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Thoughts on the Ways out of Breeding Industry under the Important Task of Ecological Civilization

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Abstract The difficulties and problems faced by the breeding industry in China are investigated. On the basis of analysis and thinking, combining the requirements of pollution control by breeding and the construction of ecological civilization at the current stage, the ways out for the development of breeding industry under the important task of ecological civilization are proposed: reforming and innovating and firmly establishing a new thinking of healthy breeding; upgrading industries to make them adapted to the new mode of economic development; treating sewage separately to ensure a clean environment; improving information platform and promoting the application of Internet + new technologies; and improving the legal system and forming a new mechanism for breeding pollution control.

Key words Ecological civilization, Breeding industry, Way out, Thinking

1 Introduction

The construction of ecological civilization is an important part of China's five-in-one strategic layout. It is also an important part of Xi Jinping's new era of socialism with Chinese characteristics. Building an ecological civilization is the current strategy for rural revitalization and an important task for building a beautiful China. In the past 40 years of reform and opening up, China's economic development has been mainly at the expense of resource consumption, promoting the super-high-speed economic development. Although economic and social development has achieved world-renowned achievements, economic and social progress has also brought a series of new environmental problems.

In some places, the environment has deteriorated and the ecological environment has been destroyed (cultivated land is polluted^[1], grassland is seriously desertified, and drinking water and air are seriously polluted). Environmental degradation in individual places has affected human survival. The harsh reality forces us to rethink the new model of economic and social development. In the construction of ecological civilization in the past, we have owed a lot of debts, so local party committees and governments have taken a series of drastic measures to overcorrect, to contain the further deterioration of the human living environment and achieve the consistency between economic development and beautiful environment and the harmonious coexistence of man and nature. The implementation of these measures and methods made the breeding industry in the agricultural industry first to be suppressed and restricted. A number of large-scale farms in some places were forced to close. However, the breeding industry is a superior industry of traditional agriculture and an important foundation of

China's national economy. Therefore, under the important task of ecological civilization construction, finding new ways out for the development of breeding industry is a major subject worthy of consideration and exploration.

It is undeniable that over the past 40 years of reform and opening up, traditional production methods and breeding technologies have made positive contributions to the development of ultra-high-speed animal husbandry. It plays an important role in the rapid growth of China's meat products, meeting people's growing material and cultural needs, and ensuring effective market supply. However, the development of traditional breeding industry is mainly driven by factor input, it consumes a lot of resources, and the waste is serious and has caused a lot of bad effects on the environment. This is incompatible with the requirements of ecological civilization and is not sustainable.

2 Problems in traditional breeding industry

2.1 Breeding concept is outdated In traditional breeding, animal husbandry is regarded as an industry accompanying planting, as a sideline. In terms of facility construction, the principles of simplicity, economy, and low investment are overemphasized. The farming facilities are simple, lack of supporting facilities, and the farms are not fully functional. In the construction layout of the pens, the emphasis was placed on being neighbors with humans and building by water and grass. They are very close to the water source grassland. As a result, the farming waste pollutes the water source and destroys the human settlement environment. On the scale of breeding, people pursue quantity one-sidedly, leading to flocks of chickens and ducks, and mountains of cattle and sheep. When the number of livestock and poultry carried per unit area exceeds the standard seriously, the environment suffers catastrophic damage after the livestock and poultry live in. All these old concepts of livestock and poultry breeding are not compatible with the concepts of economic development under the new economic

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normal.

