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China Report

AGRICULTURE

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5 February 1985

CHINA REPORT

AGRICULTURE

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BEIJING URGES REFORM OF AGRICULTURAL PRODUCTION

OWO31358 Beijing Domestic Service in Mandarin 2230 GMT 30 Dec 84

[Station commentary: "Rationalize the Structure of Production in Rural Areas"]

[Text] China's agricultural structure used to be unitary in nature, characterized primarily by farming, especially by the production of food grain. Such a unitary structure is unfavorable for the overall development of the rural economy and for further enlivening the rural economy. For that reason, we must do away with the small-peasant economic viewpoint and establish the concept that the structure of production in rural areas should be integral and multilayered.

Reforming the structure of production in rural areas means that their agricultural and labor structures, as well as their production, should all be properly readjusted. As to farming, areas suitable for grain production must do a good job of producing food grain and strive to increase yield per unit. Areas unsuitable for food grain production must gradually substitute forestry, animal husbandry or fishery for farming.

Agricultural, industrial and commercial operations should be carried out in a coordinated manner. Food grain, in particular, should be processed and reprocessed in order to increase its value. We should take advantage of the superiority of having ample supplies of corn and soybeans to speed up the development of animal husbandry and aquatic production.

The structure of agricultural production should be readjusted according to market demands and natural conditions. Certain economically developed areas along the coast and the outskirts of large and medium-size cities should grow little food grain and cotton, or even none at all. They should, in accordance with the principle of serving the urban areas and making the people more affluent, develop economic crops with regional characteristics and modernize their agricultural production through adopting foreign techniques or cooperating with fraternal regions. Localities with the proper resources may also engage in fruit or flower production, or in developing tourism.

In our country, where there is a large population, we must, in addition to improving our agricultural production, actively develop second and third industries in order to make our rural areas more affluent. Wherever possible, modern industries resembling those in cities, such as light, textile, machinery, electrical and chemical industries, should also be developed in rural areas. In that way we can speed up the proliferation of urban industries in rural areas.

NATIONAL

ZHAO SAYS STATE'S ROLE IN AGRICULTURE TO CHANGE

OW011410 Beijing XINHUA in English 1334 GMT 1 Jan 85

[Text] Beijing, 1 January (XINHUA)--Premier Zhao Ziyang stated here today that China would abolish the 30-year-long practice of state having exclusive rights in purchasing and selling major agricultural produce as from 1985.

The state is to adopt a more flexible policy towards agricultural and sideline products and to extend the scope of the role of marketing regulation under the guidance of state plan while state also actively participates in marketing regulation, Zhao said.

Premier Zhao was addressing the New Year's tea party given for 300 public figures by the National Committee of the Chinese People's Political Consultative Conference. He described the move as the second major step in the reform of rural economic structure since the introduction 5 years ago of contracted responsibility system with remuneration linked to output.

He said that in general the new move would not cause price rise. "This is what we have hoped but dared not to do for many years. Now we are able to do it as conditions are ripe," he added.

Necessary price readjustment and reform should also be carried out with regard to a limited number of industrial products. The aim was to give an impetus to the rationalizing of the industrial structure without affecting the overall balance.

Zhao Ziyang said China had decided to increase the pay for middle and primary school teachers from this month. Reform of the pay system in state institutions would also be carried out this year. Included were those in the fields of science, technology, culture, education and public health. The income and welfare benefits of workers and staff would be directly linked to enterprises' economic performance.

Zhao Ziyang stressed that price readjustment and the reform of the pay system should enable producers to increase their income, without lowering the real purchasing power of consumers. As the state was facing an excellent situation, it was able to achieve this, he said.

The ongoing nationwide reform of the economic structure had a bearing on the future of the country, Zhao said, adding that confidence in its success should be accompanied by prudent steps and methods to avoid major blunders.

The year 1985 would be the first year of the nationwide reform of the economic structure. "Our principle is to take a valuable and significant step with good preparations and full assurance, while the required conditions are met."

Zhao Ziyang said in conclusion that today next year the people would see an important and successful reform carried out in China in 1985.

CSO: 4020/74

OFFICIAL ON NEW TYPE OF SPECIALIZED FARMER

HK040639 Beijing CHINA DAILY in English 4 Jan 85 p 4

[By Wu Yadong, of Ministry of Agriculture, Animal Husbandry, and Fisheries]

[Text] A new type of specialized farmers has been emerging in China, in response to developments in the past year towards improving the market orientation of the rural economy. These farmers are not only skillful businessmen, prepared to take risks, but they also have a good mastery of technical know-how.

In the last few years, most rural farmers have been only marginally involved in business other than farming and there has been little diversification in the rural economy. This year, however, many farmers have started to concentrate on production of a single item, instead of wasting time, money, and effort on trying to do business and farming at the same time.

According to a 6-city survey in Hunan Province, about 115,000 rural households specialize only in farming and 15 percent of the specialized household pursue a single trade.

It also has become apparent to those managing rural specialized households that it is more efficient to focus on one aspect of production rather than taking on the whole business. So, some farming households have started to rely on state or collective services for the purchase of seed and fertilizer, and for irrigation and transport.

At the same time, a number of households have emerged that provide poultry breeding, animal feed processing, transport and epidemic prevention services.

The past year has seen a structural change in rural specialized households and the following statistics illustrate this change: The number of households specializing in farming has risen from 34 percent to 36 percent; the number involved in stock breeding has dropped from 32.5 percent last year to 24.6 percent; and the number of households specializing in industrial production has risen from 11.7 percent to 14.4 percent.

Rural people have gradually turned away from being mere producers into units with a role in the circulation and consumption of goods as well. Furthermore, their production scope extends to the cities and towns.

Proper policies and measures have enabled rural people to work even harder and to raise their sights. An increasing number of households are now specializing in forestry, farming, animal husbandry and fish farming.

The following may provide an insight into what is happening in rural households today:

In Taizhou region, Zhejiang Province, about 13,000 hectares of land have been contracted for afforestation, about 7,000 hectares of fruit trees have been planted and about 3,000 hectares of beach area now is being utilized.

One Shanxi Province farmer specializing in grain production contracted 45 hectares of land and sold 5 tons of peas this year to the state, with the expectation of selling a further 4 tons of grain after the autumn harvest. Altogether, his profits will bring him an income of 40,000 yuan.

Another Shanxi man collected an investment of 120,000 yuan for the improvement of a carbide factory last March. By the end of this year, his factory output will amount to 400,000 yuan, one quarter of which will be his own net income.

Some rural people have responded to inadequate transport facilities in certain areas, and have begun to buy lorries and other means of transport so that goods and farm products can now be moved elsewhere for sale.

In a county of Jilin Province, more than 4,000 rural households are now specialists in transport. They own a total of 126 lorries, more than 1,000 tractors and 2,500 horse-drawn carts, carrying more than 200 varieties of goods to other areas for sale.

Across the country, 4.2 million rural households have switched to business or commercial activities instead of farming the land. These farm-based businessmen travel back and forth between cities, towns and rural areas, selling their products and revitalizing the rural market.

Rural households engaged in service trades also are expanding. A county in Hunan Province has more than 2,570 such households, who cooperate with state and collective departments, to provide help for other specialized households in epidemic prevention, processing of farm products, transport and information supply and fill a welcome position in rural areas.

Households specializing in other trades also have sprung up in recent years, supplying building materials, tailoring, embroidery, flower growing and even teaching services.

The facts show that specialization in rural households has more advantages over common households in production, in the rural market economy and in the utilization of land. And they fare much better than common farmers.

A survey conducted by the Ministry of Agriculture, Animal Husbandry and Fishery on 8.51 million specialized households reveals that these households have

an average annual income of 2,571 yuan, which is 82.2 percent higher than their common-farming counterparts, whose average annual income is only 1,411 yuan.

While such efforts towards modernization in the countryside continue, the rural market economy and rural productivity also will develop. Further coordination between these new economic entities in rural households will succeed in boosting rural production. Already, specialized villages, towns and markets have come into being as a result of economic growth.

CSO: 4020/75

NATIONAL

STATE PLANNING OFFICIAL ON LAND MANAGEMENT

OW281427 Beijing XINHUA Domestic Service in Chinese 0734 GMT 25 Dec 84

[By reporter Xu Kehong]

[Excerpts] Zhengzhou, 25 December (XINHUA)--A responsible person of the State Planning Commission said: At present, land management [guo tu zheng zhi 0948 0960 2419 3112] is being gradually placed on the agenda. As important as the population issue, land management will, if left unattended, create a situation more intractable than the population issue in future. He made the remarks to the reporter on 23 December when attending the national discussion meeting on land planning now in session in Zhengzhou.

The official said: Land management is a strategic and comprehensive work, mainly comprising five interrelated tasks; namely, the survey, development, utilization, management, and protection of land resources. Proceeding from the nation's overall and long-term interests, land management is designed to fully and rationally utilize all natural resources to ensure a coordinated development among the economy, population, natural resources, and environment, thereby achieving better economic and ecological results.

The responsible person said: In 1981, the Party Central Committee and State Council made a timely decision to unfold the work of land management. This was an extremely judicious policy. The State Planning Commission, which is currently in charge of this work, will concentrate on formulating an outline for the comprehensive planning of the nation's land beginning next year. Successful land planning is crucial to land management. The State Planning Commission must gradually shift its emphasis from making annual and mandatory plans in the past to formulating medium-and long-range plans that will serve as guidelines. Comprehensive land planning is a fundamental task. In major land development projects, it is necessary to look ahead into several decades from now, instead of the next few years. The work is to be carried out from generation to generation. We must let land planning guide our construction in a unified manner, and reap maximum benefits from scientific and selective exploitation of land. Inadequate understanding of and shortsightedness in this issue will cause us to be at a great disadvantage in future.

The responsible person of the State Planning Commission pointed out: Land management is extensive in scope, covering urban and rural areas, and is

closely linked to agriculture, forestry, fisheries, water conservancy, industry, communications, geology, oceanography, meteorology, and scientific research. It is imperative to give full play to the role and joint efforts of all departments concerned and localities to ensure success.

The national discussion meeting on land planning opened on 19 December.

CSO: 4007/171

NATIONAL

NEW PERIOD OF DEVELOPMENT OF MECHANIZATION OF CHINA'S AGRICULTURE

Beijing NONGYE JINGJI WENTI [PROBLEMS IN AGRICULTURAL ECONOMICS] in Chinese
No 9, 23 Sep 84 pp 34-35

[Article by Zhou Xiao [0719 2556]: "Development of Mechanization of China's Agriculture Enters New Period"]

[Text] In the past several years, along with a number of things to set the rural policies to rights and the all-round growth of the rural economy, thousands upon thousands of peasants who have made their first step toward wealth, especially the specialized households and priority households, have vied with one another to purchase farm machines. This marks an end of the relatively unique "government-operated" or "quasi-government operated" situation which has long existed in the undertaking of mechanizing China's agriculture and starts a new period of mechanization under the sponsorship of the state, the collectives, individual peasants and production brigade-household combined households.

The number of farm machines in China has increased very rapidly in recent years. The total of their power reached 245 million horsepower at the end of 1983, an increase of 8.5 percent over 1982.

The total number of large and medium-size tractors reached 841,000 units by the end of 1983, an increase of 3.5 percent over 1982.

The total number of small and walking tractors reached 2.75 million units, an increase of 20.2 percent over 1982. The year 1983 scored the biggest margin of increase of the last 5 years.

The total number of trucks for farm use reached 275,000 units by the end of 1983, an increase of 33.1 percent over 1982. The year 1983 scored the biggest margin of increase of the last 3 years.

The total number of power-driven machines for drainage and irrigation reached 6.077 million units, or 78.492 million horsepower, by the end of 1983, an increase of 4.7 percent, or 2.3 percent respectively, over 1982.

Remarkable Increase in Peasants' Purchases of Farm Machines Is an Important Sign of the New Period

Peasant expenditures for the purchase of farm machines have been on the increase year after year. The national survey of agricultural households' incomes and expenditures shows that with the expenditures which peasants took from their incomes for the purchase of fixed productive assets in 1982 increased by 86.4 percent over the base year 1981, and in 1983 it increased by over 57.7 percent, of which expenditures for the purchase of farm machines showed a 140 percent increase. The ratio of peasant expenditures for the purchase of fixed productive assets, in the total of their net incomes, went up from 4.3 percent in 1982 to 6 percent in 1983.

The number of peasant-owned farm tractors rose from close to 1 million units by the end of 1982 to 2.106 million units by the end of 1983, an increase of 110 percent, and their ratio in the national total from 13.5 percent in 1981 to 32 percent in 1982 and to 58.6 percent in 1983.

Peasant-owned small tractors have had the fastest increase. Their total reached 1.879 million units by the end of 1983, double the 1982 total based on a 116 percent increase in 1982 over 1981, and they have made up 68.3 percent of the national total of small tractors. Along with the extension of the contracting period of land and the constant expansion of the scope of management, peasant demand for large and medium-size tractors has also been on the rise.

Besides, peasant-owned trucks for agricultural use and machines and tools for farming and the processing of agricultural by-products have increased in various degrees. The national total of trucks was only 7,000 in 1981 and rose to 17,000 in 1982 and 90,000 in 1983, an increase of 430 percent over 1982 and 1,200 percent over 1981. The ratio of peasant-owned trucks for agricultural use in the national total went up from 4 percent in 1981 to 32.7 percent in 1983.

All places in the country universally report that since Central Document No 1 of 1984 was issued to the lower levels announcing the extension of the contracting period of land, peasants have gradually purchased more large and medium-size tractors, trucks and even caterpillar tractors which are mainly needed for deep ploughing and capital construction of farmland. The management of farm machines by individual peasants or production brigade-household combined households represents the direction in the current phase of the development of the mechanization of China's agriculture.

Specialized Households Becoming Leaders of the Mechanization of China's Agriculture Is an Important Characteristic of the New Period

Many specialized households which came into being to accommodate the specialization, socialization and large-scale commodity production of agricultural production have become leaders of the mechanization of China's agriculture.

According to the survey conducted by the departments concerned of a total of 2,277 specialized households in 310-plus xian in 27 provinces, municipalities and autonomous regions, 1,500 of them provide services to the society with farm machines managed by them, making up 66 percent of the total. Due to their use of farm machines, these specialized households in general have the following characteristics:

1. Wide in range of services: the range of their services touches upon all fields, from the transport industry to the repair industry, from the farming industry to the processing industry and from production to circulation.

2. Large in scale of management: in the farming industry, some peasant households manage over 500 mu of farmland; in the animal husbandry industry, some households manage 100-plus cows, some 400-plus hogs and some thousands upon thousands of chickens or ducks; and in the processing and transport industries, some households have an income of several thousand yuan or over 10,000 yuan.

3. High in economic results: in terms of the amount of commodity grain sold by nearly 200 grain specialized households surveyed, those having power-driven farm machines can yield 2,900-plus jin per capita, and those having no power-driven or ordinary farm machines can yield only 2,200-plus jin per person, a difference of 32 percent between the high and the low amounts. In terms of per-capita income, the amount of the former is 720 yuan and of the latter 558 yuan, a difference of 29 percent between the high and the low amounts.

Enhancing Guidance and Management and Promoting Healthy Development of the Undertaking of Mechanization of Agriculture Are Important Tasks of the New Period

Along with the tremendous increase of farm machines, enhancement of the management of and service for the mechanization of agriculture grows more important day after day.

First, it is necessary to enhance the management of existing farm machines and make an effort to improve their utilization ratio. Because the form of management of farm machines has developed from the state and collectives to the state, collectives and individual peasants or production brigade-household combined households, the management of farm machines is growing more difficult. Taking the reflection by the Liaocheng Special District of Shandong as an example, in the past peasant households in some places shared one well and one water pump which could satisfy their need for irrigation, but now they each have a diesel engine and a water pump and find fuel and do irrigation independently. Instead of using the water pump together, several households mount their water pumps on the well simultaneously, thus resulting in considerable waste. The number of tools attached to farm tractors which are equally distributed among peasant households is decreasing year after year, thus affecting the utilization ratio of farm machines. Thus, all places must start from reality and take the whole situation into account and solve the problem accordingly. Only by so doing can we make the most of existing farm machines.

Second, it is necessary to do a good job of the service of rendering technical advice on farm machines. Along with the development of the mechanization of agriculture, peasants are in desperate need of technical guidance. Thus, departments at all levels dealing with farm machines must make an effort to do well with services for farm machines, based on the necessity to set up various types of farm machine service organizations, do a good job of rendering technical advice on farm machines through different forms and be good advisers to the peasant-sponsored mechanization of agriculture in order to enable peasants to purchase and use farm machines which are economical and practical.

Third, it is necessary to do well with the supply of diesel fuel for agricultural use. At present, the shortage of diesel fuel is a big problem in the mechanization of agriculture. Although the state's planned supply of diesel fuel for agricultural use of 1983 showed a 14 percent increase over 1982, the national average of the diesel for agricultural use for each power-driven machine is less than 50 kg, which is 30-50 percent short and far from the amount needed to satisfy the actual demand. Besides, it is hard to guarantee that the limited supply of diesel fuel can reach peasants who need it. As reflected by the departments dealing with farm machines, in 1983, 70 percent of the planned supply of diesel fuel for a xian of Sichuan was taken away by "the households having a good relationship with the supplier." Similar cases have been reported in all places. In light of this situation, it is imperative for the departments in charge of the management of farm machines to take centralized control of the limited supply of diesel fuel for agricultural use.

Fourth, it is necessary to intensify the training and education of farm machine operators. At present, because many farm machine operators are green and their technical level is low, accidents often happen. Thus, it is necessary to give farm machine operators a regular safety education and technical training, amplify the system of responsibility for the management of farm machines and promote the healthy development of the undertaking of the mechanization of agriculture.

Fifth, it is necessary to lessen the burden of the households that manage farm machines. Due to the inadequate centralization of the management and supervision of farm machines at all places at the present time, the departments concerned often poke their noses into them, causing peasants to shoulder unreasonable burdens and expenses. As some places in Hubei, Sichuan and other provinces reflected, in 1983 a household managing one medium-size tractor needed to pay various types of taxes and fees in the amount of 1,467 yuan of which a considerable part was unreasonable. Farm machine households make a lot of complaints about this situation by saying, "For the use of tractors there are many taxes, fees and barriers, but the supply of diesel, cargoes and profits are few. The roads we drive on are high-price roads, and the fuel we use is high-price fuel. Not only can we not become wealthy, we may well stand a chance of not being able to safeguard the investment." They wish that the departments concerned can solve this problem carefully and skillfully.

12730

CSO: 4007/64

NATIONAL

AGRICULTURAL PROJECTS USING FOREIGN FUNDS SEE RESULTS

Beijing ZHONGGUO NONGMIN BAO in Chinese 30 Oct 84 p 1

[Article: "China's Farm Use of Foreign Funds in Recent Years Shows Results"]

[Text] Over the last 5 years, China's use of foreign funds in agricultural construction has shown great results, primarily in the following areas:

1. A number of key construction projects have been completed on time. North China has over 6 million hectares of land which needs desalinification, but since funds were inadequate in the past, only a small area could be tackled. In 1982 China signed an agreement with such international financial organizations as the World Bank, the International Agricultural Development Foundation, and the World Food Program to borrow over \$80 million and a large amount of assistance materials (mostly crops), to bring under control over 200,000 hectares of saline-alkali land in 11 counties in Hebei, Shandong, Henan, and Anhui. Last year, farming in these areas showed extensive increases.
2. China accepted a loan of over \$50 million for instruments and equipment for 11 agricultural colleges and 6 institutes, and for training talented individuals.
3. Beijing municipality has used foreign funds in recent years to build several modern poultry farms and set up feed factories and veterinary epidemic prevention systems, thereby relieving the urban populace's concerns over tight egg supplies.

12303
CSO: 4007/95

NATIONAL

AGRICULTURAL SCIENCE MEETING HELD IN BEIJING

OW260312 Beijing XINHUA Domestic Service in Chinese 0906 GMT 23 Dec 84

[By reporter Zhou Changzhong]

[Excerpts] Beijing, 23 December (XINHUA)--The Second Academic Committee Meeting of the Chinese Academy of Agricultural Sciences, which concluded today in Beijing, pointed out that the academy should contribute to the attainment of the strategic objective of quadrupling China's gross annual value of industrial and agricultural production by the end of this century, and to the long-term development of agricultural science and technology in our country.

Comrade Nie Rongzhen wrote a greeting message to the meeting. In the message, he stated: "I earnestly hope that the experts will make vigorous efforts to further promote China's agricultural science and technology, in line with the central authorities' guidelines on developing agriculture, and contribute to the development of a socialist agriculture with Chinese characteristics!"

Comrade Fang Yi came to the meeting to hold discussions with the Academic Committee members, and to elaborate on the significance of commercialization of knowledge. He stressed the need to let people know the value of knowledge. He also talked about the necessity of increasing the mobility of personnel, promoting large numbers of middle-aged and young science and technical cadres, respecting old scientists, and doing a good job in internal and external exchanges in the field of science and technology, and the work of agricultural scientific and technological information.

Comrade Qian Xuesen was invited to the meeting to deliver a report, entitled "The Question of the Sixth Industrial Revolution and Agricultural Science and Technology."

The newly-established Second Academic Committee of the Chinese Academy of Agricultural Sciences is composed of 105 experts and professors, including a great number of middle-aged scientists, from certain provincial and municipal agricultural science institutes and agricultural universities and colleges, the Chinese Academy of Agricultural Sciences, and the Ministry of Agriculture, Animal Husbandry, and Fishery. This indicates the growth and development of agricultural science in our country. He Kang, minister of agriculture, animal husbandry, and fishery, and agricultural expert; and Jin Shanbao, veteran

agricultural scientist, were elected honorary chairmen. Lu Liangshu, president of the Chinese Academy of Agricultural Sciences, was elected chairman, and An Min, Liu Zhicheng, and Liu Genglin were elected vice chairmen.

At the meeting, Comrade Liu Liangshu delivered a work report before all members of the academic committee. He said that the Chinese Academy of Agricultural Sciences has now become the largest comprehensive agricultural science research organization in our country centering on agriculture and animal husbandry. The academy, he said, has 33 academic, specialty, and comprehensive research institutes. These institutes, the academy's institute of post-graduate students, and the library employ a total of more than 10,000 staff members and workers.

The 7-day meeting examined, and discussed, a scientific and technological work plan for the 'Seventh 5-Year Plan' and a proposal for work in the next 10 years at the Chinese Academy of Agricultural Sciences. In addition, it discussed how to develop a new situation in agricultural science research, and questions concerning structural reform.

