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Research on the Training and Education of High-Quality Farmers under the Background of Rural Revitalization

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Abstract: The comprehensive advancement of the rural revitalization strategy highlights the crucial role of highly skilled farmers in the modernization of agriculture and rural areas. This paper delves into the inherent logic between rural revitalization and the training and education of highly skilled farmers, exploring the connotation and characteristics of highly skilled farmers from a theoretical perspective, and analyzing the current practical difficulties and underlying causes faced by training and education. Drawing on successful experiences both domestically and internationally, this paper proposes an optimized training and education path centered on demand-oriented, multi-faceted collaboration, and technology empowerment. The aim is to construct a high-quality farmer training and education system that meets the needs of rural revitalization, providing theoretical support and practical reference for promoting rural talent revitalization and high-quality agricultural and rural development.

Keywords: Rural revitalization; highly skilled farmers; training and education; talent revitalization; multi-faceted collaboration

1. Introduction

The rural revitalization strategy is the general guideline for solving the "three rural issues" (agriculture, rural areas, and farmers) in the new era. Its core lies in achieving agricultural and rural modernization, and the key to agricultural and rural modernization lies in talent. Farmers, as the main body of rural development, directly determine the effectiveness of rural revitalization based on their quality. At this critical juncture of transitioning from traditional to modern agriculture, cultivating a high-quality farmer workforce that is educated, technically skilled, good at business management, and capable of administration has become an urgent need to promote rural industrial prosperity, ecological livability, civilized rural customs, effective governance, and affluent lives.

High-quality farmer training and education is not only an important way to improve farmers' comprehensive quality and employment and entrepreneurship capabilities, but also a strategic measure to promote rural talent revitalization and achieve sustainable agricultural and rural development. However, high-quality farmer training and education in my country currently faces many challenges, such as a disconnect between training content and actual needs, a single training model, and a weak teaching force. These problems act like "hurdles," restricting the

effectiveness of training. Therefore, in-depth research on the issues of high-quality farmer training and education under the background of rural revitalization and exploring scientific and effective training and education models have important theoretical value and practical significance.

2 The inherent logic of rural revitalization and high-quality farmers

2.1 The demand of rural revitalization for high-quality farmers

The rural revitalization strategy involves many aspects such as industry and talent. Talent is the primary resource. High-quality farmers are an important part of the rural talent pool and play an irreplaceable role in promoting rural industrial development and increasing income and wealth[1]. In terms of industrial revitalization, they master advanced technologies and management concepts, develop new industries and new business formats, and promote the upgrading of agricultural industrial structure from single planting and breeding to the integration of primary, secondary and tertiary industries; in terms of talent revitalization, they are the source of rural talent training and drive more farmers to learn technology; in terms of cultural revitalization, they inherit and promote excellent traditional culture and lead new trends; in terms of ecological revitalization, they establish green concepts and participate in ecological protection and governance; in terms of organizational revitalization, they have organizational coordination and democratic management awareness, participate in grassroots organization construction, and improve governance level.

2.2 The Connotation and Characteristics of High-Quality Farmers

High-quality farmers are those who, in contrast to traditional farmers, possess a certain level of cultural knowledge, professional agricultural skills, a strong sense of innovation, and a keen market awareness, enabling them to adapt to the needs of modern agricultural development and rural revitalization. Specifically, they have high cultural literacy, possessing a basic cultural foundation and continuous learning ability, allowing them to quickly understand and master new agricultural technologies, policies, and skills; they have excellent professional skills, being familiar with production technology standards and management methods in their field, and adept at using technological means to improve agricultural production efficiency, such as saving water and increasing yields through intelligent irrigation equipment; they have a keen market awareness, understanding market dynamics through e-commerce platforms and wholesale markets, adjusting planting and breeding structures and management strategies according to demand, avoiding "blind production"; they have strong innovation capabilities, daring to break through the traditional mindset of "relying on the weather," exploring new models such as "rice-shrimp co-culture," "agricultural tourism integration," and new methods such as live-streaming sales of agricultural products; they have a strong sense of social responsibility, loving and rooting themselves in the countryside, not only pursuing personal income growth but also willing to lead surrounding farmers to develop together, contributing to rural revitalization.