2.2 Production organization method is backward First of all, due to the one-sided pursuit of quantity, the carrying capacity of resources and the environment is not considered in the development. The whole region develops equally, without emphasis, and "flowers" in an all-round way. As a result, the breeding task is completed, but people's living environment has been severely destroyed. Secondly, too much emphasis has been placed on intensification and scale. A large number of livestock and poultry are raised in high density. As the pollution of breeding waste seriously exceeds the self-purification capacity^[2], and the treatment facilities cannot keep up, the excrement is like a mountain, the smell is permeated, the sewage is overflowing, and the environment is seriously polluted. Again, administrative intervention is excessive. In some places, the breeding industry is listed as a government's key project or "achievement project", and the layout of breeding farms pursues for eyeball effect. The larger the scale, the better; and the greater the quantity, the better. It pursues high density and high efficiency, and emphasizes the development of deformed "pig economy", "cattle economy" and "sheep economy", etc. one-sidedly. Livestock resources have been exploited and utilized excessively without any protection measures. The resources of excellent local varieties have been destroyed, and the ecological environment balance has been destroyed. It has also buried hidden dangers of environmental pollution. In recent years, the farms that have been ordered to remove or relocate by environmental inspectors are mostly large-scale farms built by the local governments, leading to a waste of a lot of government money, a large amount of civilian and material resources, and environmental damage that is difficult to repair.

2.3 Supporting measures are weak The traditional breeding industry is mostly free-range, and the pollutants produced are mostly solved by self-purification measures. In the large-scale animal husbandry development, due to the lack of supporting facilities, the environmental pollution caused by farming waste is ignored. As the number of breeding increases, the pollution of breeding to the environment becomes more and more serious, and even threatens human survival. All the above-mentioned problems and incompatibility deviate from the concept of ecological civilization construction and sustainable development, and severely restrict the development of the breeding industry. In the *Opinions of the Central Committee of the Communist Party of China and the State Council on Implementing the Strategy for Rural Revitalization*, it is required that the promotion of rural economic construction, political construction, cultural construction, social construction, ecological civilization construction and party building should be coordinated, in accordance with the general requirements of industrial prosperity, ecological livability, rural civilization, effective governance, and affluent life. Therefore, facing the current situation of animal husbandry development, we must not only have the determination to develop the animal husbandry industry, but also emancipate our minds and discard outdated habits, to explore

new methods and new paths that adapt to the development of the breeding industry with an innovative attitude.

3 Ways out of breeding industry under the important task of ecological civilization

3.1 Reform and innovation to firmly establish new thinking of healthy breeding In the implementation of the rural revitalization strategy, the livestock industry must receive the attention of governments at all levels. We must be determined to emancipate our minds, update our concepts, and reform to get rid of the shackles of the old farming thinking, and remove the obstacles and fetters of the old farming thinking. In the future development of breeding industry, more attention should be paid to ecological livability. We must put the protection of the environment in a particularly important position, completely abandon the rudimentary and simple ideas in the layout, construction and investment of livestock and poultry farms, break down the backward concepts of low investment standards, building by water and grass and living together with humans and animals regardless of the impact on the human settlement environment, revise and improve the guiding principles and specifications for the layout, construction and investment of livestock and poultry farms, gradually establish suitable livestock and poultry breeding areas, livestock and poultry restricted breeding areas, and livestock and poultry breeding prohibited areas (referred to as the three livestock and poultry breeding areas^[3], the same below) according to China's existing laws and regulations governing pollution in the breeding industry, focus on solving the problems of unbalanced and insufficient industrial development, and establish a new set of rules for industrial development that are compatible with China's rural revitalization strategy. This not only promotes industrial development and promotes industrial prosperity, but also pays attention to environmental protection, achieving the purpose of ecological livability.

3.2 Industrial upgrading to adapt to new ways of economic development The sewage of livestock and poultry breeding will bring pollution to the environment, which is inevitable and objective. However, the way of raising livestock and poultry determines the severity and degree of pollution from livestock breeding. Therefore, in the future development of animal husbandry, we must vigorously promote healthy breeding methods to make the development of animal husbandry and the breeding of livestock and poultry meet the new requirements of current economic development.

3.2.1 Transforming old breeding pens comprehensively. Various localities should design various model drawings of healthy livestock and poultry breeding houses in accordance with local conditions. They are chosen by owners engaged in breeding livestock and poultry to build livestock and poultry pens in accordance with the plan. The traditional breeding pens are upgraded and the pollution control facilities are improved to increase the purification capacity of farms and reduce the pollution to the surrounding environment.

