

матеріалів для зменшення відходів.

5. Сприяння сталому сільському господарству: підтримка сільськогосподарських практик, які зберігають ґрунт та водні ресурси, зменшують викиди газів з парникового ефекту та підтримують біорізноманіття.

6. Екологічна освіта та обізнаність: збільшення обізнаності населення щодо проблем сталого розвитку та впровадження програм екологічної освіти на різних рівнях.

7. Міжнародне співробітництво: спільні зусилля країн та міжнародних організацій у напрямку зменшення викидів парникових газів, збереження біорізноманіття та забезпечення сталого розвитку.

Сталість розвитку та енергетична безпека є взаємопов'язаними концепціями, які потребують системних рішень та міжнародного співробітництва. Забезпечення енергетичної безпеки та збалансованого використання ресурсів є ключовими аспектами будь-якої стратегії сталого розвитку, спрямованої на забезпечення довгострокового економічного та соціального розвитку.

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PRIORITIES OF AGRICULTURAL DEVELOPMENT IN CHINA IN THE CONTEXT OF A SUSTAINABLE AND GREEN ECONOMY

In the context of challenges of world agricultural development, China still needs to adapt its agricultural policy:

1. Ensure supply. The primary goal of China's agricultural modernization is to ensure supply. Ensuring supply means ensuring the effective supply of grain and other important agricultural products. The 14th Five-Year Plan for Promoting Agricultural and Rural Modernization also clearly states that ensuring the security of the supply of food and other important agricultural products is a top priority, ensuring both quantity, diversity and quality, responding to the uncertainty of the external environment with the certainty of stable domestic production and supply, and firmly holding the bottom line of national food security.

With the increase of Chinese people's income level and the upgrading of agricultural consumption, the supply and demand of major agricultural products, especially high-quality agricultural products, are still in a tight balance, and food consumption is shifting to more, more diverse and safer demand. Therefore, we must

firmly hold the red line of 1.8 billion mu of arable land, earnestly implement the strategy of "storing grain in the ground" and "storing grain in technology", constantly expand food sources, build a diversified food supply system, and consolidate the foundation of food security in an all-round way. The first is to expand the production space mainly from cultivated land to grassland, forest and sea; The second is to expand the food source from traditional agricultural resources to a wide range of plant, animal and microbial resources; The third is to develop a new type of food industry and develop a new type of food business; Fourth, strengthen the resilience of domestic supply, continuously improve the ability to layout the whole industrial chain of agricultural materials, products, processing, logistics and trade, strengthen the capacity of grain reserve, regulation, loss reduction and conservation, and constantly improve the emergency system of grain reserve; Fifth, enhance the security, stability and sustainability of the global supply chain of China's grain and other important agricultural products, improve the bargaining power of the international market, and ensure the stability and reliability of imported grain and important agricultural products. Only by consolidating the foundation of food security and ensuring that the Chinese people's jobs are firmly in their hands can we calmly respond to various risks, challenges and tests and consolidate the foundation and support for building China into a great modern socialist country in all respects.

2. Improve quality. The essential requirement of China's agricultural modernization is to improve the quality. The core of quality improvement lies in steadily improving agricultural quality, efficiency and competitiveness. The most arduous and onerous task of China's modernization lies in agriculture, and the level and quality of agricultural modernization determine the quality of national modernization. According to the traditional economic growth theory, agriculture has four major contributions to economic growth: products, markets, factors and foreign exchange, and plays an irreplaceable basic role in supporting the development of national economy and other industries. Since the beginning of reform and opening up, China has realized the transformation from the traditional agriculture dominated by monoculture to the modern agriculture with the comprehensive development of various industries of agriculture, forestry, animal husbandry, sideline and fishery, and the agricultural development has shifted from yield-oriented to quality-oriented.