3. Current Challenges and Root Causes of High-Quality Farmer Training and Education

3.1 Current Challenges

3.1.1 Disconnect Between Training Content and Actual Needs

Some training institutions, when formulating training plans, lack in-depth research into the actual needs of farmers and the development of rural industries. Training content focuses too much on imparting theoretical knowledge and neglects the cultivation of practical skills. Training courses are not updated in a timely manner, failing to meet farmers' learning needs for new technologies, new business models, and new formats, resulting in low farmer enthusiasm for participating in training.

3.1.2 Limited Training Models

Currently, high-quality farmer training mainly adopts traditional training models such as centralized lectures and on-site demonstrations, lacking flexibility and interactivity. Online training resources are underdeveloped, failing to fully utilize modern information technologies such as the internet and big data for remote training, thus limiting the coverage and impact of the training.

3.1.3 Weak Faculty

High-quality farmer training requires a faculty with both solid theoretical knowledge and rich practical experience. However, some training institutions currently suffer from an unreasonable faculty structure and uneven quality. Some teachers lack practical experience in agricultural production and have insufficient understanding of modern agricultural technologies and rural industry development, making it difficult to meet the needs of training and teaching.

3.1.4 Inadequate Training Evaluation Mechanism

Training evaluation is a crucial step in verifying training effectiveness and improving training work. However, the current evaluation mechanism for high-quality farmer training is inadequate, with prominent issues such as unscientific evaluation standards, simplistic evaluation methods, and insufficient application of evaluation results. Some training institutions primarily rely on trainees' exam scores and training satisfaction when evaluating training effectiveness, lacking assessment of trainees' practical application abilities and the training's contribution to rural industrial development, making it difficult to accurately reflect the actual training results.

3.2 Root Causes

3.2.1 Insufficient Understanding of the Rural Revitalization Strategy

Some training institutions and relevant departments lack a thorough understanding of the connotation and requirements of the rural revitalization strategy, failing to closely integrate high-quality farmer training with the rural revitalization strategy, resulting in unclear training objectives and a lack of targeted training content.

3.2.2 Inadequate Resource Allocation

High-quality farmer training and education requires substantial resources such as funding, instructors, and facilities. However, current government investment in this area is relatively insufficient, resulting in inadequate resource allocation. This leads to outdated facilities and equipment in training institutions, as well as a shortage of qualified instructors, thus hindering the improvement of training quality.

3.2.3 Inadequate Interest Coordination Mechanism

High-quality farmer training and education involves multiple stakeholders, including the government, training institutions, agricultural enterprises, and farmers. Due to an inadequate interest coordination mechanism, communication and collaboration among these stakeholders are insufficient, making it difficult to effectively integrate training resources and fully realize the training's potential.

4. Successful Experiences and Lessons Learned from Domestic and International High-Quality Farmer Training and Education

4.1 Successful International Experiences

4.1.1 Germany's "Dual System" Vocational Education Model

Germany's "dual system" vocational education model is a vocational education model that combines enterprise practice with school education. In the agricultural field, Germany has cultivated a large number of high-quality agricultural technical personnel through the "dual system" model. Students learn agricultural theoretical knowledge and basic skills in school, and conduct practical operations and skills training in enterprises, achieving a close integration of theory and practice. This model not only improves students' employment competitiveness but also provides strong talent support for the modernization of German agriculture.

4.1.2 The Training System of Japanese Agricultural Cooperatives (Agri-cooperatives)

Japan's agricultural cooperatives are farmer cooperative organizations that integrate multiple functions such as production, sales, finance, and insurance. Agricultural cooperatives provide farmers with comprehensive training services through the establishment of a complete training system. The training content covers multiple aspects such as agricultural production technology, business management, and marketing, and the training methods include centralized lectures, on-site guidance, and field visits. The agricultural cooperative also utilizes its online platform to provide farmers with online learning resources and consulting services, making it convenient for farmers to learn anytime, anywhere.