3.2.2 Promoting moderate-scale breeding vigorously. The wrong practice of one-sided pursuit of quantity regardless of the environ-

mental carrying capacity is abandoned. Those who can be separated will never be raised together. For those factories, farms and centers that have over 10 000 heads, it is necessary to lay out carefully. Breeding projects that are not essential will be aborted to avoid irreversible damage to the environment because of the pursuit of large-scale breeding.

3.2.3 Promoting the decentralizing breeding model combining planting and breeding vigorously. In order to reduce the deposition of breeding sewage, each breeding owner should combine the quantity of farmed livestock and poultry with the ability of their own farmland planting industry to absorb farmed waste, and reasonably determine the types and quantities of farmed livestock and poultry based on the purification ability of the crops, thereby reducing the off-site treatment and pollution of livestock and poultry manure, and forming a virtuous circle between planting and breeding.

3.2.4 Promoting the unit breeding model vigorously. Large-scale centralized breeding is divided into multiple units for breeding. Professional cooperative farming and community farming are promoted. Large-scale farming is divided into multiple units (professional cooperatives, breeding communities). This can not only reduce the excessive concentrated discharge of farming manure, but also moderately concentrate the farming of livestock and poultry. While ensuring that the number of livestock and poultry does not fluctuate greatly, it can also avoid sporadic pollution of breeding waste, facilitating the control and purification of breeding pollution.

3.3 Treating sewage separately to ensure a clean environment Different breeding methods and scales produce different breeding pollutants, so their pollution to the environment is also different. The methods to control the pollution are also different. In the new breeding activities, it is necessary to construct and improve the supporting facilities of stables. Most common farms should be equipped with septic tanks, sewage sedimentation tanks, retort tanks for livestock and poultry carcasses, livestock and poultry manure purification plants (crop plantations) and other pollution control and environmental protection facilities. On this basis, different pollution control methods are adopted for different breeding methods.

Regarding the treatment of sewage of general free-range farmers, we must combine the "toilet revolution" measure China's rural revitalization plan. Farmers should use the arable land as a reference for the number of breeding. According to the ability of cultivated land to absorb livestock and poultry manure, the breeding quantity is determined. The model of one household, one toilet and one biogas digester is promoted actively to achieve the combination of pig, methane and gas. After the livestock and poultry manure is processed by biogas fermentation, the biogas produced is used as a new fuel and the biogas slurry is used as fertilizer to fertilize the fields. The breeding waste must not be littered at random, to ensure that the surrounding environment is not polluted. For relatively concentrated breeding communities or professional breeding cooperatives, a unified treatment plant for breeding waste should be established, and dry and wet separation treatment

should be implemented. For dry and thick feces, they are collected and processed uniformly. Sewage can be used to irrigate crops or orchards after precipitation and fermentation. The dry matter is used to make compost or organic fertilizer for crop planting fertilizer. Other wastes are processed and utilized through stacking and fermentation to reduce environmental pollution.

For super large-scale intensive breeding farms, the waste generated by their breeding should be exploited and utilized as resources. Large-scale biogas digesters can be built, so that livestock and poultry manure can be used to generate electricity. This can not only participate in changing the energy structure to increase income, but also purify the sewage generated by the breeding industry. The biogas slurry is used to irrigate crops and orchards, and the biogas residue is used to make organic fertilizer. By adopting different pollution control methods for different breeding methods, the development of breeding industry and environmental protection are combined organically, so as to achieve "industrial prosperity and ecological livability". All breeding farms should be equipped with sewage removal facilities, and non-self-purifying feces, sewage and waste produced by breeding will be removed regularly, so that they do not overflow or cause disaster. Thus, the livestock and poultry farms are kept clean and tidy at all times, and the breeding environment is clean.