With the vision of building China into a great modern socialist country in an all-round way, the quality, efficiency and competitiveness of China's agricultural development need to be further improved. With the development of modern economy and the transformation of demand structure, the connotation of China's agricultural modernization is no longer limited to the traditional contribution of products, factors, markets and foreign exchange. The play of agricultural ecological, health, human and social functions means that high-quality agricultural modernization should focus on the transformation from product-based agriculture to functional agriculture. In view of the

weak links in improving quality, we should first base on the bottom line requirements of food security, further optimize the agricultural production structure and regional layout, improve the scale, intensification, standardization and digitization level by improving the material and technical equipment conditions, and constantly consolidate the hardware and software foundation of agricultural development. Secondly, it is necessary to further strengthen the functional positioning of agriculture, give play to the unique ecological, humanistic, health and social value functions of agriculture according to local conditions, and enhance the comprehensive competitiveness of agriculture. We will achieve high-quality agricultural modernization with high-quality supply, high-quality demand, high-quality allocation, high-quality input-output, high-quality income distribution, and high-quality economic circulation.

3. Increase income. The core of China's agricultural modernization is to increase income. The performance of promoting income increase is the improvement of farmers' income and steady growth of income, while the narrowing of relative income gap should also be taken into account. The report of the 20th National Congress of the Communist Party of China pointed out that the Chinese-style modernization is a huge population scale, and the key to promoting income growth is to expand the channels for farmers to increase their income and enhance their ability to continuously increase their income. On the one hand, with the development of urbanization and industrialization, farmers' income sources have expanded from single agricultural breeding income to four major sectors: wage, business, property and transfer, and income channels and sources have been increasing. At present, efforts should be made to expand farmers' income channels, create more non-agricultural employment opportunities to increase farmers' wage income, improve land productivity and labor productivity to stabilize farmers' operating income, revitalize rural assets to strengthen farmers' property income, and establish a sound agricultural support and protection system to protect farmers' transfer income. On the other hand, human capital is an important source of agricultural economic growth, so training high-quality modern farmers is also an important way to realize agricultural modernization. It is necessary to increase the input of agricultural human capital to enhance the ability of farmers to increase their income and realize the sustainable growth of farmers' income. Therefore, the labor force advantage can be transformed into the human capital advantage through farmer education and training, the farmer entrepreneur group can be cultivated and strengthened, and the efficiency of agricultural labor production, land market efficiency and resource allocation efficiency can be improved, so as to promote the common prosperity of farmers.

4. Strong technology. The inner driving force of China's agricultural modernization is strong science and technology. Science and technology is the primary productive force, the power source of agricultural modernization, and the focus of high-quality development. Due to the limited factor endowment such as land and water

resources, the effective guarantee of the supply of important agricultural products such as grain, the steady improvement of agricultural quality, efficiency and competitiveness, and the improvement of farmers' income and income growth depend on advanced modern agricultural science and technology and material equipment, which can support the improvement of agricultural total factor productivity. Traditional economic growth theories treat technology as an exogenous variable, while induced technological innovation theories treat technology as an endogenous variable of the economic system, which is induced by changes such as factor input and product demand. Whether exogenous or endogenous, technology is the decisive force for the development of modern agriculture. Compared with countries with developed agriculture, from energy agriculture, biological agriculture, green agriculture to smart agriculture, every scientific and technological progress has directly led to great changes in agriculture.

In the past 40 years of rural reform, scientific and technological means represented by machinery and equipment have been applied to agricultural production, which has enabled China's agriculture to achieve leapfrog development. The improvement of agricultural material and technical equipment capacity has brought about an average annual contribution rate of 2% of technological progress, which has greatly improved the comprehensive agricultural production capacity. Although agricultural science and technology has made progress in agricultural modernization, there is still a certain gap between China and the world advanced level in terms of basic research and cutting-edge core technologies of agricultural science and technology. First, basic research of agricultural science and technology is not enough, such as biological breeding, agricultural machinery and equipment, intelligent agriculture, ecological environmental protection and other important technologies still have many shortcomings; Secondly, the self-sufficiency ability in some key technologies is relatively lacking, such as the integration of modern seed industry, the genetic improvement of high-quality livestock and poultry breeds still has great room for improvement; Third, the combination of new economic elements such as digital economy and agriculture is not deep enough, and smart agriculture, which is mainly based on modern information technologies such as the Internet of Things, cloud computing, big data, and mobile Internet, is still in its infancy. In a word, China's existing agricultural development achievements can not be separated from the progress of agricultural science and technology, the future level and quality of China's agricultural modernization will also depend on the content of agricultural science and technology, therefore, we must take science and technology as the internal driving force of agricultural modernization.