CSO: 4007/171

NATIONAL

STATE COUNCIL RENAMES MARKETABLE GRAIN BASES

OW281134 Beijing XINHUA Domestic Service in Chinese 0206 GMT 28 Dec 84

[Excerpts] Beijing, 28 Dec (XINHUA)--The 60 pilot counties which serve as marketable grain bases that were built 2 years ago with state and local investments have gradually switched to the all-round development of agriculture, forestry, animal husbandry, sideline production, and fisheries, and of comprehensive agricultural-industrial-commercial operations, instead of solely engaging in marketable grain production. The State Council's ministries and commissions in charge of the development of the pilot counties recently conducted a joint investigation and found it necessary to rename them agricultural commodity base counties in light of the objective reality of the agricultural and economic development there.

Statistics from 26 such counties in Anhui, Hubei, Henan, and Jiangxi Provinces show that their grain output this year topped last year by 7.3 percent, and the percentage of marketable grain was about 40 percent. The two figures topped the averages of the four provinces by 3.7 and 15 percent respectively. Moreover, the number of animals and fowl raised, as well as the output of cotton, oil-bearing, and other cash crops were also considerably higher than those of last year. The growth rate in many of these counties was higher than the average growth rate of their home provinces.

In the past 2 years, with the big increase in grain output, these counties have had surplus grain in varying quantities for some time. The problem faced by the leadership of these counties was once reflected in the saying, "Secretary is a tough job when grain output is below target." Now the problem is reflected in the saying, "The secretary will experience greater pressure if the grain is not transformed." Many counties have translated the pressure into a motive force by making full use of the surplus grain; vigorously developing fish farming, and food and animal feed processing industries; and transforming surplus grain into food such as meat, fowl, eggs, milk, and fish.

The development of grain production in these counties has also furnished material conditions for readjusting the internal structure of farming. In recent years, the counties have readjusted their cropping system in keeping with the local conditions and markets; appropriately increased the acreage of cash crops which are readily marketable and have higher economic value; and vigorously developed a diversified economy.

NATIONAL

RURAL WORK NEEDS NEW ECONOMIC THINKING

HK091041 Beijing JINGJI YANJIU in Chinese No 11, 20 Nov 84 pp 49-52

[Article by Liu Zhongyi [0491 0022 0001] of the Agricultural Bureau of the State Planning Commission: "Economic Reform in Rural Areas and the Transformation of Economic Thinking"]

[Text] In our country's economic life during the past few years, there have been tremendously great changes in our rural situation. We have carried out major reforms in our agricultural economic system; our peasants have greatly extended, both in depth and breadth, the scope of their production undertakings and have made breakthroughs in this sphere; our agricultural production and diversified undertakings have developed in an all-round manner; and our peasants are becoming more well-off year by year. We have switched China's rural economic life from a most closed and stagnate to a most open and lively one. The reality of the economic development in our rural areas has not only made us feel obliged to conscientiously research the problem of economic ideology in agriculture, but has also created conditions for this kind of research work.

1. Widen our field of vision and make a breakthrough on the scope of "agricultural economy," and foster the concept of "rural economy."

China is an ancient country that regards agriculture as its foundation. For several thousand years, the tradition of "regarding agriculture as the fundamental undertaking" has struck deep roots in the minds of our peasants. Our work in rural areas since liberation has also been mainly focused on developing agriculture and excluding the development of other undertakings. For a time, we also paid attention to establishing some commune and brigade enterprises and the slogan we raised at that time was "developing industry around agriculture, and satisfactorily developing industry to serve agriculture." Obviously, we have not made a breakthrough in the basic idea of "regarding agriculture as the fundamental undertaking." For many years, we conducted "agricultural economy" in our rural areas, established an economic structure of "regarding grain as the key and simultaneously developing agriculture, forestry, animal husbandry, sideline undertakings, and fishery there, and produced the pattern of relations between workers and peasants and between urban and rural areas characterized by rural areas supplying agricultural and sideline primary products for urban areas while urban areas provide industrial and mining products to "support agriculture."

Now, our country's rural economic life has already broken these boundaries and the production and management activities that are being carried out in our vast rural areas have already been extended from the scope of agriculture to that of industry, commerce, construction industry, communications, mining, building material industry, and various kinds of social service trades. In many rural areas, agricultural output value no longer constitutes a major part of their gross output value. We are sure that if we continue to be fettered by the idea of "agricultural economy," it will be impossible for us to correctly understand the current situation in our countryside or to solve the new problems in our rural economic life, and even less can we play a role in guiding the development of our rural economy. On this problem we must transform our thinking. This transformation does not mean a negation of "agricultural economy." Undoubtedly, as a material production sector of our national economy, agricultural economy continues to be a fairly independent and integrated system and agriculture continues to be the foundation of our country's national economy. What we say must be transformed in our thinking is: 1) Our rural economy is no longer a mere agricultural economy but is an economy consisting of many sectors. This means that in our rural areas, we should not only develop agriculture; but should also develop the production and management of various trades and undertakings in the light of local conditions, and should fully estimate the tremendously great potential for and advantages of developing an economy of many sectors in China's rural areas. 2) Developing an economy of many sectors in China's rural areas is not in conflict with the development of our agricultural economy; rather, the development of the two economies supplements and promotes both. Therefore, developing a multisector economy in our rural areas is a long-term strategy rather than a makeshift policy. 3) This kind of developmental trend will enable us to avoid following the beaten path of the world's industrially developed countries, where agriculture is divorced from industry and where there is a antithesis between urban and rural areas. Our multisector rural economic structure will be a new path for reducing and gradually eliminating the disparity between urban and rural areas.

Under the guidance of this kind of new economic thinking, we can find appropriate methods to solve the difficult problems that we have failed to satisfactorily solve for a long time, such as the problem related to rural employment, the problems concerning agricultural labor productivity and peasants' income, and the problems concerning the exploitation and utilization of natural resources and rural social development. Moreover, we have made ideological preparation and become able to research, with a broad field of vision and lively thinking, into the policies for coping with the new situation and problems in our rural economic life, such as the problems related to principles of rural construction, new relations between urban and rural areas, and the strategic layout of the economic construction in the whole country.

Breaking through the boundaries of "agricultural economy" and establishing the idea of "rural economy" is a major aspect of emancipation in reinvigorating our country's rural areas and making our 800 million peasants rich. It is also a major development in our socialist agricultural economics.

2. We should more vigorously grasp the concept of commodity production and eliminate the economic thinking concerning distribution of products and supply systems.

In China's history, there has been a tradition of "looking down on commerce." When our party led the revolution, for a long time we practiced a military communist system and implemented in the main a supply system in our production and livelihood at our base areas. After the liberation of the whole country also, in order to overcome the economic difficulties at that time and in order to supply the necessities for a large population, we adopted quite a few methods of centralized administration and unified distribution. Later, because of the influence of the "leftist" guiding thoughts, we stressed in theory that distribution of products is a socialist and communist factor and regarded commodity production and exchange as being capitalist in nature. An extreme view of this kind of thinking is upholding the implementation of a "supply system" throughout our country. All the above has had a fairly great impact on our economic thinking.

Since the 3d Plenary Session of the 11th CPC Central Committee, we have begun to change this kind of situation, put forth the idea of developing commodity production in agriculture, opened up rural fairs, and paid attention to giving play to the regulative role of the market mechanism. However, in our actual rural work at present, we cannot say that our concept of commodity production is very correct and integrated.

In order to strengthen the concept of commodity production we should further be clear on the following:

First, we must acknowledge the objective nature of the law of value. If we do not acknowledge or respect the objective nature of the law of value, it will be impossible for us to really foster the concept of commodity production. True, under a socialist system, it is possible for us to understand the law and to apply it and to adapt it to the needs of the development of our socialist economy, but this kind of "application" is based on the precondition of understanding and acknowledging its objective nature. We must see that the law of value is not something that we can apply at will when we want to apply it and that we can discard when we do not want it.

Here, we should explain one problem: economic law is one thing and economic means is another, and they should not be confused. Pricing policies are economic means. Under socialist conditions, we can use the means of stipulating the prices of various kinds of products to regulate the economy, but this does not mean that, by so doing, we have acknowledged and respected the law of value and thus fostered the concept of commodity production. Only when we give full consideration to the law of value in formulating our pricing policies and do our best to make our prices match values and fluctuate as the relations of supply and demand change in the market can we be regarded as having correctly applied the law of value and as having a clear concept of commodity production. Sometimes, in order to attain a certain economic goal, we excessively raise or reduce and restrict prices of commodities and think that by so doing we are applying the law of value. In fact, however, by so doing we are merely

applying an economic means and acting in violation of the law of value. At first, this will prove "effective," but after a cycle is over, contradictions will emerge and we will be punished by the law of value. This kind of situation often occurs [word indistinct] our economic life.

Second, we must correctly understand and handle the relations between production, distribution, exchange, and consumption. For a long time in our economic work, we have always paid attention only to production and distribution, but often pitted exchange (circulation) against distribution and negated exchange, and we always hold that the more centralized the allocation and distribution of social products, the better. Often, we pit consumption against production and restrict it, and we always think that the stricter the control over consumption in our society, the better our livelihood.

When Marx expounded on the relations between production, distribution, exchange, and consumption, he pointed out: "The conclusion that we have reached does not mean that production, distribution, exchange, and consumption are all identical, but that they form the various links of an integral entity and the internal differences within an entity." (Footnote 1) (Marx: Collected Works of Marx and Engels: Introduction to 'Critique of Political Economy,' Vol 2, p 102) From the point of view of commodity economy, only through exchange can the use value produced by a producer be recognized by society, and thus the value attached to the use value is realized in the process of exchange. Therefore, commodity exchange is indispensable for commodity production. Marx clearly pointed out: "Production directly constitutes consumption and consumption directly constitutes production. Each directly constitutes the other, its opposite"; without production, there will be no consumption; while without consumption, there will be no production, because in this case there will be no purpose in production. In two aspects, consumption produces production: 1) because only through consumption can a product become a product in reality, 2) because consumption creates new demand... if there is no demand, there will be no production. (Footnote 2) (Ibid., Vol, pp 93-94)

While advocating developing commodity production and strengthening the economic concept of commodity production, we must very satisfactorily understand the tenet of Marxist political economy on this problem and overcome the trend of restricting exchange and controlling consumption. Only by so doing can we enliven our commodity production.

Third, we must foster the idea of competition. We have a bad impression of the concept "competition" As soon as competition is mentioned, we regard it as the practice of "big fish eating small fish," and think about the scene of 'life-and-death' struggle in capitalist society. Here, we must clarify some concepts. 1) "Competition" has a double nature. Competition can put pressure on and provide stimulus to the various economic cells of society and urge people to pursue technological progress, to improve administration and management, to reduce costs, to increase variety and to improve quality and service. In short, we should strive to adapt ourselves to the demands of the market and to open up new markets. If competition is negated, the result will only be the phenomenon of "those who do much work get the same pay as those who do little work and those who do their work well get the same pay as those who do

their work badly." This will check progress and protect the backward. This is not desirable. On the other hand, we should also anticipate that in competition, an individual unit (locality, department, enterprise, or individual) starts from its own interests and is in various forms of opposition" to its competitors. Both sides hope to adopt various means to surpass and defeat each other. We should weigh the advantages and disadvantages of competition and should not demand perfection in it or refrain from allowing competition for fear of its minor disadvantages. 2) The competition in a socialist commodity economy differs from the competition under the anarchic conditions of a capitalist economy. For example, ours is a competition in which no capitalist take part. It is a competition that is carried on the basis of the unified arrangement of the macroeconomy by state plans and one that is carried on under the guidance of the principles and policies formulated by the state and under the regulation of the diverse economic levers applied by the state. Our competition also results in the good defeating the bad, but will not result in a life-and-death struggle. Another point we should explain is that: since we want to develop commodity production, competition will inevitably emerge. This is not determined by people's will.

3. We should have a scientific standard by which to measure "economic results."

In doing economic work, we should pay attention to economic results. This is relatively clear. However, what economic results can be regarded as good and what should be regarded as bad? It is sometimes confusing to answer this question. For a long time, in conducting production, we have not calculated costs, have pursued only speed, have disregarded quality, and have pursued quantity only. In conducting construction, we greedily seek large numbers of projects and a large scale, neglect construction periods and actual effects, and think that if a project is completed, it is an achievement. The greater the scale, the greater the achievement. This has almost become a common failing and a persistent malpractice. In addition to this kind of problem, concerning which we should transform our guiding thinking, there is another noteworthy problem concerning "economic results," namely, our weak concept regarding efficiency, time, and turnover period. To a very great extent, our economic ideas are of an "accumulative type" and not a "turnover type." They are "supply type" instead of "increment type," "closed type" instead of "open type," and static instead of dynamic. In the past, what we vigorously pursued in conducting agricultural economy was, in the main, the amount by which we had increased agricultural grain and cotton products in a year, and whether we had increased or decreased our stocks. In a situation in which there is a shortage of materials and goods, we can understand that people regard output and increases in output as the only criterion for evaluating the effects of economic work and think that it is "better to have some than to have none" and that it is "better to have more than to have less output." However, under the new situation now, this concept of "economic results" is outdated.

The second volume of Marx' "Das Kapital" is entirely devoted to studying the process of capital circulation. He thoroughly analyzed and expounded on different forms of the cycles of capital and the laws governing them and finally expounded on the economic significance of shortening the cycles and speeding up the rate of capital turnover. "Through shortening the turnover period, it

is possible for us to use a relatively small amount of money-capital to promote the circulation of the same production capital, or it is possible for us to use the same money-capital to promote the circulation of more production capital." (Footnote 3) (Marx "Das Kapital," p 395, 1975 edition of the People's Publishing House, 1975 edition, Vol 2, p 395) Shortening the cycles and speeding up the rate of capital turnover is not only an important condition for increasing surplus value and for multiplying capital under the conditions of capitalist economy, but is also of great guiding significance in commodity production under socialist conditions.

From now on, while doing our rural economic work, we should foster a new concept regarding value, which should take into account increases in value, increases in use value suited to the needs of our society, technological progress, the reduction of consumption in production and construction, the speeding up of our capital turnover, and the rational exploration and comprehensive utilization of our natural resources. All these may be summed up as raising our efficiency and striving to conserve time. All these demand that we include the factor of "time" in our economic accounting and that we foster the idea of achieving the best economic results by means of speeding up circulation and turnover.

4. Concerning our rural economic activities, we should eliminate the idea that upholds centralism and monopoly over activities, and should foster the idea of guiding activities.

Chinese rural areas are as vast as a boundless ocean, the cells of our rural economy are the large number of dispersed collective economic entities, our rural economic activities are a complicated system consisting of many categories and tiers. It is impossible for us to try to centralize and monopolize all these activities. For 20 to 30 years in the past, we used great and powerful political and economic forces to organize and administer our rural economy. As a result, the greater the centralism, the less the vitality in our rural economy; the greater the monopoly, the heavier our burdens. Our practice has proved that this method does not work. We should change this guiding thought and practice.

Of course, this does not mean that it is not necessary for the state to arrange and lead the development of rural economy. We should understand clearly and definitely that planned economy is an important characteristic and superiority of socialist economy and that it is also imperative for us to adhere to our planned economy in order to develop our rural economy. The problem is that in our planning work related to economy, we must also change our thinking. Rural economic plans should give necessary macroguidance and scientific macrodirection to our rural economic activities, instead of being "official documents" that pass on and issue administrative orders. It is imperative for our plans to point out our strategic principles and our fighting goals, to give guidance on the orientation of development, on structure, and on layout, and to coordinate our economic relations. Our plans are not worked out to simply fix the targets and stipulate regulations. To be more concrete, our rural economic planning work relies on: 1) mastering and applying objective economic laws and understanding and analyzing the economic trends

in order to bring into play its guiding role; 2) economic means in order to bring into play its regulative role; and 3) the financial and material resources that the state may make arrangements for in order to bring into play its supporting, promoting, and exemplary role.

Regarding the application of our economic levers so as to give play to their regulative role, we should stress giving guidance and enlightenment beforehand, and should positively, actively, and adroitly guide our actions according to circumstances. We should do our best to avoid the passive situation in which we do not adopt our economic measures until there are major problems and contradictions in our economic life to remedy. Even less can we indiscriminately use some of our economic levers as new kinds of "weapons to control," and "tools of direction."

CSO: 4007/171

NATIONAL

PRC INCREASES CROP YIELD WITH RARE EARTH

OWO70252 Beijing XINHUA in English 0226 GMT 7 Jan 85

[Text] Beijing, 7 January (XINHUA)--Chinese agricultural scientists have successfully increased crop yields by 5 percent to 15 percent with rare-earth fertilizers.

Chinese studies of rare earths started in 1972 and were listed as one of the key research projects for the Sixth 5-Year Plan period (1980-1985).

By 1983, some 250 tons of rare-earth fertilizers were used on 340,000 hectares of farmland, resulting in increases of 50,000 tons of grain and raising farmers' income by 20 million yuan.

Scientists discovered that the fertilizers aided more than 20 crops including wheat, rice, peanuts, soya beans, rapeseed, beets, rubber trees, watermelons and vegetables.

Yields on 22,3000 hectares of spring wheat at state farms in Heilongjiang Province increased by 9 percent in 1984 with the rare-earth fertilizers, boosting their output value by 15 million yuan.

Cash crop yields were often three to four times higher than grain crop yields. The new fertilizers also improve the quality of agricultural crops, significantly raising the sugar content of watermelons, beets and sugarcane.

In the past 5 years, more than 200 Chinese scientists have been working on the use of rare earths in agriculture. Comprehensive studies of soils, rare-earth toxins, application techniques and plant physiology have also been carried out.

CSO: 4020/75

NATIONAL

CONTINUED EFFORTS IN GRAIN PRODUCTION URGED

Beijing ZHONGGUO NONGMIN BAO in Chinese 25 Oct 84 p 1

[Commentary by ZHONGGUO NONGMIN BAO staff commentator: "We Must Not Relax Our Efforts in Grain Production"]

[Text] There are further glad tidings for the Chinese countryside: After 5 successive years of bumper harvests in national grain production, this year we continued the momentum of growth and it is estimated that gross output could reach 800 billion jin. This is an historic change that indicates that the sharp contradiction between supply and demand in Chinese grain production has been resolved. China employs 7 percent of the world's cultivated land and nurtures nearly one-fourth of the world's population. This indisputable fact demonstrates the incomparable superiority of the socialist system.

In the wake of large grain production increases in consecutive years, the emergence of "grain-selling difficulties" in some regions followed in quick succession. As a result, some cadres and masses believe that the problem of grain production is already solved and that there is no need to expend great efforts in grain production. In certain regions there has arisen a tendency to relax grain production efforts, and some peasants have inappropriately reduced the area of grain under cultivation, decreased the application of fertilizer and slackened supervision. This situation should be of concern to cadres at all levels.

We must recognize that at present the yield per unit area and the percentage of marketable product for every Chinese grain crop is still quite low, and our ability to withstand natural disasters is still very weak. In particular we must realize that the contradiction of large population and scarce cultivated land will become more prominent as time goes on. Right now in some remote mountain regions there are millions upon millions of people who still do not have enough food and clothing. From an overall point of view our current grain supply is entirely insufficient. Based on this year's projected output, the per capita grain supply in China is only 800 jin, a figure that is lower than the average world level and vastly different from those of some developed countries.

Agriculture is the foundation for our realization of the four modernizations, and this standpoint cannot be changed. We must adopt a policy of caution toward the current grain problem. It is very easy for grain production to

fall, but it is very difficult to restore it. We must continue to carry out the policy of "never relaxing our efforts in grain production and enthusiastically developing a diversified economy." Under the precondition of guaranteed stable growth in grain output, we must make a rational arrangement of the proportions and distributions of grain, fodder and economic crops. In adjusting the composition of production, we must base our arrangements on the peasantry. We must adopt methods of consultation and enlightenment and we must implement a guiding plan. We cannot issue inflexible orders or we will dampen the enthusiasm of the peasantry for grain production. We cannot tolerate wide fluctuations in grain supply. This is a big problem that affects the lives of a billion people, and it cannot be treated lightly.

12510
CSO: 4007/94

NATIONAL

SUGGESTIONS FOR IMPROVING GRAIN, COTTON QUALITY

Beijing ZHONGGUO NONGMIN BAO in Chinese 25 Oct 84 p 2

[Article by Yang Fangxun [2799 2455 8133], of the Department of Agricultural Pricing, National Commodity Pricing Bureau: "A Few Suggestions for Improving Grain and Cotton Quality"]

[Text] China's grain and cotton output have increased enormously since the 3d Plenum of the 11th CPC Central Committee.. The 1983 yield of 74.5 billion jin of grain and 92.74 million dan of cotton was an increase of 27 percent and 114 percent, respectively, over 1978. At present the major problems in grain and cotton production are that quality is generally rather low, high-grade products are few in number and we are unable to adapt to the needs of further increases in people's living standards or growth in industrial production and foreign export. The primary manifestations of this are that some varieties of cotton are not very strong and cannot be spun into fine yarn, some paddy is of inferior quality so that the rice grains are easily broken and the cooked rice is lacking in flavor, and some wheat is low in quality and the varieties of flour are uniform. At present the flour sold in the marketplace generally comes in only two varieties--standard and enriched--and these can fulfill neither food industry needs nor the needs of the people. In addition, in some localities there is very little of certain varieties of grain, such as barley and sorghum, so that the beer and wine-making needs cannot be satisfied.

For several years now, the force of our ideas has focused on output and on quantities purchased. We have not paid much attention to understanding the new demands raised in the marketplace for quality grain and cotton. The fact is that we must transform grain, cotton and other agricultural products into commodities for sale, and hence we must pay close attention to the quality of farm products.

At this point the following six suggestions are posed concerning the question of how to further increase grain and cotton quality.

1. Departments of scientific research, production, purchasing, pricing, standards and so forth must all encourage development of rural commodity production services. They must give top priority to raising grain and cotton quality and fulfilling the daily needs of the people and industrial production needs.

2. Breeding, introducing and popularizing superior varieties are the keys to raising grain and cotton quality. The criteria for breeding and introducing new varieties must stress yield and quality equally, placing the needs of the marketplace in first place. At the same time, we must establish bases to breed top-grade varieties and for commodity production, and develop specialized households to grow improved varieties.

3. In order to bring about a linkage of output and needs and to strive together to raise grain and cotton quality, we should set up grain and cotton transfer provinces under the leadership of the state plan. We can select a certain number of grain and cotton priority counties that have direct contact with commercial and industrial enterprises in large cities. Then we can arrange production on the basis of marketplace and industrial production demands for quality grain and cotton.

4. We must conscientiously implement the policy of pricing according to quality, of setting high prices for top-grade goods and low prices for inferior goods, and set reasonable price differences for different qualities of grain and cotton. This is an effective measure to arouse the economic enthusiasm of farmers for diverse top-grade grain and cotton and to increase farmers' incomes. At present, grades 1 and 2 or grades 2 and 3 of some varieties of cotton are about the same—that is to say, their practical worth is about the same—and yet the difference in their purchase prices is quite large. We can research appropriate reductions in price differences. For some varieties of grain the price disparity for different qualities is rather small, and for these we can research appropriate increases in price differences for different qualities. Some varieties are particularly high in quality and supply falls short of demand. For these we can suitably raise the price. Some varieties are deficient in quality and are difficult to sell. For these we can suitably lower the price.

