way of increasing efficiency in China's animal husbandry. For this purpose, we have to take the following steps:

A. Make the best use of all available varieties of oil cakes and residues. At present China's oil-pressing industry supplies nearly 10 million tons of oil cakes and residues with protein contents generally of 20-50 per cent. But more than half of the rapecakes, peanut cakes and cottonseed cakes are used as fertilizers. This is waste of protein resources, for most such cakes can be used as feed and will then be coverted into manure. Measures should be taken to change this situation gradually.

B. Make use of the animal blood, bones, intestines and hair, and silkworm chrysalises and inedible fish left over at urban and rural meat-packing factories, slaughter houses, fish-processing plants and silk-reeling mills. At present, most of these materials are disposed of as wastes even though they can be processed into protein-rich feeds.

C. Produce the various kinds of additives — methionine, lysine, feed vitamins, etc. — needed for complete feeds so as to increase protein utilization rates in the fodder industry.

D. Grow more leguminous fodder plants such as alfalfa and clover by undersowing and mixed planting with farm crops.

E. Strengthen research in mycelial proteins produced with petroleum and natural gas as raw materials, and gradually develop the petroprotein industry.

III. STRATEGIC MEASURES FOR THE DEVELOPMENT OF ANIMAL HUSBANDRY

1. Introduce Varied Economic Forms in the Right Combination

To perform the above-mentioned strategic tasks, it is necessary, first of all, to utilize internal economic motivating forces in developing China's animal husbandry. Its economic development in recent years has proven that the following two steps must be taken in modernizing animal husbandry: First, we should institute the output-related responsibility system in its many forms so as to utilize the internal economic motivating force of the public ownership system and eliminate the practices of "everybody eating from the same big pot" and "rushing headlong into mass action." Second, we should encourage the co-existence of state and collective economies, the economy represented by the household undertakings of commune members, and the various economic associations under the state economy, so as to fully utilize the various scattered financial, material, labour and technical resources. The modernization of China's animal husbandry, which is chiefly autarkic or semi-autarkic and which uses chiefly traditional methods of operation, poses new problems. The state economy cannot replace the other economic forms and, in particular, it cannot replace the millions and millions of peasant families as far as animal breeding is concerned. For now, we must establish service centres for animal husbandry by relying on the state economy so as to promote the modernization of stock-breeding.

2. Make Animal Husbandry a Specialized and Socialized Undertaking Based on Commodity Production

China's animal husbandry is now undergoing a process of transformation from autarkic or semi-autarkic production using traditional methods into commodity production using modern methods. Promoting this transformation is a major step towards fulfilling our strategic goals in animal husbandry. It is of decisive importance that we establish centres to provide the social services needed before, during and after the production process. Commodity production in animal husbandry should be oriented to society and, at the same time, it requires the services of society. With the development of commodity production, specialization and socialization will become inevitable trends. The more animal husbandry is socialized, the closer the links between its various specialized jobs and society become. And the better social services become, the more developed specialization tends to be and, consequently, the more marketable products animal husbandry will provide. Therefore, socialization should be regarded as the central link in the modernization of animal husbandry, and the following measures should be taken to achieve this end:

A. Set up a network of animal and poultry farming using fine breeds. This includes the establishment and step-by-step perfection of pedigree farms, multiplication farms, sperm banks, progeny testing stations and breeding stations, to provide fine breeds to peasants.

B. Set up a network of feed-processing factories producing mainly mixed feeds. The state should collect the financial and material resources to build a number of major fodder factories producing additives, the construction of which is beyond the power of the localities. These key feed-making enterprises would supply most of the various kinds of additives and premixed feeds needed by the medium-sized and small feed factories in preparing complete feeds and would thus impel the growth of the feed industry as a whole.

C. Set up a network, oriented towards the villages, of integrated anti-pest services that concentrate on the control of animal and poultry diseases.

