

Theoretical Analysis and Empirical Research on Sustainable Development of Animal Husbandry in Inner Mongolia from the Perspective of New Structural Economics (2)

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VI. Empirical Analysis of the EASV-MG Framework for Sustainable Development of Animal Husbandry in Inner Mongolia

In order to further demonstrate the feasibility and effectiveness of the EASV-MG analysis framework for the sustainable development of animal husbandry in Inner Mongolia, The animal husbandry farmers in 12 key typical animal husbandry areas of Eastern, Central and Western prefecture-level cities (leagues) in Hohhot, Baotou, Wuhai, Chifeng, Tongliao, Ordos, Hulunbuir, Bayannur, Ulanqab, Xing'an League, Xilin Gol League, and Alxa League were selected as the research objects, and the questionnaire survey was carried out using sampling survey.

Through the data analysis of the recovered questionnaire, it is found that under the implementation and promotion of the Revitalization Strategy of animal husbandry, most animal husbandry farmers implement breeding management according to local conditions in combination with their comparative advantages, and have achieved good income and development.

1. Basic Information of Questionnaire Survey

This questionnaire survey will begin on March 17, 2021, and end on March 31, 2021, through the combination of online and offline surveys. The survey period is 15 days. 180 valid questionnaires were collected, including 27 questionnaires on pig breeding, 43 questionnaires on cow breeding, 41 questionnaires on beef cattle breeding, 32 questionnaires on Goat/sheep breeding, 23 questionnaires on chicken breeding, 10 questionnaires on duck breeding, and 4 questionnaires on other breeding (refer to figure 1). In addition, according to the characteristics of the League cities, the number of questionnaires collected by each league city is 27 in Hohhot, 25 in Baotou, 10 in Wuhai, 10 in Chifeng, 12 in Tongliao, 25 in Ordos, 12 in Hulunbuir, 13 in Bayannur, 10 in Ulanqab, 10 in Xing'an League, 11 in Xilin Gol League and 15 in Alxa League (refer to figure 2).

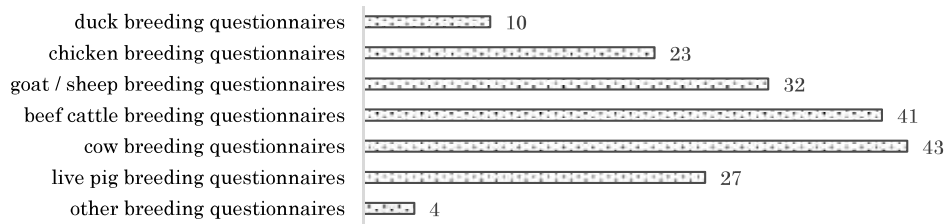


Figure1 Number of Questionnaires Collected

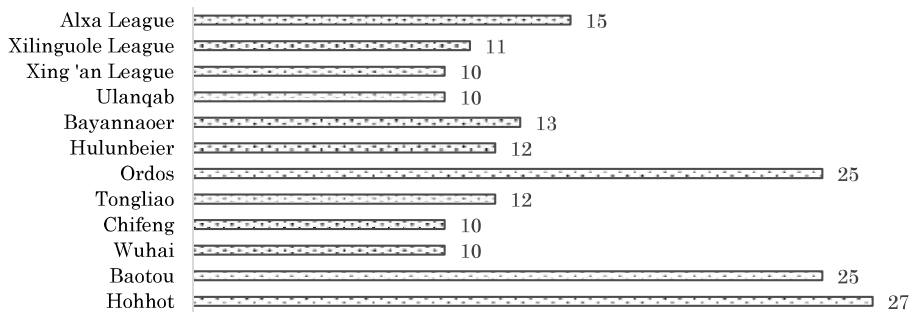


Figure2 Number of Questionnaires Collected in Leagues and Cities

1.1 Registration

As shown in Figure 3, according to the statistical analysis of the survey questionnaire, among the 180 farms, 127 have been registered and 53 have not been registered. The specific registration situation is that 60 farmers have been recognized by the agricultural department and 67 have been registered with the industrial and commercial department. The registered farmers account for 70.6% of the total survey households, the proportion of unregistered farmers in the total number of surveyed households was 29.4%.

It can be seen from the registration that although most farmers have been registered, about one-third of farmers have not been registered. This further shows that about one-third of farmers have not been recognized and registered by relevant departments, so they are more restricted and restricted than registered farmers in effectively developing their comparative advantages and enjoying preferential agricultural policies, thus affecting the medium and long-term sustainable development.

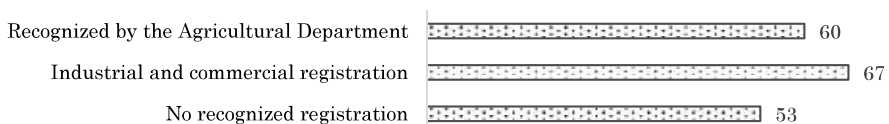


Figure3 Registration and Recognition of Relevant Departments

1.2 Breeding Scale

As shown in Figure 4, according to the statistical analysis of the survey questionnaire, the breeding scale can be divided into three levels: small farms, medium farms, and large farms. Among them, 124 farms belong to small farms, accounting for 68.7% of the total number of surveyed households; 40 farms belong to medium-sized farms, accounting for 22.2% of the total investigated households; 16 farms are belonging to large farms, accounting for only 8.9% of the total investigated households.

It can be seen from the breeding scale that small farms are one of the main characteristics of the current breeding scale.

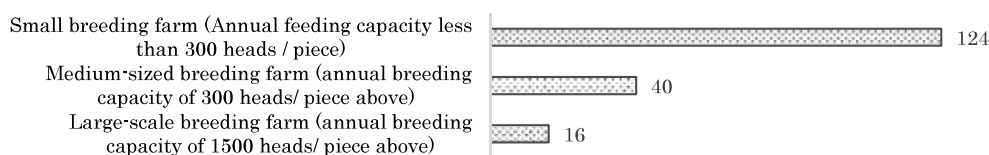


Figure4 The Scale of Breeding

1.3 Completion Time

As shown in Figure 5, according to the statistical analysis of the survey questionnaire, the completion time of farms can be divided into three periods: less than 15 years, more than 15 years, and more than 30 years. Among them, the maximum number of farms completed less than 15 years is 100, accounting for 30.5% of the total number of surveyed households; 55 farms have been built for more than 15 years, accounting for 30.6% of the total investigated households. 25 farms have been built for more than 30 years, accounting for 13.9% of the total investigated households.

According to the construction time of farmers, more than half of the farms have been completed less than 15 years, which shows that they can not form a comparative advantage in terms of capital accumulation or breeding experience, and technical development.

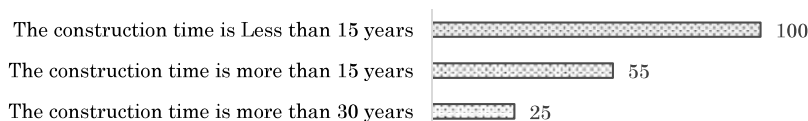


Figure 5 Construction Time

1.4 Nature of Farms

As shown in Figure 6, according to the statistical analysis of the questionnaire, it can be divided into self-employed households, family farms, companies, cooperatives, and other five types

according to the nature of the farm.

Among them, there are 114 self-employed households, 15 companies, 47 family farms, and 1 other. According to the proportion in the total number of surveyed households, the largest proportion of self-employed households is 63.3%; Followed by family farms and companies, accounting for 26.1% and 8.3% respectively; The proportion of cooperatives and others is only 1.7% and 0.6% respectively. The proportion of the nature of the farm can explain the reason for the small scale of the overall breeding.