5. Based on industrial production and marketplace demands for quality in grain and cotton, we must research suitable revisions of the grain and cotton quality standards.

6. Commercial units must actively train grassroots grain and cotton purchasing personnel and enhance understanding of policies, vocations and techniques. We really must achieve a lowering of prices without lowering quality, and an enhancement of quality without raising prices. Simultaneously, we must progressively increase grassroots facilities for inspecting grain and cotton quality. These are important measures for forging good purchasing links and for raising grain and cotton quality.

12510
CSO: 4007/94

NATIONAL

PRICE INCREASE ON UNLIMITED COTTON PURCHASE CLARIFIED

Beijing ZHONGGUO NONGMIN BAO in Chinese 28 Oct 84 p 1

[Interview with Spokesman of the Cotton and Hemp Bureau of the Commerce Ministry: "A Switch to Proportional Increased Price Method for Unlimited Purchase of Cotton"]

[Text] This is the big season for cotton procurement. Our reporter posed questions about cotton procurement based upon letters from the masses which are answered by a spokesman of the Cotton and Hemp Bureau of the Commerce Ministry, as follows:

Question: Is the state procuring unlimited quantities of cotton produced this year?

Answer: Yes. The Commerce Ministry made a concrete announcement at the National Cotton Work Conference in the latter part of August this year that the state would procure whatever cotton there was to sell. According to our understanding, much work has been done on this in most places. However, procurement has been limited in some locales, or even absent, or else only grades 3 and 4 are being procured but not grades 1 and 2. Again in mid-October, the Ministry put out its "Notice on Cotton Procurement Prohibiting Limitations on Procurement", which demanded that all areas take real steps in the spirit of the National Conference to carry out policies correctly, take accurate control of standards, open up procurement, and make planned and organized procurement of cotton put up for sale by cotton farmers.

Question: Some cotton farmers respond that in some localities only pooled resources of cotton are being purchased and not unpooled resources. Some places are making payments for procured cotton on a periodic basis. Are these practices proper?

Answer: According to our understanding, these practices are occurring in some places. They go against the spirit of current cotton procurement policies, and should be rectified. Cotton procurement units may not limit procurement for any reason. Whoever sells cotton should have accounts settled on it (including increased price payments). Wherever there is a purchase there should be a payment, in the manner which the cotton farmer chooses. Those who want cash should get cash. Those who want to transfer accounts should get them. Procuring stations may not reduce payments in the name of any unit or department except for taxes or return on advances.

Question: Cotton farmers in the northern regions say that this year's payments for cotton sold are low. Is there a problem of grades and prices being forced down?

Answer: The gains for this year's cotton compared with last year's for cotton of equal quantity and quality are somewhat lower. The primary reason is the state's readjustment policies:

1. The 5 percent subsidy on the price of northern cotton has been eliminated. Prior to 1979, the planting area for cotton in the north was small, and the state adopted an interim measure to spur these northern regions to expand cotton production: a 5 percent subsidy was tacked on to the composite average of the list price and the increased price for northern cotton regions. More recently, northern region production has developed extensively. Income of cotton farmers has increased, which was the projected goal. Therefore, the State Council decided that from the time this year's cotton went to market, the 5 percent price subsidy for the northern regions would be eliminated.

2. The switch from a base method to a proportional method for calculating the increased price for cotton brought down the proportional price increase. In 1979, the state implemented increased price incentives for excess procurement of cotton on a fixed base price. The fixed procurement base was determined from the average amount procured in the 3-year period from 1976 through 1978. But as cotton production developed after 1979, the base was not adjusted, and there was no base for new cotton growing areas. Practice has demonstrated that the base price method played an important role in stimulating enthusiasm among cotton farmers and increases in cotton production and procurement. But there were great disparities in the base prices, increased price calculation procedures were complicated, and increased price payments could not be settled on a timely basis. So the State Council decided that from the time this year's cotton went to market there would be a switch to a proportional method. According to 1982's actual procurement base, and taking into account the interests of the three groups [individuals, collectives, and the state], the number of price regions was reduced, price differentials between north and south were lessened appropriately, and a ratio for southern regions of straight 4 to 6 (40 percent increased price, 60 percent list price) and for northern regions of reversed 2 to 8 (80 percent increased price, 20 percent list price) were fixed. This policy adjustment lowered the increased price ratio accordingly for regions which had no base or where the base was too low.

3. Because of the effects of climate, this year's cotton does not measure up to last year's in terms of quality. From reports in Shandong and Hebei, weather has been continually rainy in some regions since September, markedly affecting cotton quality, and although fiber length is up a millimeter from the same period last year, the average grade is one grade lower, reducing per dan income by 5 yuan.

12303
CSO: 4007/95

NATIONAL

COTTONSEED CAKE DETOXICATION TECHNIQUE APPROVED

Beijing ZHONGGUO NONGMIN BAO in Chinese 1 Nov 84 p 1

[Article: "Welcome News of Increased Protein in the Nation's Feed: Cottonseed Cake Detoxication Technique Receives Approval"]

[Text] A cottonseed cake protein feed synthesis technique developed by the Nutrition Office of the Husbandry Section of the Chinese Institute of Agronomy was approved at Beijing in late September. Large amounts of soybean cake can be replaced by cottonseed cake using this method as protein feed for cattle, sheep, swine, and poultry, which will be a great boost for developing China's husbandry.

Every year China produces 6 billion jin of cottonseed cake from which the oil has been pressed. With a usable protein content of 20 percent, these 6 billion jin could be placed in feed to produce 30 billion jin of mixed feed, which could then be used to raise 53.57 million pigs, yielding 3.75 million tons of pork, or else used to raise 3.1 billion chickens, to yield 6.26 million tons of meat. But because ordinary cottonseed cake contains a toxic element (cotton phenol), it cannot be used as animal feed unless the toxin is removed, while only a small amount can be used to feed ruminant animals such as cattle and sheep. Thus, less than 20 percent of all cottonseed cake is currently utilized as feed.

In recent years, researchers from the Nutrition Office of the Husbandry Section of the Chinese Institute of Agronomy carried out systematic research on developing a technique for full utilization of cottonseed cake protein for feed based upon immersing it in ferrous sulphate and limewash to remove the toxin. The approved procedure includes: rapid determination of the amount of free cotton phenol; standards for purity of the ferrous sulphate used to neutralize the toxin; and the daily amount of detoxified cottonseed cake to be added to swine and chicken feed.

12303
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NATIONAL

PRICING PROBLEMS IN WATER CONSERVANCY CONSTRUCTION REVIEWED

Beijing ZHONGGUO SHUILI [WATER CONSERVANCY IN CHINA] in Chinese No 10, 15 Oct 84 pp 27-28

[Article by Ye Yongyi [0673 3057 3015]: "The Question of Prices in Economic Analysis"]

[Text] I. Economic Analysis Requires a Pricing System that Reflects Real Social Value

In estimating the results (output) and costs (inputs) of any investment program, the question of prices is always encountered when doing economic analysis, including the price of materials, raw materials, fuel, labor, and resources that are consumed and the amount of increase in each type of product and service. Choosing a price that differs greatly from the real value can distort the results of economic analysis or produce false results. An example is a domestic petrochemical enterprise that produces synthetic fiber. If the petroleum used as a raw material is purchased according to the rather low domestic allocation price and the chemical fiber products are sold at the very high domestic price, then the economic results of the enterprise will wrongly appear quite high and the conclusion will be drawn that the investment for plant construction can be recovered in a few years. If the world market prices for petroleum and chemical fiber are used, however, we will discover that the above conclusion is wrong and that the enterprise's economic results are far lower than in similar enterprises abroad. This sort of question is frequently encountered in water conservancy and hydroelectric construction. For example, the estimated increase in benefits from an irrigation project may be underestimated if we use the relatively low posted state purchase prices for agricultural goods. Similarly, the economic results of a water lifting irrigation project may be overestimated if they are based on the especially favorable prices for oil and electricity used in agriculture. This has caused some state leaders to point out that the economic results of increased grain output from using diesel fuel for water-lifting irrigation must be compared with exporting the diesel fuel in exchange for grain. Because China ignored the law of value and the role of market regulation for such a long time, the prices that people set for certain products often differed greatly from their value. We cannot, therefore, simply use currently stipulated prices in economic analysis, but should instead adopt prices that reflect social and economic value. This problem is found in all countries and especially in developing nations.

II. Factors that Influence Prices

The price of a commodity is determined by the amount of its value, which is average product costs plus profit as determined by the average social profit rate under average production conditions in the existing society. The cost of a product is made up of consumption through depreciation of various fixed assets, consumption of raw materials, wages and other production costs. The price for a product calculated according to this formula is called the theoretical price. In a free market economy, the actual price of a commodity (the market price) is also restricted by the law of supply and demand. It does, however, float around the theoretical price. For example, when the supply of a commodity exceeds demand, the producers or sellers will lower its price to attract more buyers in order to dispose of a large amount of inventory. In contrast, the price of a commodity may rise quickly when social demand exceeds supply. Under conditions of free circulation, the product [price] fluctuates according to the law of supply and demand. Under monopoly conditions, however, [the price of] a commodity may be kept higher than its value for long periods in order to obtain excessive profits.

In a socialist planned economy, prices for certain commodities may be artificially raised or lowered for economic or political reasons, causing their price to differ from their value. For example, the prices of high level consumer goods like wristwatches or wool fabric may be raised to gain higher profits for faster capital accumulation; or, the prices of certain essentials like grain, oils or vegetables may be lowered to guarantee the basic living needs of the masses, which is not only unprofitable but also requires subsidies. Such prices are termed policy prices.

In order to achieve fair and rational comparison of water conservancy construction programs, prices should approximate their original value so that the disparity between price and value is eliminated. One method is to adopt the theoretical price. However, several dozen or even several hundred other commodities are consumed directly or indirectly during the process of producing most commodities, so it is rather difficult to measure them all.

A relatively simple method of approximation is to examine prices on the free market. As mentioned above, the market prices for commodities float around their value under free competition. For this reason, free market prices can approximate values if we just pay attention to eliminating any artificial influences and consider design conditions. In development of irrigation projects in areas with poor communications, for example, the price of grain is high because there is insufficient grain and it must be shipped in from outside. When increased grain output exceeds local demand, however, if it is difficult to ship out or use effectively, the price of the portion of grain that exceeds demand will be lower than the grain price in common areas. We also must consider such things as the effects of the weather in different years, production conditions and changes in population size. The price of grain may rise because of decreased grain production

during drought years or because of a population increase due to local development. Improvements in fertilizers, seeds and other technical conditions may lead to bumper grain harvests, causing lower grain prices, and so on.

III. Setting Rational Prices in Economic Analysis

Economic analysis to determine the rationality of a project or program proceeds from the perspective of society or the national economy and is based on the costs of the project and the net increase in the value of national income. We cannot set policy prices that do not reflect the value of commodities. If we adopt free market prices and consider the law of supply and demand and other factors as mentioned above, they will approximate their actual value. Foreign and international banks recently have been widely using "shadow prices" for economic analysis. "Shadow prices" are also called "efficiency prices," "optimum planning prices," "implicit prices," or "intrinsic prices." They refer to the amount of increased total social benefits when the ability to supply a product or resource is increased by one unit. For example, there will be no added social benefit if we add one unit of a product that is already in excess supply in society and cannot be sold; its shadow price this is 0. Goods that promote other types of economic development, such as electric power, may have a shadow price much higher than their market price. Certain rare mineral resources like petroleum have very high shadow prices even though they have not been processed and no labor has been applied. Mathematical optimization is used in foreign countries to determine the shadow prices of goods. Because this is relatively complex, it will not be described in detail here.

Given China's conditions, we can consider adopting applied and approximate methods for comparison to determine the prices to be used in economic analysis at the present time:

1. We can use the international market FOB price minus the necessary transportation and administration costs for products that can be exported (like petroleum, coal, etc). We can use the FOB price added to the necessary transportation costs for goods that can replace imported goods (such as grain and steel). The legal currency conversion rate for the foreign currency used should be readjusted according to actual circumstances.

For example, after the price for standard coal used for motive power in China's thermal power plants was raised to 38.7 yuan per dun in 1980, the FOB export price for identical power coal was \$55 per dun. If we convert this according to the legal trade currency conversion rate of \$1 per 2.8 yuan (RMB), the result would be 154 yuan per dun, more than 3 times greater [as published]. If we do economic comparisons of thermal power programs based on these prices for coal, then the superiority of hydroelectric power is much more obvious. Hydroelectric power construction has proceeded slowly for several years, which is closely related to the fact that the price of coal being used is too low. This has wasted the state's energy resources.

When increased grain output in an irrigation district can replace some imports, we also can convert according to the FOB price plus transportation costs. As shown in Table 1, the posted prices for unified purchases of wheat in Shaanxi and Gansu Provinces in 1981 were 0.166 and 0.164 yuan/jin, respectively. An overquota purchase price 50 percent higher would still be too low. There is a grain shortage in these two provinces which must be made up from other provinces or from foreign countries. Increased grain output in irrigation districts can replace a portion of these imports. If we use the FOB price for foreign imports plus transportation costs, then the prices would be 0.299 and 0.304 yuan/jin, respectively, quite close to the rural market prices in these two provinces. This can serve as the price for wheat for calculating results during economic analysis.

Table 1. Wheat and Corn Prices in Shaanxi and Gansu Provinces, 1981

<u>Item</u>	<u>Prices (yuan/jin)</u>			
	<u>Wheat</u>		<u>Corn</u>	
	<u>Shaanxi</u>	<u>Gansu</u>	<u>Shaanxi</u>	<u>Gansu</u>
Posted unified purchase price	0.166	0.164	0.115	0.113
Over-quota purchase price	0.249	0.246	0.172	0.169
Rural market price	0.300	0.320	0.190	0.190
Import FOB price	0.274	0.274	0.216	0.216
Import to province price	0.299	0.304	0.241	0.246

2. The price for nonexportable goods can be set directly according to negotiated free market prices, or a conversion coefficient can be used to determine their shadow prices. An example is the price for corn in the two provinces shown in Table 1. Because very little corn is shipped in from outside the provinces, the rural market price can be used during economic analysis. Likewise, it is more rational to use negotiated prices for construction materials.

3. The price of land, labor and resources: The old method of setting compensation prices according to the value of output from the land over a period of years is unsuited to actual conditions. It should be based on the net benefits "b" derived by deducting labor and other production costs from the annual interest rate on common bank loans "i" : $C = \frac{b}{i}$. If the annual net benefits from a mu of cultivated land amount to 80 yuan and the interest rate is 8 percent, then the use price of this type of land would be $\frac{80}{0.08} = 1000$ yuan. The annual net income per mu of barren land is only 2 yuan, however, so the value of each mu of land is only 25 yuan. If we calculate the future net benefits of such land at 20 yuan per year after development and utilization, then the land price will increase to 250 yuan.

Rocky hills, deserts and other areas without production benefits can be used without compensation.

The wages paid to hired workers are primarily determined by supply and demand conditions and the social value they can create. In regions with few ways to develop production and serious labor surpluses, the shadow price of labor approaches zero because the addition of an additional laborer creates no wealth for society. The suburban areas of cities, however, have many possible lines of production and high demand for labor, so the price of labor is high. There can be large differentials between the wages paid for labor in different regions or in different seasons (the slack farming season or busy farming season), and these wages can be determined primarily according to local market prices. Apart from being based on actual wages and the payment of bonuses, the wages paid to permanent employees also should consider the question of labor productivity. Actual wages should be divided by work productivity to derive the amount of wages that should be used.

Natural resources of limited quantities (such as crude oil, coal, land, water sources, etc.) also have their shadow prices even before they have been exploited by anyone. For example, the water diverted for irrigation upstream in a river would seem to have no price. In terms of society as a whole, however, this amount of water can be used to create new wealth if it is not diverted but is instead allowed to flow downstream to several hydropower stations. The net social benefit thus created is the shadow price of the upstream resources. Attention to this during economic analysis would cause restriction of the amount of water used upstream in order to obtain the greatest benefits for society. For water resources in water-short regions, the use of one cubic meter of water in one department can mean that another department has one less cubic meter to use and receives benefits reduced by a certain amount. Thus, there is a definite shadow price for natural water resources in water-short regions. The greater the amount of social benefits created per unit of water and the greater the shortage of water resources, the greater the shadow price of natural water resources. Paying attention to the shadow price of natural water resources can cause us to pay closer attention to effective water use and make the greatest efforts to reduce the waste of water resources.

12539
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NATIONAL

PRC AGRO-AVIATION DEVELOPMENT REVIEWED

Beijing NONGYE JISHU JINGJI [ECONOMICS FOR AGRICULTURAL PRODUCTION TECHNOLOGY]
in Chinese No 9, Sep 84 pp 7-9

[Article by Chen Ziyue [7115 5261 2814] of the Specialty Department, China Civil Aviation Bureau: "The Development of China's Agro-aviation Enterprise"]

[Text] Agro-aviation is aviation which uses specially equipped aircraft to serve agricultural production construction and its scientific and research experiments directly.

In the 35 years since the founding of the People's Republic, under the care and solicitude of the party and government, China's agro-aviation, in starting from nothing, has grown from small to big, has gradually moved from backward to advanced and has developed very rapidly. In 1951, China's Civil Aviation Bureau began to undertake agro-aviation. In 1956, China's Civil Aviation Bureau set up a specialized aviation organization and established a specialized flying service contingent which started to take responsibility for all kinds of agricultural-production aviation tasks. At present, China's Civil Aviation Administration [CAAC] already has 14 flying service contingents, which use more than 200 airplanes of 6 different models along with complete sets of specialized equipment, over 3,000 staff and workers in various fields such as organizational guidance, rear-echelon service and management and which thus form a rather complete specialized aviation system on a national scale. With the expansion of the agro-aviation teams, agro-aviation has played an active role in various areas like protecting vegetation, combating natural disasters in agriculture, reducing losses, raising yields, improving quality, increasing feed, saving labor, surveying resources, making mountains and streams green, renovating the land and cleansing the environment of our daily lives, etc. and has made an important contribution to the development of modernized agriculture and achieved results that have grabbed people's attention. By the end of 1983, agro-aviation had put in 510,000 flight hours of operations in 28 provinces, autonomous regions and municipalities, sprayed a total of 12.2 billion mu and sowed nearly 200 million mu of forests and 10.54 million mu of grass. In addition, each year aviation forestry protection patrols 800 million mu of forests. Since the 3d Plenum of the 11th CPC Central Committee, the number of operations has increased rapidly. Compared to the 5-year period between 1974 and 1978, in the past 5 years, agro-aviation flight hours have grown at an average rate of 73 percent per year. The number of flight hours completed in

1983 was 25 times that of the period just after the establishment of the republic. In the past few years, there have been new developments in agro-aviation. In 1983, the Xinjiang production and construction corps set up their own agro-aviation service brigade--the first in China owned by an enterprise; in 1984, peasants in Beijing suburbs, Henan, Anhui and other places began ordering ultralight aircraft for agricultural use, thus challenging traditional agricultural production methods of the past several thousand years. This kind of competition at various management levels has hastened the reorganization and development of agro-aviation and pushed agro-aviation into a new stage.

In the past 30-odd years, the economic results of China's agro-aviation have been excellent and have been manifested in the following areas:

First, the scope of service has broadened and has been applied to farming, forestry, animal husbandry, sideline occupations and fishery. In China, agro-aviation has mainly been used for agricultural crops, forests and pasture land through sowing, fertilizer application, disease prevention, insect control, rat eradication and chemical weed elimination; it has been used to carry out exfoliation for accelerated ripening and drying out for cotton, wheat and rubber trees; it has been used for carrying out fertilizer application and for the prevention and treatment of disease and insect damage for fruit trees; and botanical hormones are sprayed on agricultural crops and forests in order to increase yields or growth. In addition, it is also used to extinguish forest fires chemically, survey vegetative cover, prevent and eradicate shrubs and undergrowth, prevent and control mosquitoes and flies, spray for the elimination of harmful animal pests such as the oncamelania snail, the zhuishi [2785 1395] snail, and ticks, disperse clouds to prevent hail, create artificial rain, stain an area black to melt snow, investigate schools of fish, stock adult fish and fry from the air, conduct sea rescues, survey the insect pest situation and wild animal resources, photograph land plans from the air, set out the parasitic wasp egg sacks to control harmful insects, bombard ice flows that block navigational channels, prevent and control external parasites on domestic animals and insects that are vehicles of contagious disease, etc. By 1983, the number of agricultural production operations by airplanes for agricultural use had reached over 460 projects of 12 different types. Since the 3d Plenum of the 11th CPC Central Committee, and with the rapid development of agricultural production, agro-aviation has shifted from disaster relief type operations to production type operations, with an increase in the production projects such as sowing and fertilizer applications and a reduction in disaster relief operations such as disease prevention and insect control. When we compare 1983 to 1978, flight hours for the former (production related) rose from 8.6 percent of total flight hours to 40.8 percent, a 32.2 percent increase, and flight hours for the latter (disaster related) fell from 82.6 percent of the total to 35.2 percent, a 47.4-percent reduction.

Second, it has greatly reduced the time required for operations and has raised labor productivity. In normal operations such as insect eradication, the application of chemical herbicides, foliage dressings, etc., one Yun-5 airplane can complete a 15,000-25,000 mu task in one operating day; this is equivalent to 10,000-16,000 days of work using a WV-12 suspended sprayer. When used on

aerially sown forests, it can sow 30,000-70,000 mu of forests in one operating day, and a sown area of 1 million mu can be completed in about 20 days. If we were to use human labor to sow, calculating at 20,000 mu per year, it would take 50 years. When used to sow pasture, in 1 hour it can broadcast-sow between 6,000 and 12,000 mu, which are equivalent to 10 days of sowing by three BGT-24 sowers pulled by a tractor. According to a survey, in 1979 the Xiaoshan No 2 State Farm in Zhejiang set up mechanized paddyrice production centered on aerial operations, and the entire team of 46 agricultural workers manage a 7,016-mu area of late rice, averaging 152 mu per person. Aside from ground-based machines for soil preparation and harvest shelling, all the other production links such as sowing, weeding, fertilizer application and insect control, etc. use airplane operations. The average per-mu yield for late rice is 553.7 jin and the average per-capita production is 85,000 jin, with a commodity rate approaching 98 percent. The rice produced by 1 person can feed 90 people. Compared to 1977, when they did not use airplanes in overall operations, the total yield has increased 1.3 times, the per-mu yield has increased by 315.7 jin and labor productivity has increased 53 times. Since 1979, this technology has already been extended throughout the nation and by 1983, more than 40 state farms in 13 provinces, autonomous regions and directly administered cities were carrying out these operations. Together, they had sown a 700,000 area of paddy rice and increased their yields an average of about 10 percent.