D. Set up a network of integrated enterprises for processing and marketing animal products.

3. Rationally Utilize the Grasslands

The chief threat to China's animal husbandry today is grassland degeneration. Statistical figures contained in the 1980 issue of *Year Book of Chinese Agriculture* reveal that more than 700 million *mu,* or 17.5 per cent of our total grassland area, have been seriously affected by drifting sands, alkalinization and degeneration. This has been caused mainly by the following activities: First, large tracts of grassland have been given over to grain crops. Some 100 million *mu* have been used for grain production since liberation, and the destruction of vegetal cover has caused them to be occupied by shifting sands. Second, grazing has exceeded the capacity of the natural pastures. This has resulted in their serious deterioration. Jirem League of Inner Mongolia, for instance, has over 74 million *mu* of natural pastureland which carried only 370,000 head of animals in the early post-liberation years. The number had jumped to 3.69 million head by late June 1979, a nearly 10-fold increase which meant that the per-animal area of pastureland had fallen from 200 *mu* to 20 *mu*. Overgrazing led to thinning vegetation and reduced grass growth per unit area. Coupled with frequent sandstorms, this turned more and more pastures into desertland. Now five million *mu* — 6.8 per cent of the total area of the League's pastureland — have been buried under sand. Third, pasture management has been neglected. In some places, inadequate preventive measures against rodents and harmful insects have caused severe damage to about one-third of China's pastureland.

The following should be done in order to exploit China's grasslands fully:

A. Make rational use of the grasslands. First and foremost, it should be specified who has the right to use, manage and construct which plots of grassland. On the basis of proper planning, the boundaries between counties, communes, production brigades and teams and stock-breeding farms should be demarcated and the grasslands divided into a number of sections to be used and taken care of by fixed units or persons. This

will do away with the phenomenon existing in many places of "everybody grazing herds on natural grasslands but nobody taking care of them or contributing to their development." Second, we should overcome the tendency towards exclusively seeking to increase numbers of animals. Emphasis should be given to the improvement of their quality and the shortening of their turnover process so as to attain a proportionate development of animal husbandry. Third, we should formulate policies and decrees on the rational use of grasslands, including a state grassland law that would stipulate rewards and penalties related to the use and development of grasslands so that their protection will be codified. There should be explicit provisions stating that indiscriminate use of grasslands for farming is strictly forbidden, and that those sections that have already been switched over to farm crops be reverted to pasturelands. We should work out policies to prevent overgrazing, and set numbers of animals to be grazed on different types of pastures, taking into account actual grass yields and the planned output of animal products. Those who overgraze herds in violation of these policies should be made to pay the expenses for the regeneration of the overburdened pastures. The pastoral and mixed pastoral-farming areas should be exempted from grain sales and delivery quotas and, instead, required to deliver and sell animal products to the state.

B. Ameliorate the condition of the grasslands. This work is necessary to forestall the degeneration of the grasslands, develop them and increase their productivity. Measures include planting trees and sand-fixing belts, regenerating vegetation, replanting fodder grass where necessary, building water conservancy works, applying more fertilizer, and combating rodents and destructive insects. Grassland improvement has yielded notable results in many localities. Formerly, the Taigemiao Production Brigade in Eijin Horo Banner on the fringe of the Mu Us Desert of Inner Mongolia laid exclusive stress on "taking grain as the key link" and thrice carried out large-scale reclamation of its grasslands, nearly all of which were affected, grievously disrupting the ecological balance and causing ex-

tensive areas to be encroached upon by drifting sands. By 1973, upwards of 1,000 sand dunes of varying sizes had appeared on over 70 per cent of the brigade's land. Later, it planted trees over 21,220 *mu*, averaging 56.6 *mu* per capita, and grass was planted extensively on the affected pastures, which were then closed for regeneration. These active measures for reviving the vegetation have paid off handsomely: 100,000 *mu* of drifting sands have been brought under control, thus salvaging 70 per cent of the sand-invaded area. Grassland improvement has meant renewed development of stock-breeding for the Taigemiao Brigade.

C. Practise seasonal pastoralism. This means making the fullest use of the growing season of fodder grass and engaging in large-scale animal breeding and, as winter approaches, disposing of most of the livestock and producing animal products. Decreasing the number of animals looked after in winter lessens the pressure on the pastures during the unproductive season, while in the summer and autumn the new-born animals can fatten on the luxuriant grass. Experience has shown that this method can shorten the production cycle, quicken process of animal turnover and improve the situation in quite a few places where the animals fattened in autumn lose their condition in winter and die in spring.