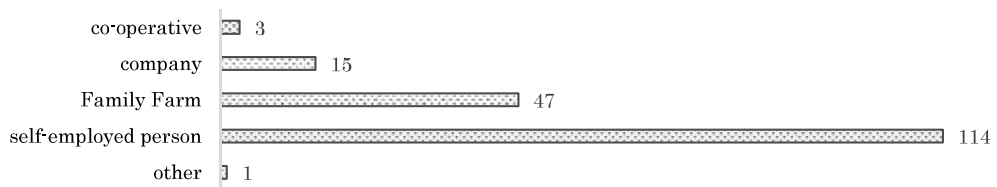


Figure 6 Nature of Farm

2. Investigating the Factor Endowment Structure of Farmers' Breeding Operation

As mentioned above, in the EASV-MG analysis framework of sustainable development of animal husbandry in Inner Mongolia, the factor endowment structure represented by E mainly includes general animal husbandry production factor endowment structure and special animal husbandry production factor endowment structure.

2.1 Endowment Structure of General Animal Husbandry Production Factors

Based on the theoretical analysis of new structural economics, the general animal husbandry production factor endowment structure is mainly composed of resource-based animal husbandry production factor endowment and process animal husbandry production factor endowment. Among them, the endowment of resource animal husbandry production factors mainly includes animal husbandry feed, animal husbandry labor force, animal husbandry capital, animal husbandry land, etc. The process of animal husbandry production factor endowment is mainly composed of scientific and technological innovation, animal husbandry system, animal husbandry culture and so on.

2.1.1 Endowment of Production Factors of Resource Animal Husbandry

Based on the statistical analysis of the questionnaire, firstly, the basic situation of animal husbandry feed can be referred to figure 7. As shown in Figure 7, among the 180 surveyed farmers, most farmers ensure roughage and compound feed by purchasing.

The specific situation is that 97 farmers purchased all roughage and compound feed, accounting for more than half of the total investigated households, accounting for 53.8%; 23 farmers purchased most roughage and compound feed, accounting for 12.7% of the total

investigated households; 21 farmers are self-sufficient in roughage and buy all formulated feed, accounting for 11.6% of the total investigated households; Roughage is self-sufficient, and 29 farmers buy most of the compound feed, accounting for 16.1% of the total investigated households; 10 farmers are self-sufficient in roughage and compound feed, accounting for 5.5% of the total investigated households. In addition, concerning the channels for farmers to purchase feed, it can be seen that the farmers purchased from feed manufacturers, retail feed distributors, and cooperative organizations are 16 households, 124 households, and 30 households respectively from Figure 6-8. Among them, the most purchased from retail feed distributors, accounting for 72.9%.

Based on the analysis of the basic situation of animal husbandry feed, it can be concluded that under the background of the uneven market of feed industry in Inner Mongolia, underdeveloped processing and production technology, and shortage of feed resources in animal husbandry, most farmers surveyed ensure feed through purchase, and the feed purchase channel is mainly from retail feed dealers, Therefore, this also determines the main reason for the high breeding cost and low profit of farmers.

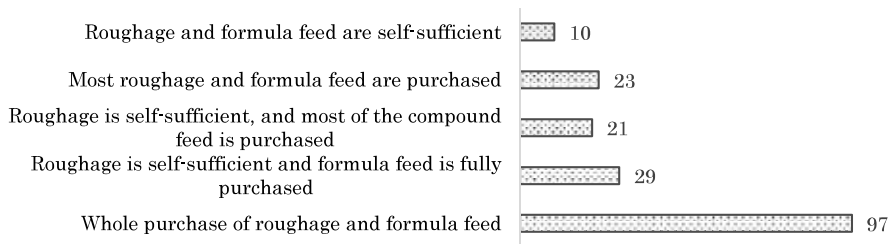


Figure 7 How to Ensure Feed

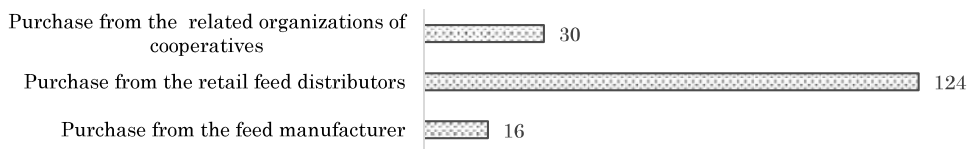


Figure 8 The Purchase Channels of Feed

Secondly, Figure 9 and Figure 10 show the labor force characteristics of the farmers. In Figure 9, 107 households responded that the labor force was moderate, accounting for the largest number of households in the study at 59.4%, followed by 53 households that responded that the labor force was sufficient at 29.4%, and 20 households that responded that the labor force was insufficient at 11.1%, the smallest of the three. Next, in Figure 10, the age distribution of the main labor force under 40 years and over 40 years and under 50 years accounted for more than half of the total number of households surveyed, at 63.3%.

The analysis indicates that Inner Mongolia's farmers have a better advantage in terms of both the number and age distribution of their workforce, so the overall workforce profile of them is relatively affluent and has some potential comparative advantage in achieving sustainable development.



Figure 9 Labor Force

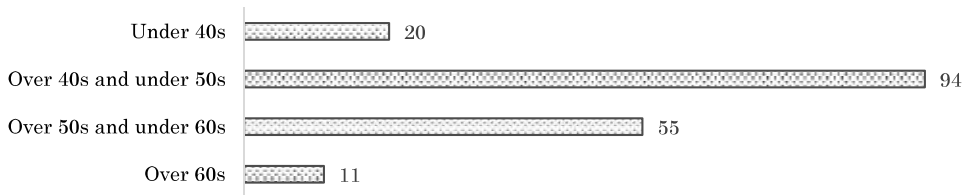


Figure 10 Age Distribution

Thirdly, capital investment in animal husbandry can be divided into two parts: capital investment in production and capital investment in circulation. According to the needs of farmers' breeding scale and the degree of investment, the capital investment in production and circulation can be divided into four levels: generally small, small, generally large, and large.

In Figure 11, capital investment in the production field, there are 52 farmers with generally small investment, 100 farmers with small investment, and 15 and 13 farmers with generally large and large investment respectively. Among them, the proportion of generally small and small investment accounts for 84.4% of the total investigated breeding households, while the proportion of generally large and large investment accounts for only 15.5% of the total investigated breeding households, which can show that the overall capital investment of the investigated farmers in the production field is insufficient.

In Figure 12, although the capital investment in the circulation field is different from that in the production field, the overall problem is the same, that is, the overall capital investment of the investigated farmers in the circulation field is insufficient.

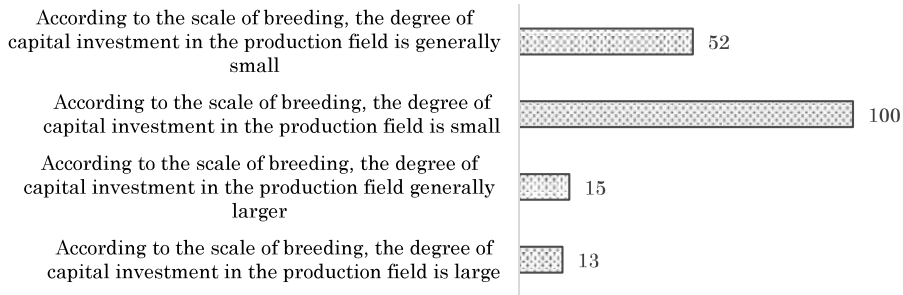


Figure11 Capital Investment in Production

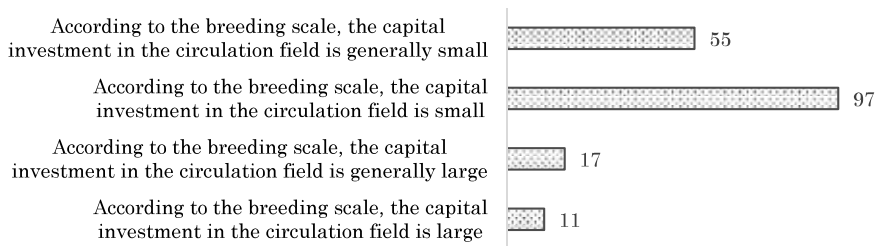


Figure12 Capital Investment in Circulation

Fourthly, according to the needs of farmers' breeding scale and the amount of breeding land used by farmers, it is divided into three levels: insufficient, moderate, and sufficient. In Figure 13, 47 households answered that the area of breeding and planting land was insufficient, accounting for 26.1% of the total investigated households; 97 households answered that the land area for breeding and planting was moderate, accounting for 53.8% of the total investigated households; 36 households answered that the land area for breeding and planting was sufficient, accounting for 20.0% of the total investigated households. This shows that although some farmers are insufficient in breeding and planting land, the proportion is relatively small. Therefore, the area of breeding and planting land of the investigated farmers is relatively rich on the whole.

