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Sustainable Agriculture and Ecological Construction in Rural Economic Development

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Abstract: ***Agriculture is an important part of economic development. Plant industry is an important part of national food security. the agricultural economy is very rich: it includes not only crops, livestock and forestry related to large-scale agriculture, but also non-agricultural industries. In many areas, agriculture is the backbone of the rural economy. Lack of ideas in the development process, whether in agriculture or industry, will have a certain impact, even damage the ecological landscape. It has become an important factor hindering the development of rural society in the world. the destruction of rural ecological environment has become one of the obstacles to agricultural development. At the Labor Conference held in December 2014, the CPC Central Committee stressed the need to further accelerate the process of agricultural transformation, focus on quantity, quality and efficiency, improve competitiveness as soon as possible, innovate agricultural technologies, and realize the sustainable and effective development of modern agriculture..***

Keywords: Rural Areas; Economic Development; Agriculture; Ecological.

1. SUSTAINABLE AGRICULTURE AND ENVIRONMENTAL PROTECTION

Agriculture is the foundation of human society, the development of every civilization can not do without agriculture, agriculture is the most important pillar of human society. Environmental changes in the process of economic development should be based on the traditional concept of "industrial support, agricultural development", and gradually restore the damaged rural ecology. As we all know, there are three main factors that have seriously damaged the rural ecology. Industrial pollution is one of them. Due to the huge scale of rural industry, sewage, waste gas, waste and dust seriously affect rural vegetation, soil and water resources. Second, pollution from modern agriculture. Modern agriculture is the name of agriculture in the industrial era. Agriculture refers to the socialization of production means and scientific management methods provided by modern science and technology and modern industry. Although this method increases the output of a single product, it brings irreversible disaster to the rural ecology. Many fertilizers, hormones, antibiotics and pesticides used in production are not only used in agriculture, but also pollute the agricultural sector. In particular, the "white" pollution caused by the non- decomposition of plastic film seriously affects the environmental quality of farmland, which has a long-term impact. In addition, much rural wastewater is discharged directly into untreated water and household waste is stored in surface runoff. In aquaculture, high density feed and extremely inappropriate use of fishing gear can also lead to water pollution. In particular, many of the ponds around the village are polluted, directly. This has affected the lives of the villagers. In the future, rural water pollution will be another major problem after industrial pollution. Third, household pollution. With the development of society, the gap between rural household goods and urban gradually increased. If a city is able to handle domestic waste due to economic and technological constraints, no city has a standard external landfill outside the city. Many rural areas lack ecological infrastructure and ecological resources flow directly into production and rural life. the dryness of rural household garbage is very difficult, and the garbage of modern rural life has become another stone that destroys rural ecology. the second problem can only be solved by changing the concept of development. In other words, the concept of modern agricultural development must be sustainable. As a complete plant and animal production management system, sustainable agriculture attaches great importance to maintaining the sustainability of agricultural development, maximizing the use of non-renewable agricultural resources, and ensuring the correct connection between natural biological cycle and biological measures. the development of agriculture is inseparable from soil and water. If modern agriculture wants sustainable development, it must improve and repair the severely damaged water resources and soil. On the one hand, sustainable development of agriculture should be maintained, on the other hand, water resources and soil damaged by modern agricultural development should be gradually restored. In addition to modern agriculture, the goal of sustainable agriculture is to "maintain sustainable agriculture, maintain natural ecological balance, safeguard human health and safety, and care about the sustainable development of the country".

2. THE PATTERN AND CHARACTERISTICS OF SUSTAINABLE AGRICULTURE

The proposal of "one belt, one road" initiative has provided important opportunities for economic development and political exchanges of all countries along the route, and has also broadened important channels for the integration and mutual learning of different countries and cultures. Based on the important one of "one belt, one road" initiative, "sharing and sharing", under the international background of great development and great changes and prosperity, the urgency and necessity of enhancing Chinese culture self-confidence are particularly prominent. Cultural self-confidence reflects a country's recognition of its own cultural content, respect for its own customs and habits and belief in its own cultural value. A nation full of cultural self-confidence can maintain its own unique cultural charm and spiritual strength in the world cultural exchange and integration. It has a high degree of confidence in the historical choice and realistic characteristics of its own culture. It can actively support the inheritance of its national culture, and can effectively fight back against all kinds of statements that damage the national culture and pollute its cultural connotation. It is the fundamental key for a nation's culture to maintain its unique connotation and spiritual advantage in the long history.