D. Develop artificially cultivated pastures and do away with the tradition of raising stock "at the mercy of Heaven." China's animal husbandry suffers to a great extent from the short growing period (three to five months) for grass, limited acreage of artificially cultivated pastures and lack of silage in winter. Planting grass where feasible is a step towards solving the feed problem in winter, and it is of no small importance in increasing the output of livestock products in pastoral areas where animal husbandry depends on grasslands.

(June 1983)

A DEVELOPMENT STRATEGY FOR CHINA'S FISHERY

by the Research Group for a Development Strategy for China's Fishery, Institute of Agricultural Economics, Chinese Academy of Social Sciences

I. THE STRATEGIC OBJECTIVE OF CHINA'S FISHERY

Between 1981 and the end of the present century, China's total aquatic output will increase by 120 per cent and the total output value of fishery will quadruple. To achieve this, we must work out, in conformity with objective laws, policies and measures for developing production, using advanced scientific technology and advanced management techniques, fully utilizing the advantages of China's fresh-water and sea-water aquiculture, and greatly increasing the economic efficiency of fishery. There will be a marked rise in the consumption of aquatic products by the urban and the rural population during the same period. New fishing settlements will be set up, which engage in diversified undertakings with fishery as the main pursuit, and the people engaged in fishery will soon be able to enjoy a comparatively well-off material and cultural life.

According to our tentative plans, China's fishery will have reached the following goals by the year 2000: total aquatic output — 9 to 10 million tons; total output value of fishery — about 13 billion yuan; rates of average annual increase — 4 per cent for output and 7.2 per cent for output value.

Aggregate catch from sea waters will increase from 2.813 million tons in 1980 to 3.3 million tons in 2000. Of this, aggregate annual offshore catch will remain at about 2.8 million

tons, and total annual fishery production in outer and distant seas will reach 500,000 tons.

Total annual output of sea-water aquiculture will rise from 444,000 tons in 1980 to 1.5 million tons in 2000.

Aggregate annual catch from fresh waters will remain at about 300,000 tons.

Total annual output of fresh-water aquiculture will increase from 902,000 tons in 1980 to 4.2-4.9 million tons in 2000. Of this, output of pond fishery will increase from 620,000 tons to 2.2-2.8 million tons; output of lake fishery, from 75,000 tons to 350,000 tons; output of reservoir fishery, from 112,000 tons to 300,000-400,000 tons; output of stream fishery, from 82,000 tons to 400,000 tons; output of fishery in paddy fields and other places, to 850,000 tons or thereabouts.

By the close of this century, per-capita consumption of aquatic products will be some 8 kg., 70 per cent more than the 4.6 figure in 1980. What with the developed commodity production in fishery and the unobstructed channels of supply, per-capita consumption of aquatic products will reach 15-20 kg. in the big and medium-sized cities. The quality of such products will be much better than at present.

II. THE BASIS AND EMPHASIS OF FISHERY DEVELOPMENT

In the light of China's present situation, the characteristics of its fishery enterprises and the experience (both positive and negative) gained in this field during the three decades since the birth of the People's Republic, we have formed a tentative development strategy for the country's fishery, basing ourselves mainly on the following:

(1) China's fishery has vast potentials, in aquiculture and fishing in sea waters, inland lakes, reservoirs, ponds and weirs. There are 2.25 billion *mu* of marine water surface near the continental shelves, which, no more than 200 metres deep, are suitable for fishery. Of this area, more than 20 million *mu*

consist of beaches and other shallow waters good for the culture of marine shellfish, algae, fish and prawns. China has 300 million *mu* of inland water surface consisting of rivers, lakes, ponds and reservoirs, over 80 million of which can be used for aquiculture. According to statistics, in late 1980, China possessed 61,000 motorized fishing vessels and 383,000 non-motorized ones. With regard to the exploitation of aquatic resources, only one-tenth of the country's coastal beaches and less than 60 per cent of its serviceable fresh-water surface have been utilized, and aquiculture in sea or fresh waters still remains at a rather low level of development. On the other hand, the extensive offshore and inland water areas have been overfished and thus need a certain period of recuperation so as to conserve the aquatic resources. Results gained in recent years in opening up new prospects for the use of aquatic resources, improvement of labour productivity and increase of output show that correct principles and policies can encourage the fisherfolk to adopt various methods to exploit the waters more fruitfully and turn potential into actual productive forces. It is, therefore, clear that, by implementing correct policies and bringing about a more extensive and closer union of labour power, on the one hand, and the means and objects of labour, on the other, we can tap the potential of China's fishery, use its aquatic resources more effectively and turn out more and better aquatic products.

