

# Research on the Theory of Photovoltaic + Characteristic Agriculture Model Embedded in Targeted Poverty Alleviation

## -- Taking Qiaocheng District of Bozhou City as an Example

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### Abstract

Since the slogan of poverty alleviation was put forward, we have explored and tried out poverty alleviation projects step by step. Photovoltaic power generation has gradually become a practical poverty alleviation project, which has a good effect on solving the problem of local employment and increasing the income of poor people. And photovoltaic power generation as a clean energy, photovoltaic + characteristic agricultural mode makes photovoltaic industry based on agriculture, as a way of targeted poverty alleviation, less investment, sustainable, reflects the new concept of green development, and in line with China's national conditions, accurate and sustainable innovative poverty alleviation mode. This paper selects Qiaocheng District of Bozhou City as a case, uses the methods of literature research, qualitative analysis and field research to sort out the collected data, combs and analyzes the implementation process and key points of the poverty alleviation policy of photovoltaic + characteristic agriculture, and the main achievements can provide reference for the poverty alleviation work of China and the world.

### Keywords

Targeted Poverty Alleviation; Photovoltaic Power Generation; Characteristic Planting.

## 1. Introduction

With the completion of the task of building a well-off society in an all-round way in 2020 and poverty alleviation and difficulties tackling, China has achieved the poverty reduction target of the United Nations Agenda for Sustainable Development in 2030 ten years ahead of schedule. According to the international poverty line standard of the World Bank, since the reform and opening up, China's poverty-stricken population accounted for more than 70% of the global poverty-stricken population in the same period, and 770 million rural poor people in China got rid of poverty. China's success on the road of precise poverty alleviation provides an important reference for the global poverty reduction practice and a reference path for the global poverty reduction cause.

In the practice of precise poverty alleviation, photovoltaic poverty alleviation, as a "sunshine project" benefiting the country and the people, is an important part of industrial poverty alleviation. In June 2017, President Xi pointed out at the poverty alleviation and difficulties tackling Symposium in Deep Poverty Areas: "Implementing photovoltaic poverty alleviation in places with light and heat conditions, building village-level photovoltaic power stations, and forming village collective economy through income, We will carry out poverty alleviation

through public welfare posts, small-scale public welfare undertakings and incentives and subsidies. These are all good ways to solve deep poverty. "

## 2. Basic Situation of Poverty Alleviation in Qiaocheng District

Bozhou City, Anhui Province, as an underdeveloped area in northwest Anhui Province, Qiaocheng District is a key poverty-stricken county in poverty alleviation and development in Anhui Province. To build a well-off society synchronously with the whole province, "poverty alleviation and difficulties tackling" must be taken as a strategic task. After several years of efforts, Qiaocheng District has delivered a good answer to the poverty alleviation work, from more than 70,000 poor people in 2014 to completely get rid of poverty in 2020. The incidence of poverty ranges from 4.95% to 0.

Since the 18th National Congress of the Communist Party of China, especially since the fight against poverty started in 2015, Qiaocheng District has followed President Xi's precise poverty alleviation thought, based on characteristic industries, stimulated endogenous motivation, increased capital investment and encouraged multi-party participation, and constructed a pattern of poverty alleviation in large industries.

Always adhere to the basic principle of "helping the poor and helping the poor truly", adjust measures to local conditions, implement policies according to households, and make precise efforts, pay attention to the development of long-term poverty alleviation industries, promote the "four belts and one self" industrial poverty alleviation model, promote the construction of employment poverty alleviation workshops, poverty alleviation bases and other carriers, implement 528 industrial poverty alleviation projects, and fulfill the special financial poverty alleviation funds of 350 million yuan. Promote the long-term effectiveness of industrial poverty alleviation projects and promote the stable income increase of poor people; In accordance with the requirements of "being able to develop, develop, get employment and get employment", efforts have been made to broaden the employment channels for poor people. In the past three years, a total of 25,371 poverty alleviation public welfare posts have been developed; Actively carry out poverty alleviation through consumption, strengthen the identification management of poverty alleviation products, and vigorously promote the construction of "three specific platforms". Solidly carry out activities such as "eight advances" and "twelve ones" for government procurement of poverty alleviation products and production and marketing of agricultural products; Continue to implement financial poverty alleviation and steadily implement poverty alleviation microfinance; Implementing forestry poverty alleviation, the current forestry poverty alleviation preservation area is 18,674.2hm<sup>2</sup>, covering 10,095 poor households, with a total allocated fund of 134 million yuan.