5. Add green color. The external requirement of China's agricultural modernization is to increase green. Green is to promote the greening of agriculture to achieve sustainable development, which is also the core content of agricultural supply-side reform and high-quality development. The report of the 20th National Congress

of the Communist Party of China pointed out that Chinese-style modernization is the modernization of harmonious coexistence between man and nature. Therefore, exploring green development is an inevitable requirement for promoting agricultural modernization. Agriculture, as an important part of ecosystem and the basis of human existence, has obvious externality characteristics. The pollution of land, air and water resources caused by excessive use of chemicals and agricultural waste will directly harm the ecological environment and harm human health through various channels such as natural circulation and physiological intake. Moreover, due to the high dependence of agriculture on natural resources such as soil and water, extensive production behaviors will increase production costs and reduce the quality of agricultural products, which is not conducive to the sustainable development of agriculture.

China is a populous country, and the supply pressure of agricultural products is huge. Under the pressure of increasing production, with limited arable land and water resources to achieve continuous grain growth, it is inseparable from the input of modern agricultural production materials such as fertilizers, pesticides and agricultural film. Excessive and unreasonable use of agricultural chemicals will lead to soil compaction, water eutrophication, agricultural non-point source pollution and other environmental problems, and the resulting degradation of cultivated land quality becomes a hidden danger affecting the goal of grain increase. From foreign experience, fertilizer and pesticide application in some developed countries in the European Union, North America, Asia and the Middle East have shown a trend of rapid growth, stable decline or continuous decline after reaching the peak, and these countries have gradually embarked on the road of sustainable development with weight loss and efficiency, high yield and high efficiency. In recent years, China has actively explored the road of green agricultural production, and the fertilizer application has shown a downward trend after reaching its peak in 2016, but there are still problems of high fertilizer application intensity and low utilization efficiency. Therefore, China's agricultural modernization should take green as the development background, take into account the dual goals of ecological environment safety and agricultural product quality safety, and promote the greening of agriculture to achieve sustainable development.

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МОДЕРНІЗАЦІЯ ІНФРАСТРУКТУРИ ДЛЯ ЗМЕНШЕННЯ ЕНЕРГЕТИЧНИХ РИЗИКІВ ТА ПІДВИЩЕННЯ СТАЛОСТІ

Зростаючі вимоги до енергетичної безпеки та сталого розвитку вимагають модернізації інфраструктури, включаючи енергетичні системи, транспортні мережі та будівлі. Модернізація інфраструктури також необхідна через низку факторів: старіння та неефективність існуючих енергетичних мереж, вразливість інфраструктури до зовнішніх загроз, таких як кібератаки, війна та стихійні лиха, низька ефективність використання ресурсів та енергетична залежність, а також недостатня адаптація до сучасних технологій та вимог щодо охорони довкілля та безпеки. Таким чином, модернізація інфраструктури має важливе значення для зменшення енергетичних ризиків, забезпечення сталості та розвитку сучасної енергетичної системи.

Мета - проаналізувати та висвітлити поточні проблеми енергетичної інфраструктури з метою розробки конкретних стратегій модернізації. Проаналізувавши ці проблеми, я визначу методи та рекомендації щодо модернізації інфраструктури для зменшення ризиків та підвищення стійкості енергетичної системи.

Модернізація будівель. Одним з найпоширеніших і найефективніших способів адаптації існуючої інфраструктури до систем відновлюваної енергетики є модернізація будівель з використанням енергоефективних функцій і пристроїв.