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Study on Balanced Development of Industrialization, Urbanization and Agricultural Modernization in Henan Province

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Abstract This article expounds the connotation of balanced development of "industrialization, urbanization and agricultural modernization", and points out the problems thwarting balanced development of "industrialization, urbanization and agricultural modernization" in Henan Province as follows: the level of industrialization is not high; the general level of urbanization is low; the agricultural foundation is weak and there are many institutional barriers. The goal of balanced development of "industrialization, urbanization and agricultural modernization" in Henan Province is to take a road of industrialization and urbanization, not at the expense of agriculture and food. Based on this, the measures are put forward for balanced development of "industrialization, urbanization and agricultural modernization" in Henan Province as follows: keep to the new road of industrialization with characteristics of Henan Province, promote the development of industry and accelerate the transformation of pattern; keep to the road of new urbanization with characteristics of Henan Province, and promote the rapid change in urban development pattern; adhere to the road of agricultural modernization with characteristics of Henan Province, and promote the rapid change in pattern of agricultural development.

Key words Henan Province, Industrialization, Urbanization, Agricultural modernization, Balanced development

Henan is a big agricultural province and the core area of food production in China with a large population, which undertakes the important task of developing modern agriculture, now in accelerating and advancing phase of industrialization and urbanization. How to properly handle the relationship between industrialization, urbanization and agricultural modernization, and propel the process of industrialization and urbanization on the basis of ensuring continuous and stable development of agriculture, so as to make the three form mutually coordinated virtuous development mechanism, is the core content for Henan Province to achieve scientific development.

1 The connotation of balanced development of "industrialization, urbanization and agricultural modernization"

The balanced development of "industrialization, urbanization and agricultural modernization" in Henan Province means that industrialization, urbanization and agricultural modernization reinforce each other, achieve virtuous cycle and develop jointly, to realize modernization of entire national economy. The so-called industrialization mainly refers to the process that the proportion of industry in economy of one country increases constantly until it replaces agriculture to become the economic subject. To put it simply, it is the process of the traditional agricultural society transforming to modern industrial society. The major characteristics of this process are as follows: a large num-

ber of agricultural labor forces transfer to industry; a large number of rural residents transfer to cities and towns; the urban population exceeds the rural population. Industrialization is the basis and premise of modernization, and highly developed industry society is an important symbol of modernization. The so-called urbanization is a historical process that the rural residents ceaselessly transfer to cities and towns, and the secondary industry and tertiary industry incessantly cluster in cities, so as to bring about the increase in the number of towns, cities, and expand the urban scale, which can be manifested as follows: with the development of productive force in one country or region, progress in science and technology and adjustment of industrial structure, the rural residents transfer from their settlements to cities and towns, and the occupations that the rural labor forces engage in transfer to the secondary industry and tertiary industry in cities and towns. The process of urbanization reflects the social change that each country will experience in the process of achieving industrialization and modernization. The so-called modernization of agriculture refers to the process and means of traditional agriculture transforming into modern agriculture. In this process, agriculture is increasingly equipped with modern industry, modern science and technology and modern economic management method, thereby the backward traditional agriculture gradually transforms into the agriculture with advanced level in contemporary world. The agriculture achieving this transformation process is called modernized agriculture.

The balanced development of "industrialization, urbanization and agricultural modernization" in Henan Province is a gradual process of mutual promotion and common development, and "industrialization, urbanization and agricultural mod-

ernization" are closely interrelated, complementing each other.

Industrialization and urbanization show significant positive correlation. The development of industrialization can promote the industrial agglomeration capacity of the city, drive the development of urban infrastructure, and create more jobs, therefore, industrialization plays a role in driving urbanization. In turn, urbanization not only provides favorable external economic environment and geographical space for large-scale centralized production of industry, but also provides huge consumer market to enterprise products. Through demand expansion, it fuels economic growth and upgrading of industrial structure, to provide space for the further development of industrialization. So, urbanization plays a role in promoting industrialization.