To sum up, through the investigation and analysis of the investigated farmers, there is a certain degree of weakness in the endowment of resource-based animal husbandry production factors, animal husbandry feed, and animal husbandry capital factors, and there are potential comparative advantages and comparative advantages in animal husbandry labor force and animal husbandry land resources, but this advantage needs to be further reformed and innovated.

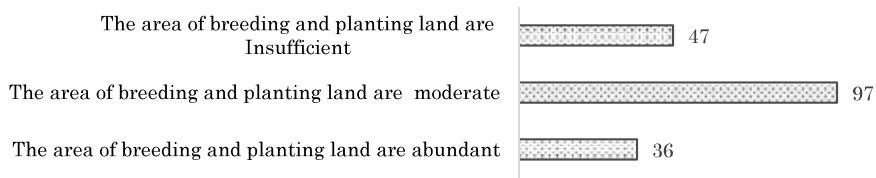


Figure 13 The Area of Farming and Planting Land

2.1.2 Process Factors of Animal Husbandry Production

Process Factors of Animal Husbandry Production mainly include technological innovation, animal husbandry system, animal husbandry culture. Based on the statistical analysis of the questionnaire, firstly, the specific situation of scientific and technological innovation can be referred to Figure 14 and Figure 15. Figure 14 is a questionnaire survey on the importance of technological innovation as a factor of production in breeding operations in the past five years. According to the degree of attention, the responses were divided into six levels of importance: very little attention to farmers for 2 households. Seven farmers do not pay attention to. 21 farmers are generally valued. More attention is paid to 140 farmers. 10 farmers are highly valued. Among them, 95.0 % (171 households) of farmers attach importance to scientific and technological innovation. Although the degree of attention is different, it is enough to illustrate the important role of scientific and technological innovation as a factor of production in the operation of animal husbandry.

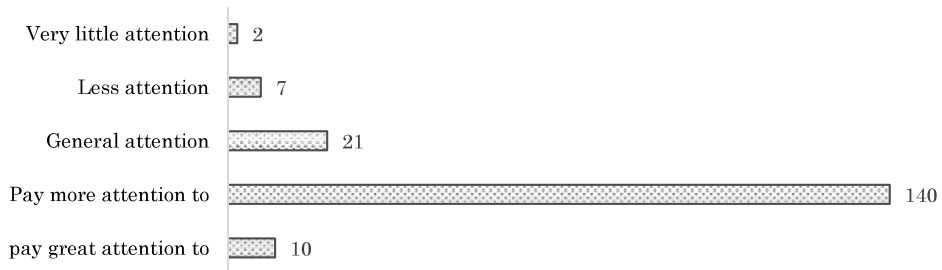


Figure14 TheDegree of Emphasis on Technological Innovation

Figure 15 shows a questionnaire survey on the extent to which farmers have increased their level of scientific and technological innovation in their breeding operations over the last five years. The responses of farmers can be divided into six levels according to the degree of improvement in the level of scientific and technological innovation: 29 farmers with almost no improvement; 57 farmers with a small level of improvement; 57 farmers with an average level of improvement; 32 farmers with a large level of improvement; and 5 farmers with a very large level of improvement. Of these, 52.2% (94) of the farmers responded that the level of scientific

and technological innovation had increased in their breeding operations. The above analysis indicates that although more than half of the farmers have increased their level of scientific and technological innovation, the overall level of scientific and technological innovation is still comparatively weak. This also illustrates that the scientific and technological innovation ability of the farmers studied is relatively weak.

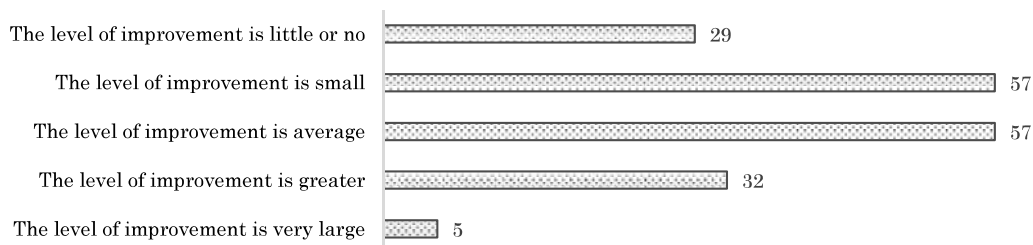


Figure15 The Degree of Improvement in The Level of Technological Innovation

Secondly, the animal husbandry system plays a vital role in the process of farmers ' breeding operations. Combined with figure 6-16, figure 17, figure 18 and figure 19, the effect of the animal husbandry system on farmers is investigated from the incentive perspective of the animal husbandry system. Figure 16 shows the questionnaire on whether the reform and improvement of the local farming policy system over the past five years has improved the farming environment for farmers. The number of farmers who answered that they have not unclear answers is 65, those who answered that they had not improved is 40, and those who answered that they had improved is the largest number that is 75.

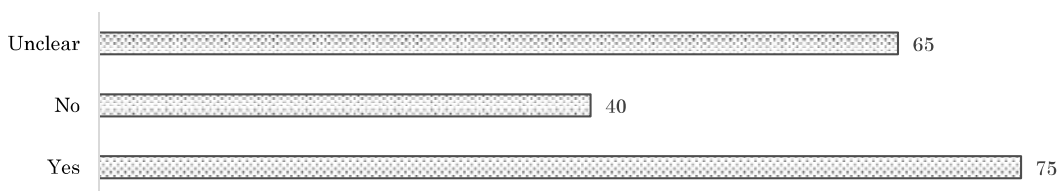


Figure 16 Whether The Reform and Improvement of Local Breeding policies and Systems Have Improved The Breeding Environment of Breeding Operators

Figure 17 shows the research questionnaire on the extent to which the policy of benefiting people system has facilitated sustainable farming for farmers over the past five years, divided into five levels of very little, less, average, more, and very much facilitation, according to the level of facilitation provided. Of these, 18 and 19 households answered very inconvenient and less convenient, respectively, accounting for 20.6% of the total number of households surveyed, while 59, 62 and 22 households answered moderately convenient, more convenient ,and very

convenient, respectively, accounting for 79.4% of the total number of households surveyed.

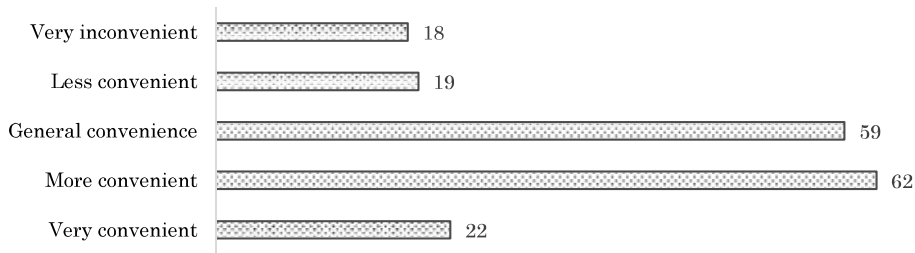


Figure 17 The Extent to Which The Policy System Provides Convenience for Farmers in Scientific Farming

Figure 18 shows the research questionnaire on the degree of incentive of the policy of benefiting people system on farmers' participation in farming activities including technical learning, ecological farming ,and scale expansion over the past five years, which is divided into five levels according to the degree of incentive: none, less, average, larger and very large, with 31 and 15 households answering none and less than small, respectively, both of which accounted for 25.6% of the total number of households surveyed, while 68, 46 and 19 households answered average, large and very large respectively, accounting for 73.9% of the total number of households surveyed. Although the degree of incentive enjoyed by the three varies, it seems clear from the overall picture that the policy of benefiting people provides a better incentive for farmers.