4.2 Successful Domestic Experiences

4.2.1 Zhejiang's "Ten Million Farmers' Quality Improvement Project"

Zhejiang Province's "Ten Million Farmers' Quality

Improvement Project" is a systematic project aimed at improving farmers' overall quality and employment and entrepreneurship capabilities. This project integrates resources from the government, enterprises, and society to conduct multi-level and multi-form training activities. Training content is customized according to the different needs of farmers and the development of industries, including vocational skills training, entrepreneurship training, and rural practical talent training. At the same time, Zhejiang Province has also established a training subsidy mechanism to provide certain financial subsidies to farmers participating in training, thereby increasing farmers' enthusiasm for participation.

4.2.2 Talent Training Model for Shouguang Vegetable Industry in Shandong Province

Shouguang, Shandong Province, is a renowned vegetable production base in my country. In the process of developing its vegetable industry, Shouguang has formed a unique talent training model. Leveraging its local advantages in the vegetable industry, Shouguang has established multiple vegetable industry training bases, inviting domestic and international experts and scholars, as well as technical personnel from agricultural enterprises, to teach farmers. The training content includes not only vegetable planting techniques but also knowledge of deep processing, marketing, and brand building. Through this training, Shouguang has cultivated a large number of vegetable industry talents who are technically proficient, business-savvy, and good at management, promoting the sustainable development of Shouguang's vegetable industry.

4.3 Implications

Successful experiences at home and abroad show that high-quality farmer training and education requires the joint participation of the government, enterprises, and society to form a synergy. A diversified training investment mechanism should be established, increasing government investment in training and education while encouraging enterprises and social organizations to actively participate in training activities. Personalized training programs should be developed based on the actual needs of farmers and the development of the industry to improve the relevance and effectiveness of training. The construction of the training faculty should be strengthened to improve the professional quality and teaching level of teachers. Modern information technology should be fully utilized to innovate training models and methods, expanding the coverage and influence of training.

5. Optimization Path of High-Quality Farmer Training and Education under the Background of Rural Revitalization

5.1 Demand-Oriented and Precisely Designed Training Content

5.1.1 In-depth Research on Farmers' Needs

Training institutions should go deep into the grassroots of rural areas and comprehensively understand the actual needs and training intentions of farmers through questionnaires, interviews, seminars and other methods. Based on the needs of farmers in different regions, industries and groups, personalized training programs should be developed to improve the pertinence and effectiveness of training.

5.1.2 Optimization of Training Curriculum

Training courses should cover multiple aspects such as agricultural production technology, agricultural product quality and safety, agricultural management, marketing, e-commerce, and rural tourism, emphasizing the combination of theory and practice and highlighting the cultivation of practical skills [2]. At the same time, training content should be updated in a timely manner, incorporating new technologies, new business formats and new models into the training courses so that farmers can master the latest agricultural knowledge and skills and adapt to the requirements of modern agricultural development.

5.2 Supported by Multi-faceted Collaboration, Integrating Training Resources

5.2.1 Strengthening Government Guidance and Support

The government should play a leading role, formulating relevant policies and plans, and increasing investment in the training and education of high-quality farmers. A sound training subsidy mechanism should be established to provide financial subsidies to farmers participating in training, reducing their training costs. At the same time, the government should strengthen the supervision and evaluation of training institutions to ensure training quality.

5.2.2 Promoting the Participation of Enterprises and Social Organizations

Agricultural enterprises, farmers' cooperatives, and agricultural science and technology parks are encouraged to participate in the training and education of high-quality farmers, leveraging their advantages in technology, capital, and markets to provide farmers with practical training and employment and entrepreneurship opportunities. Support should be given to social organizations to carry out public welfare training activities, integrating social resources to form a synergy in training.