Industrialization, urbanization and agricultural modernization promote each other. On the one hand, the development of industrialization and urbanization can enhance the level of agricultural modernization. The development of industrialization and urbanization will provide substantial financial, technology and material equipment for agricultural modernization, to promote the division of labor within the agricultural industry, enhance the degree of specialization of agricultural production, absorb a large amount of labor forces, propel large-scale agricultural operation, and improve agricultural production efficiency. On the other hand, the enhancement in the level of agricultural modernization can provide support and protection for industrialization and urbanization. The development of agricultural modernization can optimize the industrial structure of agriculture, improve agricultural production efficiency, and diversified supply of agricultural products for the development of industrialization and urbanization. Meanwhile, the development of agricultural modernization will provide valuable land resources and more labor forces resources for the construction of industrialization and urbanization, stimulate the development of urban commodity production and commodity circulation, and promote the further development of industrialization and prosperity of urbanization.

In short, the balanced development of "industrialization, urbanization and agricultural modernization" in Henan Province means that industrialization, urbanization and agricultural modernization reinforce each other, achieve virtuous cycle and develop jointly, to realize modernization of entire national economy. Based on the strategic positioning of Henan Province in general situation of China, the goal of balanced development of "industrialization, urbanization and agricultural modernization" in Henan Province is to maintain continuous and rapid development of industrialization and urbanization, promote agricultural development and especially the grain production capacity, taking a road of industrialization and urbanization not at the expense of agriculture and food. The industrialization and urbanization course of non-agricultural-transformation and non-grain-transformation will be bound to make industrialization and urbanization lose foundation and support, and hard to carry on. Conversely, we cannot take a road of safeguarding food security to achieve agricultural modernization at the expense of industrialization and urbanization. Sacrificing industrialization and urbanization to seek agricultural modernization will inevitably lead to

"involution" of agricultural development and overall poverty of farmers, making agriculture difficult to achieve modernization.

2 The major problems thwarting balanced development of "industrialization, urbanization and agricultural modernization" in Henan Province

Since the reform and opening-up, the economic and social development in Henan Province has made great achievements; the process of industrialization and urbanization has been accelerated constantly; high yield and stable yield have been achieved ceaselessly in agriculture; the overall trend of balanced development of "industrialization, urbanization and agricultural modernization" in Henan Province is good. However, it is also in face of some ticklish challenges and problems as follows: the development level of industrialization is not high; the development of urbanization lags behind; it is difficult for us to increase food output.

2.1 The level of industrialization is not high First, the heavy industry has a large proportion. After the founding of China, it adopted the strategy of giving priority to the development of heavy industry, affecting the economic structure of industry in Henan Province. Henan Province has long put excess emphasis on the development of industry, and this situation has been adjusted to some extent since the reform and opening-up, but the heavy-industry-trend of industry has not been fundamentally reversed, and the proportion of heavy industry is still too large. The heavy industry, taking large amounts of capital as support, with limited ability to absorb labor forces, is difficult to effectively promote non-agricultural-transformation configuration of rural surplus labor forces, thereby affecting the process of urbanization. Meanwhile, the correlation between heavy industry and agriculture is low, failing to promote the development of agricultural industrialization. Second, the quality and efficiency of industrial economic development is not high. The industrial economy of Henan Province is still in a "weak" state, and have the following specific characteristics: the level of industry structure is very low, and the upstream industry such as energy and raw materials has a large proportion; the low-level processing industry grows rapidly, and the development of industries with high processing degree is insufficient; the industrial concentration degree is extreme low, and the business organizations have small and decentralized scale with poor scale merit; the level of product structure is not high, and there are a plethora of traditional products, for want of hi-tech products; the independent innovation capacity is not enough and technological progress is slow. "Weakness" of industrialization not only restricts the ability of industry in driving the urban development, but also directly affects intensity of "industry nurturing agriculture", and effect of "using industry to promote agriculture".

2.2 The general level of urbanization is low

2.2.1 The urbanization rate is low. At the end of 2009, the urbanization rate of Henan Province was far below the national average, and was also the lowest in comparison with that of the

five provinces in Central China (Fig. 1). Nationally, the urbanization rate of Henan Province is only higher than that of Yunnan Province, Guizhou Province, Tibet Autonomous Region and other provinces.