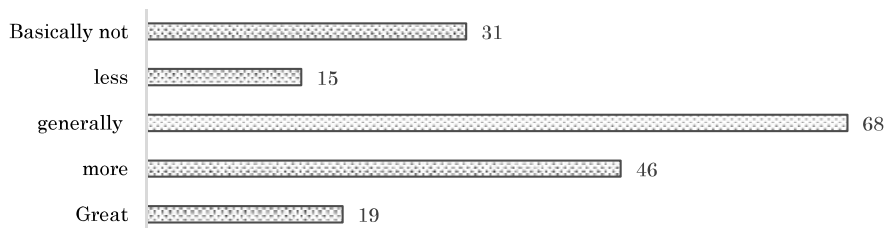


Figure 18 The Degree of Incentives for Farmers to Participate In Breeding Activities By Social Benefiting Policy

Figure 19 is a survey questionnaire about the incentive degree of local breeding subsidies and support system for farmers ' breeding operations in the past five years. According to the different incentive degrees, it is divided into five levels: basic no, small, general, large,and very large. The number of farmers who answered basic no and small is 28 and 15 respectively, both of which accounted for 24.5% of the total number of households studied, while the number of farmers who answered general, large and very large is 68, 53 and 15 respectively, all three of which

accounted for 75.5% of the total number of households studied. Although the degree of incentive enjoyed by the three differs, the overall picture shows that the local breeding subsidies and support systems provide a good incentive for farmers.

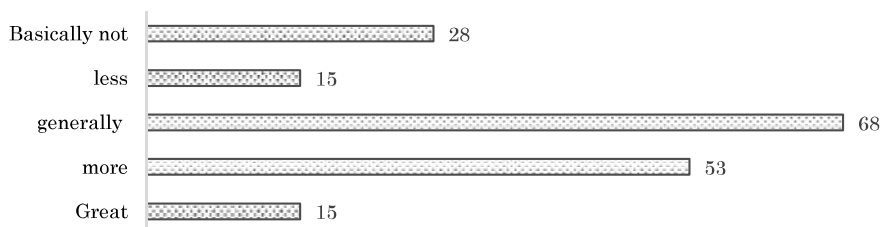


Figure 19 Incentive Degree of Local Breeding Subsidy and Subsidy and Support System to Farmers Breeding Activities

Based on the above data, from the incentive perspective of the animal husbandry system, in the past five years, the animal husbandry system has played a certain role in the breeding operations environment of animal husbandry. However, compared with the animal husbandry system in developed regions, both the convenience and incentive degree of the animal husbandry system show comparative disadvantages.

Third, the culture of animal husbandry is mainly analyzed from three aspects: normative standards, innovation awareness ,and moral level. The number of farmers who answered don not know is 65, accounting for 36.1% of the total number of households surveyed; the number of farmers who answered no is 25, accounting for 13.8% of the total number of households surveyed; and the number of farmers who answered yes is 90, accounting for 50.0% of the total number of households surveyed (Figure 20) . The analysis demonstrates that there is a certain lack of awareness of the importance of breeding norms and standards among farmers, which needs to be further improved.

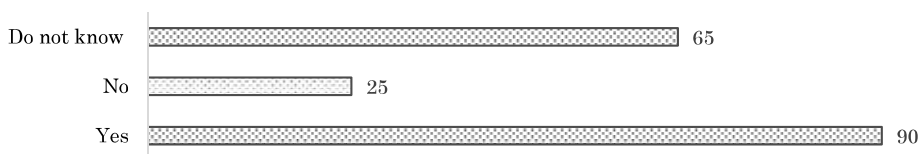


Figure 20 Regulations and Standards of The Breeding Business Environment

Figure 21 shows a questionnaire on the intensity of awareness of technological innovation inbreeding over the last five years. According to the different cognitive levels is divided into very weak, weak, general, strong ,and very strong five levels. Among them, 3 households (1.7% of the total number of households surveyed) considered their awareness to be very weak; 31

households (17.2% of the total number of households surveyed) considered their awareness to be weak; 62 households (34.4% of the total number of households surveyed) considered their awareness to be average; 59 households (32.7% of the total number of households surveyed) considered their awareness to be strong; and 25 households (13.8% of the total number of households surveyed) considered their awareness to be very strong. The analysis shows that there is also a certain lack of awareness of the level of technological innovation in breeding among farmers, which needs to be further strengthened.

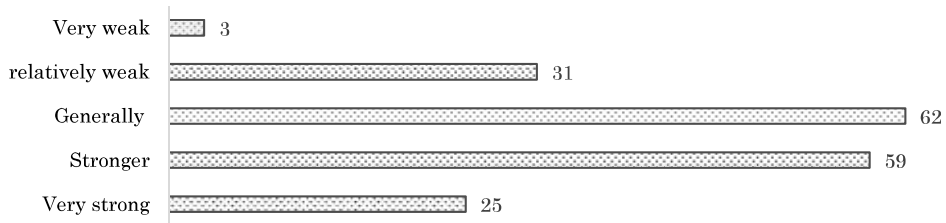


Figure 21 Intensity of Farmers Awareness of Breeding Technology Innovation

Figure 22 is a questionnaire about the cognitive intensity of farmers on the level of professional and technical ethics in the past five years. According to the different cognitive levels is divided into very weak, weak, general, strong, and very strong five levels. Among them, 9 households (5.0% of the total number of households) considered the cognitive intensity to be very weak; 10 households (5.5% of the total number of households) considered the cognitive intensity to be weak; 65 households (36.1% of the total number of households) considered the cognitive intensity to be average; 68 households (37.7% of the total number of households) considered the cognitive intensity to be strong; 28 households (15.5% of the total number of households) considered the cognitive intensity to be very strong. The number of farmers who considered their perceptions to be very strong was 28, accounting for 15.5% of the total number of households surveyed. The analysis validates that there are also some deficiencies in the cognitive intensity of farmers on the level of professional and technical ethics, which needs to be further strengthened.

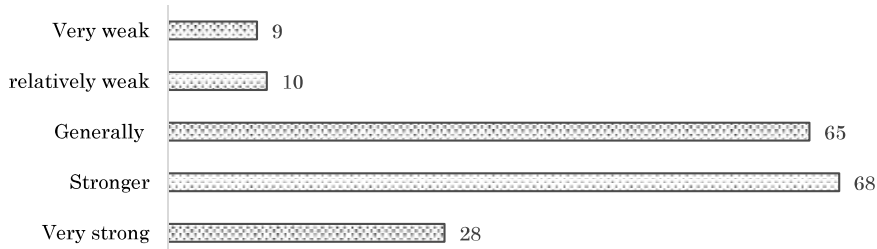


Figure 22 Professional and Technical Ethics Level of Farmers

Through the investigation and analysis of the farmers surveyed, farmers have certain disadvantages in scientific and technological innovation, animal husbandry system, and animal husbandry culture. Thus, animal husbandry breeders in the process of animal husbandry production factors, showing a low level of scientific and technological innovation, animal husbandry system support is insufficient and animal husbandry culture needs to be improved inherent endowment structure characteristics.