Third, we are able to combat naturally disasters effectively. After the establishment of the republic, we used airplanes to spray agricultural chemicals and totally reorganized the way of reclaiming surface wasteland, and in just barely 10 years time, we eradicated the migratory locust which had ravaged the agricultural areas of the central plains for several thousand years. According to statistics, since the 1970's, each year in China we use airplanes to prevent and control disease and insect damage on agricultural crops and forests over an average area of 10 million mu. In general, the insect- and rat-killing rate has reached 90-98 percent, and the drop in damage from disease and the insect pest situation has been about 80 percent. According to statistics, due to the use of airplanes to protect forests and prevent fires and to strengthen surface fire prevention measures, comparing the 5-year period between 1979 and 1983 with the previous 5-year period in the Daxing Anling forest area, the area destroyed by fire was reduced by 61 percent, and the number of workdays for firefighting was reduced by 75 percent, saving 67 percent in direct firefighting expenses. In 1980, Sichuan province used airplanes 7 times to create rain, and rain fell each time, benefiting 38 counties where the rainfall increased between 19-51 percent over the amount before they created the rain, with a net increase of between 23 and 200 million tons of rainwater. This amounted to an investment for rainfall of only 1 yuan for each 500 mu of farmland. Every year about 10 planes in more than 20 provinces, autonomous regions and directly administered cities throughout the country engage in these operations, and about 70 percent of the sorties result in rainfall, increasing the rainfall from 20-50 percent over areas without these operations and benefiting an area of 350,000-400,000 square km.

Fourth, we are able to increase agricultural crop yields greatly. The use of airplanes for chemical weeding, foliage dressing and spraying plant hormones are important technological measures for stable, high agricultural crop yields. Aerial foliage dressing enables the nutrients to pass through the leaves and directly enter the main body of the plant at the right time, creating a high fertilizer utilization rate and contributing to high yields. The provinces of Heilongjiang, Jilin, Liaoning, Henan, Anhui, Shaanxi, Shanxi and Hubei have all used airplanes for the large-area spraying of the chemical fertilizer potassium dihydrogenphosphate, plant hormones to increase vitality and petroleum agents to aid growth. In the north, they are used to combat damage from low temperatures and thus raise yields; in the south, they are able to defend against the danger to wheat from hot dry winds and also raise yields. Generally, they can increase per-mu yield an average of 7 percent and the income is 5 to 10 times that of investment. In the past 5 years, the area sprayed has reached over 30 million mu, increasing the national grain yield a total of about 1.2 billion jin and the value nearly 200 million yuan.

Fifth, we have improved the natural environment and raised economic results. By 1983, forests and grass sown from the air had already reached 210 million mu on the barren mountains and grasslands of the provinces of Sichuan, Shaanxi and Gansu. Of these, nearly 200 million mu of forests and 1,054 million mu of grass had been sown from the air. According to statistics, forests sown from the air make up 16 percent of the forests created by the nation. There are over 5 billion mu of mature forests and 2.2 billion mu of useful timber. After the Yunnan pine that was planted at an early stage in Xichang, Xide, Ganluo and Yuexi Counties of Sichuan had become mature forests, they formed a new forestry base of concentrated, connected tracts, playing an important ecological preservation role. The planted area of Dongxihe in Xichang County had barren mountain tops and severe soil erosion before the forests were planted, but with the aerial sowing of forests, after 9 years the mountain tops have mature green forests, and the natural environment has improved dramatically. The quantity of flood water has declined by one-third, the volume of silt has gone down 70-80 percent and annual rainfall has increased 80 percent. And due to a stable river bed, approximately 4,000 mu of cultivated land that was ruined by mountain floods in the past has now been recovered and returned to production. The masses commend the project, saying: "The silver eagle sows thousands upon thousands of mountains; barren mountains are draped with green clothes; timber is abundant, grain is plentiful and livestock flourishes; and the water is beautiful, the mountains are green and the birds sing sweetly." Since 1979, in over 130 counties (banners) in 22 provinces, autonomous regions and directly administered cities in the northern pasture lands, the northwest loess plateau soil erosion area, the southern grassy mountain slope area, the red and yellow soil erosion areas and the cold mountainous plateau areas, we have planted more than 30 types of pasture grass over an area of more than 3.3 million mu, with a more than 50 percent rate for keeping a full stand for seedlings. This not only provides a large quantity of high-quality feed for the development of animal husbandry but it also contains sand storms. According to statistics, forests sown from the air cost 0.7-1.5 yuan per mu, which is only one-tenth to one-twentieth the expense of creating forests on the ground through human labor. Planting grass costs 0.6-1.0 yuan per mu, which is 50 percent cheaper than the cost of using machines on the ground. The per-mu cost of planting

paddy rice is 2.5-3 yuan in the south and 4-5 yuan in the north. This saves one-fourth to one-third the cost of using broadcast planting ground machines or human use of brace planting machines. By using an airplane to apply foliage dressing, accelerate ripening, control insects, plant rice, create man-made rain and eliminate weeds chemically, we can increase the crop yield an average of 6-8 percent, with the yield being 2-10 times greater than the investment. For example, when aerially sprayed foliage dressing technology was applied to the Xinjiang cotton-producing area in 1980, the boll-opening rate increased 23 percent over the area that had not been treated, reaching 96.6 percent, and the per-mu yield of the pre-frost ginned cotton increased by 25.73 jin, a 25.73 percent increase. By 1983, the area sprayed where this technology was used reached 475,000 mu, increasing the national output of high-quality, long-fiber ginned cotton by 122,000 tan. Between 1979 and 1983, Hunan's Nanshan Experimental Stock Farm used airplanes to sow high-quality pasture grass, creating pastureland of 610,000 mu and making up 87 percent of the total area of the current man-made pasture land. A 1983 survey found that the per-mu yield for the aerially sown area was 10,000 jin of fresh grass, a four-fold increase over the amount of grass produced on natural pasture land; because the pasture grass quality is excellent, each head of the 157 dairy cattle set out to pasture there produced 7,150 jin of fresh milk a year, a 103 percent increase over 1979. The amount of concentrated feed eaten per head per day dropped from 12 jin in 1979 to 3 jin, allowing a 62 percent drop in fresh milk costs. The rate for calves living to maturity has risen from 50 to 90 percent. After its economic income increased, this farm flung off its "deficit cap," and in 1983, profits grew to 100,000 yuan and the average monthly salary for staff and workers rose to over 60 yuan, four times greater than 5 years earlier.

Agro-aviation is an important production tool that we cannot do without in agricultural modernization. There are 3.3 billion mu of grassy mountains and slopes and barren mountains in China that should be planted in pasture grass, 400 million mu of mountain land suited to forests which should be planted in forests, one-third of low-yield crops that should have foliage dressing, 200 million mu of agricultural and forest land damaged by disease and insects or mice and rats which should be eradicated or prevented and controlled. All of this opens up an even broader prospect for the further development of our agro-aviation. China's agro-aviation will play an ever more important role in developing our national economy and our scientific endeavors.

12452

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NATIONAL

SCALE OF COOPERATIVE ECONOMY IN RURAL AREAS EXPLORED

Beijing NONGYE JISHU JINGJI [ECONOMICS FOR AGRICULTURAL PRODUCTION TECHNOLOGY]
in Chinese No 5, May 84 pp 18-21

[Article by Fu Zhengde [0265 2398 1795] of the Economics Research Institute,
Tianjin Academy of Social Sciences: "An Elementary Discussion of the Problems of Scale in the Rural Cooperative Economy"]

[Text]

I

China's rural economy is just now going through a great historical change, and every aspect of the rural economy is experiencing profound changes. At the same time, we are invariably running into many theoretical and practical questions. The question of management scale in the rural cooperative economy is one important feature. This article attempts a general discussion of this question.

I feel that the so-called "scale" of farming should include at least the three areas of basic scale, technological scale and scale of efficiency.

Basic scale, that is, the numerous factors in productivity such as land, population and labor possessed by an agricultural management unit.

Technology scale, that is, the technological facilities and related funding circumstances possessed by an agricultural management unit that primarily reflect the "input" scale of an enterprise. At the same time, in one respect, it also reflects the level of productivity of an enterprise.

Scale of efficiency, that is, the management achievements of an agricultural management unit--such as product yield, commodity amount, output value, net income, etc. which mainly reflect the "yield" size of an enterprise and the accomplishments of the enterprise's management.

II

Actual experience shows that the basic scale, technological scale and scale of efficiency in an agricultural management unit have a relative unanimity, while also has different degrees of divergence due to differing circumstances in productive relationships and differences in productivity levels. The

management scale of China's rural economy has undergone constant change since the founding of the People's Republic, along with the transformation of the rural production relationship and the development of productive forces, and has gone through roughly four adjustment stages--the small-scale management of the small-scale peasant economy before and after land reform, rational expansion during the period of rural cooperativization, a management scale that went beyond objective reality when communes were organized and the management scale since the 3d Plenum of the 11th CPC Central Committee. In order to explain the situation of changing management scale in the rural economy since the founding of the nation, I will first make a specific analysis using the example of rural Tianjin.

1. The evolution of the basic scale. Since the founding of the nation, the basic scale of Tianjin's rural economy has quite clearly shown changes as well as setbacks (Table 1).

Table 1. Changes in the Basic Scale of Tianjin's Rural Economy

Period	Number of households	Labor Force	Area of cultivated land
Private economy			
Before land reform (1949)	1	2	19
After land reform (1952)	1	2	19
Cooperativization			
Mutual aid teams (1954)	6	12	115
Elementary agricultural producer's cooperatives (1955)	35	70	633
Advanced agricultural producer's cooperatives (1957)	178	340	2,930
Organization of communes			
High tide (1958)			
Production teams	65	124	1,008
Production brigades	191	365	2,960
Communes	6,628	12,681	102,932
After adjustment (1978)			
Production teams	58	96	503
Production brigades	211	352	1,841
Communes	3,761	6,262	32,749
After the 3d Plenum of the 11th CPC Central Committee (1981)			
Production teams	48	89	396
Production brigades	218	402	1,788
Communes	3,861	7,126	31,709

In the early period after the founding of the nation, from the small-scale management of one family or one household after land reform to the organization in 1955 of elementary agricultural producer's cooperatives, the number of households and the size of the labor force for each management unit expanded 34 times and the size of cultivated land expanded 32 times, an expansion basically in line with the level of productive forces of the time.

With the organization of advanced agricultural producer's cooperatives, by 1957 the number of peasant households and laborers in each rural management unit had expanded 4 times those of 1955, equivalent to 170 times those of 1949; the area of cultivated land was expanded 3.6 times, equivalent to 154 times that of 1949, and contradictions had already appeared which did not fit the level of productive forces and the management level of the period. In the high tide of organizing the people's communes in 1958, the basic scale was even larger and unified commune accounting was implemented. At the same time, the average number of peasant households and laborers expanded 36 times over 1957 and the cultivated land expanded 34 times. A small number of communes joined with urban communes, uniting the managements of industry, agriculture, commerce, schools and the military, and the scale became even larger, causing the development of Tianjin's rural economy to suffer a number of setbacks. Later, they made adjustments, implemented "ownership by the three levels, with the brigade as the foundation," and adjusted the basic scale of the basic accounting unit back to the basic scale of the period of the elementary agricultural producer's cooperatives. Yet due to the interference of "leftist" thinking, there were still times when there was a blind combining of brigades and of communes. This problem was not basically solved until the 3d Plenum of the 11th CPC Central Committee.

2. The evolution of the technology scale. The technological scale reflects the extent of production intensification under certain basic-scale conditions. It is different from the situation of developmental changes in the basic scale. One characteristic is that the tendency for growth is even more apparent, and the extent of growth is larger than that of the basic scale; the second is that it does not have obvious rises and falls as does the basic scale. For example, between 1978 and 1981, due to organizational restructuring in the rural economy, the 14,007 basic accounting units in rural Tianjin were increased to 17,549 and the basic scale was reduced. However, the technological scale was not reduced along with it. Indicators such as agricultural forces and rural electrification continued to maintain a tendency toward continual growth. This shows that the technological scale has an objective tendency to grow along with the continual development of the rural economy (see Table 2).

3. The evolution of the scale of efficiency. The scale of efficiency is an overall reflection of the basic scale, technological scale and other economic factors. It reflects the farming accomplishments of the management unit. Before land reform, the average annual total agricultural output value for each agricultural household in Tianjin was only 360 yuan. In 1952, after land reform it increased to 632 yuan. The average total agricultural output value of mutual aid teams in 1954 was 3,556 yuan. In 1955, the total average agricultural output value of the elementary agricultural producer's cooperatives reached 124,090 yuan, and the scale of efficiency quickly expanded. After the organization of the people's communes, and under circumstances where the three levels of economic organization were adjusted and delimited many times, when compared to the changes in the basic scale and the technological scale, the extension of the scale of efficiency was even greater (Table 3), which shows the objective tendency for the scale of efficiency to expand continually along with the development of the rural economy.

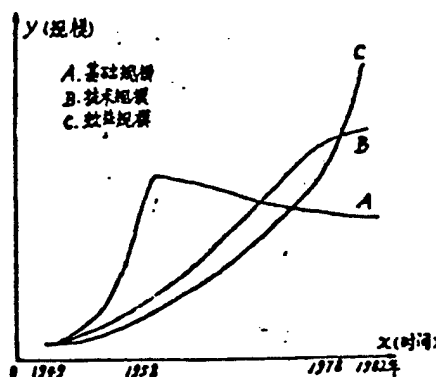
Table 2. Changes in the Technological Scale in Tianjin's Rural Economy

Period	Annual expenses (yuan)	With- holding that year (yuan)	Agri- cultural power (h.p.)	Rural electri- fication (kwh/yr)	Chemical ferti- lizer (jin/yr)
Private economy					
Before land reform (1949)	--	--	0.017	9	0.7
After land reform (1952)	--	--	0.024	18	15.8
Cooperativization					
Mutual aid teams (1954)	--	--	0.2	88	217
Elementary agricultural producer's cooperatives (1955)	--	--	1.4	581	1,972
Advanced agricultural producer's cooperatives (1957)	--	--	17	1,936	14,282
Cooperativization, high tide (1958)					
Production teams	9,430	3,173	10	3,133	6,735
Production brigades	27,699	9,320	29	9,203	19,782
Communes	963,108	324,054	1,016	320,000	687,838
After readjustment of communes (1978)					
Production teams	24,748	6,442	128	37,900	41,445
Production brigades	90,627	23,590	467	138,790	151,770
Communes	1,612,326	419,674	8,314	2,469,163	2,700,093
After the "Third Plenum" (1981)					
Production teams	19,998	5,673	171	38,389	24,124
Production brigades	97,399	25,637	772	173,495	109,027
Communes	1,726,941	454,566	13,680	3,076,164	1,969,070

Table 3. Changes in the Scale of Efficiency in Tianjin's Rural Economy Since the Organization of Communes (Unit: yuan)

Period	Production teams	Production brigades	Communes
High tide of organizing communes (1958)	42,044	103,502	4,294,189
After adjustment of communes (1978)	80,204	293,705	5,225,209
After the "Third Plenum" (1981)	89,105	402,707	7,140,228

The actual experience of developmental change in Tianjin's rural economic management tells us that the course of developmental change in the economics of scale has been fairly complicated. The trends in developmental changes in the basic scale, technological scale and scale of efficiency of Tianjin's rural cooperative economy over the past 30 years can be expressed in lines, as below (see graph).



Key:

Y - Scale
X - Time (year)
A - Basic scale

B - Technological scale
C - Scale of efficiency

Of them, when you exclude the basic scale which has been adjusted since the 1960's for historical reasons, a moderate degree of growth in the scale of the rural economy and of management is a widespread objective trend in the course of economic development. We must both take the profound lesson of not heeding objective facts, of not heeding the level of productive forces, of disobeying objective laws and of seeking "large in size and collective in nature" in scale and must also recognize the inevitability of the expansion of economic scale in the process of transforming a small-scale peasant economy based on private ownership to a socialist cooperative economy. Only in this way will we be able to understand correctly and handle the problem of management scale in the present phase of the rural economy.

III

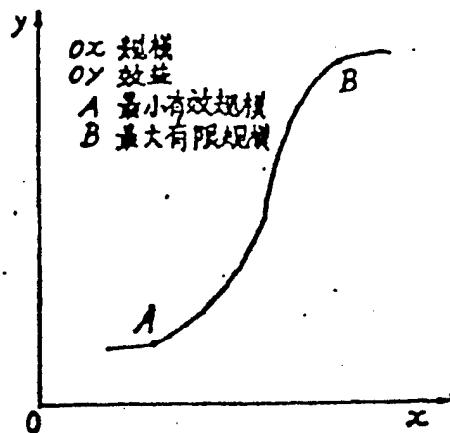
In recent years, some nations have developed the study of the problems of the economics of scale in the study of the economic theory of productive forces. For example, the economic theory of scale of the American economist Z. (?Westfall) [phonetic: Wei-si-te-fa-er], the theory of productive scale of the Indian economist Jin-gen [phonetic] and the theories of other economists concerning enterprise scale put forth "the smallest beneficial scale," "the limits of the expansion of scale," "the relative benefits of small-scale economies," "optimized scale" and other concepts. I feel that drawing upon the positive results among them will aid in the study of the economic problems of China's economies of rural scale. Actual experience proves that concepts like the larger the scale the better or the smaller the scale the better are both quite one-sided. Our position is that we should start with the facts and develop the study of "moderate scale [shidu guimo 6684 1653 6016 2875]." "Moderate scale" refers to the optimum scale for obtaining the greatest economic benefit under certain conditions at a certain time and place.

The specifications of "moderate scale" should be (1) it is able to make full use of natural and economic resources; (2) it is useful in popularizing the use of modernized agricultural technology; (3) it is useful in efficient economic management; (4) it has considerable microeconomic and macroeconomic benefits; and (5) it is useful in maintaining a benign ecological environment.

The basis for determining the size of "moderate scale" should primarily be the following: it should provide for the practical conditions for the various material conditions which are the objects of labor; it provides for the various material and technological facilities for the instruments of labor; and it should provide for the scientific and managerial levels of the labor force itself.

"Moderate scale" is the intermediate value between the "smallest effective scale" and the "greatest limited scale" (as in the graph), that is, the intermediate value between A and B. The scale of $\langle A, \rangle B$ [as published] cannot achieve a corresponding increase in benefits and so is not moderate in scale. The task of macroscopic decisionmaking for the economics of scale lies in determining the scope of areas A and B, and the task of microscopic decisionmaking lies in determining the optimum point of scale within the area AB.

The moderate scale of different regions naturally has different AB values, and different economic management units, too, naturally have their own optimum scale. The major task of economic research on scale is precisely to carry out quantitative studies on such variables.



Key:

OY - Scale

OX - Efficiency

A - Smallest effective scale

B - Greatest limited scale

Along with the conscientious implementation of the whole series of guiding principles and policies since the 3d Plenum of the 11th CPC Central Committee, the level of rural productive forces has risen constantly, and the growth of the management scale of the rural cooperative economy through the economic combination of various forms within the scope of "moderate scale" is an objective tendency. In particular, the expansion of technological scale and the scale of efficiency are even more necessary for rural economic development, and they are necessary for realizing the strategic objective of "quadrupling" and being comfortably well-off, they are necessary for agricultural modernization and they are also necessary for raising rural labor productivity, for shifting excess agricultural labor and for the overall development of the rural economy. However, we must emphasize that the tendency for expansion of the scale of management in the rural economy is not simply the "commune-style" collecting of labor and labor forces. The primary path of expanding the scale of management in China's rural economy is to expand scale through raising the degree of intensive management and through the gradual transition from intensive labor forms to intensive forms of funding and intellectual power; to expand the scale through the specialization of production and the development of a diversified economy and the circulation and transfer of excess agricultural labor; to expand the socialized economic network; and to expand the scale through various forms of economic integration and socialization of production and through the development of a socialist cooperative economy that is collectively owned by the laboring people. And we should also recognize here the relative usefulness of a "small-scale" economy under certain historical conditions. We must prevent again the mistake of "arbitrary uniformity" in management scale so that the management scale of various economic unions will be able to adapt to the varied and complex actual circumstances of China's rural economy and give full play to the advantages of varied scales.

12452

CSO: 4007/25

NATIONAL

BRIEFS

HYBRID COTTON VARIETY PLANTING AREAS INCREASED--Increased use of hybrid cotton is an important way to improve cotton yields and quality; and this year the area where hybrid cotton is planted has grown to over 600,000 mu throughout the nation, of which 460,000 are in Sichuan and 110,000 are in Jingjiang County, Jiangsu. It has also been planted in such areas as Henan, Shandong, Hubei, and Hebei. Hybrid cotton has the features of high quality, high yield, and high resistance, and also solves the problem of nonuniformity in fiber, quality, yield, and resistance which currently exists in cotton breeding. Sichuan hybrid cotton composition No. 3 currently in use in Sichuan has an increased yield of around 15 percent, with fibers stronger and finer than the normal breeds. Sichuan has also established 21,400 mu of plantings throughout the province devoted specifically to inbreeding fiber strength or resistance, and it is projected that in the coming year the area of cotton planting devoted to hybrids will possibly reach 7-800,000 mu. [Text] [Beijing ZHONGGUO NONGMIN BAO in Chinese 28 Oct 84 p 1] 12303

RICE VARIETIES--Changsha, 8 January (XINHUA)--China now has more than 40,000 varieties of rice, more than any other country, according to a national conference now in session here. The forthcoming "Catalog of Chinese Rice Varieties" lists 29,939. Ten thousand more collected across China since 1979 bring the total to more than 40,000, the conference was told. Local rice varieties account for 77 percent of China's total, and high-quality and rare varieties make up 10 percent. Some were bred or imported after 1949. Wild rice varieties have been found in 140 counties in 7 provinces, including Guangdong, Yunnan and Fujian. Some are edible and others of medical value. They are good parents for developing hybrid rice varieties. [Text] [Beijing XINHUA in English 1613 GMT 8 Jan 85 OW]

CSO: 4020/75

TRANSPROVINCIAL AFFAIRS

AFFORESTATION DATA FOR 1984 SUMMARIZED

Beijing ZHONGGUO NONGMIN BAO in Chinese 25 Oct 84 p 2

[Article: "According to Statistics from 17 Provinces, Autonomous Regions and Municipalities, This Year's Rainy Season Afforestation Totals More Than 20 Million Mu"]

[Text] This year's rainy season afforestation is basically finished. According to statistics from 17 provinces, autonomous regions and municipalities, including Yunnan, Sichuan, Nei Monggol and so forth, this year's rainy season afforestation completed more than 21.58 million mu. Of these, 5.94 million mu were planted by aerial seeding, which is 3.17 and 5.77 times that of 1982, respectively [as published]. Five provinces and autonomous regions, including Yunnan, Hebei, Shaanxi, Sichuan and Nei Monggol, completed more than a million mu, and of these, Yunnan completed 9.8584 million mu.

