

Low-Carbon Agriculture Should Learn From Tradition --Taking Rice-fish Agricultural System as an example

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Abstract: Agriculture is the basis for the development of the entire national economy. It is essential in many respects such as maintaining sustainable development of agricultural production, practicing the scientific concept of development, building ecological civilization and developing the low carbon economy. However, with population growth, popularization of high-input, high-output new crop varieties, application of chemical fertilizers and pesticides, deforestation, excessive exploitation, environment deterioration, excessive animal grazing, pest invasion, social changes and economic development, many ecological and environmental problems occur, while the modern agriculture just focused on the high-input and high-output ways to resolve food security issues. Traditional agriculture combined many excellence developmental patterns as agricultural production, rural economic development, environment protection and resources efficient utilization; therefore, it meets the requirements of low-power, low-emissions, low-pollution of low-carbon agriculture. This paper, taking Rice-fish Agricultural System in Qingtian county of Zhejiang province, the first pilot site of Globally Important Agricultural Heritage Systems (GIAHS) in China as a case study, analyzes the features of low-carbon of traditional agriculture and explores how to develop low-carbon agriculture. The results show that the traditional system plays potential and important roles in regional sustainable development of economy, society, culture and eco-environment. For example, it can increase the production and benefits of agriculture, reduce the cost of agriculture, bring relative economic benefits, keep the ecological balance of the rice field, protect the farmland environment and conserve the biodiversity, etc. In order to give consideration to both food production and supply of ecosystem service, it is necessary to excavate traditional knowledge, and steadily improve technical system of rural low-carbon economy.

Key words: Traditional agriculture; Low-carbon agriculture; Globally Important Agricultural Heritage Systems (GIAHS); Sustainable agriculture; Qingtian county of Zhejiang province