2.1.3 Endowment Structure of Special Animal Husbandry Production Factors.

The endowment structure of special animal husbandry production factors is mainly analyzed from two aspects: regionality and nationality. Since the farmers surveyed are from twelve cities (leagues) in Inner Mongolia, their regional and national characteristics at the macro level have been demonstrated in the fourth part, which is not repeated here. However, in order to further explore, I will analyze the abundance and deficiency of regional and national factor endowments from the micro level based on the survey of farmers' recycling questionnaires. Figure 23 and Figure 24 are the questionnaire about the farmers' cognition of the abundance and deficiency of regional and national factors in their breeding areas. According to the degree of scarcity is divided into very scarce, more scarce, general, more abundant, and more abundant five levels. In Figure 23, the number of households that considered the regional factor endowment to be very scarce is 3, accounting for 1.7% of the total number of households studied; the number of households that considered the regional factor endowment to be scarce is 5, accounting for 2.8% of the total number of households studied; the number of households that considered the regional factor endowment to be average is 7, accounting for 3.9% of the total number of households studied; the number of households that considered the regional factor endowment to be more abundant is 34, accounting for 18.9% of the total number of households studied; and the number of households that considered the regional factor endowment to be more abundant is 131, accounting for 72.8% of the total number of households studied. In contrast, in Figure 24, the number of farmers who considered the endowment of national factors to be very scarce is 2, accounting for 1.1% of the total number of households studied; the number of farmers who considered the endowment of national factors to be scarce is 3, accounting for 1.7% of the total number of households studied; the number of farmers who considered the endowment of national factors to be average is 5, accounting for 2.8% of the total number of households studied; the number of farmers who considered the endowment of national factors to be more abundant is 17, accounting for 19.4% of the total number of households studied; and the number of farmers who considered the endowment of national factors to be very abundant is 153, accounting for 85.0% of the total number of households studied. It can be seen from the analysis

that both regional and national characteristics reflect abundant factor endowment structure.

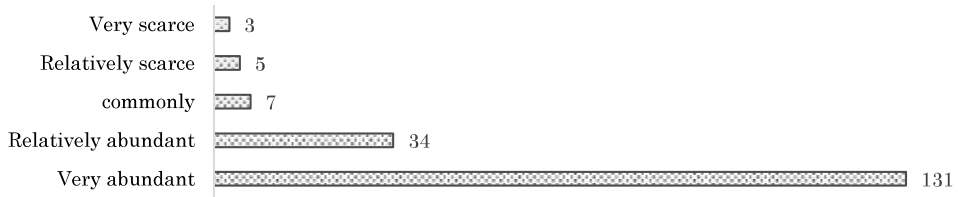


Figure 23 Abundance and Deficiency of Regional Factor Endowments



Figure 24 Abundance and Deficiency of nationality Factor Endowment Nationality

Through the investigation and analysis of the general animal husbandry production factor endowment and the special animal husbandry production factor endowment and their structure of the investigated farmers, it can be seen that the animal husbandry feed, animal husbandry capital, scientific and technological innovation, animal husbandry system and animal husbandry culture involved in the breeding operation of the investigated farmers are relatively insufficient, while the animal husbandry labor force, animal husbandry land, regional factors, and national factors are relatively abundant. Such factor endowment structure is basically consistent with the EASV-MG analysis framework of sustainable development of animal husbandry in Inner Mongolia.

2.2 Investigating the Comparative Advantages of Farmers' Breeding Operations

Based on the factor endowment structure of relatively abundant animal husbandry labor force, animal husbandry land, regional elements, and national elements of the investigated farmers, the comparative advantages of the investigated farmers' breeding management are investigated, that is, the comparative advantages determined by the investigated farmers' factor endowment structure (A in EASV-MG analysis framework) are discussed. Figure 6-25 is a survey questionnaire about farmers' cognition of factor endowment comparative advantage. According to different element contents, it is mainly divided into nine content elements: scientific and technological innovation, breeding culture, breeding system, nationality, regional element, breeding financial element, breeding material element, breeding human element, and others. In

the chart, the factors that farmers consider to have more advantages can be arranged as follows: the first is the national factor, the second is the regional factor, the third is the breeding manpower factor, the fourth is the force factor of breeding, the fifth is the financial factor of breeding, the sixth is the factor of breeding system, seventh is the culture element of culture, the eighth is the innovation factor of science and technology, Ninth is the other.

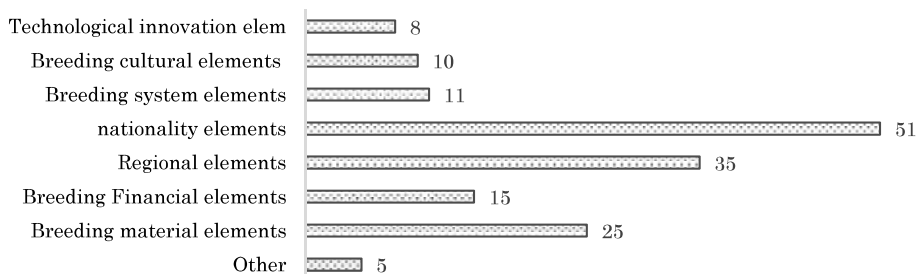


Figure 25 Perception of Comparative Advantage of Factor Endowments

The results of the above analysis show that the farmers' cognition of comparative advantage of factor endowment based on their own factor endowment structure is basically consistent with the previous theoretical analysis. In other words, it is feasible for the farmers surveyed to develop animal husbandry breeding based on their comparative advantages determined by their factor endowment structure.

2.3 Survey of Farmers Following a Comparative Advantage Strategy to Develop Breeding Operations

Based on clarifying the comparative advantages of the research farmers as determined by their factor endowment structure, it was examined whether the research farmers followed the comparative advantages determined by their own factor endowment structure to develop their breeding operations, that is, whether the research farmers followed the comparative advantage strategy (S in the EASV-MG analysis framework) to develop their breeding operations.

Figure 26 is a questionnaire about the strategic policies adopted by farmers in the past five years. According to the content of the strategic policy is divided into five parts. Specifically, 45 households (25.0% of the total number of households surveyed) chose to improve their farming strengths and farming standards in line with market demand; 5 households (2.7% of the total number of households surveyed) chose to be supported by government subsidies at all levels; 37 households (20.5% of the total number of households surveyed) chose to be guided by government farming policies at all levels; 92 households (51.1% of the total number of households surveyed) chose to follow their own practical. The number of farmers who chose to follow their comparative advantages is 92, accounting for 51.1% of the total number of

households surveyed; the number of farmers who chose other options is 1.

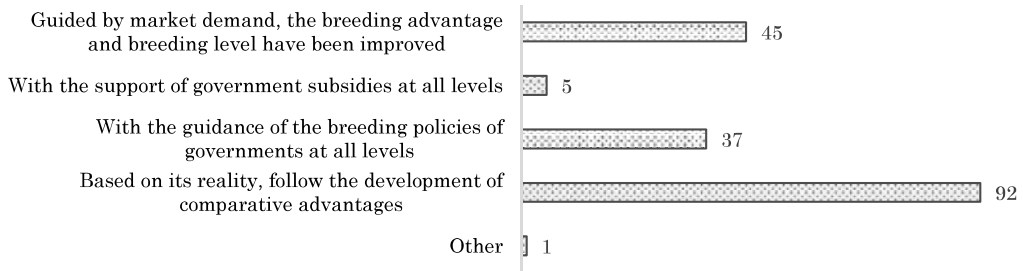


Figure 26 The Situation of Adopting Strategic Measures

Through the analysis, it can be seen that more than half of the farmers choose to follow the comparative advantage to develop breeding operations, indicating that the farmers follow the comparative advantage decided by the endowment structure of body factors to adopt the comparative advantage development strategy to develop breeding operations has become the trend of animal husbandry in the future.