The "one belt, one road" initiative is a philosophical basis for the improvement of cultural confidence based on Marx's basic analysis method, and is a scientific conclusion based on dialectic methodology. One belt, one road, and the other countries are all individuals. Each country can not get away from the unified organic whole of the Silk Road Economic Belt when it develops. The one belt, one road and the other, is also subject to the development trend of individual countries. The construction of one belt, one road is the planning and layout on the basis of overall and systematic nature. It has a scientific and logical mechanism within it, and the development of various countries in the system helps the development of the silk road. On the other hand, the cultures of different countries and nationalities will inevitably lead to cultural differences due to the diversity of customs and habits, values and contents. Each national culture is eager to show its own unique cultural charm and release cultural tension in the collision and blending. But the existence of cultural differences will inevitably lead to cultural contradictions. To develop the contradiction into a benign aspect, we need to be tolerant and open-minded to seek common ground while reserving differences, and to learn from each other and learn from each other. To enhance cultural self-confidence is not cultural conceit and cultural inferiority complex, it is not a total denial of foreign culture's self-reliance, nor is it a total denial of their own culture's blind worship of foreign culture. It is the deep understanding of Chinese excellent traditional culture and the rational examination under the analysis of dialectical thinking.

2.1 Unlike traditional and modern agriculture, sustainable agriculture pays attention not only to sustainable development, but also to nature and ecology.

In other words, sustainable agriculture is an integral part of agriculture. Education and sustainable agriculture have dispelled the myth that agriculture is a natural attribute. Sustainable agriculture emphasizes the sustainable development of agriculture, so that the water and soil resources that depend on agricultural development can realize the virtuous cycle to the maximum extent. Therefore, the application of traditional ecological concept is the core of agricultural development. Therefore, organic agriculture has become an important mode of sustainable development of agriculture. In other words, agricultural proposals emphasize the development and balance of animals, plants and microorganisms. the so- called "promoting the mutually beneficial coexistence of biota and observing the law of physical energy circulation of agricultural ecosystem" is not only listed as "organic agriculture", but also a strict standard mode of sustainable agricultural development. For example, agricultural production does not create new production pollution. Production, including the optimization of natural vegetation structure, can improve the agro-ecological environment.

2.2 Natural agriculture is the second model of sustainable agriculture.

Natural agriculture is an agricultural development model that integrates production, living and ecology. It emphasizes the integration of agricultural production into daily life and replaces agricultural production goals with visual goals. the development of agriculture is not to obtain more products, but to meet the needs of people, participate in and enjoy agricultural production, but to turn agricultural production facilities into ornamental plants. the garden tourism complex recreates agricultural production, sowing and harvesting of agricultural products. In order to make agriculture gain benefits, it was forbidden or restricted to use in the production process, and the development of agriculture gradually approached the primitive ecological conditions. A lot of pesticides and fertilizers are used in agriculture. In organic agriculture, special emphasis is placed on the use of pesticides, fertilizers and other inorganic substances to change and adapt to the structure of the natural social ecosystem in rural areas, gradually restore and improve the damaged soil fertility, restore wetlands, and constantly improve the self-regulation ability of the agricultural ecosystem, so as to restore agricultural production to the level close to the

primary stage. the difference between sustainable agriculture and modern agriculture in development and significance means that sustainable agriculture is different from modern agriculture.

2.3 First of all, ecology is one of the main characteristics of sustainable agriculture and modern agriculture.

At the same time, some experts point out that modern agriculture has become the new trump card of policies that destroy ecology and agricultural development. "Modern agriculture limits the land that families have almost destroyed, and this is reflected in the heavy use of fertilizers and pesticides, the use of large agricultural machinery and equipment, the long-term destruction of the use of sustainable agriculture and the destruction of use space. " the only result has been the massive application of fertilizers and pesticides, resulting in the destruction of land plants, the reduction and destruction of many species, and irreversible ecological disaster.