(2) Practice since 1978 has proved that, through readjusting the relations of production and introducing the system of production responsibility, we can mobilize the enthusiasm of the broad masses of commune members for fishery. Many peasant households have engaged in fishery exclusively or in combination with other productive pursuits, and some other economic forms such as co-operative undertakings have emerged. The result has been the quickened development of aquiculture. Along with the constant improvement of the production responsibility system and the expansion of the diversified economy, 100 million of the 800 million Chinese peasants are switching from crop cultivation over to product

processing, aquiculture, transport and other economic activities. The division of labour in the countryside that gradually moves towards socialized and specialized production and the availability of an increasing percentage of marketable products mean that more and more productive forces will inevitably be turned towards fishery. Unprecedented in previous decades, this change will impel the development of fishery and serve as a basic motive force for the realization of our strategic objective.

(3) The policies worked out in recent years by the Central Committee of the Chinese Communist Party for promoting the growth of the rural economy reflect the objective requirements of the law of agricultural and fishery development. According to these policies, fishermen have extended powers in the disposal of their products; a change has been made in unified state purchase and marketing of aquatic products which are now handled more through separate arrangements than through unified planning; market fairs have been opened in the rural areas; and commodities are now circulated through multiple channels. Together these measures enable the prices of aquatic products to basically reflect their respective values through market regulation so that the producers can receive reasonable remuneration for their labour. Helping to bring into play their enthusiasm, these measures — designed to consciously utilize the law of value and induce the commune members, the collectives and the state enterprises to develop production — are of great significance to the swifter expansion of China's fishery.

(4) Over the past few years the rural economy has been invigorated so that it is developing at a quicker pace, with the result that the productive undertakings of most peasants have expanded and their livelihoods have improved. As a portion of the commune members have become more well-off, idle capital in the rural areas has increased to 20-30 billion yuan. More and more of such funds will be available as a greater number of peasants become richer and, apart from a portion that will go towards consumption, an increasing percentage will be invested in expanded reproduction by, among others,

peasant families engaged in aquiculture, either exclusively or together with other productive endeavours, and by associations belonging to the collective sector of the economy. An important supplement to the accumulation of funds by enterprises under public ownership, accumulation through peasant undertakings is a positive factor for developing fishery and a significant means of financial support in achieving our strategic objective in fishery.

(5) On the whole, China's fishery has developed rather quickly during the past three decades, but it has not developed in a balanced way. Total aquatic output rose from 450,000 tons in 1949 to 4.497 million tons in 1980 (output value rose to 3.21 billion yuan). This was a 10-fold increase, or an average annual increase of 7.7 per cent. But the process did not take place without complications. The Great Leap Forward of 1958 and the "cultural revolution" (1966-76) brought great damage to production. For many years, the guidelines for fishery emphasized fishing to the neglect of conservation, emphasized sea-water aquiculture to the neglect of fresh-water aquiculture, emphasized quantity to the neglect of quality, and emphasized monoculture to the neglect of diversified undertakings. This led to overfishing and damage of aquatic resources. Moreover, waters were polluted, large stretches of lakes and sea were filled in to create farmland, and many water conservancy works blocked the migration routes of fish, all adversely affecting the normal development of fishery. Aquatic production fluctuated between two and three million tons during over half of the past thirty years. Looking ahead to the next two decades, however, we are confident that, side by side with the other branches of the economy, China's fishery will be able to proceed with its modernization in a political situation of stability and unity after correctly summing up historical experiences (both positive and negative). Our goal of more than doubling total aquatic output in the next 20 years can be realized, provided we make a strenuous effort.