2.4 Investigate the Self-Generating Ability of Farmers

Investigate the self-generating ability of farmers, namely V in the theoretical framework EASV-MG. The self-generating ability of farmers can be investigated from two aspects: whether the characteristic animal husbandry products have comparative advantage and competitive advantage in the market. Figure 27 is an analysis chart on whether the characteristic animal husbandry products produced and processed by farmers have comparative and competitive advantages in the market based on their comparative advantages as determined by their factor endowment structure. In Figure 27, the number of farmers who believe that the products they produce and process have comparative advantages in the market is 135, accounting for 75.0% of the total number of research households; the number of farmers who believe that the products they produce and process do not have comparative advantages in the market is 28, accounting for 15.5% of the total number of research households; and the number of farmers who choose not to know is 17, accounting for 9.4% of the total number of research households. The analysis illustrates that the characteristic animal husbandry products of the farmers studied have a certain comparative advantage in the market.



Figure 27 Whether There is A Copmarative Advantage

In Figure 28, there are 68 farmers who believe that their products have competitive advantages in the market, accounting for 37.7 % of the total number of research households. There are 75 farmers who believe that their products have no competitive advantage in the market, accounting for 41.6 % of the total number of research households. The number of farmers who do not know is 37, accounting for 20.5 % of the total number of research households. It can be seen from the analysis that the competitive advantage of characteristic animal husbandry products of farmers in the market is relatively weak.

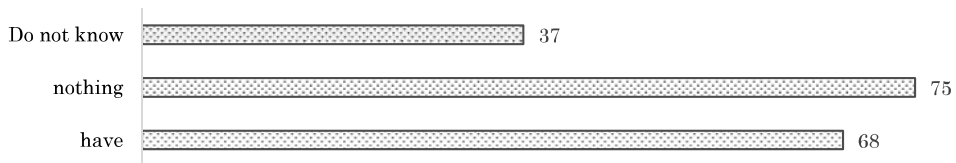


Figure 28 Whether There Is A Competitive Advantage

Through the above analysis, it can be concluded that although the characteristic animal husbandry products, which are produced and processed according to the comparative advantages of farmers' endowment structure, have certain comparative advantages in the market, the competitive advantage in the market is Comparatively weak. Therefore, especially in terms of competitive advantage, the self-generating ability of farmers in the market needs further improvement and enhancement.

2.5 The Role of Government and the Market

In the model framework EASV-MG of animal husbandry sustainable development system in Inner Mongolia, effective market (M) and promising government (G) as exogenous power subsystem play an indispensable role. In order to further investigate the role of effective market and promising government from the micro level, the farmers were investigated and analyzed. Figures 29 and 30 are a survey analysis of farmers ' access to and enjoyment of government-provided policy support subsidies and public services over the past five years (multiple-choice answers). It can be seen from the analysis that more than half of the surveyed farmers have received policy subsidies and that most farmers have enjoyed public services provided by the

Government, with more than 70% of the dairy farmers and pig farmers in particular enjoying policy support subsidies and public services. Therefore, from the perspective of policy subsidies, it can be seen that in the past five years, the government has played an important role in the construction of soft and hard infrastructure and in guiding farmers to follow the comparative advantages to develop characteristic animal husbandry products in the process of realizing the sustainable development of farming.

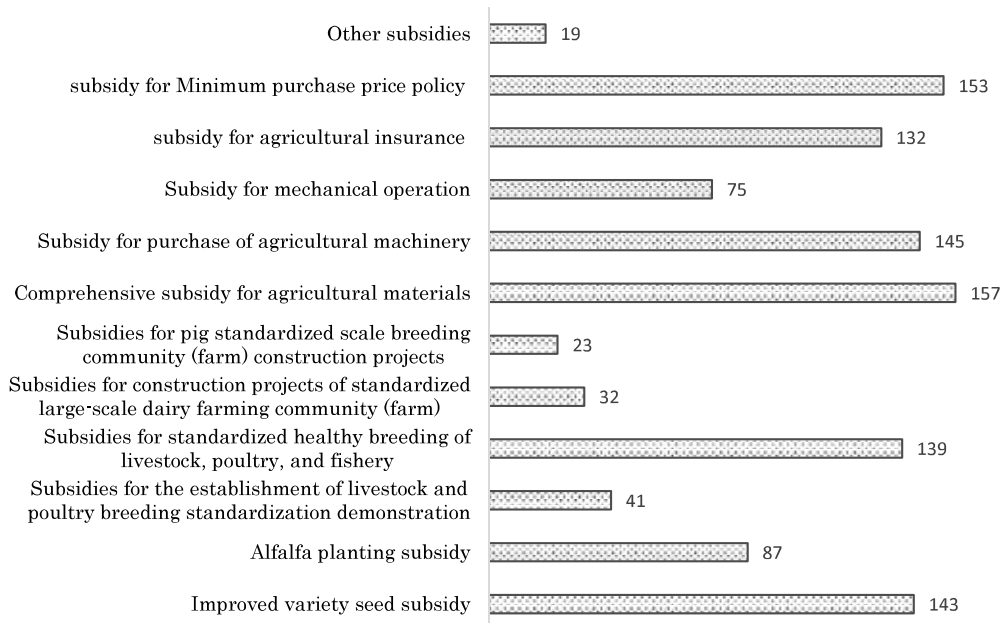


Figure 29 Policies Related to Support Subsidies (Multiple Choices)

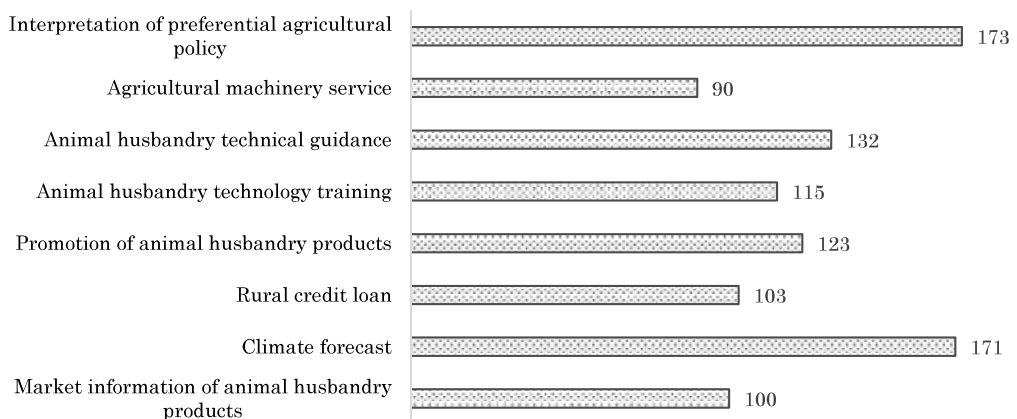


Figure 30 Provision of Relevant Public Services (Multiple Choices)

Figure 31 is about the farmers in the past five years on the market role of the cognitive strength of the survey analysis chart, according to the farmers on the market role of the cognitive

degree is different, divided into very weak, weak, general, strong, very strong five parts. Of these, 5 farmers considered the role of markets is very weak, 45 farmers considered the role of markets is weak, 104 farmers considered the role of markets to be average, 15 and 11 farmers considered the role of markets is strong and very strong respectively. The analysis shows that the majority of farmers (85.5%) considered the role of the market is relatively small, while those who considered the market is relatively large accounted for only 14.5% of the total number of households studied.