Second, sustainability is a symbol of the difference between sustainable agriculture and modern agricultural areas. In general, modern agriculture seeks to expand its economic and productive advantages. To take full advantage of these two phenomena, a variety of non- environmental means can be used to cause serious damage to the environment. In addition, reliance on fertilizers and pesticides increases the cost of farming. To change this situation, we must not only take appropriate measures for improvement, but also tackle the problem in the context of sustainable development. Key to sustainable development is the concept of biological recycling of natural resources such as water and heat. Rational use of light energy and soil, "gradually restore and improve soil fertility, water and soil conservation and pollution control" [1] for by- products and residues in the production process.

2.4 Thirdly, health is a kind of sustainable agriculture, which is different from modern agriculture.

Food safety is one of the areas of social concern: modern agriculture uses chemicals such as agriculture, fertilizers, antibiotics and hormones, which not only reduces the quality of produce but also endangers human health. Sustainable agriculture is primarily healthy: through biological recycling and resource regeneration, production has become an important part of the active recovery and restoration of health products. Healthy agriculture has become one of the priority directions of agricultural development. Systematization is also an important feature of sustainable agriculture. Sustainable agriculture relies on systematic cycles that make up natural healthy cycles. This cycle can improve resource and environmental quality, meet people's needs for healthy nutrients and fibre, and improve the quality of life for farmers and society at large.

3. CURRENT SITUATION OF STRAW UTILIZATION IN SHOUXIAN

It can be seen that the total straw collection amount in Shouxian from 2014 to 2017 showed an increasing trend. In 2018, it has reached 1712556t, including 1142200t of rice and 522300t of wheat.Combined with the regional characteristics of crop planting in various regions of the country, it can be seen that Shouxia is located in the Huaihe River Basin, with superior geographical and climatic characteristics, and has a large area of agricultural underlayer, which is a typical representative of the Huang Huai ecological region in China. The amount of grain straw collection is mainly wheat and rice.In order to comprehensively promote the transformation of ecological economy in Shouxian , in recent years, the local government has introduced relevant enterprises and technical talents, established a demonstration base for comprehensive utilization of straw, implemented the policy subsidy and reward and punishment system, and vigorously promoted the development of comprehensive utilization of straw.As of 2018, breakthrough progress has been made by Shouxian. The straw collection amount of the whole county has reached 1712556t, and the utilization rate has reached more than 93%, an increase of about 3.0% over the previous year. In the future development process of comprehensive utilization of straw, the government should take advantage of the advantages and avoid the disadvantages, develop the advantageous industries in the region, and establish a diversified, regional and efficient industrial chain of straw resources utilization.

3.1 Straw Collection and Storage

Straw collection generally refers to the manual or mechanical collection of straw, straw binding, compression, packaging and other steps. Straw storage refers to the storage of straw in the processing plant or storage point. Straw transportation is to transport straw to the processing plant.The technical mode of straw collection, storage and transportation in China is mainly decentralized and centralized. The main body of decentralization is farmers, professional cooperative economy or straw broker, who collect straw first and then provide it to enterprises. However, the defect of this mode is that the principle of system management is poor and is restricted by individuals.The main body of centralized collection, storage and transportation mode is professional straw

collection, storage and transportation company or farm. After the overall collection, processing and transportation of straw, it will be classified and sold. This model solves the random risk of straw supply, but the disadvantage is that the capital cost of early investment is large.In response to the government's call for comprehensive utilization of straw, Shouxian has established about 600 collection and storage points in the whole county, and actively established systematic and regional straw collection and storage network, and achieved good demonstration effect. At the same time, the introduction of straw based enterprises as industrial raw materials to achieve efficient utilization of straw. For example, Anhui Geyi circular economy Industrial Park Co., Ltd., as an Anhui Provincial technology enterprise, consumes 180000 tons of crop straw every year.

3.2 Straw Returning

The economy of Shouxian is underdeveloped. As the main way of straw utilization, straw returning is low cost and easy to operate, accounting for 80% of the total straw utilization.Good experimental results have been achieved in covering, crushing and organic returning. However, straw returning also faces some challenges.Straw returning directly to the field is easy to rot, and the microorganisms decomposed may destroy the balance of carbon and nitrogen ratio in soil layer, thus affecting crop sowing and development.On the current market, although the automatic integrated sowing harvester is simple in operation and efficient in efficiency, the cost of agricultural machinery is slightly higher, and the operator is required to have professional technology and rich experience. In view of this problem, Shouxain government introduced and implemented the agricultural machinery subsidy policy. As of 2018, the county has 1000 tractors above 66.15 kW, 1360 straw returning machines, 7000 rotary tillers, 150 reverse stubble cutters and 100 balers.