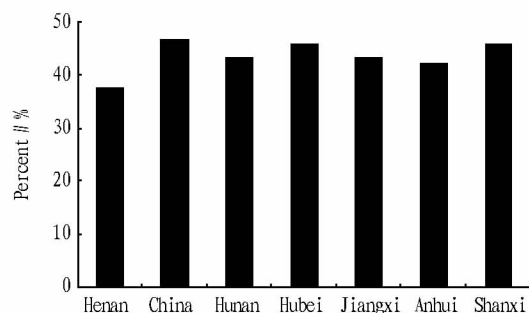


Fig.1 Comparison of Henan Province, the state and five provinces of Central China in 2009 in terms of urbanization rate

2.2.2 The development of urbanization lags behind that of industrialization. According to internationally accepted international standard value method of 0.5 of IU ratio and 1.2 of NU ratio, I quantify and measure the relationship between urbanization and industrialization in Henan Province at present, and get the conclusion that the development of urbanization lags behind that of industrialization. IU ratio is the ratio of labor forces industrialization rate (Ratio of industry labor forces to total labor forces) to urbanization rate (Ratio of urban population to total population). NU ratio is the ratio of non-agricultural conversion rate of labor forces (Ratio of non-agricultural labor forces to total labor forces) to urbanization rate. If IU ratio is approximately 0.5, and NU ratio is about 1.2, it will indicate that there is a balanced relationship between industrialization and urbanization; if IU ratio is significantly greater than 0.5, but NU ratio is significantly greater than 1.2, it will indicate that urbanization lags behind industrialization; if IU ratio is obviously less than 0.5, and NU ratio is significantly less than 1.2, it will indicate that urbanization keep ahead of industrialization. In 2009, the total number of labor forces in Henan Province was 59.49 million; 16.75 million of labor forces engaged in the secondary industry; 15.09 million of labor forces engaged in the tertiary industry^[1]. Based on this, we can calculate that IU ratio in that year was 0.75 (I is 28.15% and U is 37.7%), and NU ratio in that year was 1.42 (N is 53.52%), significantly higher than 0.5 and 1.2, respectively, indicating that currently, the development of urbanization lags behind that of industrialization in Henan Province.

2.2.3 The scale of cities and towns is very small and the central city is not strong in its agglomerating and driving role. In Henan Province, there are 38 cities, ranking No. 4 among China's provinces. However, in terms of city size, the medium-sized and small cities are the majority, for want of metropolis with great competitiveness and strong influence in China. Only Zhengzhou City and Luoyang City are megacities with a population over one million. Many cities lack the capacity of agglomerating elements like big cities, with low level of industry, weak economic strength and weak comprehensive competitiveness,

which play a not strong role in agglomerating and driving the factors of the surrounding areas, and absorbing surplus labor forces in rural areas.

2.3 Agricultural modernization is restricted by many factors

2.3.1 It is limited by the weak water conservancy. Most of the existing irrigation facilities in Henan Province were built in the 1960s to 1970s, maintaining normal operation mainly by relying on organizations and farmers' maintenance work in winter and spring. For a long time, due to lack of inputs, low standard of construction and a great deal of historical debts, the water conservancy facilities have become ramshackle, and some of functions have lost, with slow pace of renovation and upgrading. The statistics in 2008 show that the effective irrigation area of farmland in Henan Province has reached more than 70%, but due to various factors, the actual effective irrigation area is less than 50%. In the effective irrigation area, the area of achieving water saving and irrigation is less than 15%^[2]. The ability of agriculture to withstand natural disasters is still low.

2.3.2 The level of agricultural mechanization and popularization rate of agricultural practical technique are low. Judging from the situation of entire Henan Province, it is still rife with small production by simple tools, manual labor and animal power. As the agricultural science and technology promotion and management system is not implemented well, the phenomenon of "vacant shell" of township agricultural technology stations is serious, and agricultural science and technology promotion fund inputs are insufficient, thus many kinds of pragmatic agricultural technology are difficult to be implemented. In addition, the technology quality of farmers is not high, which leads to insufficient purity of high-quality varieties in agricultural production, excessive quantity of seed usage, unreasonable fertilization, and contradiction between extensive production and management and modern agriculture, therefore, the output rate of land diminishes progressively.