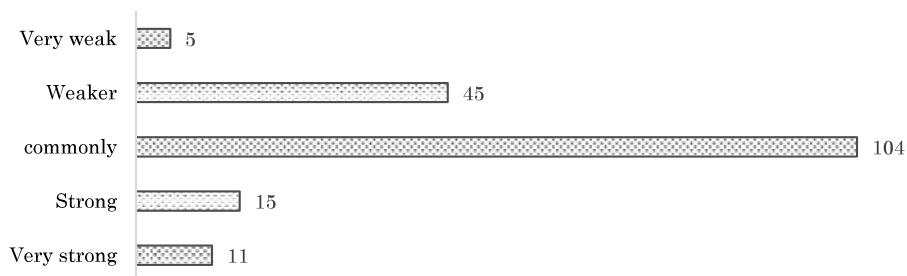


Figure31 Cognitive Intensity of The markets Role

There are several possible reasons why most farmers believe that the role of the market is relatively small: firstly, the importance of the role of the market is denied because of a lack of understanding of the principles of the market mechanism. Secondly, since most of the farmers' breeding scale is small, the production of animal husbandry products is not only limited, but also the high value-added characteristics of high-quality products are few and unitized, and often only animal husbandry products can be sold to a small number of intermediary traders or business agency organizations, so it cannot be directly enjoyed by the market through the relative price system to reflect the endowment of animal husbandry production factors to help farmers identify their comparative advantages in the process of breeding operations, so as to effectively play its comparative advantage to achieve competitive advantage, so that the certification strength of the market role is low. Thirdly, although some farmers have joined some relevant organizations, their organizations also follow the law of market demand development to formulate and implement relevant strategies to effectively play the role of market mechanism, but in reality, farmers cannot better enjoy the dividend brought by the market role.

Through the above analysis of farmers on the role of government and market research found that in the past five years in the process of farmers breeding operations, the role of government is far greater than the role of the market. The analysis results are inconsistent with the argument that effective market (M) and promising government (G) play an important role in the EASV-MG theoretical framework. In other words, the government plays a leading role in the process of

farmers' breeding operations, while the market plays a synergistic role in development. However, according to the ideal account of the relationship between government and market in the new structural economics, the relationship between government and market should be that an effective market should be premised on the government being effective, and the government being effective should be based on the market being effective. Therefore, the relationship between the government and the market is one of dominance and one of dependence in the process of farmers' breeding operations. Based on the above analysis, the roles of government and market can be summarized as follows: in the process of farmers' sustainable farming development, government plays a vital role as an indispensable subsystem in the exogenous power system; at the same time, market, as one of the important subsystems in the exogenous power system affecting farmers' sustainable farming development, plays a role in identifying farmers' comparative advantages and guiding factor. However, according to the results of the research and analysis, the effective mechanism of the market is not yet sound, and it is still difficult to fully play the important role of an effective market to allocate factor resources rationally, so it is necessary to further deepen the reform and improve.

In summary, through the empirical analysis of 180 farmers from 12 cities (leagues) in Inner Mongolia, it is fully demonstrated that the EASV-MG theoretical framework for the sustainable development of animal husbandry in Inner Mongolia constructed in this study is feasible and effective. At the same time, in the process of empirical analysis, whether government, market or farmers all have some degree of problems under the EASV-MG analysis framework.

VII Main Problems Existing in Sustainable Development of Animal Husbandry in Inner Mongolia

Due to the different geographical location and resource endowments, there are some differences in the path, mode and format of animal husbandry sustainable development in different cities (leagues) of Inner Mongolia. However, in the process of realizing the sustainable development of animal husbandry, how to deal with the relationship between government, market and farmers and how to play the role of government macro-control, market allocation of resources and farmers' production factor endowment and mechanism is the fundamental. There appear also some common problems in the realization path of different roles and mechanisms. The specific problems are mainly manifested in the excessive action of the government, the insufficient role of the market, the independence of farmers and the subject consciousness need to be strengthened and improved.

1. Excessive Government Action is Detrimental to the Self-generating Ability of Farmers' Breeding Operations

The realization of sustainable development of farmers' breeding needs to give full play to the comparative advantage of farmers' production factor endowments, actively revitalize comparative advantage resources, and effectively develop and utilize characteristic animal husbandry products and services. Adhere to the market plays a decisive role in the allocation of resources and better play the guiding role of the government, farmers actively cooperate with the implementation of relevant policies, effective use of market-oriented way to promote the sustainable development of animal husbandry. However, from the analysis of the survey results of farmers, in the past five years, the autonomous region government and all levels of Cities (leagues) and counties in the process of following the comparative advantage to realize the sustainable development of animal husbandry, whether in the formulation of animal husbandry policy measures, implementation of supervision or animal husbandry financial allocation plays a leading role, which greatly affects the choice and operation of farmers' comparative advantage strategy.

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In terms of farmers' selection of comparative strategies based on their comparative advantages determined by their factor endowment structure, although more than half of farmers follow their comparative advantages and develop animal husbandry based on their own reality (Figs. 26), their the self-generating capacity of farmers' breeding operations, especially their competitive advantages, needs to be further improved and enhanced (Figs. 27). Therefore, it is necessary for the government to provide support from various aspects such as policy guidance, technical

guidance and financial allocation (Figs. 29 and 30). But farmers enjoy the support of the government, especially the financial subsidies need to conform to the relevant policies and regulations formulated by the government. Thus, farmers in order to enjoy their support, whether it is the choice of comparative advantage strategy or breeding operations to the government function and role of tilt, to a large extent, to give up following their own factor endowment structure decided by the comparative advantage of the development of characteristic animal husbandry. As the name suggests, although the government did not directly participate in the farmers' planning and implementation of animal husbandry, it has a great impact on the farmers' animal husbandry. The biggest benefit of this influence in the short term is that farmers can achieve the rapid development of farming operations with the support of the government. However, in the medium and long term, it is only simple to develop animal husbandry in accordance with the requirements of the government, and the farmers' breeding operations without spontaneous operation will inhibit the innovation and improvement of the self-generating capacity of farmers' breeding operations, so it is difficult to achieve the sustainable development of farming operations.

2. Inadequate Market Role is not Conducive to the Self-generating Ability of Farmers' Breeding Operations

At present, since Inner Mongolia's animal husbandry is in the period of transformation and upgrading to modern animal husbandry, the effective market mechanism of animal husbandry has not been fully established. Therefore, the effective market role that truly reflects the relative price of animal husbandry production factor endowment is only partially played, and sometimes it seems difficult to play out (Fig. 31). In the market is difficult to give full play to its role, from the current situation of farmers breeding scale, high value-added characteristics of high-quality products less and unitized and competitive advantage, farmers in the process of following the development of comparative advantage and market demand did not combine their own comparative advantage and market demand closely and adjust and optimize the breeding structure according to the relationship between market supply and demand, resulting in not better adapt to market demand and difficult to successfully realize the transformation of comparative advantage to competitive advantage. In other words, because the market cannot give full play to its role, it also causes the situation that it is difficult for farmers to obtain the self-generating ability of breeding operations.

However, guided by the theory of new structural economics, in the framework of sustainable development of animal husbandry in Inner Mongolia (EASV-MG), the market should play a decisive role in the sustainable development of animal husbandry in Inner Mongolia. However,

due to the effective animal husbandry market mechanism has not been fully established, it is impossible to achieve the effective allocation of animal husbandry resources through the market. Therefore, in the process of establishing and perfecting the effective market mechanism of animal husbandry, it is inevitable for the government to play a leading role in policy formulation, strategic choice and infrastructure improvement of animal husbandry competitiveness development, which is also one of the reasons for excessive government action.

3. Farmers' Lack of Independence is not Conducive to Their Own Ability Development

According to the research results, the current animal husbandry mode of farmers is dominated by four modes: individual households, family farms, companies and cooperatives, of which individual households (farmers carrying out their own animal husbandry operations) account for more than 60% of the four modes, but the proportion of income farming mode is small. Although the reason is related to the government ' s excessive behavior, but the main reason for this is the convergence of breeding patterns among farmers and the weak sense of independence and innovation among farmers who operate in a unitary manner. Although farmers according to the comparative advantage of their own factor endowment structure to choose the consciousness of independent breeding operation is rising and can combine their own comparative advantage to develop comparative advantage development strategy planning to carry out all kinds of operations, but in the reality of breeding operation is easily affected by the excessive role of the government and the market allocation of resources play an inadequate negative impact, farmers objectively formed a blind follow-up breeding operation, but cannot subjectively develop independent and differentiated breeding operation. Due to the lack of independent ability and follow-up breeding operation, it is difficult for farmers to produce high-quality characteristic animal husbandry products and services with competitive advantages in the market, thus hindering the cultivation of their own ability.