(6) In recent years, China's fishery, especially aquiculture, has entered a new stage of all-round development, and more

and more fishermen and peasants are anxious to master production skills and learn related scientific principles and technology. Our country has a long tradition of aquiculture and has accumulated a wealth of experience. And tremendous achievements have been scored in fishery science and technology, as witnessed by the notable results in experiments on artificial hatching; the combination of grain production, pig-raising and fish farming; the cultivation and spread of new varieties of products; the prevention and treatment of fish diseases; the processing of aquatic products; and the mixed culture of different breeds of fish in deep ponds. In the years ahead, we should build on what we have achieved and further popularize advanced science and technology in fishery, developing our intellectual resources, helping the broad masses to master scientific-aquiculture and transforming scientific accomplishments into productive forces, in order to multiply aquatic output and greatly improve the quality of the products. This will be important in ensuring that we reach our strategic objective for China's fishery and quadrupling its total output value.

To ensure the fulfilment of the targets set for total aquatic output and the total value of such output and to ensure that those engaged in fishery will be able to become fairly well-off at an early date, we should set clear priorities in the development strategy for China's fishery and use our manpower and material and financial resources first of all for developing fresh-water and sea-water aquiculture and product processing. This is because rather serious damage has been done to our fresh-water and sea-water fishery resources. Increases in fishing facilities must be controlled over a rather long period (with the exception of those for outer-sea and distant-water fishing), and the output of offshore and inland fishery should be basically stabilized instead of being allowed to continue to drop. On the other hand, under the conditions created by the Party's flexible policies on rural economy adopted since 1978, aquiculture around coastal beaches and fish-rearing in ponds in rural areas have developed impressively.

COMPARATIVE OUTPUT OF FISHERY AND AQUICULTURAL PRODUCTION

	1977	*1981*	*Change over 4-year period*
Aggregate catch (in 10,000 tons)	350.3	313.3	—10.6%
Output in aquiculture (in 10,000 tons)	119.2	147.2	+23.5%

As shown by the above chart, in the four years under review, output in aquiculture increased by 280,000 tons while aggregate catch fell by 370,000 tons. Because the former increase largely made up for the latter decrease, the total output did not suffer very much. The chief way of developing China's fishery over the coming years must be through increasing the rate of utilization of exploitable water surfaces and raising output per unit area. In achieving our aim to more than quadruple the total output value of aquatic production in the next two decades, we should devote the first 10 years mainly to the readjustment of production relations, which will afford the material and social basis needed for the growth of aquiculture and the full utilization of all exploitable water surfaces. In the second decade, we should look to the spread of related scientific and technological knowledge, the achievement of stable and high yields, the in-depth development of aquiculture, and a great increase in the output value of fishery by expanding the product processing industry and developing the multi-purpose use of aquatic products.

Special efforts should be made to develop aquiculture in the following water areas:

(1) Ponds, small reservoirs and estuaries. Totalling 30-40 million *mu* in area, these are key points in China's fishery development. We must make the greatest possible use of the advantages of the limited water surfaces which are suited for intensive fishery to achieve better economic results, i.e., high yields and fine product quality. Pond fishery has a long history in China and the country has a rich store of experience

in this respect. Fishermen in the Zhejiang Delta, around Taihu Lake, at Hangjiahu Plain (in north Zhejiang Province) and Jianghan Plain (in central-south Hubei Province), and in Sichuan and Hunan provinces, are skilled in meticulous, high-yield fish farming, and their successes should be popularized. Peasants who have contracted jobs raising fish in ponds should be encouraged to dig the ponds deep to improve production conditions and increase output. Great potential still lies to be tapped in pond fishery inasmuch as many serviceable ponds have yet to be utilized and output per unit area can still be raised by a wide margin. Per-*mu* output was 46 kg. in 1978, 50.5 kg. in 1980, and 56.5 kg. in 1981, an average annual increase of 7 per cent. As the output of many fish ponds has already exceeded 500 kg. per *mu*, much remains to be done to increase the productivity of the rest. By striving to improve breeds, preparation of feed, disease prevention and fishery management, and by popularizing new techniques for increasing production suited to local conditions, aquiculture in small bodies of water can become a chief factor in promoting the development of China's fishery as a whole.

(2) Lakes and reservoirs, which together offer an area of 40-50 million *mu* suitable for aquiculture. First of all, it is necessary to clarify the rights of peasants regarding the use of lakes and reservoirs near which they live. Only then will production take on a normal order and will it be possible to improve the economic management of aquicultural activities. Diverse measures at various administrative levels should be taken to fully utilize the extensive inland water areas to develop fishery and so stimulate the development of farming, forestry, animal husbandry, sideline occupations, industry, transport, commerce and the service trades. To cope with the growth of the productive forces, we should support the economic associations and other forms of management. Our purpose is to make the big lakes and reservoirs bases of production featuring a developed diversified economy.