3.4 Improving the information platform and promoting the application of Internet + new technologies In the future development of the breeding industry, information services should be promoted actively for production organizers and business owners. Data analysis platforms must be established at all levels. Through the big data information platform, industrial information is collected, sorted, analyzed and processed. Through a variety of new media such as QQ, WeChat and client, production and marketing information, supply and demand information, early warning information and market risks are publicized to production organizers and operators timely. Information on new facilities, new equipment and new technologies for livestock and poultry breeding is disseminated vigorously, so that production organizers and operators are enabled to keep abreast of industry trends in a timely manner, and the upgrading of healthy breeding technology is accelerated. Breeding plan is determined scientifically, to reduce ineffective breeding. Effective supply is increased, and the structure of the supply side is optimized.

The application of the Internet + new technologies is promoted vigorously to improve the technological content of the breeding industry, extend the industrial chain, innovate production and business models, and form a variety of production and business formats, promoting industrial upgrading. Thus, resource consumption is reduced, pollution is reduced, the environment is protected, the breeding industry develops stably and healthy, and stable and effective supply of meat is guaranteed.

3.5 Improving the legal system and forming a new pollution control mechanism for pig breeding In order to achieve long-

terprises and farmers to innovate various models of ecological agriculture, carry out cooperation through various channels, extend the chain of industrial development, and improve their ability to survive and develop.

4.3 Relying on advantages and demonstration drive and innovating the brand and characteristics of ecological agriculture in Xiantao City Relying on the geographical and resource advantages of various areas in Xiantao City, referring to the ecological development model of Xianfeng Village of Zhanggou Town, Chenchang Town and Duliu Village of Shazui Street Office, and drawing lessons from their successful experience, it is necessary to develop a suitable eco-agricultural development model and innovate the brands and characteristics of ecological agriculture in this region. First, it is necessary to promote exchanges and cooperation among various regions, give full play to their geographical and resource advantages, make rational plan, and make effective use of resources. Second, the government should set up a platform to give economically backward areas the opportunity to fully learn

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term effects in control of pollution caused by breeding, it is necessary to improve the legal system and manage it in accordance with laws and regulations. The education and training of practitioners should be strengthened. Relevant knowledge and skills that farmers of different scales should have are clarified. The employment access system is implemented to solve the problem of ignoring environmental protection in the livestock and poultry breeding industry from the source. It is necessary to strengthen the management of the "three areas" of livestock and poultry breeding. According to local conditions, combined with local people's living habits and economic development level, the red line of the "three areas" for livestock and poultry breeding is delineated scientifically. The density and scale of livestock and poultry breeding in each area are determined scientifically. Livestock and poultry breeding activities in accordance with laws and regulations are supported. This can not only maintain the healthy and stable development of breeding, but also protect the ecological environment. It is necessary to establish treatment facilities for diseased livestock and poultry and carcasses arising from breeding. Illegal acts of purchasing, trading, processing and operating diseased livestock and poultry and their carcasses are cracked down severely. The construction of the pastoral administration and law enforcement team is strengthened, the pastoral administration and law enforcement is enhanced, and illegal breeding activities are banned and cracked down. In particular, it is necessary to severely investigate and punish those breeding owners who have caused serious damage to the ecological environment, and those that constitute a crime

from the experience of successful development of ecological agriculture, and to provide financial support for the development of ecological agriculture in areas where agricultural development is backward. Third, all regions of Xiantao City should focus on developing their own characteristic agricultural products and promote the concentration of resources and funds to superior industries and products.

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are transferred to the judicial organs, so that breeding development and ecological protection complement each other, coordinate and promote each other.

4 Conclusions

The construction of ecological civilization is a major strategy for China's economic and social development. The breeding industry is the basic industry of China's national economy, and it is related to people's livelihood and effective supply of the market. Under the current important task of ecological civilization construction, how to make the breeding industry prosperous and the environment ecologically livable is an important issue faced by the development of breeding industry and a hurdle that must be overcome. We firmly believe that party committees and governments at all levels and practitioners will be able to emancipate their minds, seek truth from facts and explore a new way for the breeding industry to adapt to the economic and social development of the new era.

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