Rapid action, large quantity and good quality were characteristic of this year's afforestation. The major reason for this was that we relaxed policies, adopted all sorts of money-raising measures, and mobilized the enthusiasm of a vast number of households. This year, Tai'an Prefecture in Shandong assigned 10,000 mu of additional private mountain land and expanded the area managed by specialized households by more than 100,000 mu. The prefecture transformed mountains and prepared soil over 72,600 mu, afforested 22,000 mu, grew 11,000 mu of seedlings and tended 108,000 mu of forest. In Nei Monggol, the more than 13 million yuan raised by individuals and collectives effectively resolved the urgent afforestation funding problems.

12510
CSO: 4007/94

BEIJING

RURAL AFFORESTATION AREA REPORTED UP

Beijing BEIJING RIBAO in Chinese 12 Oct 84 p 1

[Article: "Individuals, Collectives, and the Nation Combine Forces to Build Up Forestry: Forested Area in the Capital Environs Increased 14-Fold from Liberation Forest Cover Rate Goes from 1.3 percent in the Fifties To 16.6 Percent"]

[Text] Afforestation of wilderness mountains and tree-planting in rural Beijing has brought together the forces of individuals, collectives, and the nation, so that the greening and beautification of the capital has entered its "Golden Age".

The area of Beijing's mountainous suburbs comprises about two-thirds of the total area of the municipality, with 10 million mu of mountain spaces suitable for forests. According to research by departments concerned, Beijing once had plentiful forests; but due to the ravages of time and man-made and natural destruction, when Beijing became the capital of New China at the time of the founding there were only some 300,000 mu of forests, and the forest cover rate was only 1.3 percent.

Since Liberation, the party and the government have stressed reforestation of wilderness mountain regions in the Beijing environs along with tree-planting and forestry work. They moved quickly to set up forestry administration organs at all levels. In such key areas as scenic tourist districts with their many famous historical sites, water conservation districts, and those threatened by wind-blown sand, 16 state-owned forestry farms were established at one time or another, covering an area of 628,000 mu, extensively expanding the reforestation effort both in the mountains and the flatlands. In addition, 11,000 mu of land were set aside for nurturing seedlings at a state-owned nursery. Under conditions where the nation's resources were very tight, a special fund was set aside for reforestation around the capital each year. Thanks to the active concern of the Politburo and the State Council, the mountainous regions around the capital have returned to life. For example, except for some small pockets of trees around Xiangshan and Badachu, the Xiaoshan region was virtually barren at liberation. After New China was established, through reforestation and many years of management, Xiaoshan's forest cover has spread to an area of over 32,000 mu. Forest storage capacity has surpassed 55,000 cubic meters, which has come to play a role in cleaning up the atmosphere around the capital, preventing wind-blown sand, and preserving water resources.

Afforestation by rural brigades and communes has also advanced in fits and starts; and through the efforts of the broad masses of commune members over the years, there have been achievements in such areas as nurturing forests deep in the mountains and in wilderness areas, constructing orchards, and planting trees all over.

After the Third Plenum of the 11th CPC Central Committee, through the continued elimination of "left" influences, forestry policies in and around the capital have been further relaxed, and all kinds of forestry production responsibility systems have been set up and improved. Young Miyun County farmer Zhao Pangfu came forward to take responsibility for 670 mu of mountain wilderness and forested 300 of them in the first year. Specialized forestation householder Li Fuyu from the wilderness region of Changping County, under the direction of all levels of leadership, invited a laborer friend to join him in afforestation. They actually formed a "Peasant Forest Management Company" with high economic results, and in the first year forested 19,500 mu. At their instigation, mountain peasants all came to sign up for their own mountain areas or responsibility mountain areas and went the path of creating wealth through business. According to incomplete statistics for eight mountain counties, the area set aside for "the two types of mountains" is over 3.29 million mu, which amounts to about half the total mountain area which needs reforestation throughout the municipality. According to figures from the municipal forestry bureau, there are just about 4,800 large forestry households with mountain plots of over 100 mu, of which 52 are "number one households," taking on over 1,000 mu of mountain wilderness.

At the present time, there are 4.4 million mu of forest in rural regions of the capital, more than 14 times the amount in the period right after Liberation. The forest cover rate has increased from 1.3 percent in the fifties to 16.6 percent.

The Central Committee Secretariat's four directives concerning policies for construction in the national capital have further aroused the enthusiasm of the masses for forestation. There is now in Beijing a force of workers from all the people, coming together to build up forestry. It has the welcome character of uniting individuals, collectives, and the nation has brought the reforestation and beautification of the nation's capital into its "Golden Age".

12303
CSO: 4007/95

BEIJING

SPECIAL-GRADE PADDY PROCUREMENT PRICE RAISED

Beijing ZHONGGUO NONGMIN BAO in Chinese 25 Oct 84 p 2

[Article: "Beijing Implements Procurement Price Increase for Special Grade Paddy, Wields the Economic Lever of Price To Increase Grain Quality"]

[Text] As of the beginning of the 1970s, the quantity of special husked rice needed in Beijing began to rise rapidly. In order to guarantee the supply of top-grade husked rice, Beijing Municipal Grain Bureau insisted on implementation of the principle of "high quality, high price," and instituted a procurement price increase on special-grade paddy.

The rice mill at Xizhimen Grain Depot is responsible for providing Beijing with its special supply of "Jingxiao Zhan" husked rice. This kind of husked rice requires processing of top-grade paddy with very few "fubai [5215 4104] grains." After 1970 there was less and less Haiding District paddy that conformed to standards, so the depot had no choice but to go to a few counties in the outer suburbs to choose and transport 6 million jin of top-grade paddy. This expense alone increased expenditures by 100,000 yuan. In order to reverse the passive trend, the depot selected from Haiding-produced paddy the "yuefu" variety that conformed to special quality standards. Then it combined the other quality indices, gave wide publicity to them in Yongfeng Commune and, based on the policy of "pricing according to quality," fixed these high-grade paddies as "first-rate" or "special-grade" paddies. This increased the income of the production team. After a comprehensive study of per-mu yields and income, this production team rapidly expanded the cultivated area growing the "yuefu" variety and also popularized it among other teams. Consequently, the area sown with this variety increased rapidly from 20,000-plus mu in 1979 to more than 70,000 mu in 1980. In 1980, of the paddy that entered Xizhimen Depot from Haiding District, 36.5 percent was first-rate, and 68.5 percent of the paddy from Yongfeng Commune was first-rate or above. However, only 7.4 percent of the paddy purchased city-wide was first-rate or above. In comparison with the rest of the city, Haiding District received more than 140,000 yuan in additional income due to the higher price for top-grade paddy, and Xizhimen Grain Depot saved 100,000 yuan on transport costs. Because the selling price of Jingxiao Zhan rice is 20 percent higher per jin than that of most rice, the state also reduced the deficit by more than 200,000 yuan, which is really a sweeping achievement with one stroke. By bringing into play the economic leverage of price, we have greatly increased the production enthusiasm of Beijing's suburban peasantry. In the past few years and the amount of special-grade paddy purchased has risen steadily. The forecast for this year projects that it may reach 30 million jin.

GANSU

BRIEFS

GRASS, TREE SPECIALISTS MEETING--On 28 December, provincial CPC Committee Secretary Li Ziqi and Governor Chen Guangyi met in the (Niuwozhuang) Hall a number of delegates who attended the provincial meeting to commend advanced typical examples in planting grass and trees and advanced specialized households. Comrade Li Ziqi said that this meeting had been very successful. He said: In order to achieve strategic transformation of agriculture, it is essential to give prominence to planting grass and trees and switch from single-product economy to diversification. We must integrate planting grass with raising livestock, continue to develop specialized households, vigorously develop township and town enterprises, and organize commodity circulation well. The township CPC committees and governments must center their work around production and getting rich through hard work. [Excerpt] [Lanzhou Gansu Provincial Service in Mandarin 2300 GMT 28 Dec 84 HK]

CSO: 4007/149

GUANGDONG

OPTIMIZATION OF REGIONAL AGRICULTURAL STRUCTURE REVIEWED

Beijing NONGYE JISHU JINGJI [ECONOMICS FOR AGRICULTURAL PRODUCTION TECHNOLOGY]
No 9, Sep 84 p 42-46

[Article by Yang Qirong [2799 0796 2837] of the Department of Agricultural Economics, Chinese People's University: "The Problem of Optimizing the Regional Agricultural Structure"]

[Text] Giving full play to the advantages of a region is one of the major foundations for adjusting the structure of agricultural production. But often the advantages of a region are not singular but multifaceted. When reviewed from different angles, there are different advantages, and there may be an intimate relationship between these different advantages, or no relationship whatsoever; they might be used at the same time, or it might be impossible to do so. The question of how to balance and use the advantages in different fields comprehensively and properly to optimize the structure of the agricultural economy in an area is one of universal significance. This article attempts to use a method combining qualitative analysis and quantitative analysis to explore the question of optimizing the structure of agricultural production in a relatively independent agricultural area--the Zhu Jiang [Pearl River] delta's Dashatian area.

I

The Zhu Jiang delta is an area with natural and social advantages and has a developed economy and it is also a commodity product base for various agricultural products like grain, sugarcane, silkworms, mulberries, fish grown in ponds, vegetables and fruit. Agricultural production has many advantages. Seen from climate and soil conditions, the Zhu Jiang delta is one of the most suitable places in the country for growing sugarcane, and it has a long history of growing it. Not only does sugarcane cultivation have high yields but great economic results. As for grain production, it enjoys the advantages of a high degree of intensification, a high per-unit area of yield and a high commodity rate.

Viewed from geographical position, there are a large number of large and medium-size cities like Guangzhou and a dense network of towns and so the area has beneficial conditions for developing suburban agriculture; viewed from economic and social conditions, it also has excellent conditions for developing rural and town industry.

It is clear that agricultural production in the Zhu Jiang delta has many advantages.

For the nation as a whole, the Zhu Jiang delta is one of our major agricultural areas. The Zhu Jiang delta itself is divided roughly into three types of agricultural districts. The Dashatian area is on a plain close to the sea with only a short period for marshland reclamation and a fertile soil and it still has a small population. It is the major base in the Zhu Jiang delta for commodity grain and sugarcane. The key to adjusting the agricultural structure in Dashatian is to determine a rational proportion between grain and cane. We feel that in determining the proportion between the areas for growing grain and for growing sugarcane in the Dashatian area, we must consider in an overall way the various restricting factors on demand and production. If we put undue emphasis on grain production it will inevitably check the full expression of the advantages of sugarcane and other cash crops and make agriculture fall into the vicious cycle of low benefits and high consumption. History has already proven that a structure of grain alone is not desirable. And yet blindly developing sugarcane production would also bring about many contradictions. First of all, it would affect the development of grain production, thus expanding the amount of grain that would have to be brought in or imported, and would not only bring great losses but bring tremendous political risks; second, it would affect the comprehensive utilization of the advantages of grain production, check the development of animal husbandry and other sectors and lower the overall economic results. Consequently, the most suitable proportions of grain and sugarcane should be ones in which the profits and total tax revenues from increased sugarcane production are equal to the direct and indirect losses from reducing grain production. To use a formula to express the sum of the coefficients for high losses and the political risks from importing grain as:

$$M \text{ sugarcane} \geq M' \text{ paddy rice} + C' \text{ grain} + R.$$

In the formula, "M sugarcane" refers to the sum of the profits and taxes from sugarcane; "M' paddy rice" and "M' paddy rice" refer to the direct and indirect profits from paddy rice; "C' grain" refers to the high losses from importing grain; and "R" refers to the loss from political risks from importing rice.

As seen from the above formula, when "M sugarcane" is greater than the sum of the other items, then there is a rational development of sugarcane production. The optimal proportion for grain and sugarcane is when the two are equal.

II

To give full play to the advantages of an area, we must not only point out what those advantages are but even more importantly explain what the proportional relations of the various advantages should be. Consequently, just a qualitative analysis is not enough, but we must gain an accurate quantitative analysis through qualitative analysis.

In order to solve the problem of the proportion of grain and sugarcane in the Dashatian area and the contradiction between higher prices for agricultural

products and specialization, we selected a representative commune--the Langwang Commune of Zhongshan County (it has now become the Langwang District of Zhongshan City) to carry out our study. This commune has 36,903 mu of cultivated land, a population of 21,703 and 1.7 mu of cultivated land per capita. The whole commune has 10,038 laborers. Agriculture is the main production sector of the commune, with paddy rice and sugarcane the main items. Before 1979, the commune's total area in paddy rice had reached 29,158 mu, or 79 percent of the total area, and sugarcane had reached 4,657 mu or 12.6 percent. Beginning in 1980, the area of paddy field fell to 25,015, or 68 percent, an 11 percent decline; the area in sugarcane rose to 6,500 mu or 17.6 percent, a 5 percent rise; and they changed to growing 2,000 mu of peanuts or 5.4 percent of the total. In 1982, the area in sugarcane was further increased to 7,959 mu, and in 1983 it fell to 7,036 mu. The paddy rice area also fell from 27,074 mu to 26,910 mu. At present, they still have not found the most suitable proportion between paddy rice and sugarcane.

In view of the fact that the agricultural production structure and relations in this commune are fairly simple, the problem of structure is primarily the use of present cultivated land and the corresponding problems involving animal husbandry, and the use of labor, source of funds, etc. And so we chose to use a linear programming model to carry out our study. In the model, different production activities are the adjustable patterns and the goal is the largest net income for the commune's agricultural system. Moreover, we set up separate restraining conditions from the land, labor, state plan, market capacity, ecological balance, use of sideline products and other aspects. See Table 1 for variables and restricting conditions.

The major field crops for this commune are paddy rice, sugarcane and peanuts, and among the three there is an intimate rotating and supplemental relationship. We separately set up the five variables X_1 - X_5 , in accordance with actually existing rotational methods. According to the most recent price rises for agricultural products and the trend toward more agriculture in the suburbs, we also set up the five variables X_6 - X_{10} . Of them, straw mushrooms are a fungal foodstuff raised with rice chaff as the raw material. Due to its advantageous geographical location and abundant raw materials, this commune developed straw mushroom production very rapidly and it is already the top supplier for the Guangzhou market. Vegetables are a foreign export product, mainly supplying the Hong Kong area.

The primary limiting factors for this commune's agricultural production are limited cultivated land and fairly small supply of labor during the busy season. As a base area for commodity grain and sugarcane, direct state planning plays a major guiding role for the commune. In addition, market demand and the use of sideline products also play a definite limiting role in its agricultural production.

Through computer processing, we obtained the optimal plan. See Table 2. The optimal plan could make the net income of the system* reach 8.73 million yuan, an 18.6 percent increase over the entire commune's net income for agriculture in 1983, and the per-capita net income could reach 402 yuan. Based on the average for each laborer engaged in agriculture, the average net income per laborer has reached 1,750 yuan and each man-day earns a net income of 5.76 yuan.

*The scope of the study for this model is only one part of agriculture, and so the net income for the system is smaller than the net income for agriculture.

Table 1. Variables and Restricting Conditions in the Langwang Model

Variable	Code	Unit	Upper/ lower Limit	Restricting Condition	Type of Restriction	Unit	Upper/ lower Limit
Successive rice crops	X ₁	1 mu		Total area of cultivat- ed land	L(4)	mu	33,976
Sugarcane/ rice rota- tion (1:3)	X ₂	4 mu		Annual labor	L	man-day	1,606,080
Sugarcane/ rice rota- tion (2:2)	X ₃	4 mu		Spring plow- ing labor; summer har- vest/planting labor	L L	man-day man-day	112,500 250,000
Sugarcane (peanuts)/ rice rota- tion (1:3)	X ₄	4 mu		Fall harvest labor	L	man-day	100,000
Peanuts/ rice rotation	X ₅	1 mu		Balanced supply/ demand for grain	G()	jin	28,815,000
Peanuts-- straw mushrooms	X ₆	1 mu		Sugarcane area	G	mu	7,036
Vegetables-- straw mushrooms	X ₇	1 mu		Balanced 1)N fertility	L	jin	908,532
Vegetables/ sugarcane rice rotation	X ₈	4 mu		2)P	L	jin	748,439
Excavated fish pond	X ₉	1 mu	500	3)K	L	jin	2,049,290
Fruit	X ₁₀	1 mu		Sugar balance	G	jin	0
Hog raising	X ₁₁	head	8,800	Straw balance; changed area of cultivation	G L	10,000 jin mu	3,000 2,500
Poultry rais- ing (chick- ens, ducks & geese)	X ₁₂			Hog task	G	head	8,800
Negotiated- price nitrogen	X ₁₃	jin	1,541,000	Vegetable area	L	mu	1,000
Negotiated- price phosphorus	X ₁₄	jin	1,541,000	Market capac- ity for straw mushrooms	L	jin	1,800,000
Negotiated- price potassium	X ₁₅	jin	837,500	Sugarcane yield	L	jin	68,000

Table 2. Model Optimal Plan

Variable	Numerical Value	Marginal Value	Material	Amount Used	Shadow Price
X_1	0	- 22.54	Objective Number	8,730,819	1.0
X_2	0	- 9.35	R_1	33,976	-208.44
X_3	1,896.8	- 60.96	R_2	1,514,090	0
X_4	5,268.7	- 50.83	R_3	68,160	0
X_5	0	- 16.45	R_4	250,000	- 6.17
X_6	296.1	-305.65	R_5	99,444	0
			R_6	30,174,900	0
X_7	62	-288.79	R_7	10,000.3	0
X_8	938	-420.49	R_8	908,532	- 0.29
X_9	500	-159.02	R_9	227,209	- 0
X_{10}	703.9	- 63.25	R_{10}	1,424,656	0
X_{11}	8,800	- 44.55	R_{11}	0	0.15
X_{12}	375,027	- 1.20	R_{12}	3,000	397.57
X_{13}	129,105	- 0.29	R_{13}	2,500	-388.63
X_{14}	0	- 0.02	R_{14}	1,000	- 52.41
X_{15}	0	- 0.46	R_{15}	942,095	0
			R_{16}	68,000	- 7.18

It is clear from the optimal plan that the field rotation system mainly uses the 2:2 sugarcane/paddy rice system (X_3) and the sugarcane (or peanuts)/paddy rice rotation system (X_7). Of them, the 2-2 sugarcane/paddy rice system has an area of 1,896.8 units [dan wei 0830 0143], or 7,587 mu, occupying about 21 percent of the total cultivated area; the sugarcane (peanuts)/paddy rice rotation system has an area of 5,268.7 units, or 21,075 mu, and occupies 57 percent. Because of low yields and low incomes, the continuous cropping of paddy rice and the 1:3 sugarcane/paddy rice rotation system have been eliminated. In the cultivated land in front of and behind the village, they can arrange for 938 units, or 3,752 mu, to rotate vegetables, sugarcane and paddy rice. Combining these three, there are 21,476 mu of paddy rice or 58 percent

of the cultivated land, 10,000 mu of sugarcane or 27 percent, 5,268 mu of interplanted peanuts and 296 mu of spring peanuts. These three items combined--paddy rice, sugarcane and peanuts--make up 85 percent of the cultivated land. The proportion of paddy rice to sugarcane area is about 2:1 and a bit.

At the proportion for paddy rice and sugarcane of 2:1, you can both give full play to the advantages for sugarcane in this area and also not affect grain production. With the optimal plan, the total grain output for the whole commune can reach 30.17 million jin, and although this is 13.33 million jin less than for 1983, it can still exceed the minimum limit of 13.6 million jin, which not only can fulfill the state's purchase task but can also guarantee that animal husbandry will have a development. Estimating the feed held back by this commune, apart from satisfying the requirements for raising hogs, they can also raise 375,000 fowl, an increase of 55,000 over 1983, or a per-capita average for raising fowl of 17. If we put undue emphasis on playing up the local predominance of sugarcane, and allow the sugarcane area to exceed 27 percent, it will lead to a reduction in grain production due to a reduced area in paddy rice area, and then it will both be difficult to complete the state purchase task and also put constraints on the development of animal husbandry and straw mushroom production, and we will lose the advantages of the comprehensive utilization of paddy rice. According to a sensitivity analysis, based on the optimal plan, a 1-mu increase in sugarcane area will at the very least reduce the net income by 30.48 yuan. In the same way, with the present, rather large flexibility in grain, an overemphasis on grain production will cause the sugarcane area not to reach the level of the optimal plan and might also create a corresponding reduction in net income. At the level of the optimal plan, each 1-mu increase in paddy rice area will reduce the net income from 16.9 to 23.3 yuan.

Having the proper proportions for expanding the area for cultivating sugarcane and paddy rice benefits the implementation of wet and dry rotation and promotes the increased yields of both sugarcane and paddy rice. According to statistics for Zhongshan City, between 1978 and 1982 the proportion of area planted in paddy rice to sugarcane in the city fell from 6.5:1 to 4:1, resulting in increases in total yield for paddy rice and sugarcane of 30 percent and 81 percent, respectively, and the income per capita distributed to commune members increased from 131 yuan to 451 yuan. As a proportion of total income, agricultural production costs dropped from 36 percent to 25 percent. All this shows the quite obvious results obtained from readjusting the proportions of paddy rice and sugarcane. If the 2:1 proportion for paddy rice and sugarcane is used, then all the cultivated land can be rotated once in 3 years, and for experience and flexibility, we can separately adopt different rotation systems like 1:3 or 2:3.

Seen from the optimal plan, it is about right when roughly 15 percent of the cultivated area is taken up by the production of high-priced products like straw mushrooms, vegetables, pond-raised fish and fruit, etc (not including the area of private plots, current orchards and fish ponds). When done this way, it both guarantees the specialized production of field paddy rice and sugarcane and can also fully use idle labor in the production of high-price products that take intensive labor.

The optimal plan and the changing trend now taking place are basically in agreement. In accordance with higher-level directives, the Langwang area has already formulated their 1984 production plan. The commune plans to decrease the area for paddy rice from 26,910 mu to 24,410 mu, a reduction of 2,500 mu; sugarcane will be increased from 7,036 mu to 8,036 mu, an increase of 1,008 mu; and the commune will expand the cultivation of peanuts by 1,500 mu. The way this differs from the optimal plan is that the extent of adjustment envisioned by the optimal plan is greater than that of the production plan and the total net income would exceed 20 percent [as published]. If other conditions remain unchanged, then this commune's agricultural production structure can hope to adjust to the level of the optimal plan within 1 or 2 years.

III

Whether a production structure is rational or not is determined by the magnitude of economic results of the agricultural system. But the various production conditions that form the basis of a rational agricultural production structure are by no means unalterable, but rather they normally change. Consequently, it is extremely important to do a sensitivity analysis and feasibility evaluations of optimal plans.

As seen from the Langwang area model, both the benefit coefficient [liyi xishu 0448 4135 0190 2422] and the material limits of the optimal plan have fairly sensitive elements. The sensitivity of the benefit coefficient primarily reflects the effect of the changes in agricultural product prices on the optimal plan. The smaller the scope of change permitted by stability for the optimal plan, the more sensitive the benefit coefficient.