(3) Paddy fields. Greater efforts should be made to raise fish in paddy fields. Our tentative plan is that, by the year

2000, one-tenth of the total area of such fields will be available for mixed rice growing and fish raising or for rotating the two. Large and medium-sized cities should try to breed fish along factory production lines by using warm water discharged from power plants. In the mountainous and hilly regions of southern China which are endowed with good aquatic resources, peasant families should be induced to go in for fish farming on their private plots or other small pieces of land.

(4) Coastal beaches and other shallow waters. Totalling 20 million *mu* in area, they should be made important bases of fishery. Since by world standards our country is still backward in sea-water aquiculture, we have to popularize our domestic experience and draw on foreign experience in the artificial propagation of sea-water fish, in the preservation and processing of shellfish, in the purification of algal products, in the construction of artificial reefs on the ocean floor, and in other areas of science and technology as well as in managerial methods. This will help greatly expand our marine aquiculture and increase its economic effectiveness.

Fishery should be carried out in keeping with the actual conditions of the localities concerned, and taking into consideration the economic interests of the fishermen. Since there are too many fishermen and a relatively limited area of water and shallows suitable for aquiculture in the coastal areas where marine fishing is concentrated, it will be difficult to boost the fishermen's incomes considerably in a relatively short time. Some of them should, therefore, be organized for outer-sea fishery. For instance, although the Zhoushan Islands are nearest to the high seas of the East China Sea, in the past, most of the more than one million tons of economic fish available beyond the fish sanctuary of the sea were caught every year by Japan and south Korea and by Hongkong and Macao. We should give support to our coastal fishermen in matters of funds and fuel so that, taking advantage of China's proximity to the high seas and of the relative economy in fuel consumption, they can shift part of their efforts to the outer sea and compete with their foreign counterparts in order to wrest a greater part

of the fishery resources there. Where possible, China should allocate a portion of its construction funds for building a number of high horse-power fishing vessels with advanced equipment for use in exploiting the fishery resources in the distant waters and the Antarctic Continent.

With the development of the national economy as a whole, fishery will become more and more socialized and specialized; the percentage of its marketable products will increase continuously and there will be more and more fishing enterprises. A considerable part of our manpower, material and financial resources should be released from marine and fresh-water fisheries for developing the processing industry, feed production, transportation, marketing facilities and means of popularization of scientific and technological knowledge, all in the interest of the all-round growth of China's fishery. Measures should be adopted for fully utilizing our aquatic animal and plant resources to add to the portion of marketable products. Part of the productive forces in the fishing areas should be used for expanding diversified undertakings. Through the full development of fishing, aquiculture, aquatic product processing and a diversified economy, fishermen will be able to increase their incomes rapidly. Meanwhile, great attention needs to be paid to cultural side of their lives so that there will be a general improvement in both the fishermen's material and cultural lives.

III. MAJOR PROBLEMS TO BE SOLVED IN THE FULFILMENT OF THE STRATEGIC OBJECTIVE

In order to fulfil the strategic objective of China's fishery, it is essential to strengthen leadership, set up or reinforce necessary departments and take measures with regard to policy and scientific and technological matters to ensure positive results in the introduction of fine species, feed production, disease prevention, storage, transport, supply and marketing, preservation, processing and multi-purpose use of products, protection

of resources, fishery management, the use of construction funds, and in the supply of materials needed in fishery. In particular, we should do the following:

(1) Correctly handle the relationship between fishery and other economic branches and related departments.

As a component of the national economy, fishery occupies an important position in its overall development strategy, and its growth calls for a co-ordinated effort by all quarters concerned. First, it is necessary to give fishery adequate attention, support and aid, and to make rational arrangements for it in the long-term, five-year and annual national economic plans as regards funds, means of production, intellectual resources, construction of fishing settlements and other basic requirements. Second, as an independent economic department, there are many favourable conditions within the area of fishery itself that can contribute to the fulfilment of its development strategy. Third, fishery and the other economic branches should co-ordinate their efforts in development. On its part, fishery should avoid occupying farmland and paddy fields in order not to adversely affect grain production, while the other departments should support the regular development of fishery and conscientiously solve such serious problems as water pollution and encroachment on water areas designated for fishery. The overall development strategy of the national economy and the specific programmes and measures for its realization should affirm and reflect the status of fishery and its relationship with other related departments.