Adhere to local conditions, household policies and precise efforts, strengthen the implementation of policies, and effectively solve the problem of "two guarantees and three guarantees". Vigorously implement education to help the poor, continue to increase financial aid for students from poor families who have set up their cards, and distribute a total of 34 million yuan of educational aid funds in the region, benefiting 13,000 students, so as to realize "zero dropout" for students from poor families who have set up their cards in compulsory education. The "Rain and Dew Plan" subsidizes 7,600 poor students and pays 11 million yuan for punching cards to ensure that poor students master a skill and improve their employ ability; Deepen health and poverty alleviation, and enjoy a total of 0.9 million people from the government; We will continue to rectify the rural living environment, carry out the "Spring Breeze Action" in a down-to-earth manner, adhere to the principle that all changes should be made, and promote the renovation of dilapidated buildings with high quality and high efficiency. A total of 14,570 dilapidated houses have been renovated, ensuring the housing safety of four key objects.

### 3. Connotation and Characteristics of "Photovoltaic + Agriculture" Precise Poverty Alleviation Model

Photovoltaic agriculture is a rapidly developing new industry, which is a new type of agriculture that applies solar photovoltaic conversion power generation to agricultural production activities such as planting, breeding, irrigation, pest control and power supply of agricultural machinery. The connotation of "photovoltaic+agriculture" accurate poverty alleviation model in Qiaocheng District of Bozhou City is photovoltaic power generation+characteristic agriculture. This model makes the photovoltaic industry based on agriculture, as a precise way to help the poor, with less investment, stable returns and sustainability, which is conducive to the improvement of agricultural production efficiency, the improvement of farmers' quality of life and the development of rural ecological civilization construction.

The "photovoltaic+agriculture" poverty alleviation model in Qiaocheng District of Bozhou City is characterized by "hematopoietic poverty alleviation", which provides reference for poverty alleviation methods in the new period for the vast poverty-stricken areas and helps to innovate the poverty alleviation model from "blood transfusion poverty alleviation" to "hematopoietic poverty alleviation". Secondly, green development. The photovoltaic poverty alleviation model combines poverty alleviation with the concept of green development. It is not only helpful to promote the maximum development of rural areas, but also realizes the exploitation of superior resources in poor areas under the environment of ecological fragility. "Photovoltaic+ Agriculture" combines the benefits, and strives to practice the new development concept of "innovation, coordination, green, openness and sharing" to help rural revitalization.

### 4. Qiaocheng District "Photovoltaic+Agriculture" Precise Poverty Alleviation Model Innovation

#### 4.1. Poverty Alleviation of Photovoltaic Industry

At present, the photovoltaic poverty alleviation power station mode in Qiaocheng district is mainly village level photovoltaic poverty alleviation power station. Entrust professional operation and maintenance management team to carry out operation and maintenance management, strengthen operation and maintenance management of photovoltaic power station, improve power generation through effective management, and give full play to the benefits of photovoltaic power station. Photovoltaic poverty alleviation uses rural idle land, housing roofs and agricultural greenhouses to lay solar panels and sell them to the State Grid to obtain stable income through power generation. Subsidies and benefit sharing are provided to the poor households who have lost labor ability and have no income source and the poor villages who have no collective income source to get rid of poverty.

#### 4.2. Poverty Alleviation of Characteristic Planting Industry

Qiaocheng District of Bozhou City is a large agricultural area, with land area of 145,000 hm<sup>2</sup>, cultivated land area of 127,000 hm<sup>2</sup>, perennial grain planting area of 173,000 hm<sup>2</sup> and cash crop area of 110,000 hm<sup>2</sup>. Qiaocheng District of Bozhou City is mainly to further expand the coverage of industrial poverty alleviation by breeding custody sheep, developing medicinal material bases and planting mulberry trees, and strive to promote poverty-stricken villages and poor households to achieve sustained income increase and stable poverty alleviation through industrial development.

Qiaocheng District, a poverty-stricken village, has developed characteristic traditional Chinese medicine planting, cultivated standardized planting bases for Radix Paeoniae Alba, Cortex Moutan, chrysanthemum and other medicinal materials, and mainly cultivated wheat, sweet potato, corn, etc. it has built a high-quality fruit mulberry planting demonstration park in

Chenguang village, introduced a number of mulberry varieties, and vigorously adjusted the industrial structure. Increase the income of poor households by means of industrial assistance, employment assistance and financial poverty alleviation.