We can see from Table 3 that the benefit coefficients connected to low- and medium-price products like paddy rice, sugarcane and peanuts are all rather sensitive. This shows that price changes for low and medium-price products very easily bring about changes in the optimal plan. But the benefit coefficient for high-price products is not sensitive, thus showing their tremendous advantage. A sensitivity analysis of material limits shows the extent of the effect of increases or decreases in the amounts of various materials on the optimal plan.

We can see from Table 4 that the land area, amount of labor in the agricultural busy season, amount of paddy rice and sideline products and state plan task are all rather sensitive. Of them, the most sensitive is the amount of labor during the busy summer harvest and summer planting season. If the amount of labor invested during the busy season exceeds 0.5 percent or is reduced by more than 2.5 percent, then it will bring about changes in the entire optimal plan. Within this range, an increase or decrease of 1 man-day will cause an increase or decrease of 6.17 yuan in net income, respectively. This numerical value can be considered the standard for influx of labor. If the daily income for industry and sideline production does not surpass 6.17 yuan, then people would rather stop work and return to the brigade and take part in busy-season labor.

Table 3. Range of Benefit Coefficient Sensitivity (percentage)

Objective's Function Coefficient	Lower Limit	Upper Limit
C_1	-	120.2
C_2	-	101.5
C_3	94	107.8
C_4	98.5	107.7
C_5	-	109.3
C_6	87.5	113.3
C_7	80.4	113.5
C_8	96.4	108.4
C_9	-	134.2
C_{10}	75.9	109.4
C_{11}	-	217.2
C_{12}	47.5	182.2

In addition to the sensitivity of parameters, when the objectives are different, then the optimal production plan is also different. We can see from a comparison of net income objectives, profit objectives and overall objectives that the largest possible area for paddy rice is 23,607 mu, and the smallest is 21,476 mu. The sugarcane area is between 7,869 and 10,000 mu. In accordance with the optimal plan and with the effects of various variable factors, the proper proportion for sugarcane and paddy rice is between 1:2 and 1:3.

Apart from this, along with the overall economic development in the Zhu Jiang delta area, the social and economic conditions facing agricultural production will see profound changes which cannot help but affect the choice of agricultural production structure. Presently, the following are worth our attention: the further commercialization of agriculture, a greater degree of openness in agricultural systems, the development of rural industry and commerce and the expansion of groundbreaking agricultural production, the transfer of labor out of agriculture, the raising level of peasant income and the sharp increase in the daily value of labor, etc. These economic conditions affect agriculture to differing degrees in different areas. For example, the labor transfers and the raising daily labor wages create correspondingly

Table 4. Range of Sensitivity of Resource Shortage Limits

Resource	Amount	Upper Range of Change	Percentage	Lower Range of Change	Percentage
Land area	33,976	34,382	101.9	32,985	97.1
Labor during summer harvest and planting	250,000	251,321	100.5	243,643	97.5
Nitrogen balance	908,532	1,037,637	114.2	-503,362	-
Straw balance	3,000	3,515	117.3	2,867	95.5
Restrictions on changing cultivated area	2,500	3,493	139.7	1,859	74.3
Vegetable area	1,000	1,051	105.2	32	3.2
Sugarcane yield	68,000	74,674	109.8	64,367	94.7

Table 5. Comparison of Optimal Plans for Different Targets

Item	Net Income Target	Profit Target	Overall Target
Target value:			
Profit (10,000 yuan)	420	444	437
Net income (10,000 yuan)	873	867	839
Output value (10,000 yuan)	1,657	1,670	1,666
Grain yield (10,000 jin)	3,017	3,049	3,307
Paddy rice area (mu)	21,470	21,712	23,607
Sugarcane area (mu)	10,000	9,764	7,869
Total annual surplus labor (man-days)	91,990	197,574	266,699

costly agricultural labor, and the costs of agricultural products also increase greatly. To meet these changes, we must adjust the agriculture structure, raise labor productivity and increase the production of high-cost products. And so there is no unalterable optimal plan and the improvement of agriculture's production structure must be a process of constant advance.

12452

CSO: 4007/53

GUANGDONG

HAINAN MEETING ON AGRICULTURE CONCLUDES 3 JANUARY

HK050323 Haikou Hainan Island Service in Mandarin 0400 GMT 4 Jan 85

[Excerpts] The Hainan meeting of district chiefs [qu zhang] and managers of agricultural-industrial-commercial joint companies concluded yesterday afternoon after 9 days in session. During the meeting, important speeches were made by Yao Wenxu, secretary of the Hainan Regional CPC Committee, and Lei Yu, deputy secretary of the committee and the principal responsible person of the Hainan Regional People's Government. The documents of the CPC Central Committee's national rural work conference were conveyed to the meeting. The participants studied the CPC Central Committee on reform of the economic structure, and theory on rural commodity economy, and exchanged information in developing rural commodity production. They discussed and studied how to speed up the development and construction of agriculture in Hainan.

The participants understood that the tasks in rural work are: to further reform the management structure of rural economy; expand regulation by market mechanism under the guidance of the state plans; promote rationalization of the rural production mix; and further enliven the rural economy.

Wei Zefang, deputy secretary of the regional CPC Committee, delivered a summation at the conclusion of the meeting. He put forward the following demands:

1. Apply the reform spirit to speed up the building of modern agriculture in Hainan, and produce more and better agricultural products to meet the needs of speeding up Hainan's development and construction and of the international markets.
2. Readjust the rural production mix. Arrange current agricultural production in a planned and measured way.
3. Reform the rural science and technology management setup to suit the needs of big development of rural commodity production.
4. Party and government departments at all levels must strengthen leadership over rationalizing the rural production mix.

CSO: 4007/149

GUANGDONG

BRIEFS

HAINAN AGRICULTURAL PRODUCTION--According to statistics, Hainan Island's gross output of grain in 1984 amounted to some 2.6 billion jin, and was approximately 7 percent more than in 1983. [Summary] [Guangzhou Guangdong Provincial Service in Mandarin 1000 GMT 2 Jan 85 HK]

CSO: 4007/149

GUANGXI

BRIEFS

GUANGXI MOUNTAINOUS AREA CONFERENCE--From 26 to 28 December, the Guangxi Regional People's Government held a conference in Nanning on work in the mountainous areas. The conference looked into the problems of how to use well the large amount of grain, cotton, and cloth appropriated by the state for our region. Attending the conference were responsible persons of departments concerned at the regional level and responsible comrades of all prefectural commissioner's offices, 48 district prefectural and county governments in the border areas, and units concerned. The state recently appropriated gratis a large amount of grain, cotton, and cloth whose value was about 170 million yuan, to our region to build roads and medium-sized and small water conservancy facilities in poor prefectures, particularly brigades which seriously lack grain and clothes and counties own townships which seriously lack transport facilities. The region has decided to mainly use this grain, cotton, and cloth to help 48 distant prefectures and counties in the border areas throughout the region, particularly 10 autonomous counties, old revolutionary bases, counties in the border areas, and 155 poorest communes and townships, to build roads, drinking water facilities, and small hydroelectric power stations and water conservancy facilities. It has been provided that this grain, cotton, and cloth cannot be used as relief articles, cannot be equally distributed, cannot be used for other purposes, and cannot be resold to the state. Jin Baosheng, deputy secretary of the regional CPC Committee, attended the conference and spoke. Zhang Shenzhen, member of the regional CPC Committee Standing Committee and vice chairman of the Regional People's Government, made a summing-up report. [Summary] [Nanning Guangxi Regional Service in Mandarin 1130 GMT 31 Dec 84 HK]

CSO: 4007/149

GUIZHOU

BRIEFS

GUIZHOU'S RURAL ENTERPRISES DEVELOP--The development of the province's town and township enterprises has made a breakthrough point this year. During the first 10 months, the gross output value of the province's town and township enterprises has reached over 656 million yuan, and their gross income totalled more than 518 million yuan, both increased by about 25 percent compared with the same period last year, or increased by 100 percent since 1978. [Summary] [Guiyang Guizhou Provincial Service in Mandarin 2300 GMT 20 Dec 84 HK]

GUIZHOU'S RURAL SCIENTIFIC REFORM--The provincial Scientific and Technological Committee held a meeting in Anshun from 15 to 19 December on discussing the province's reform of scientific and technical system in rural areas, as well as on developing the mountainous area in a comprehensive way. The meeting urged scientific and technological committees at prefectural and county levels to seriously make science and technology, and the economic construction to gear to each other's needs; to build a scientific and technical system that integrates ownership by the whole people, by the collective, and by individuals, and which conforms to the rural economic structure; to build a new industrial system that includes science, technology, economic planning, production, and marketing; to study and readjust the scientific and technical system so as to conform to the reform of economic structure. [Summary] [Guiyang Guizhou Provincial Service in Mandarin 2300 GMT 20 Dec 84 HK]

CSO: 4007/149

HEBEI

HEBEI REAPED ANOTHER BUMPER HARVEST IN 1984

HK071016 Shijiazhuang Hebei Provincial Service in Mandarin 0430 GMT 1 Jan 85

[Text] Our province reaped a bumper agricultural harvest again in 1984. It is estimated that the gross agricultural output value for the whole year may amount to 17.8 billion yuan, an increase of 12.2 percent over 1983. Although the areas sown to crops throughout the province were reduced by 3.79 million mu, due to the increased per-mu yeild the gross output of grain was the highest in our province's history for a second year. It is estimated that gross output of cotton may reach 2 billion jin, the highest record in history. Gross output of [oil-bearing] crops may amout to 1 billion jin, 40 million jin more than in 1983. The whole province afforested 4.46 million mu in 1984, some 200,000 mu more than in 1983, an increase of 4.9 percent. The amount of draft cattle in stock was 3.92 million head, an increase of 4.9 percent over 1983. The amount of sheep in stock was 8.22 million head, 0.6 percent more than in 1983. The amount of aquatic products also increased.

The further development of the rural commodity economy promoted the development of diversification. At present, 5.31 million laborers throughout the province have changed from engaging in traditional farming to engage in diversification, such [as] the breeding trade, industry, construction, transport, commerce, and catering and service work. The number of rural specialized household has increased to some 2.49 million, accounting for 22.7 percent of the total number of peasant households throughout the province. The number of economic combines is 250,000, of specialized villages 5,483, of specialized townships 203, of specialized fairs 485, and of agricultural trade wholesale fairs 221. According to preliminary statistics, the output value of townships and towns for the whole year may reach some 5.8 billion yuan an increase of 43 percent over 1983.

CSO: 4007/149

HEBEI

TEMPO OF LIFE SPEEDS UP IN HEBEI PROVINCE

OWO70800 Beijing XINHUA in English 0712 GMT 7 Jan 85

[Text] Shijiazhuang, 7 January (XINHUA)--Some 70 percent of the 96 households (a total of 400 people) in Hebei Village are now eating out in order to save time, indicating a faster tempo of rural life under the current policies of encouraging a market-oriented economy.

"We just couldn't do farming while working in village-run mills," one interviewee said. "Besides, we need time to attend technical training sessions in order to be good industrial workers."

The village's five processing mills for rubber and plastics set up in recent years employ 80 percent of the village's labor force. To raise efficiency, the workers attend in shifts round the clock.

The villagers are becoming increasingly busy in work and study. And they want to spend more time enjoying themselves watching TV and taking part in other recreational activities. Because of this, they said, the village committee has set up a restaurant.

Farming of the village's 50.6 hectares of land is done by just a dozen families. The current policy helps farmland concentrate in the hands of better farmhands for more marketable grain.

The annual income per person in the village last year was about 1,000 yuan on average, up from 45 yuan in 1978. This is higher than the average annual income for city dwellers.

Qi Shangchun, a middle-aged woman and her two children used to be in debt to production team as her husband worked elsewhere. She now earns more than 1,500 yuan a year by working in a village mill. Last year she transferred her contracted farmland to another household and began to eat with her two children in the village restaurant.

"I now have time to study," she said. She is attending a general knowledge class.

CSO: 4020/75

HEBEI

HAI RIVER CONSTRUCTION STATUS REPORT

Beijing ZHONGGUO SHUILI [WATER CONSERVANCY IN CHINA] in Chinese No 10, 15 Oct 84 pp 2-3, 8

[Article by Niu Fuzhai [3662 4395 1341] and Zhang Erjun [1728 1422 6874]:
"Achievements in Water Conservancy Construction in the Hai River Basin"]

[Text] Besides the five major tributaries in the Hai River Basin of the Chaobaibei Canal, the Yuanding He, the Daqing He, the Ziya He and the Zhangweinan Canal, the basin also traditionally includes the Luan He, the Ji Canal, the Tuhai He and the Majia He. The basin extends from Taixing Shan in the west to Kuayan Shan in the north, to the Bohai Sea on the east and to the Huang He in the south. Administratively, it includes all of Beijing and Tianjin Municipalities, most of Hebei Province and portions of Shanxi, Henan, Shandong and Liaoning Provinces and the Nei Monggol Autonomous Region. The terrain slopes downward toward the Bohai Sea from the north, west and southwest. The basin covers 319,000 square kilometers, and has a population of more than 98 million and 173.8 million mu of cultivated land. It is the governmental, economic and cultural center of China.

The Hai River has a semiarid monsoon climate and precipitation is extremely unevenly distributed, both over the long term and during any particular year. The long-term average precipitation ranges from 400 to 600 mm. Average annual runoff is 29.2 billion cubic meters, a percapita average of less than 300 cubic meters of surface water, only one-ninth of the national percapita figure of 2,700 cubic meters. It is one of the country's most severe water-short regions.

Throughout history, because of the large number of upstream tributaries in the Hai River Basin and the lack of a transitional sloping zone between the mountainous regions and the plain, the tributaries were short and flowed violently, and upstream areas were more prone to flooding than downstream areas. The concentrated downpours during each flood season spilled through the tributaries into the Hai River at Tianjin. The inability to drain off the water caused the river to rise rapidly and often led to disastrous flooding. Because of high winds and little rain during the spring of each year, however, the river bed would dry up and a drought would ensue. Many

years saw both drought and floods, with repeated disasters. The added lack of control of the Hai River by generations of the feudal governing class made the land in the Hai River Basin barren, and the people were poor and subject to repeated drought and flooding disasters. Throughout these difficult years, broad masses of working people were forced to leave their homes to flee famine and beg every year with a disaster. Some families were forced to sell their children and lost their families, to the extent that some were unable to survive and starved or froze to death.

The party Central Committee and the State Council have paid special attention to water conservancy construction in the Hai River Basin since the founding of the nation. During the early period after the founding of the nation (1949-1957), the decrepit dykes left over from the old society were rebuilt, irrigation projects were constructed, and the middle and lower reaches began to come under control so that it was able to withstand low standard flooding. The flood prevention projects in the middle and lower reaches of the Chaobai He and the Daqing He were constructed during this period. The first large scale reservoir in the Hai River Basin, the Guanting reservoir, was constructed during this period on the upper reaches of the Yuanding He. After 1958, more than 20 large scale reservoirs and a large number of medium and small scale reservoirs were built in upstream mountainous areas and soil conservancy work was undertaken. Irrigation and mechanized well projects also were built in the midstream and downstream plains area. The upstream reservoirs played an enormous role in retaining the floodwaters during the major flood in the Hai River Basin in 1963 and successfully protected the safety of Beijing and Tianjin Municipalities and the Beijing-Guangzhou, Beijing-Shanxi and Tianjin-Huangpu railroads. At this time, Chairman Mao Zedong issued the call that "we certainly must bring the Hai River under control." Each year 500,000 to 600,000 people took part in constructing backbone water conservancy projects in the Hai River Basin and countless peasants engaged in water conservancy construction on farmland. This sort of large scale water conservancy construction continued for more than a decade. We adopted the principle of paying attention to storage and drainage during this period. On the one hand, we actively expanded and fortified the large upstream reservoirs and raised flood prevention standards. On the other hand, we expanded the river channel in its middle and lower reaches and opened up new outlets to the sea like the Zhangwei He, the Ziya He, the Yuanding He, the Duliuyu He and others. At the same time, we also made arrangements for dealing with flooding in the plains areas such as the Xuanhui He, the Beipai He, the Nanpai He and others. At the onset of the 1970's, following reduced flood danger and development of industrial and agricultural construction, water shortages began quite obvious. The shortage of water for industrial purposes and for daily use by the urban population was especially serious and led to even greater development of mechanized well construction. At the same time, we also built the Zhuzhuang, Daheiting, Fanjiakou and other large reservoirs and completed the project to divert the Luan River into Tianjin (the northern line); which began carrying water in September of 1983. Construction is now in progress on the project to divert the Luan River into Tangshan (the southern line) and it is predicted that water will begin flowing through it

in 1985. This will greatly improve the water supply in Tangshan City. What especially deserves mention is that during construction of the project to divert the Luan River into Tianjin (the northern line), we overcame such problems as long battelines, multiple projects, large numbers, urgent construction schedules and difficulty in construction and created valuable experiences in "having key projects truly become key projects." Only 1 year and 4 months were required from the time that construction began on the line as a whole to the time that water began moving through it, 2 years ahead of the state's requirements that water move through in 1985. The project is of good quality and saved on project investments. It has become a model of good, rapid and more economical results in the capital construction battlefront, and has been highly evaluated at home and abroad. The construction of the project to divert the Luan He to Tianjin and the movement of water through it greatly alleviated the water shortage in Tianjin Municipality and enabled the city to make even greater contributions to construction of the four modernizations throughout the country.

The state has invested about 10 billion yuan in the Hai River Basin over the past 35 years and the masses themselves have contributed about 6 billion yuan. More than 1,800 large, medium and small reservoirs have been built with a total capacity of about 26 billion cubic meters. Of these, the 30 large reservoirs (including the Pingyuan reservoir) have a total capacity of about 22.5 billion cubic meters. Almost 50 sections in the middle and lower reaches of the backbone river channels have been dredged, including eight new channels that drain into the sea. The capacity to drain floods into the sea has increased five-fold since 1963 and about 10-fold since before Liberation. This has fundamentally transformed the old situation of large channels upstream while downstream there were small channels with impeded flow and flooding, as well as the collection of water at Tianjin before flowing into the sea. Excavation and dredging of key drainage channels now permits preliminary control of an easily-waterlogged area of more than 45 million mu, equal to 81 percent of the original amount of easily-waterlogged land. At the same time, we also improved saline and alkaline lands, reducing the amount of saline and alkaline land from 32 million mu in 1962 to 12.4 million mu. We have also constructed 160 large irrigation districts covering more than 50,000 mu each and drilled more than 800,000 mechanical wells. The irrigated area has grown to more than 92 million mu. Preliminary controls have been established on 46 percent of the area suffering from soil erosion in mountainous areas. More than 21,100 mechanical and electrical well irrigation stations have been built with a total installed capacity of 1.65 million KW. More than 800 large, medium and small scale hydropower stations have been completed with a total installed capacity of 820,000 KW.

The results of water conservancy construction in the Hai River Basin over the past 35 years are obvious. First of all, improvement of the ability to prevent floods has provided safeguards for industrial construction, agricultural production and the lives and property of urban and rural people. A flood prevention system at a preliminary scale has now been constructed in the Hai River Basin. Large and medium scale reservoirs now have been built

on the upstream sections of each of the rivers, and flood waters in mountainous regions are now basically under control. The key midstream and downstream river channels have increased their capacity from being unable to deal with 10-year floods to being able to deal with flooding at a severity seen every 20 to 50 years. Besides providing a defense against normal flooding, they also can deal with especially large floods by capture and adjustment. This plays an important role in protecting Beijing, Tianjin and downstream towns, protecting the Beijing-Guangzhou, Beijing-Shanxi and Tianjin-Huangpu rail lines, and guaranteeing the safety of industrial and agricultural production and the people's lives and property across the broad plain. According to historical statistical information covering 536 years (from 1412 to 1948), Tianjin was flooded every 7 or 8 years on the average. During the major flood in 1938, the city region of Tianjin was inundated for 2 months, leaving many people homeless and seriously damaging industry. Tianjin has never been endangered by flooding since construction of reservoirs on the various rivers upstream and establishment of control on the midstream and downstream channels. Life went on as usual in Tianjin during a major flood in 1963 when the total amount of floodwater was double that in 1939. Statistics for just 15 of the large reservoirs show that protection for downstream farmland was provided about 71 million mu times and that the loss of more than 10 billion jin of grain was averted.

The second is improvement of the utilization rate of water resources, which has played a major role in the people's daily lives and development of industrial and agricultural production. The area controlled by large reservoirs upstream in the various tributaries of the Hai He covers 85 percent of the total mountainous area, and some reservoirs control 95 percent of the mountainous area of their own basins. This has raised the control and utilization rate for runoff in the entire river basin (including the plain) to 57 percent. The amount of underground water being extracted annually ranged from 14.3 to 17.5 billion cubic meters during the period 1977-79, and the comprehensive replenishment rate reached 75 to 79 percent for the same period. According to statistics from 14 large reservoirs in the Hai River Basin, they supplied more than 100 billion cubic meters of water during the 18-year period from 1962 to 1979. From the time of their construction up to 1979, the Guanting and Miyun reservoirs alone have supplied Beijing, Tianjin and Hebei Province with 39.1 billion cubic meters of water, 26 billion cubic meters of this going to Beijing Municipality. The late 1970's and early part of the 80's were years of successive drought and low rainfall in the Hai River Basin. A water crisis endangered agriculture and especially industry and the daily water needs of urban residents. The diversion of the Huang He and Yue He into Tianjin Municipality in 1981 and 1982 provided more than 1 billion cubic meters of water resources. There has been a great deal of opening up and utilization of water sources for irrigation and the irrigated area in the river basin has increased many times. The current irrigated area is three to four times greater than shortly after Liberation. Grain output in the river basin increased from 18 billion jin in 1948 to 61.8 billion jin in 1979, a better than threefold increase.

The third is raised drainage standards, with notable results in drainage and controlling alkalinity. With construction of a drainage system on the plain and the digging of channels draining into the sea, the drainage standards have generally been raised to 3 to 5 years, and total drainage capacity into the sea has increased by 5.8-fold over the amount before control. Some 81 percent of the easily-waterlogged area is now under preliminary control. The historical situation of major disasters with major rains and minor disasters with little rain in the Hai He plain has been transformed. The amount of saline-alkaline land has been reduced by nearly two-thirds.

Apart from being manifested in a reduction in the waterlogged area during years of high rainfall, the results of drainage are also seen prominently in the amount of land that produces no output. An example is Cangzhou Prefecture, where an average of 840 mm of precipitation fell [per month] from June to September of 1964, with maximum precipitation of 1,160 mm. An area of 9.471 million mu of land was inundated, 74 percent of which produced nothing. Total grain output fell to 760 million jin. After preliminary control of the easily waterlogged area was achieved in 1977, however, precipitation during the same part of that year was 760 mm, and the maximum rainfall reached 1,360 mm. Only 37 percent of the land failed to produce output. Total grain output even reached 1.66 billion jin, a 2.2-fold increase in output over 1964. The improved drainage standards have created the conditions for stable and high output in agriculture.

