

# **Influence of Different Meteorological Conditions on Agricultural Economic Development and Countermeasures**

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**Abstract:** As we all know, there is a close relationship between climate change and human survival and development. Therefore, currently, the international community has also given full attention to the issue of enterprise change. In the relevant research of agricultural meteorology in China, during the actual analysis of the factors affecting the grain production, different material elements are included into the model according to economic theory, but for the impact of climate factors on the grain crop yield, there is few research. Based on this, this paper mainly discusses the actual impact of different types of climate conditions on the agricultural economy.

## **1. Introduction**

Agricultural production is the basic industry in China's economic progress, which is related to the national economy and people's livelihood. As the largest developing country in the world, China has invested a lot of human, material and financial resources in the progress of agricultural economy, with remarkable achievements. However, agricultural production is restricted by meteorological conditions, which will seriously affect the progress of agricultural economy. Recently, the earth's ecological environment has been deteriorating, water and soil loss has become increasingly serious, floods and droughts have occurred frequently, China's land resources have been sharply reduced, and grain production has been seriously affected. Therefore, to cope with adverse weather conditions and promote the efficient progress of ecological agriculture economy, we should deeply study advanced agricultural production technology, develop water conservancy planning, achieve the goal of invigorating agriculture through science and technology, and actively promote the sustainable progress of agricultural economy.

## **2. Main Impacts of Meteorological Disasters on Agricultural Production**

### **2.1 Affect the Growth and Development of Crops**

Once meteorological disasters occur, they will have a huge adverse impact on agricultural production. First of all, meteorological disasters themselves will have a great impact on the growth of crops. Due to the huge land area of China, meteorological disasters occur frequently, and the meteorological disasters themselves change with different seasons. Different types of meteorological disasters will have a huge impact on the growth of crops. For instance, China's July and August are the time of the most flood disasters<sup>[1]</sup>. At this time, the Yangtze River basin is in the period of corn growth. Once the flood disaster occurs, it will lead to the situation of corn crop failure.

### **2.2 Have a Huge Impact on the Planting Time of Crops**

If a certain meteorological disaster occurs in the stage of large-scale crop planting, the planting time of the whole crop will be delayed. If not planting in advance, it may lead to insufficient quality of crops and decline in yield. For instance, after winter wheat planting in Shandong Province, it has reached the stage of rapid growth of wheat, which is also the stage of the most frequent frost damage. To better avoid the impact of freezing damage on wheat at the stage of rapid growth and development, the way of delaying sowing is usually chosen. If wheat is planted in advance, it is

likely that the wheat will grow too fast before winter and suffer from the impact of frost damage, which will eventually lead to a decline in wheat yield.

### **2.3 Have a Great Impact on Facility Agriculture**

The so-called facility agriculture refers to the type of engineering agriculture carried out by human beings to better resist adverse weather conditions, meteorological disasters and other factors, such as artificial construction, thermal insulation, lighting and other related measures. Facility agriculture mainly focuses on fruits and vegetables, flowers, aquatic products, animal husbandry and so on. It aims to promote plant growth by creating a small climate environment. Due to the occurrence of meteorological disasters, the development of facility agriculture has been greatly promoted<sup>[2]</sup>. However, the emergence of meteorological disasters will also cause damage to facility agriculture to a certain extent. For instance, freezing, hail, even rainstorm and other adverse weather conditions will cause damage to facilities related to facility agriculture.

## **3. Impacts of Meteorological Disasters on China's Agricultural Economy**

### **3.1 Agricultural Economic Losses Show an Obvious Upward Trend**

From a practical point of view, due to the occurrence of meteorological disasters, the losses of China's agricultural economy have shown an obvious upward trend.

### **3.2 The Overall Frequency of Agricultural Economic Impact is Accelerating**

Currently, the overall frequency of the impact of various meteorological disasters on agricultural economy in China is accelerating, and their harm is also increasing. Each year, about 4% of the gross national economic product is offset by various losses caused by meteorological disasters, which are very serious on the whole.

### **3.3 Meteorological Disasters Will Have a Huge Impact on the Stability of Agricultural Economy**

The occurrence of meteorological disasters will not only directly affect the agricultural economy itself, but also greatly affect the overall stability of the entire agricultural product market. If there is a meteorological disaster, it will lead to a substantial reduction in the output of agricultural products, which means that the supply and demand relationship of the agricultural products market will be affected, then the overall market price of agricultural products will increase. The occurrence of meteorological disasters will increase the pressure of inflation within a certain period of time, which is extremely detrimental to maintaining the economic stability of China's agricultural products market.

## **4. Relevant Measures for Prevention of Meteorological Disasters**

### **4.1 Establish the Work System of Meteorological Disaster Prevention**

Local governments should pay more attention to meteorological disasters and bring them into the scope of agricultural progress and social and economic progress. The government should take the lead in the overall deployment of meteorological disaster prevention and mitigation, and build a complete defense system. Its main contents include: building a meteorological disaster emergency response system, and regularly organizing the defense command, forecast and warning, and defense implementation of meteorological disasters in a unified leadership and joint manner, establishing a meteorological disaster prevention infrastructure construction system to ensure the progress and quality of various projects, and developing a risk assessment system for meteorological disasters of large-scale agricultural facilities to reduce the damage rate of disasters<sup>[3]</sup>.

### **4.2 Grasp Meteorological Laws and Adjust Agricultural Layout**

The occurrence of meteorological disasters is closely related to the current environment, which

requires the relevant government and disaster prevention and mitigation staff to understand the environmental changes, grasp the meteorological laws, improve the defensive ability of agriculture against meteorological changes, and then adjust the agricultural layout to achieve the sustainable development state of agricultural development and full utilization of meteorological resources, and then achieve the goal of high yield, high quality and high efficiency of agriculture.

#### **4.3 Establish the Awareness of Disaster Prevention and Reduction, and Improve the Defense Ability of Meteorological Disasters**

First, establish a publicity and education system for disaster prevention and reduction of meteorological disasters in rural areas, and incorporate disaster reduction education into various rural education systems. Through this publicity and education, people in meteorological disaster-prone areas can understand the causes of disasters and preventive measures. Second, improve the professional quality and skills of the staff engaged in agrometeorological disaster prevention, and give full play to the construction benefits of meteorological disaster monitoring, early warning and emergency system, so as to reduce agricultural production losses and improve agricultural economic benefits.

#### **4.4 Enhance Ecological Awareness and Realize Sustainable Development of Agricultural Production and Utilization of Meteorological Resources**

The occurrence of meteorological disasters is closely related to the environment. In the construction of new rural areas, it is necessary to control and protect water resources pollution, take overall consideration of the improvement of human settlements and disaster prevention and mitigation, reasonably develop and layout mountains, water and forests, and take overall consideration of the formation of microclimate in villages and towns to avoid meteorological disasters. Meteorological disasters have a great impact on China's agricultural production and agricultural economy, especially in the planting and growth of crops and the stability of agricultural economy. Further disaster prevention and technological innovation are needed to perfect the important goal of disaster prevention and mitigation.

### **5. Conclusion**

Owing to the rapid progress of science and technology as a whole, China's agricultural production technology has also made great progress. However, due to the direct impact of meteorological conditions on agricultural production, to better push the progress of agricultural economy, and solve the problems related to the sharp reduction of land resources, environmental damage and the reduction of food production caused by climatic conditions, in the actual process of agricultural production, we must always adhere to the ecological environment as the basic criterion, combine the actual situation with local conditions, and carry out necessary response according to the climate conditions, so as to ensure the normal progress of agricultural production and realize the sustainable progress of agricultural economy.

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