2.3.3 It is restricted by resources and environment and there is an increasing shortage of farmland resources. In recent years, the total area of farmland in Henan Province is stable, and annually the land occupied due to the development of industry and towns is complemented through various channels, basically achieving the overall balance, but most of the farmland expropriated and occupied is fertile and high-quality arable land, while most of the land complemented is wasteland or farmland needing to be transformed for many years. The overall quality of arable land is declining. At the same time, there is still a large number of phenomena of indiscriminate use of arable land, farmland waste and so on, seriously lacking water resources. In 2010, the total water resources in Henan Province was 41.371 billion m³, ranking 19th in China. And the amount of water per capita and amount of water per 0.16 acre was approximately 400 m³, only one fifth and one sixth of the national average, less than 4% of the world average. It is a province with a serious water shortage^[3]. Environmental carrying capacity of agriculture is destructed. Due to inappropriate and considerable use of chemical fertilizer and pesticides, soil, groundwa-

ter, and the atmosphere and so on are contaminated to much extent. At the same time, considerable livestock excrement, sewage, garbage and so on in rural areas are discharged arbitrarily without treatment, which also causes environmental pollution. These problems all impede the sustainable development of agriculture.

2.4 Institutional barriers hamper balanced development of urbanization and agricultural modernization

Urbanization needs a large number of rural residents to transfer into cities, reside and work in cities. Thereby the farmers need to be converted to urban residents. Modernization of agriculture requires a large amount of rural surplus labor force to transfer to non-agricultural industries and cities, in order to achieve large-scale operation and promote labor productivity. Therefore, the transfer of rural labor forces becomes the key to balanced development between urbanization and agricultural modernization^[4]. The reality is that the transfer of labor forces to urban areas is restricted by institutional barriers.

2.4.1 The barrier of dual urban and rural household registration system. Over the years, the long existing dual household registration system has divided the registered permanent residence of citizens into the agricultural registered permanent residence and non-agricultural registered permanent residence, and posed restriction on random conversion and migration, which limits the free mobility of labor forces from rural areas to urban areas.

2.4.2 The barrier of employment system. The differences in environment and conditions of employment between urban and rural residents are prominent, and the employment of rural workers in cities is generally discriminated. The rural labor forces are not included in the city's employment plan and management of labor security, and do not get equal employment services, difficult to enjoy many kinds of employment information career counseling, skills training, micro-credit, subsidy training and other preferential employment policies. In addition, in terms of employment opportunities, working conditions, labor remuneration, and labor protection, the migrant workers do not enjoy equal treatment like the urban residents.

2.4.3 The barrier of welfare and security system. The current urban social welfare and security system is basically designed for urban residents, and the migrant workers are difficult to enjoy due welfare security treatment. The worries of life cannot be dissipated and the migrant workers never feel a sense of stability in the city.

2.4.4 The barrier of rural land system. The rural household contract responsibility system, as a kind of land system innovation, played an active role in emancipating productive forces in rural areas in the earlier period of the reform and opening-up. However, the endowment rights it offers to the land contract members show serious lag institutionally for the transfer of rural labor forces. Under this system, the land does not have the transferability of property, and if the members want to transfer completely, it will generate the exit costs as a result of abandoning land free, thus the contractual land becomes a dilemma, namely farming is uneconomical and reluctant to abandon land,

for the transfer of farmers^[5], which is an important reason responsible for farmers' migration between cities and villages, but not complete transfer into the cities and towns.

3 The measures for balanced development of "industrialization, urbanization and agricultural modernization" in Henan Province

To solve the current prominent problems thwarting the balanced development of industrialization, urbanization and agricultural modernization in Henan Province, and achieve virtuous interaction and synchronized advancing of industrialization, urbanization and agricultural modernization, it must accelerate the transformation of development pattern, and take the road of new industrialization, new urbanization and new agricultural modernization with characteristics of Henan Province^[6-7].

3.1 Keep to the new road of industrialization with characteristics of Henan Province and accelerate the change in development pattern of industry

3.1.1 Vigorously develop agriculture-related pillar industries. Henan is a major agricultural province, and the industrialization is inseparable from agriculture, so it focuses on the development of agriculture. Only by developing the processing industry of agricultural products vigorously can the agriculture be grafted into industry, and only by focusing on the cultivation of agriculture-related pillar industries can we give full play to the role of industrialization in driving the development of agriculture. According to the reality that Henan Province is the major province of producing wheat and cotton, it should focus on the development of food industry and textile industry. The food industry should focus on implementation of "three projects" -overall utilization of wheat, processing of livestock and poultry products, deep processing of fruit products; on the basis of exploiting market demand, extend and broaden deep processing chain; strive to build the largest production base of wheat, the largest production base of instant noodle, the largest flour frozen food production base, and the largest processing base of livestock and poultry meat products in China. The textile industry should highlight the development of clothing, household and industrial textile and other terminal industries; moderately develop printing and dyeing industry from high starting point; intensively develop chemical fiber, weaving and spinning sectors; strengthen technological innovation and brand building; improve industry service system; improve industry cooperation capacity, to build Henan Province into new competitive textile industry base with high intensive degree connecting upstream and downstream.