In order to guarantee achievement of the magnificent goal of quadrupling the total value of industrial and agricultural output by the end of this century and to better serve the four modernizations, the people of Hai River Basin are striving to improve the safety standards for flood prevention and earthquake resistance in some of the large reservoirs. They are continuing to concentrate on solving the problem of inadequate water resources, actively exploiting the potential in existing projects and making great efforts to develop soil conservation in upstream mountainous regions and to do good water resource protection work.

12539

CSO: 4007/77

5 February 1985

HEBEI

BRIEFS

ACCOMPLISHMENTS IN LIVESTOCK PRODUCTION--In the 35 years since the founding of the People's Republic, with the exception of slow development in large livestock, Hebei's animal husbandry production in swine, sheep, poultry and so forth has expanded greatly. As of June, 1984, the amount of large livestock on hand province-wide had increased 29 percent over 1949, swine had increased two-fold, sheep had increased nearly four-fold, poultry had increased to 83.59 million head and dairy cows were introduced and grew to 25,000 head. In 1983 the total output of meat, eggs and milk in Hebei was 1.02 billion jin, 330 million jin and 130 million jin, respectively, and the amount consumed per capita was 20 jin, 6.2 jin and 2.4 jin, respectively. At the moment, Hebei's animal husbandry industry is in the process of transformation from self-sufficiency to large-scale commodity production, and from traditional to modernized form. [Text] [Shijizhuang HEBEI RIBAO in Chinese 4 Oct 84 p 1] 12510

CSO: 4007/94

HEILONGJIANG

BRIEFS

HEILONGJIANG NEW AGROTECHNOLOGY--Through popularization of 20 agrotechnologies, Heilongjiang Province increased its grain and soybean output by 5 billion jin and its output value by 600 million yuan in 1984. [Summary] [Harbin Heilongjiang Provincial Service in Mandarin 1000 GMT 31 Dec 84 SK]

HEILONGJIANG AGRICULTURE GUIDANCE PLANS--The provincial government will only issue guidance plans for agricultural production this year. The number of planned quotas will decline from 40 in 1984 to 25. These quotas will be implemented in counties and be used as references for production and operational information in various localities. [Text] Harbin Heilongjiang Provincial Service in Mandarin 2200 GMT 9 Jan 85 SK]

CSO: 4007/171

HENAN

HENAN'S LIU JIE INSPECTS DISASTER AREAS DURING NEW YEAR

HK030906 Zhengzhou Henan Provincial Service in Mandarin 2300 GMT 1 Jan 85

[Excerpts] On New Year's Eve, Comrade Liu Jie, secretary of the provincial CPC Committee, led responsible comrades of departments concerned at the provincial level to go deep into the disaster areas in our province to hold a forum, to visit the masses in the disaster areas, and to resolve their difficulties in living through the winter and spring.

From August to October 1984, some places in our province had continuous torrential rains or exceptionally big torrential rains, crops were inundated, and many citizens' houses were damaged. According to statistics, throughout the province the extent of the disaster areas was over 40 million mu and some 900,000 houses collapsed. After the disaster situation occurred, the provincial CPC Committee and the provincial government attached great importance to it. Relief leadership organs at all levels, ranging from the provincial to township levels, were set up and relief funds were appropriated. Provincial leading comrades went to disaster areas on several occasions to get a clear picture of the situation.

With a view to further making arrangements for the masses' production and livelihood in the disaster areas in the winter and spring, on 27 December Comrade Liu Jie, secretary of the provincial CPC Committee, led responsible comrades of departments concerned at the provincial level to disaster areas to conduct investigation and study. On 28 and 29 December, they held a forum in Xinyang which was attended by leading comrades of four prefectures--Xinyang, Zhumadian, Zhoukou, and Shangqiu. The former listened to the latter's views and specifically talked about the principles and methods of future relief work. From 30 December 1984 to 1 January 1985 Comrade Liu Jie and his party went deep into localities, including the rural areas in Hunagchuan and Xincai, to understand the living conditions of the masses in the disaster areas. They consulted with grassroots cadres and the masses about methods of production and relief. On the way Comrade Liu Jie showed great concern for the problems of the people's livelihood in the disaster areas.

Regarding relief work, Comrade Liu Jie repeatedly emphasized that it is necessary to solve the current problems well. What is more important is solving future problems well. The so-called current problems are to make good arrangements for the masses' livelihood and production, to do a good job in wheat

field management, and to strive for a bumper wheat harvest. The future problems are that through our work, it is essential to try in every possible way to transform the disaster areas and to gradually turn the disaster areas into rich places. In light of our several decades' experiences and lessons, we must change the plight of the old disaster areas which require relief and suffer disasters every year, a vicious cycle. To basically solve the problems, we must change the farming structure, industrial structure, and the economic structure as a whole here so as to make them suit natural conditions, natural laws, and economic laws in the localities.

Comrade Liu Jie said: First, it is necessary to readjust the farming structure, to properly enlarge area sown to wheat, to raise per-mu yield, and to endeavor to ensure that a single season crop is sufficient for a whole year. Places which are frequently inundated must cultivate waterlogging-tolerant industrial crops and grain crops in the autumn. The exceptionally serious disaster areas can even grow no crops in autumn but can organize the labor forces to engage in the breeding trade and diversification. Perhaps people in these areas can go to other places to do business and engage in transport and laboring work. In short, it is necessary to lay stress on grasping this work in autumn.

Comrade Liu Jie also said: In the disaster areas, relief work can be replaced by offering jobs to people. The state can use grain and money to organize labor forces in the disaster areas to build water conservancy facilities and roads or to do other public work.

Comrade Liu Jie inspected relief work in four prefectures--Xinyang, Zhumadian, Zhoukou, and Shangqiu--and several counties on the way. These prefectures have attached importance to relief work and have made very great achievements. In the disaster areas, the public was reassured, society is stable, and the masses did well in providing for and helping themselves by engaging in production. Comrade Liu Jie on many occasions commended the grassroots cadres in the disaster areas who have worked hard night and day. He demanded that everyone continue to work hard, to have confidence, to overcome difficulties, and to strive to markedly improve the outlook of the disaster areas in 3 to 5 years.

CSO: 4007/149

HENAN

HENAN AGRICULTURAL ZONING CONFERENCE HELD IN DECEMBER

HK310905 Zhengzhou Henan Provincial Service in Mandarin 1030 GMT 27 Dec 84

[Text] A meeting of heads of offices for agricultural zoning of all prefectures, cities, and counties in the province was held in Kaifeng from 21 to 25 December.

Hu Tingji, provincial vice governor and director of the Provincial Committee for Agricultural Zoning, attended the meeting and delivered a speech.

In carrying out agricultural resources survey and agricultural zoning work, the province, since 1979, has done agricultural zoning work in stages and by groups with stress on the county level.

Through 5 years of hard work, the province has basically determined its land, water, climate, and biological resources, and made some important scientific and technological achievements. In addition, the province has conducted research on agricultural strategies and investigation of special subjects, and proved the feasibility of some key construction projects.

The province has also achieved remarkable achievements in applying agricultural zoning results to guide production. Up to now, all counties in the province have basically fulfilled the prescribed part of the tasks in agricultural resources survey and agricultural zoning work.

All the participants exchanged their experiences and realized their orientation. They unanimously held that agricultural zoning work is a long-term strategic task and the offices for agricultural zoning work are brain trusts and consultants of leaders at all levels. We must put the stress of agricultural zoning on the research of the development of rural economy as a whole, vigorously propagate and apply agricultural zoning results, and bring into fuller play the role of agricultural zoning in invigorating rural economy.

Provincial Vice Governor Hu Tingji made a summation report at the meeting.

CSO: 4007/149

HENAN

BRIEFS

HENAN DRAFT CATTLE--The number draft cattle in Hanan Province has greatly increased for 6 consecutive years. The number of draft cattle in the province in 1984 amounted to 7.72 million head. On average, two households had one draft cattle. Ox production has developed relatively quickly and the amount of oxen is approximately 5 million head. [Summary] [Zhengzhou Henan Provincial Service in Mandarin 1030 GMT 4 Jan 85 HK]

CSO: 4007/149

HUBEI

HYBRID RICE YIELDS HIGH OUTPUT

Wuhan HUBEI RIBAO in Chinese 20 Oct 84 p 1

[Article]

[Text] The 5.7 million mu of hybrid rice grown in Hubei this year amply demonstrated its power to raise production. Initial calculations revealed that the average output on 2.55 million mu of semi-late hybrid rice exceeded 1,000 jin per mu, an increase of 150 to 200 jin per mu over conventional semi-late rice output. The average output on 3.15 million mu of late rice was 850 jin, an increase of approximately 200 jin over conventional late rice output.

This year there has also been new development in Hubei's old hybrid rice cultivation area, and the new cultivation area has made a great breakthrough. In former years, the only place in the northern Hubei hilly area that persisted in large-scale cultivation was Suizhou City. This year, Zaoyang, Xiangyang, and Gucheng Counties also have successively begun to develop large-scale cultivation. On this stretch of semi-late hybrid-rice field, outputs of 1,600 jin per mu have occurred, outputs of 1,400 jin per mu are very common, and outputs of less than 1,000 jin per mu are infrequent. In the eastern hill country of Hubei, hybrid rice paddy has spread from Xishui to the four counties of Huangmei, Qichun, Huangang and Yingshan, and in many places late rice surpasses early rice. In the western mountain country of Hubei the area of hybrid rice cultivated represents 40 percent of the paddy area, and the yield per unit of area has for the first time topped 800 jin. The most gratifying aspect is that on the Jiangnan plain, which has suffered several setbacks, hybrid late rice paddy has expanded from the original two or three regions on the banks of the Dong He and the Jing He to a large-scale joint cultivation of some 67,000 mu of hybrid late rice in the four counties of Mianyang, Jianli, Honghu and Tianmen. Good harvests of 850 jin per mu have been achieved.

The steady development of Hubei's hybrid rice benefits from model demonstrations. This year Hubei has established four large jointly cultivated demonstration fields based on localities and cities as the units: in the Jiangnan plain, the northern hilly area, the eastern hill country and the western mountain region. This cultivated area represents one half of Hubei's total hybrid rice area. These demonstrations have broadened the peasant's outlook and opened up prospects for Hubei's hybrid rice development.

12510
CSO: 4007/94

HUBEI

BRIEFS

AGRICULTURAL ZONING CONFERENCE ENDS--The first national conference on professional agricultural zoning, which was sponsored by the Ministry of Agriculture, Animal Husbandry, and Fishery, ended in Wuhan today. The conference communicated and studied the important speeches by leading comrades of the Secretariat of the CPC Central Committee on the development of agriculture, animal husbandry, and fishery; exchanged experiences in applying the achievements of agricultural zoning; discussed and studied the main problems in the current agricultural zoning work; and made new arrangements for further carrying out zoning work and completely fulfilling professional zoning in 1985. Provincial Vice Governor Wang Libin and responsible comrades in charge of agricultural and animal husbandry zoning work from all prefectures, autonomous prefectures, and cities attended the conference. [Excerpt] [Wuhan Hubei Provincial Service in Mandarin 1100 GMT 25 Dec 84 HK]

TOTAL GRAIN OUTPUT--Hubei's total grain output will reach 44 billion jin. It has been a banner year across the board in agriculture, forestry, animal husbandry, sideline industries, and aquaculture, with rural and small town enterprises developing at a rapid pace. Based on initial projections by the provincial departments concerned, the total grain output will be 44 billion jin, up 4.2 billion from last year. Total cotton output may hit 9.6 million dan, up by over 1.9 million from last year. Output of such products as oil-bearing crops, hemp, citrus, vegetables, and meat and output value of rural and small town enterprises were all up last year. Records were set in every area but oil-bearing crops and beef. [Text] [Beijing GUANGMING RIBAO in Chinese 25 Oct 84 p 1] 12303

HUBEI GRAIN OUTPUT--The province reaped a bumper harvest in agriculture in 1984. Total grain output was more than 45 billion jin; cotton output was over 10.3 million dan; the output of oil crops was over 10.3 million dan; the number of pigs sold was 11.5 million; and the output of aquatic products was 500 million jin. Calculated in 1980 prices, the total agricultural output value for 1984 was over 1.6 billion yuan, an increase of 15 percent over the previous year. All the above-mentioned figures reach all-time highs, except for that for oil crops. [Summary] [Wuhan Hubei Provincial Service in Mandarin 1100 GMT 31 Dec 84 HK]

CSO: 4007/149

HUNAN

HUNAN BOOSTS AGRICULTURAL OUTPUT VALUE IN 1984

HK050239 Changsha Hunan Provincial Service in Mandarin 0000 GMT 5 Jan 85

[Text] According to HUNAN RIBAO, the year just past was a year in which Hunan's rural economy was unprecedentedly lively and yielded rich fruits. It is estimated that total agricultural output value can exceed 18.5 billion yuan, showing a rise of about 10 percent over 1983. It is particularly encouraging that this growth was achieved when grain output value fell by over 300 million yuan. This shows that gratifying changes have taken place in the structure of the province's agricultural output value. The era when everything was decided by a bumper or lean grain harvest is now past history. This is the result of readjustment and reform in the province's agriculture.

Last year the province reduced the grain area by 1.55 million mu. In Huarong, Nanxian, and Qidong Counties, which carried out readjustment relatively well, the ratio of grain land to land for diversification was in general 6:4. As a result of the readjustment, the sown area of industrial crops in the province increased by 36.7 percent over 1983, and output of all the main varieties increased.

There have also been relatively great changes in manpower structure. About 40 percent of the province's manpower is no longer laboring in the fields, or is engaged in combined industrial and agricultural labor.

CSO: 4007/149

HUNAN

HUNAN HOSTS NATIONAL HIGH-QUALITY RICE PRODUCTION CONFERENCE

HK091208 Changsha Hunan Provincial Service in Mandarin 0000 GMT 8 Jan 85

[Text] On 6 January, (Huang Heqing), a reporter of this station, learned from the national conference on high-quality rice production held in Changsha City that our country will greatly increase high-quality rice production.

Since the 3d Plenary Session of the 11th CPC Central Committee, our country has increased grain production by 200 billion jin, of which flour and rice has increased by 140 billion jin. Places which used miscellaneous food grains, including corn and sweet potatoes, as staple foods in the past now basically use rice and flour as the staple food. When the masses' living level is universally raised, the phenomenon of eating high-quality rice has appeared.

In order to resolve the peasants' difficulties in selling grain and the masses' difficulties in eating high-quality rice, the State Economic Commission, the State Planning Commission, and the agricultural departments of all provinces throughout the country have decided to readjust the structure of grain products, to greatly increase high-quality rice production, and to speed up the improvement of the quality of grain.

This conference will exchange and popularize experiences in cultivating high-quality rice, such as cultivating Xiang rice in our province, cultivating black glutinous rice in Guizhou, cultivating black rice in Shaanxi, cultivating (Wunian) rice in Guangxi, and cultivating Simiao rice in Guangdong. It will study and make arrangements for standards of high-quality rice, high prices for high quality, and building commodity production bases.

CSO: 4007/171

HUNAN

BRIEFS

HUNAN READJUSTS AGRICULTURAL STRUCTURE--This year the province has made remarkable achievements in readjusting the structure of agriculture by basing on agriculture and boldly taking a relaxed attitude toward measures. According to the expectation of the provincial Statistics Bureau in mid-December, the provincial gross agricultural output value may reach 16.2 billion yuan, an increase of 578 million yuan or 3.7 percent compared with last year. The province has also greatly developed town and township enterprises, animal husbandry, aquatic products industry, and forestry. The annual output value of town and township enterprises totals more than 5 billion yuan, an increase of 25 percent compared with last year. Presently, there are more than 324,000 animal husbandry specialized households and major households, and each peasant household raises about 0.5 head of livestock and 3 domestic fowls more compared with last year. Also, the province's gross output of fish has reached beyond the level of 8.5 million dan, accomplishing the 1985 production target 1 year ahead of schedule. [Summary] [Changsha Hunan Provincial Service in Mandarin 0100 GMT 24 Dec 84 HK]

CSO: 4007/149

JIANGXI

JIANGXI PROVINCE TO MODERNIZE AGRICULTURAL ECONOMY

HK010422 Beijing CHINA DAILY in English 1 Jan 85 p 2

[Text] Jiangxi Province is set to modernize its agricultural economy based on its fine natural resources, according to Ni Xiance, vice-governor of the province.

Elaborating on the scheme in a report in the Shanghai-based journal WORLD ECONOMIC HERALD Ni says this master plan for future development is in keeping with the realities of the situation in the province.

Agricultural production in Jiangxi is already developed. The average rate of farmland, forest and water surface under cultivation for its population of 33 million is the highest in the east China region.

Ni's vision of an agricultural economy involves the development of industry on the basis of a developed agriculture, with agriculture providing both raw materials and a market for industrial production.

Meanwhile, the development of processing, transport, distribution and storage will boost the commercialization of agricultural production.

As an initial step, Ni said, Jiangxi has been changing the structure of its economy, particularly the distribution of the workforce, with farmers being transferred to the burgeoning yet backward township enterprises and service industries.

According to statistics, the production value of forestry, livestock, fishery and sideline occupations covered 39.1 percent of the province's agricultural total last year. This figure was 1.3 percent up on figures for 1982. The output value of township enterprises was 1.86 billion yuan last year, 17 million yuan more than in 1982. This year's output is estimated to be 25 percent up on last year.

Moreover, statistics show that, so far this year, cash-crop land has expanded 12.5 percent over last year. The business value apart from agricultural production has improved by 9.6 percent and the value of feed output has increased 1.8 times over last year.

Food processing and the nonferrous-metal industry have been given to priority by the provincial government, with food processing taking the lead.

According to Ni, this is because mineral resources, particularly nonferrous metal resources, are particularly rich in Jiangxi.

But, although this is potentially a considerable source of profit for the region, it is not yet financially and technically strong enough to tap these resources on its own. However, through developing the food processing industry it is hoped that Jiangxi will be able to accumulate sufficient funds to exploit their underground resources.

Jiangxi is one of the traditional bread baskets of China, with no limits to the potential of grain production. Along with the development of the food processing industry, other manufacturing businesses such as packing, paper-making, and plastics, and the machine building industry will also be boosted.

At present, the output value of food processing covers one-third of total light industrial production and it is expected to be the main profit-maker for the province in the near future.

Jiangxi has also adopted an open policy towards international cooperation, offering 72 projects and investment opportunities for foreign capital this year at the Guangzhou commodities fair.

The provincial government set up a special group early this year to take charge of the import of foreign investment and technology with decisionmaking authority for trading, financing, banking, and planning.

It has approved 108 programmes involving \$55 million.

Jiangxi has also established compensation trade ties and consultant relations with foreign firms. At present, it has economic ties with 119 different countries and regions, and the province has signed construction project contracts with 12 countries for which it will supply the labour.

Domestically, it has established cooperation with 18 areas elsewhere in China and 330 exchange programmes have occurred. The total investment involved is estimated at 260 million yuan for 1984.

CSO: 4020/75

JIANGXI

BRIEFS

TOTAL GRAIN OUTPUT--Jiangxi will have a total grain output of 30.5 billion jin. Agricultural production enjoyed a bumper crop across the board. According to survey and analysis by the relevant departments, the projected total grain output will be 30.5 billion jin, up 1.29 billion, or 4.4 percent, from last year's record crop. Output of cash crops, livestock, and aquatic products, and total income from rural and small town enterprises will all be up considerably from last year, among which sugar cane, brown (red) hemp, and silkworms will be up 70 to 80 percent respectively. Cotton and blue hemp will be up over 25 percent. Poultry and eggs will increase by 15 percent. Pork going to slaughter, dairy products, and aquatic products will increase by more than 10 percent, and rural township enterprise income will be up by 18 percent. [Text] [GUANGMING RIBAO in Chinese 25 Oct 84 p 1] 12303

JIANGXI INCREASES AGRICULTURAL PRODUCTION--"The total grain output of our province in 1984 was 30.5 billion jin, 4.4 percent over the 1983 figures. The output of all industrial crops increased tremendously. Aquaculture also developed markedly. Compared with 1983, the total output of marine products in 1984 increased 10.4 percent. During the same period, the total income of village and township enterprises increased 20 percent. Seven counties and districts each registered a total income of over 100 million yuan from these enterprises. The output quotas for grain, cotton, edible oil, and other major produces set in the Sixth 5-Year Plan were fulfilled 1 year ahead of time." Since the founding of the republic, our province has provided the state over 1 billion jin of marketable grain each year. In 1984, the grain acreage was 235,000 mu less while the total grain output was 1.29 billion jin more, compared with 1983. Over 10 billion jin of grain were purchased and stored in granaries by the state, 1.4 billion jin more than in 1983. [Summary] [[Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 1 Jan 85 OW]

CSO: 4007/149

JILIN

BRIEFS

TOTAL GRAIN OUTPUT—Jilin's total grain output hits 32.35 billion jin this year, 944 percent above last year's bumper crop, for a total of 2,310 jin per capita for the province. This year the province witnessed a seldom seen rash of natural catastrophes such as low temperatures, a dry spring and waterlogged summer, yet owing to the full-scale implementation of the household contract responsibility system, mass farmer enthusiasm for studying and using science, popularization of such high-yield corn cultivation methods as suiting species to localities, fixing density, mechanical sowing period, and fertilizer application, alternating rows by gender [7133 5887 0637 7160] and applying growth regulators, the effectiveness of disaster resistance was improved. Thirty-five counties and cities adopted mechanized sprout planting in large rice nursery sheds, increasing yield by about 180 million jin. These also turned farm equipment companies and farm technique resource stations into farm mechanization and technique service companies, and vigorously expanded technical services. Now the average family has one member who has received some farm technical training, and there are 29,817 farm machinery specialized households. [Text] [Beijing ZHONGGUO NONGMIN BAO in Chinese 28 Oct 84 p 1] 12303

TOTAL GRAIN, LEGUME OUTPUT—Jilin's total grain and legume output for the year will exceed 32.3 billion jin. According to provincial statistics bureau figures, this year's total will be 32.35 billion jin, almost 10 percent above last year's bumper crop, and is a new record. Cash crops, oil bearing crops, and tobacco production figures are also up from last year. Large livestock, live hogs, and sheep on hand also show an increase over the previous year. [Text] [Beijing GUANGMING RIBAO in Chinese 25 Oct 84 p 1] 12303

JILIN PADDY RICE PRODUCTION—In 1984, Jilin Province increased its paddyfields by 250,000 mu over 1983, and reaped a total of 3.5 billion jin of paddy rice. [Summary] [Changchun Jilin Provincial Service in Mandarin 2200 GMT 31 Dec 84 SK]

CSO: 4007/171

LIAONING

BRIEFS

LIAONING AGRICULTURAL HARVEST--Liaoning Province reaped a bumper agricultural harvest in 1984--the second highest figure ever achieved in the province. The total grain and soybean output reached 28 billion jin. [Excerpt] [Shenyang Liaoning Provincial Service in Mandarin 1030 GMT 30 Dec 84 SK]

LIAONING COTTON PRODUCTION--According to statistics of the Liaoning Provincial Cotton and Flax Company compiled on 8 December, Liaoning Province had procured 1,211,784 dan of cotton, overfulfilling the state-assigned task by 242.4 percent and showing an increase of more than 200,000 dan over the same period of last year. [Text] [Shenyang LIAONING RIBAO in Chinese 11 Dec 84 p 1 SK]

CSO: 4007/171

NINGXIA

BRIEFS

AGRICULTURAL OUTPUT SINCE 1949--In the 35 years since the founding of the People's Republic, Ninxia's gross annual agricultural output value has risen 7.9 times, from 121.62 million yuan in 1949 to 960.085 million yuan in 1983. The figures for 1983 agricultural output are as follows: 2.9 billion jin of grain and 82.34 million jin of oil bearing crops were produced, and there were on hand 478,800 head of swine, 2.475 million head of sheep and 17.376 million mu of preserved forest area. [Text] [Yinchuan NINGXIA RIBAO in Chinese 3 Oct 84 p 1] 12510

CSO: 4007/94

JPRS-CAG-85-007
5 February 1985

SHANDONG

BRIEFS

SHANDONG PEANUT PRODUCTION--In 1984 Shandong Province produced 36.62 million dan of peanuts, an increase of 3 million dan over 1983. [Excerpt] [Jinan Shandong Provincial Service in Mandarin 2300 GMT 16 Dec 84 SK]

CSO: 4007/149

TIANJIN

BRIEFS

TIANJIN AGRICULTURAL OUTPUT VALUE--According to preliminary statistics released by the Tianjin Municipal Statistical Bureau, the total agricultural output value of Tianjin in 1984 is estimated at 2.6 billion yuan, an increase of 14 percent over the previous year. All industries except the fishing industry will increase by varying degrees. Of this, the output value of the planting industry will increase by 17.5 percent, that of forestry, 30.5 percent, animal husbandry, 15.7 percent, and sideline occupations, 12.6 percent. [Excerpt] [Tianjin City Service in Mandarin 0030 GMT 17 Dec 84 SK]

CSO: 4007/149

XINJIANG

XINJIANG EXPANDS HERDS WITH IMPORTED STRAINS

OW100332 Beijing XINHUA in English 0252 GMT 10 Jan 85

[Text] Urumqi, 10 January (XINHUA)--Xinjinag, China's second-largest pastoral area, has greatly expanded animal husbandry with imported strains, according to the regional Agricultural Department.