5.2.3 Strengthening University-Local Government Cooperation and Industry-University-Research Integration

Universities and research institutions should strengthen cooperation with local governments, establish industry-university-research cooperation bases, and provide technical support and talent guarantee for the training and education of high-quality farmers. Through scientific research, technology promotion, and talent cultivation activities, they can promote the transformation and application of agricultural scientific and technological achievements and improve farmers' scientific literacy and innovation capabilities.

5.3 Innovating Training Models Through Technological Empowerment

5.3.1 Developing Online and Offline Integrated Training Models

Make full use of modern information technologies such as the Internet, big data, and artificial intelligence to carry out online and offline integrated training models. Online training can provide rich learning resources through network platforms, such as video courses, online live broadcasts, and virtual laboratories, making it convenient for farmers to learn anytime and anywhere [3]. Offline training can provide farmers with face-to-face guidance and communication opportunities through centralized lectures, on-site demonstrations, and practical operations, thereby enhancing the interactivity and effectiveness of training.

5.3.2 Promote experiential and case-based training methods

Adopt experiential and case-based training methods to allow farmers to learn and master skills in actual operation. By organizing farmers to conduct on-site inspections and visits to agricultural demonstration bases, agricultural enterprises, and farmers' cooperatives, farmers can personally experience advanced agricultural production models and management concepts, broaden their horizons, and stimulate innovative thinking. At the same time, by analyzing typical cases, farmers can be guided to learn from successful experiences and solve practical problems.

5.4 Improve training quality by focusing on teacher development

5.4.1 Strengthen teacher training

Regularly organize teachers to participate in training and academic exchange activities to update their knowledge structure and improve their teaching level. Domestic and foreign experts and scholars, as well as technical backbones of agricultural enterprises, are invited to give lectures to teachers and impart the latest agricultural technologies and management experience [4]. Teachers are encouraged to go deep into the front line of agricultural production, carry out practical research and scientific research activities, and accumulate practical experience.

5.4.2 Establish a Teacher Incentive Mechanism

Establish and improve a teacher incentive mechanism to recognize and reward teachers with outstanding teaching achievements, thereby enhancing their work enthusiasm and initiative. Simultaneously, reasonably determine teachers' salaries and benefits, improve their working conditions, and attract and retain outstanding talent.

5.5 Safeguard Training Effectiveness with a Sound Evaluation Mechanism

5.5.1 Establish Scientific and Reasonable Evaluation Standards

Evaluation standards should include trainees' academic performance, mastery of practical skills, the actual application effect after training, and their contribution to rural industrial development. Emphasis should be placed on both theoretical knowledge assessment and the cultivation of trainees' practical operational and innovative abilities.

5.5.2 Adopt Diverse Evaluation Methods

Employ diverse evaluation methods, such as

examinations, field visits, trainee feedback, and expert evaluations. Through the comprehensive use of multiple evaluation methods, the training effectiveness can be evaluated comprehensively, objectively, and fairly.

5.5.3 Strengthen the Application of Evaluation Results

Link training evaluation results with the qualification certification, project application, and funding support of training institutions to incentivize them to improve training quality. At the same time, the evaluation results will be fed back to the trainees, providing a basis for their self-improvement and promoting their continuous development.

Conclusion

The rural revitalization strategy presents both new opportunities and challenges for the training and education of highly skilled farmers. Highly skilled farmers are the main force, and strengthening their training and education is crucial for rural talent revitalization and agricultural and rural modernization. Currently, training and education face practical difficulties, requiring analysis of the reasons and drawing on domestic and international experience to explore optimized pathways. By precisely designing training content, integrating training resources, innovating training models, improving teacher quality, and perfecting evaluation mechanisms, a demand-driven training and education system can be built to enhance farmers' skills and capabilities. In the future, we should summarize experiences, innovate methods, promote the high-quality development of training and education, and contribute to rural revitalization.

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