(2) Achieve a favourable ecological environment essential for fishery.

The conversion of matter and natural cycles in fishery require a rational ecological structure and ecological balance involving different types of regions and water areas. In the fulfilment of long-term plans, it is necessary to constantly improve production conditions, make use of all the factors favourable to fishery development, and gradually achieve a

favourable ecological environment. The following must be done in order to develop fishery in a planned, systematic, balanced and sustained manner:

A. Work for better conservation of water and soil in the various river valleys and around the various lakes and reservoirs. We should plant trees extensively, especially trees for water conservation on the upper reaches of rivers, expand the vegetal cover, check water and soil loss, halt the gradual silting, narrowing and shallowing of inland natural water bodies, and furnish rich and reliable water resources and a fine ecological environment for fishery.

B. Stress aquiculture and encourage diversified undertakings. We should check the long-term tendency for the fishing population to increase too fast, creating a surplus of labour power, and thus reduce the fishing intensity in offshore and inland natural water bodies and effectively stop the deterioration of fishery resources. We should treat industrial waste waters, and erect facilities in lakes, reservoirs and rivers to allow the passage of fish and ensure their protection. We should strictly implement the regulations on environmental protection so as to remedy the disrupted ecological environment of fish and achieve a new ecological balance.

C. Set up and develop commodity production bases in suburban areas, which centre around fishery and embrace farming (vegetable and fruit growing) and stock-breeding (raising of pigs and milch cows) and engage in diversified pursuits, so that there will be multi-purpose use of resources. We should construct more land improvement and water conservancy projects and encourage peasants to invest more manpower to deepen and renovate fish ponds so as to improve the conditions for pond aquiculture and rear fish at different depths of water.

(3) Readjust the relations of production in fishery to meet the needs of the growth of the productive forces.

Another basic condition for achieving the strategic objective of China's fishery is to start from reality and readjust the

relations of production in fishery according to the actual development needs so as to suit the level of development of the productive forces. It is necessary to form an ownership structure with the state economy playing the leading role, the collective economy and the various economic associations functioning as major components and the individual economy playing an important supplementary role. This structure, which makes it possible for all economic sectors to develop side by side, can be created by formulating policies which are aimed at bringing into full play all positive forces — embodied in the state, the collectives and the individuals — for developing aquiculture. Using relatively advanced technology and technical equipment and other favourable material conditions, as well as better management and operation, the state fishing enterprises can develop more quickly, obtain better economic efficiency and set aside more funds for accumulation. The collectively-owned fishing enterprises, which are suited to the current level of development of the productive forces in our country, must be expanded and strengthened continuously. Fishery by individual peasant families is gaining ground. They are operating not only in scattered small water areas as before, but also on considerably large scales. Quite a number of households have taken up fishery either exclusively or in combination with other undertakings. This form of fishery, which is contributing to overall development both in depth and breadth, has vast prospects.

In fishing areas and settlements, it is necessary to promote and improve in an all-round way the system of contracted responsibility in fishery with remuneration linked to actual output. We should correctly handle the relationships between decision-making power, responsibility and benefits and take into account the interests of the state, the collective and the individual so as to fire the enthusiasm of peasants and fishermen for developing aquiculture. Measures should be taken to enable more and more fishing enterprises to engage in

specialized production and to turn out an increasing percentage of marketable products, and also to co-ordinate fishery with farming, forestry, animal husbandry and sideline occupations and other diversified pursuits. Our general objective is the all-round prosperity of the agricultural and fishing areas, including their economic, scientific and technological and cultural undertakings and the living standards of the local people.

(4) Reform the circulation system and develop commodity production.