VIII Policy Suggestions on Effectively Realizing Sustainable Development of Animal Husbandry in Inner Mongolia

In order to better help Inner Mongolia ' s animal husbandry to achieve sustainable development and increase the net income of animal husbandry farmers, no matter from the perspective of policy support, market allocation of resources or the improvement of farmers ' own ability, in the process of realizing the sustainable development of animal husbandry in Inner Mongolia, the government should clarify its role orientation and accelerate the transformation of its function 27), give judicious guidance according to circumstances to different cities (leagues)

to choose the path and mode suitable for the sustainable development of local animal husbandry according to the structural characteristics and development trend of factor endowment, and continuously optimize the construction of effective system of animal husbandry market to promote the sustainable development of animal husbandry in Inner Mongolia.

1.Improving the Mechanism of Rational Role Positioning and Strengthening the System of Development of Promising Government that Give judicious Guidance According to Circumstances

City (league) county (banner) two levels of government to accelerate the construction of standardized animal husbandry sustainable development role reasonable positioning mechanism measures, so that animal husbandry in the realization of sustainable development in the process of government, market, farmers three main role and its corresponding power can be balanced, rules can be abided by, in the system policy ,the promising government should give judicious guidance according to circumstances. Since the Second and Third Plenary Sessions of the 18th Central Committee, it has been emphasized that the transformation of government functions is the core of deepening the reform of the administrative system, that is, the core issue of economic system reform is to deal with the relationship between the government and the market, so that the market plays a decisive role in resource allocation and better play the role of the government. The key to economic system reform is to transform government functions²⁸⁾ . In the past five years, although the government has made some progress in the functional transformation in the field of agricultural governance, compared with the requirements of modern agricultural management system, especially the modern management system and operation mechanism of animal husbandry, there appear still some problems in the functional transformation of the government, such as offside and over-action caused by the fuzzy boundaries of responsibilities and powers. At present, Inner Mongolia is in an important transition period of animal husbandry modernization. Thus, the government should reasonably locate its own role, accelerate its functional transformation, and play a vital role in giving judicious guidance according to circumstances.

Firstly, the government is one of the governance subjects of sustainable development of animal husbandry in Inner Mongolia. To promote the modernization of the governance system and governance capacity of the sustainable development of animal husbandry in Inner Mongolia, it requires the government not only to continuously optimize the government responsibility system from the internal, but also to continuously improve the government ' s functions of economic regulation and market supervision of animal husbandry from the external. The focus of governance of animal husbandry is to guide and support farmers to tap comparative advantages

and continuously enhance competitive advantages, and resolutely overcome the offside and excessive behavior of government functions and accelerate the modernization of government animal husbandry governance system and governance capacity.

Secondly, the core of giving full play to the decisive role of the market in resource allocation is to organically combine the effective market with the promising government and effectively play the role of the government. Follow the law of socialist market economy, reduce the offside and excessive government functions as a direct allocation of animal husbandry market resources and animal husbandry farmers micro farming business model and development path of direct intervention, improve and perfect the animal husbandry market main body cultivation and growth system, stimulate and enhance the vitality of the animal husbandry market, accelerate the formation of the new pattern of sustainable development of animal husbandry in Inner Mongolia.

Thirdly, as a promising government to effectively play its role in giving judicious guidance according to circumstances of animal husbandry farmers based on their own factor endowment structure advantage animal husbandry and realize the market plays a decisive role in the allocation of resources is a prerequisite for governments at all levels must adhere to the administration according to law, promote the standardization of the situation, strengthen the function of power offside, excessive as the phenomenon of restriction and supervision, to ensure that the government ' s role in guiding the situation in the rule of law on the track to comprehensively promote.

2.Improve the Effective Market Mechanism of Animal Husbandry and Stimulate the Formation and Development of the Self-Generating Capacity of Farmers' Breeding Operations

At present, the animal husbandry market cannot reflect the relative price of animal husbandry production factors in Inner Mongolia due to the offside and excessive action of two-level government functions, which leads to difficulties in guiding the rational allocation of animal husbandry resources to advantageous products and services in line with consumer demand. Therefore, to give full play to the decisive role of the animal husbandry market in the allocation of animal husbandry resources, it is imperative to improve the mechanism of competition, product price, information transmission, and supervision, and management of the animal husbandry market.

Firstly, speed up the improvement of fair competition in the animal husbandry market system. The core of the animal husbandry market economy is fair competition. Only the animal husbandry market system with fair competition can better allocate animal husbandry resources and achieve the survival of the fittest.

Secondly, strengthen and improve the price control mechanism of animal husbandry products. Under the fair competition animal husbandry market system, the perfect animal husbandry product price regulation mechanism is the core of animal husbandry product price to achieve flexibly and truly reflect the change of animal husbandry market demand. Therefore, the use of big data, cloud computing, artificial intelligence, and other modern new technologies through online and offline interaction mode to promote the autonomous region's price monitoring and prediction and early warning system modernization, improve the monitoring and prediction and early warning system. At the same time, the government should strengthen the price control of animal husbandry products, adhere to the principle of combining macro-control and micro-control, pay attention to the city (league), county (banner) to carry on the classification management, give full play to the two levels of government as the main body of market for effect, improve the animal husbandry product price regulation mechanism, to ensure animal husbandry product price within a reasonable range.

Thirdly, strengthen the supervision and management of the animal husbandry market. By innovating supervision means and enriching management methods, the city (league) and county (banner) governments constantly improve the legal system of animal husbandry, strengthen the interaction and exchange of three-dimensional information among the government, animal husbandry market, and farmers, and reasonably guide the standardization and standardization of animal husbandry market, so as to provide legal protection for farmers to stimulate and cultivate the formation and development of the self-generating capacity of their breeding operations.

3.Strengthening the Role of Collective Economic Organizations and Leading Enterprises of Animal Husbandry, and Innovating Breeding Management Mode According to Local Conditions

To further strengthen the collective economic organizations of animal husbandry, the joint operation of leading enterprises and the leading role of interest linkage mechanism, according to local conditions to innovate breeding management mode, the development of moderate scale operation.

First of all, collective economic organizations such as specialized breeding cooperatives and family ranches will effectively organize farmers who are willing to form a joint force of development with property rights, capital, labor, technology, and products as a link, which is not only easy to form the agglomeration effect of industrial scale, but also easy to operate and manage, prevent various risks and increase the right to speak in the protection of their own rights and interests.

Secondly, according to the principle of benefit sharing and risk sharing, we should speed up the construction of the three joint operation platform system with animal husbandry leading

enterprises as the guide, specialized breeding cooperatives, and family ranch as the main business entities, and realize the moderate scale operation of the industrial consortium through the three forms of technical service sharing, production and marketing collusion, and brand strategy creation.

Thirdly, most animal husbandry breeding is a spontaneous organization by farmers relying on their own natural factor endowment resources and has formed a blind trend of farming management. Therefore, it cannot provide real animal husbandry products and services with its characteristics for increasingly diversified consumer groups according to the animal husbandry characteristics of each city (alliance). According to the historical and cultural differences of animal husbandry resources in different cities (leagues), farmers innovate and develop animal husbandry management models based on industrial development, ecological protection, suburban intensive, resource integration, efficient animal husbandry, and leisure tourism for the increasingly diversified consumer groups, providing high-quality animal husbandry products and services with their characteristics and competitive advantages, achieving economic benefits and promoting sustainable development of animal husbandry.

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