However, rural infrastructure is still weak, which restricts the development of rural economy. Farmland water, electricity, wells, canals, ditches, roads and other infrastructure are not matched and perfect, and their use efficiency is not high, which can not play its due role, thus affecting normal agricultural production to a certain extent. "Photovoltaic+Agriculture" transfers the land of poor households to photovoltaic power stations, which are operated by photovoltaic agricultural companies. Poor households participate in farm work in power stations. Poor households can get three incomes: poverty alleviation policy, land rent and labor wages. At the same time, it also enhances the labor skills of efficient agriculture. This is a kind of "hematopoietic" poverty alleviation.

## 5. Prospect of "Photovoltaic + Agriculture" Precise Poverty Alleviation Model

The development of modern agriculture needs the promotion of energy, and in today's energy shortage, the use of solar energy just fills the shortage of energy in agriculture. Photovoltaic has always been considered as one of the most promising forms of energy utilization among many new energy sources, and China's agricultural greenhouse area ranks first in the world, and photovoltaic is combined with agriculture. It is another new breakthrough in the field of photovoltaic application and agriculture in China, and has become a new investment hotspot.

China's photovoltaic industry has encountered many problems while developing rapidly, such as the distance between resource-rich areas and consumption areas, and the lack of long-distance transmission economy; In the densely populated areas in the east, there is a lack of land, although it has strong absorptive capacity. For this reason, photovoltaic agriculture came into being. Under the condition of not changing the land use attribute, the cost of photovoltaic power station and facility agriculture was shared. Common and efficient development. The future development trend of photovoltaic agriculture mainly focuses on the following three aspects.

### 5.1. Intelligent Greenhouse

Through computer terminal control, a high-precision intelligent greenhouse is established, photovoltaic power generation is stable, and agriculture is efficient and green. Intelligent greenhouses have high requirements, and their service life is more than 25 years, far exceeding the service life of ordinary greenhouses, thus avoiding the waste of resources caused by repeated construction of agricultural greenhouses every year and saving a lot of production costs and social resources. In addition, in the whole operation process of photovoltaic agriculture system, the combination of photovoltaic modules and ultra-white tempered glass can effectively filter the harmful light waves of solar radiation to crops, for example, the damage of ultraviolet rays to crops through photovoltaic agriculture system will be reduced.

### 5.2. Maximizing Social Benefits

Photovoltaic agriculture must not be separated from the agricultural foundation, and the ultimate goal still needs to focus on agriculture, farmers and rural areas, so as to fundamentally maximize social benefits. In addition to basic photovoltaic power generation and agricultural production, it can also be combined with sightseeing and picking, rural tourism, folk culture tour, popular science base, rural landscape and other forms to improve the income per unit of land. Maximize the use of land resources, increase ecological and social benefits, increase farmers' income, and effectively promote local economic development.

### 5.3. Green Sustainable Way to Poverty Alleviation

Green concept provides a new opportunity for poverty alleviation. The purpose of precise poverty alleviation is not only to achieve poverty alleviation in poverty-stricken areas, but also to make poverty-stricken areas walk out of a sustainable and clean energy source. Photovoltaic poverty alleviation fully meets the green requirements, is conducive to the development of ecological civilization, and is the heavy road to achieve accurate poverty alleviation. Therefore, to get rid of poverty and become rich in poverty-stricken areas, We must firmly hold the bottom line of development and ecology. We adhere to the development concept of "Lucid waters and lush mountains are invaluable assets.", use organic fertilizers and biological pesticides in production, develop physical agriculture, greatly reduce agricultural non-point source pollution, and promote ecological environment improvement. At the same time, planting ornamental peony in some project bases, building agricultural picking and leisure sightseeing projects, and promoting the construction of beautiful countryside and the development of eco-tourism.

## 6. Thinking of "Photovoltaic + Agriculture" Precise Poverty Alleviation

The thinking caused by the precise poverty alleviation model in Qiaocheng District is: in the process of precise poverty alleviation, there are two goals, one is poverty alleviation, and the other is the utilization of superior resources and green development. It is necessary to avoid the overcapacity of photovoltaic and agriculture, and to rationally distribute the income from poverty alleviation and use the funds for the villagers who really need them. It is necessary to develop poverty alleviation projects according to specific conditions, industries, ecological environment and other factors and local conditions, so as to work out workable assistance measures.

Accurate poverty alleviation in China is not only an economic problem, but also has its profound social governance logic behind it. "President Xi pointed out in the report of the 19-th National Congress of the Communist Party of China that it is necessary to build a social governance pattern of joint construction, governance and sharing, and improve the level of socialization, rule of law, intelligence and specialization of social governance." Accurate poverty alleviation in 2020 will inevitably bring about changes in rural social governance structure. Poverty alleviation is not just a point, but should be overall, not only to help the poor, but also to improve people's livelihood and promote rural revitalization.

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