One of the characteristics of fishery is a high percentage of marketable products. Marine fishery turns out only a very low percentage of products for consumption by the fishermen themselves. And in fresh-water fishery, as the state aquicultural enterprises develop and fish farming by collective economic units and individual peasant households becomes more and more widespread, there will be a rapid increase in the proportion of products for sale. It is, therefore, necessary to change the situation in which circulation is carried on through a single channel; in which there are numerous and overlapping links in purchase, marketing and transport; and in which costs are high, the quality of products is becoming increasingly poor, enterprises are run at a loss and waste is serious. There must be a system of circulation for aquatic products, which involves varied economic sectors, mutiple channels and different forms of operation and which makes possible a direct link between production and marketing.

Full scope should be given to market regulation in the reform of the circulation system for aquatic products because these products are easily perishable. After fulfilment of their sales quotas, state enterprises may market their products at negotiated prices. With regard to sales quotas for major areas of aquatic production, a small portion of the products may be purchased at state-set prices. All this is meant to ensure the availability of specified quantities of aquatic products in the cities.

The contract system should be practised in all purchases of aquatic products. As stipulated in the contracts, the state

is to supply the production units with the materials needed, and give them support in matters of price, funds and credit. It should also give price subsidies to enterprises engaged in outer-sea and distant-water fishery, and allow them to sell a portion of their products directly on the international market to make their operation more profitable.

(5) Promote fishery by relying on science and technology.

The realization of the strategic objective of China's fishery hinges, to a great extent, on the progress and spread of aquicultural science and technology. Fishery development must be guided by correct technical and economic policies; there must be proper emphasis on technical development, and long-term plans are necessary. Science and technology can help ensure the constant advance of fishery and help increase the output per unit area of aquiculture.

Great importance should be attached to intellectual investment in aquicultural science and technology. Large numbers of scientific and technological personnel must be trained for aquiculture through varied channels, and this requires administrative and economic means. Research institutes and colleges and universities should stress applied technology and strive for better results on such key subjects as the purification and rejuvenation of domestic fish, the prevention and treatment of fish diseases, the manufacture of fishing and detection equipment used in marine aquiculture, and the processing of aquatic products. Technical advisory stations should be set up extensively in major areas of commodity aquicultural production to guide and help the masses in mastering professional skills, particularly skills of use in intensive and high-yield production. Fishery administrative departments and schools and research institutions at all levels should train grass-roots technical personnel and impart to them the necessary knowledge for popularizing scientific fishery, improving skills and raising the level of management.

(June 1983)

INDEX

中国农业生产责任制的建立与发展
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CHINA'S SEARCH FOR ECONOMIC GROWTH: THE CHINESE ECONOMY SINCE 1949

By Xu Dixin and Others

This collection of essays by China's leading economists presents a comprehensive summary of the course of China's economic development since the founding of the People's Republic of China. The authors seek to analyse the successes and failures of past economic construction, from which they draw the lessons needed to guide current economic policies. Their analyses are accompanied by detailed statistics.

CHINESE VILLAGE CLOSE-UP

By Fei Hsiao Tung

The present book includes the results of the author's field work conducted in 1936, 1957, and 1980 at the same village. Using his 1936 data as a basis for comparison, Prof. Fei thus able to describe some of the far-reaching changes that have occurred in rural China since the success of the revolution. The book provides an unparalleled opportunity for both readers of general interest and specialists to witness the course of reform and revolution as it has occurred in one village, as seen by a distinguished Chinese academic authority.

Miraculous achievements have resulted from the implementation of the rural contract responsibility system. The Chinese Premier frankly admitted that the achievements were "unexpected." To the rank-and-file Chinese, the system comes close to being an omnipotent magic wand capable of bringing any economic success. SMASHING THE COMMUNAL POT represents the first English edition of a systematic account of the evolution of the system.

Ever since its first appearance in the early 1950s, the contract responsibility system has received repeated criticism, and has at times been suppressed or outlawed, until 1979, when it was finally affirmed and implemented nationwide. The book traces the various forms and contents of the system as well as the varied receptions it received at different historical periods. Included also is a study of the most recent development of the system — specialized households and key households. The last portion of the book is devoted to four developmental strategies for China's agriculture, forestry, animal husbandry and fishery in the year 2000, when the system will be further consolidated.

Embracing China's policies on agriculture, the cornerstone of its national economy, over a wide space of time, the book is a useful tool for both specialists and readers of general interest in understanding past economic policies and the far-reaching significance of on-going economic reforms.