3.1.2 Actively foster and invigorate emerging industries. In order to promote quality and benefit of industrial economic development in Henan Province, it should improve the overall strength of the industrial economy, strengthen the capacity of using industry to promote agriculture and drive the development of urbanization, and enhance optimization and upgrading of industrial structure. It should not only develop coal, nonferrous metals, chemicals, machinery manufacturing and other strategic support industries, but also actively foster and develop emerging strategic industries. It should focus on electronic in-

formation, biology and new medicine, new materials and new energy; strengthen research and development of the front-end products in industry chain, and application, promotion and support in the back-end; strive to achieve breakthrough in new energy-saving battery, new drugs, non-metallic functional materials and other industries. It should give priority to the development of electric car industry, break through the key technologies, and promote the comprehensive development of entire vehicles, batteries and key components.

3.1.3 Speed up the construction of industrial cluster area. It should follow the requirements of "concentrated layout of enterprise, development of industry cluster, intensive use of resources, and collective building of function"; scientifically work out and implement various kinds of planning of industry cluster areas; speed up the construction of industry cluster areas and structural adjustment projects; improve the function of carrying the urban industries, population, and environment; promote the enterprise to concentrate in parks, labor forces to transfer into cities and towns; promote virtuous cycle of economic development, resources and the environment; achieve mutual promotion and integrated development of industry and city.

3.1.4 Strengthen the independent innovation capacity. It should stick to innovation and speed up construction of independent innovation system; promote technological innovation in the key field; make every effort to break through a number of key technologies restricting the development of key industries and key fields in Henan Province; greatly enhance innovation ability of enterprise; deepen the reform of scientific and technological system; speed up the cultivation of scientific and technological personnel; strengthen the construction of enterprise research and development center; actively promote combination of production, study and research; build a number of major independent innovation platforms of industry.

3.2 Keep to the road of new urbanization with characteristics of Henan Province and promote the rapid change in urban development pattern

3.2.1 Implement the strategy of central cities driving other areas, taking the industrial cluster as basis, expansion of employment capacity as fundamental, promotion of rural population to transfer into cities as center, enhancement of carrying and service capacity of city as guarantee, and modern transportation network as link, to further promote the construction of modern urban system.

First, it should accelerate and propel "one pole, two circles and three layers" spatial layout of central plains urban agglomeration, namely taking "Zhengzhou – Kaifeng New Zone" as the core growth pole; taking Zhengzhou integrated transport hub as the center to create "half-hour traffic circle" and "one-hour traffic circle"; taking Zhengzhou – Kaifeng integrated area as the core layer, "half-hour traffic circle" area as close layer, cities within "one-hour traffic circle" as the radiation layer; actively construct new pattern of balanced urban-rural development-"one pole, two circles and three layers", with reasonable division of labor, functional complementation, centripetal development, coordinated promotion, and common prosperity.

Second, it should foster and develop medium-sized cities; take industry cluster area as a carrier; actively undertake industrial transfer; promote clustered development of characteristic industry and advantageous projects; promote the development of county economy; promote farmers' employment on the spot; gradually develop the counties into medium-sized cities with the number of permanent residents more than 0.2 million. Third, it should strengthen the urban infrastructure construction and management; use "compact-style", "compound-style" ideas to construct cities and towns, and optimize spatial layout; establish sound urban water, electricity, gas, heat, and underground pipeline network supply system; coordinate and arrange facilities of science and technology, education, health, sports and tourism, and improve comprehensive functions of cities and towns.