3.3 Straw Organic Fertilizer

Shouxian is short of chemical fertilizer resources. Since 2017, Shouxian county has vigorously promoted the work of straw organic fertilizer, and established two demonstration sites for integrated rice and fertilizer agricultural planting. There are about 12 organic fertilizer processing enterprises and demonstration sites in the county. About 50% of them can produce more than 20000 tons of organic fertilizer annually. For example, CITIC Geyi recycling economy Co., Ltd. is committed to the production of straw organic fertilizer, with an annual output of 26000 tons of organic fertilizer and an annual consumption of 28500 tons of straw raw materials.However, the research and development of strains on the biological bacteria decomposition process is relatively slow, and the requirements for temperature control are relatively high, and some nitrogen and phosphorus elements will be lost in the processing process. Therefore, the processing point should improve the level of professional technology, control the strain and temperature, and balance the fertilizer yield and nutrition.

3.4 Straw Energy

The fossil energy in Shouxia is mainly coal consumption, and excessive coal mine energy consumption will make it face the dilemma of lack of disposable energy and uncoordinated development.However, reasonable utilization of straw resources and improvement of energy structure can well adjust the current situation of unreasonable energy distribution. At present, the straw energy industry chain in Shouxian is not perfect. As one of the first batch of renewable energy projects for biomass power generation in China, Guoneng bio Power Generation Co., Ltd. is the first straw power generation project in Shouxian county with energy conservation and emission reduction as the center. The financial support of the county government is 1.473 million yuan. According to statistics, it can generate 100 million kwh per year, of which the average annual consumption of crop straw is about 170000 tons ,and the company adds 6000 to 8000 extra per capita for local farmers per year Income.However, the tar produced in the gasification process of straw greatly reduces the efficiency of straw utilization, and the black carbon particles produced during the combustion of straw also cause serious loss to power generation equipment, which also greatly increases the cost.

4. COMPREHENSIVE BENEFIT ANALYSIS BASED ON AHP

4.1 Related Theories and Applications of AHP

The analytic hierarchy process is to decompose specific problems into goals,criteria and indicators, on this basis, perform quantitative analysis to obtain the optimal decision. Petrini (2016) [18] believes that the analytic hierarchy process can divide complex issues into multiple levels, then compare the advantages and disadvantages, and finally rank the importance of various influencing factors. This method can combine qualitative and quantitative

analysis with subjective judgment to achieve the purpose of problem-solving. Yu Jusheng (2014) [19] believes that the analytic hierarchy process can generally be divided into four processes: constructing a hierarchical system,constructing a matrix,calculating a weight vector and performing a consistency check.

The analytic hierarchy process has been used in many aspects abroad, such as agricultural public policy evaluation, resource management, etc. The basic research methods are to decompose the target hierarchically into a hierarchical structure, then construct a matrix of related indicators, and finally calculate the results and sort the indicators. Yavuz (2013) [20] carried out a hierarchical analysis study on the rationality of Brazilian government policies, so as to understand the living conditions of farmers in sugarcane growing areas, and find out the factors that influence the policies. Oddershede (2007) [21] evaluated the water management strategy of the largest lake basin in Turkey, combined the SWOT method with the analytic hierarchy process, and finally found the best way to solve the problem.

4.2 AHP Analysis

As a major agricultural county in Anhui, Shouxian mainly produces rice,wheat and soybeans, with an annual output of about 1.6 million tons of straws. Therefore, scientific recycling and utilization of straw resources is of great significance in economic, social and environmental aspects. Improving the efficiency of comprehensive utilization of straw can help the local government build "Green Shouxian" and "Ecological Shouxian", what's more, it realizes the recycling of agricultural and sideline products resources while increasing employment for residents and driving the development of the county's ecological economy. Therefore, this article analyzes the comprehensive utilization of local straw from the perspectives of straw returning to the field, organic fertilizer and energisation. The indicator system constructed includes three parts, namely the target layer, the criterion layer and the indicator layer.

5. CONCLUSION

Like modern agricultural methods, sustainable agriculture is important not only for development but also for the scientific use of agricultural resources. Compared with other industries, agriculture and industry is a complex system based on natural resources such as land, water and climate. Therefore, ensuring sustainable agricultural development and a healthy agro-ecological environment is of Paramount importance.

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