The Xinjiang Uygur Autonomous Region has introduced fine strains of cows, sheep and horses from Austria, France, Federal Germany and the Soviet Union since the 1950s.

Xinjiang now has more than 30 million head of livestock on about 47 million hectares of grassland.

Imported strains have been fused with local domestic animals to produce new breeds, including the Xinjiang brown cow, fine-wool sheep and Yili horse. These have been introduced to other parts of the country, with 20,000 head of breeding stock available for sale this year.

There are now more than 8 million fine-wool sheep in Xinjiang, producing 27,000 tons of wool a year--one-third of China's total output.

The number of Xinjiang brown cows has quadrupled to 430,000 since 1979. The cow produces 70 percent more beef than the indigenous cattle and at least three times more milk.

A regionwide network of artificial insemination stations has been set up. A dozen frozen semen stations established in recent years also use the imported product to upgrade local cattle.

More than 4 million ewes are bred with imported fine strains annually, and 300,000 head of cattle--both at least double the number in the 1960s.

The improvement of livestock strains has spurred the growth of Xinjiang's wool, leather, milk and meat-processing industries.

Xinjiang now has 9 woollen mills with a total of 36,000 spindles, and more than 10 powdered milk factories with a combined annual production capacity of 3,000 tons. Large quantities of manufactured goods made from animal by-products are supplied to both Chinese and foreign markets.

XINJIANG

HERDSMEN RAISE SUGGESTIONS FOR REFORM MEASURES

HK050510 Urumqi Xinjiang Regional Service in Mandarin 1300 GMT 3 Jan 85

[Text] The following is a letter from station reporter (Ma Jinxin):

While gathering news in the pastoral areas, this reporter learned that along with the development of the economy in the pastoral areas toward specialization, large-scale commodity production, and modernization, there has been an increase in herdsmen's income, thus giving rise to profound changes in their demands in production and daily life.

They have raised some suggestions on and proposals for reform of the economic structure focusing on the urban economy, which can be summarized as the following 10 points:

1. They call for resolving as quickly as possible the problem of redundant administrative organs in the urban areas and towns and too many obstacles and procedures so as to facilitate peasants in doing work and business in the urban areas and towns.
2. They demand that leading organs at all levels overcome the dilatory style of work, raise efficiency, and frequently go to grassroots units to conduct investigation and research so as to help the herdsmen resolve practical problems.
3. They call for establishing information service networks and stations in the pastoral areas so as to provide herdsmen with information about commodities and production.
4. They call for producing more generators of small horsepower, motorcycles, small tractors, and small vehicles.
5. They call for producing mixed forage and supplying medicines for preventing epidemic diseases in domestic animals.
6. They call for producing more color TV sets, stereo recorders, washing machines, sewing machines, refrigerators, solar energy lighting, solar energy ovens, high-class piecegoods, and gold, silver and jewellery.

7. They hope that the science and technology departments will impart scientific and technological knowledge in the pastoral areas.

8. They hope that doctors in urban areas and towns will often go to the rural areas to give medical treatment to herdsmen.

9. They call for attaching importance to intellectual investment in the pastoral areas, doing a good job in eliminating adult illiteracy, and properly running schools in the pastoral areas.

10. They hope that the postal and telecommunications departments will establish and perfect a system which can facilitate the herdsmen in subscribing to newspapers and magazine, and that they will take effective measures to quickly deliver newspapers and magazines so that the herdsmen can read them in time.

CSO: 4007/149

XINJIANG

XINJIANG COMMENTARY ON DEMANDS OF HERDSMEN, PEASANTS

HK050520 Urumqi Xinjiang Regional Service in Mandarin 1300 GMT 3 Jan 85

[Station short commentary: "Listen to the Voices of Herdsmen and Peasants and Satisfy Their Demands"]

[Text] The 10 suggestions and proposals raised by herdsmen in Xinyuan County not only reflect the urgent demands on and desires for leading organs at all levels and urban economic reform by herdsmen of one county, but also voice the common aspiration and desires of peasants and herdsmen of various nationalities.

After a series of reforms, great and radical changes have taken place in the region's rural and pastoral areas. The fields of production and the scope of business operations of the peasants and herdsmen are not limited to 1 or 2 mu of land or several cattle. They are now developing commodity production, entering the circulation channels, and developing the tertiary industry with their confidence, wisdom, and creativity. They are endeavoring to change the setup of production and the structure of industry. Their contributions to the state are not only limited to the supply of living means such as grain, cotton, oil, and industrial raw materials, but they have also become a large market with great potential. They are no longer satisfied with the situation of only having enough to eat and earn, but seek more and better in materials, culture, science and technology, and public health. A series of desires and proposals raised by peasants and herdsmen of various nationalities in this connection, in essence, reflect their demands for more contributions to the state's four modernizations. This is a valuable initiative. Satisfying their demands and protecting and unleashing this initiative is a great impetus to the in-depth rural economic reform and the initial reform of the urban economic structure, and will benefit the process of the four modernizations.

In the current reform of the economic structure, leaders at all levels and all trades in the urban areas must break with old ideas, throw conventions to the wind, study new problems in the rural and pastoral areas, resolve new problems in our advancement, and adopt various methods and measures to strengthen economic ties between the rural and urban areas and to achieve a common boom in the urban and rural economies.

CSO: 4007/149

XINJIANG

URGENT MEETING ON PROTECTING LIVESTOCK IN WINTER

HK050355 Urumqi Xinjiang Regional Service in Mandarin 1300 GMT 4 Jan 85

[Excerpt] The regional people's government recently held an urgent meeting on protecting livestock from natural disasters, which demanded that leading organs at all levels strengthen leadership, rely on the masses and on all trades and sectors, and do everything possible to do a good job in this work. The meeting decided to set up a regional command for protecting livestock from natural disasters, headed by Yusufu Mohanmode, vice chairman of the regional government.

The meeting pointed out: Since the beginning of winter, there have been low temperatures and heavy snowfalls throughout northern Xinjiang. The temperature dropped earlier than usual, the cold weather has lasted a long time, and the snow lies deep. As a result there are difficulties in grazing livestock. There are rather small winter fodder reserves in parts of southern Xinjiang, due to drought during summer and autumn. At present the cold weather is persisting, and there is not much fodder on the winter grazing grounds. In some places the roads are blocked, and it is difficult to ship materials in. Loss of weight and death have already occurred among the livestock, and this is now developing to a serious extent. Hence the task of protecting livestock from natural disasters is very urgent and heavy this year.

The meeting demanded that leading organs at all levels tangibly strengthen leadership and firmly embrace the idea of fighting natural disasters to achieve a bumper crop. They should rely on the masses and do everything possible to protect the livestock from disasters. All sectors and trades should closely coordinate with the animal husbandry departments, and provide support in capital, materials, transport, and so on.

CSO: 4007/149

XINJIANG

BRIEFS

YOUNG YUAN HOUSEHOLDS' MEETING--The Great Hall of the Urumqi Bianjiang Guest-house presented a lively scene this morning, as Regional CPC Committee First Secretary Wang Enmao, Secretary Tomur Dawamat, Government Vice Chairman Yusufu Muhanmode, and Production and Construction Corps Deputy Political Commissar (Zhao Yudeng) came to the forum of young rural 10,000 yuan households, which concluded today. They met the participants and encouraged them to do still better in the new year and make still greater contributions to developing rural commodity production. They were also photographed with the participants. [Excerpt] [Urumqi Xinjiang Regional Service in Mandarin 1300 GMT 27 Dec 84 HK]

CSO: 4007/149

YUNNAN

BRIEFS

YUNNAN GRAIN STORAGE--By 25 December, Yunnan Province had stored in granaries 3.75 billion jin of grain, which is some 420 million jin more than in [the] same period last year. This is the fourth consecutive bumper grain harvest. While doing well in grain procurement, all localities have practically and realistically reduced or remitted the procurement quotas for some disaster areas and poor areas. [Summary] [Kunming Yunnan Provincial Service in Mandarin 1100 GMT 31 Dec 84 HK]

CSO: 4007/149

ZHEJIANG

BRIEFS

GROSS AGRICULTURAL OUTPUT VALUE--Zhejiang's gross agricultural output value was 15.2 billion yuan in 1983, a 5.1-fold increase from 1949. The 1983 output value for rural and small town enterprise was 8.6 billion yuan, a 2.3-fold increase over the 1978 figure of 2.63 billion yuan. Zhejiang's grain output is rising steadily. In 1983 it hit 31.67 billion jin, a 2.7-fold increase from the founding year of 1949. Currently, a mighty army of specialized households numbering 1,690,000 has been taking shape throughout the province, amounting to 20.4 percent of all farm families and forming the nucleus of rural commodity production. [Text] [Hangzhou ZHEJIANG RIBAO in Chinese 15 Oct 84 p 2] 12303

CSO: 4007/95

Animal Husbandry

AUTHOR: ZHANG Zhongge [1728 0112 5514]
ORG: Beijing Agricultural University
TITLE: "Expansion, Utilization of Pig-breeding Resources Examined"
SOURCE: Beijing ZIRAN ZIYUAN [NATURAL RESOURCES] in Chinese No 3, Sep 84
pp 48-53

ABSTRACT: Pigs in China exhibit these characteristics, namely, early maturation, easy fattening, litters of 10 and more piglets per birth, feeding with coarse green fodder, tender meatiness with delicious taste and mild disposition. However, there are undesirable features: slow weight gain, low proportion of lean meat and high fat proportion. These latter features are caused by the use of low-nutrient green fodder, with scant high-caloric grain feed as used in the United States and Japan. The author proposes to conduct selective breeding to produce a lean strain of hogs while maintaining the good features of tender meatiness; large-litter breeding and adaptation to coarse fodder. Even now, in China there are the Beijing black pigs, which have a high lean content of 47 to 62 percent. The source of protein feed is the material base for producing animals with more lean meat; amino acid equilibrium must be analyzed to economize on the amount of protein used because China's billion-strong population demands large quantities of cereal grain. This is therefore not likely to be available in sufficient amounts for domesticated animals in the near future.

10424
CSO: 4011/3

Ecology

AUTHOR: SHU Guangfu [2457 0342 1318]
ORG: Protection Division, Ministry of Forestry
TITLE: "China's Planning of Nature Reserves Reviewed"
SOURCE: Beijing ZIRAN ZIYUAN [NATURAL RESOURCES] in Chinese No 3, Sep 84
pp 23-29

ABSTRACT: China's vast territory contains plant cover of nearly 30,000 species of higher plants, of which some 200 genera are unique to China. There are valuable tree species, such as Santalum album, L., Spiraea prunifolia S. et Z., Cinamomum camphora, Ness., and Machilus Nanme, Hemsl. Of more than 2,100 species of animals in China, the giant panda, golden monkey and sacred crane are among the valuable species. Since man is interdependent with animals and plants, the renewal of life resources is closely linked to man's survival.. Establishing nature reserves is aimed at maintaining an equilibrium between man and nature. In particular, preservation of endangered species is vital to counteracting man's destruction of the environment. This is the main rationale underlying the upkeep of nature reserves in China, which are divided into five types: the ecological system, valuable trees and other plant cover, wild animals, forest parks and historically undisturbed settings. All told, there are 133 such reserves, encompassing about 8 million hectares. Terrain and ecology of eight zones are described. One table shows the area and number of reserves of these eight zones in each of the five above-mentioned reserve types.

The author thanks Zhang Yupu [1728 3768 3877] of the Jilin Provincial Department of Forestry, Yang Mao [2799 5399] of the Fourth Forest Investigation Brigade, Yunnan Province, Qu Yaoxiang [1448 5069 5046] of the Forestry Design Institute, Shaanxi Province, and Wei Maozhang [7614 3768 3877] of the Forestry Department of Guangxi Autonomous Region for compiling the data.

10424
CSO: 4011/3

Forestry

AUTHOR: WANG Jiuling [3769 0046 7881]
ORG: Beijing Forestry College
TITLE: "How China Was Changed from Expansive Forests to Scarce Forests"
SOURCE: Beijing ZIRAN ZIYUAN [NATURAL RESOURCES] in Chinese No 3, Sep 84
pp 54-61

ABSTRACT: In ancient times, China had broad forested areas. However, population pressure led to farmlands being reclaimed from forests; this has been the major reason for diminished forests, besides wars, fires, timber requirements (for fuel and construction) and mismanaged harvests. Thus, droughts and floods occur more often, soil erosion causes more silting in rivers and timber demand can barely be satisfied. During the Kuomintang years, afforestation was neglected while the then government ran inefficient forestry operations. These valuable resources were sold to imperialists and private merchants while lumber was imported from the United States and Japan. In the 1929-1935 period, the annual mean lumber imports were more than 1 million cubic meters from 1927 to 1940; the annual import value (over exports) of lumber amounted to more than 33 million (Chinese) dollars, corresponding to more than 10 percent of total import. The evils of insufficient and unevenly distributed forest resources were not basically eliminated even after the Communist takeover. Afforestation, codification of forest laws and advances in forestry science are steps aimed at restoring forest resources. In more than 3 decades of Communist rule, China is now forested over 12.7 percent of its area. The afforestation areas with maintenance amount to 420 million mu, and annual timber production has been kept at a level of 50 million cubic meters. The author used another pen name, Xiao Jiu [2556 3773], in writing a paper on the same topic, which was published in 1978 by the Science and Technology Information Institute, Chinese Academy of Forestry Sciences. This article is a rewritten version of the above-mentioned paper.

10424
CSO: 4011/3

Grain Storage

AUTHOR: None

ORG: Guangdong Provincial Institute of Food Science; Nanhai County Food Bureau, Guangdong Province

TITLE: "Prospects of Insect Control of Stored Grain Outlined"

SOURCE: Sichuan LIANGSHI CHUCANG [THE JOURNAL OF GRAIN STORAGE] in Chinese No 5, 25 Oct 84 pp 42-45, 6

ABSTRACT: About 70 percent of the grain crop in Guangdong Province is stored by farming households. Following the innovative farm contracting system and bumper crops in recent years, farmers' food grain storage has been increased year after year. Insect control has been consistently a weak sector in grain storage as shown in the table below.

Table. Comparison of Weight Loss Rates of 91 Samples of Stored Grain

Weight loss rates of stored grain (percent)	Number of samples			Percentage of total samples
	Stored for half a year	Stored for a year	Stored for a year and a half	
0.05 - 0.99	30			32.96
1 - 2.99	18	4		24.17
3 - 4.99	12	1	2	16.48
5 - 6.99	8	4		13.18
7 - 8.99		7		7.69
9 - 10.99	1	4		5.49
17.76		1		1.09

From the table, two-thirds of total samples showed weight losses of more than 1 percent; the worst sample had a loss of 17.76 percent after one and a half year's storage. These weight losses are mostly caused by beetles and weevils of the family Curculionidae. In a rough estimate, of the 380 million tons of China's grain crop in 1983, more than 300 million tons were stored by farmers. With loss rates of 5 to 15 percent due to insects, mildewing and rats, China's grain loss in storage ranges from 15 to 45 million tons a year. Most farmers were helpless in controlling these pests. Some farmers showed their lack of knowledge by spraying poisonous insecticides (such as 666 and DDT) onto grain, thus injuring people or domesticated animals. Therefore, broad publicity of appropriate grain storage techniques is vital and urgently needed.

Sanitation of grain storage storerooms and cleaning of grain sacks are simple but important steps. Old and new crops should be stored separately; the grain should be sunned if the opportunity arises. A cheap Chinese-made organic phosphorus insecticide is highly recommended for insect control. Grown wild in Yangshan County, Guangdong Province, Atractylis ovata. Thunb. is quite effective in insect control with fumigation. Gypsum can be used as a DDT carrier to be buried in stored grain for slow release in order to avoid contamination. Enclosed airtight partitions can be built in farmers' old houses since they now have new ones. The natural reduction of oxygen in the airtight partitions can kill insects and rats. Portable (1 cubic meter in volume) grain storage cases and three-ply (insecticide-impregnated moisture absorbing materials as the inner layer, synthetic fiber netting as the middle layer, and rat-repellant-impregnated airtight rubber as the outer layer) folding grain bags are handy around the house. Two remaining tables show distribution of insect densities (per kilogram of grain) in samples of stored grain.

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CSO: 4011/4

Grain Storage

AUTHOR: FAN Fan [2868 0416]

ORG: Storage and Transportation Division, Hubei Provincial Food Bureau

TITLE: "Standardization of Open Air Grain Storage"

SOURCE: Sichuan LIANGSHI CHUCANG [THE JOURNAL OF GRAIN STORAGE] in Chinese
No 5, 25 Oct 84 pp 39-41

ABSTRACT: Open-air grain storage is an important solution to warehouse space shortages. In the past two years, the average volume of open-air grain storage in Hubei Province more than doubled. Temporary storage facilities have become permanent; therefore the standardization of open-air storage is next in priority. This means standardizing the building of cargo platforms, grain piles, forms of cover, building of ventilation tunnels under the storage, and selection of materials for side protection of grain piles, among other activities. In this way grain storage can avoid damage from rain, insects, birds and rats. There are three types of cargo platforms: warehouse foundations, fixed, and movable types. Storage on warehouse foundations can be improved into full-fledged warehouses, if needed. The fixed type consists of building a rectangular wall, 65 by 70 cm high. Within the wall, the soil is compacted and then empty grain shells, rush mats and/or oil cloth cover the soil on which grain is to be piled. Cement mortar is plastered onto the wall, and then pile cover and side protection are added. In the movable type of storage, bricks are piled into lines of buttresses with a spacing of about 0.8 meter between two adjacent line buttresses. Prefabricated boards are then placed on the line buttresses. The lanes between line buttresses can drain off water; the buttress height is sufficient for moisture-proofing. The iron sheets are used for side protection and top cover. The facility can be dismantled and re-erected at appropriate locations. Open-air grain piles are 4 to 5 meters high (for bagged grain, and 3 to 4 meters high for bulk grain), 7 to 9 meters wide, and less than 20 meters long. In plains areas, a grain pile contains about one million jin; in hilly areas, a pile contains about 300,000 to 500,000 jin. As a rule, sunning should be reduced to a minimum to keep the stored grain cold and dry. The pile is covered by oil cloth; beneath the cover, a gap of about 60 cm is maintained as an access path, or else the gap is filled with grain-shell-filled grass bags. Tunnel space is provided in the pile by using gunny sacks, straw bags or bamboo cages for ventilation. Sides are protected by oil cloth, coarse rush mats or bamboo-shaving mats as shown in three figures.

10424

CSO: 4011/4

Land Productivity

AUTHOR: LIU Yongsì [0491 3057 1835]
REN Dingfang [0117 1353 2455]
ORG: None
TITLE: "Computation of Farmland Output Under Contract"

SOURCE: Beijing SHULIANG JINGJI JISHU JINGJI YANJIU [QUANTITATIVE AND TECHNICAL ECONOMICS] in Chinese No 9, 5 Sep 84 pp 8-13

TEXT OF ENGLISH ABSTRACT: Linking remuneration to farmland output has become the hallmark of the production responsibility system in China's vast rural areas. Farm output is directly linked to the farmer's self-interest, therefore his initiative in farming is greatly enhanced. The system's vitality is apparent from years of use. Contracting work tasks to individual households is the most popular form. Central to the system is the scientific computation of farm output under a contract. There are five steps in the computation: (1) Accurate surveying of the farmland is the basis of a contract. (2) Grading of farm productivity based on water availability and fertility is also indispensable. The authors propose four levels in mu output: level one: 801 to 1,000 jin of grain; level two: 601 to 800 jin; level three: 401 to 600 jin; and level four: 201 to 400 jin. (3) Standard farm output should be correctly computed. The per mu output is averaged over a period of 3 to 5 years, and a contracted plot should be larger than 10 mu. (4) The contracted output is to make allowance for labor and investment inputs, as well as crop output. (5) Differential land income is then computed. This income is manifested in two forms: (a) Differential land income I shows a higher output from same labor and investment due to different land fertility and other factors (such as irrigation); (2) Differential land income II shows a higher output from the same plot owing to long-term investment. State investment affects land income I while the contracting household's investment affects income II. Therefore, the state can only share in land income I. Two tables show farmland qualities, and computation of differential land income and contracting output. Fourteen equations serve in computing various factors of farm output.

10424
CSO: 4011/5

END