3.2.2 Promote institutional reform and innovation, create favorable environment conducive to the development of urbanization. As for all kinds of irrational, unfair institutional arrangements hindering the transformation from migrant workers to townspeople, it should boldly conduct reform and innovation, and solve the issue of "there are people going to the city, the city can keep people", to ensure the smooth development of urbanization. First, it should deepen the reform of household registration system; loosen restrictions on farmers' settlement in the city; abolish dual household registration system of the agricultural registered permanent residence and non-agricultural registered permanent residence; implement unified urban-rural household registration system to achieve equality of citizenship; restore the residents' freedom of residence and migration in Constitution; implement the household migration policy of taking citizen housing, stabilizing vocation and income as settlement standard. This will help break the barriers of the urban and rural dual household registration system, to achieve reasonable flow of rural population to urban areas. Second, it should establish unified and standardized human resources market, to form equal employment system for urban and rural workers; cancel restrictive employment policy targeting the migrant workers and population from elsewhere; implement unified management on the urban-rural labor forces in employment permit, employment contracts, remuneration and employment training, so that the migrant workers enjoy the same treatment as urban residents in the labor and employment rights, and the remuneration. Third, it should improve the urban social security system; include the farmers in the city into the scope of social security; establish and improve unemployment insurance, pension, medical insurance and industrial injury insurance compensation system for the migrant workers. At the same time, it should establish the national social security network system as soon as possible, so that in the case of variation in labor relations, the social security account of migrant workers can change immediately. Fourth, it should accelerate transfer system construction of land use rights; in order to emancipate the migrant farmers from the land, adopt subcontract, lease, exchange, transfer, transfer of shares and other forms to transfer the land contractual right, in accordance with the principle of voluntariness and abiding by

law, so that the transfer of rural labor forces departs from the land and homes.

3.3 Adhere to the road of agricultural modernization with characteristics of Henan Province and promote the rapid change in pattern of agricultural development

3.3.1 Increase input to agriculture. The fiscal spending should focus on rural areas, to ensure the enhancement in aggregate and increment of agriculture; within budget, the fixed assets investment should be used for the construction of agricultural infrastructure, to ensure further increase in aggregate and proportion; the share of input of land revenue to agriculture should be gradually increased. It should accelerate the formulation of overall rural financial reform plan, strive to form all-around rural financial system with commercial finance, cooperative finance, policy finance, and microfinance organizations complementing each other, explore various forms of guarantee mechanisms, and guide financial institutions to increase credit for agriculture. At the same time, it should integrate a variety of funds for supporting agriculture, establish agriculture-support investment planning and department information communication working mechanism, improve input management approach, and use the input in key areas and key projects, and improve use efficiency of agriculture-support capital.

3.3.2 Strengthen the construction of water conservancy. It should speed up the construction of supporting facilities in large-scale irrigation area and water-saving transformation; implement volume control and quota management of irrigation water; expand the scope and scale of transformation and implementation of major pumping station technology; increase inputs to water-saving transformation of medium-sized irrigation area for comprehensive agricultural development; reinforce and consolidate the big, medium-sized and small key reservoirs in danger; adjust measures to local conditions to build small drought-prevention water projects; innovate upon investment mechanism; explore many ways to encourage and support farmers to carry out the construction of small-scale irrigation facilities, and integrated control project of small valley.

3.3.3 Quicken and propel agricultural mechanization. It should popularize the mechanization of planting, harvesting and other links of main grain and oil crops; accelerate the research and development of light and convenient agricultural machinery suitable for the use in hilly areas, and large agricultural machinery for a large area of operation; support industry technology transformation of agricultural machinery; promote suitability and durability of agricultural machinery products and enhance after-sales service; give credit support to big grain-producers and agricultural machinery service organizations when they purchase large and medium-sized agricultural machinery.

3.3.4 Strengthen farmland protection, improve farmland quality. It should strengthen and implement farmland protection responsibility system, and control the scale of transforming agri-

cultural land into construction land; reasonably guide intensive rural land use; prevent the agricultural production practices damaging the soil; take effective measures to support the construction of agricultural irrigation, land consolidation, soil improvement, tractor roads and farmland forest networks; accelerate the construction of basic farmland with high and stable yield. At the same time, it should continue to increase comprehensive agricultural development, input to rural land consolidation, and transform low-yielding farmland.

3.3.5 Extensively promote resources-saving-based agricultural technology, protect rural ecological environment. It should actively develop and use a variety of conservation-oriented agriculture technologies; promote the use efficiency of agricultural resources and agricultural input products; vigorously popularize water-saving irrigation technique and implement water-saving agricultural demonstration project; expand the implementation scope and subsidizing scale of measuring soil before fertilizing; further promote the diagnosis fertilization, precise fertilization and other advanced fertilization technologies; strengthen rural environmental protection, further control the pollution arising from irrational use of chemical fertilizers, pesticides and plastic film, to protect the rural environment.

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