

# *Practical Approaches to Building a Modern Agriculture Professional Group in the Context of Rural Revitalization*

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**Abstract:** Rural revitalization is a crucial strategy in the current economic and social development of China and serves as a key pathway for achieving agricultural modernization and rural prosperity. In the context of rural revitalization, the construction of modern agriculture professional groups has become an essential means to drive agricultural transformation and upgrading. Modern agriculture professional groups are collaborative networks organized in rural areas that involve agricultural practitioners, technical service organizations, enterprises, and relevant institutions. Their objective is to promote agricultural modernization and enhance agricultural production efficiency and farmers' income levels. Therefore, this paper aims to provide valuable insights and guidance for the implementation of the rural revitalization strategy through an in-depth study of the practical approaches to building modern agriculture professional groups.

## **1. Introduction**

With the deepening implementation of China's rural revitalization strategy, rural economic development faces new opportunities and challenges. Traditional agricultural models are increasingly insufficient to meet the demands of modern society. Modern agriculture professional groups, as a novel organizational form, are widely recognized as a crucial pathway for driving rural development. By integrating rural resources, enhancing farmers' skills, and nurturing rural industries, modern agriculture professional groups contribute to the transformation and upgrading of rural economies. However, in the practical implementation process, the construction of modern agriculture professional groups encounters a series of issues and challenges.

## **2. Background of Professional Group Construction**

The modern agricultural professional group is one of the essential domains in the field of education and training at the school, dedicated to nurturing highly skilled individuals with modern agricultural technology and management capabilities. This professional group comprises four majors, including modern agricultural technology, seed production and management, horticultural technology, and unmanned aerial vehicle application technology, offering diversified training and education to meet the demands of contemporary agricultural development.

## **2.1. Horticultural Technology Major**

The horticultural technology major has achieved significant accomplishments in terms of faculty, practical bases, and school-enterprise cooperation. The faculty team for this major is of high quality, and the availability of part-time teachers enriches the resources, providing comprehensive guidance and support to students. The diversity of practical bases offers students abundant opportunities for hands-on experience. Extensive school-enterprise cooperation with various corporate entities has fostered the deepening of practical teaching and enhanced students' employment prospects.

## **2.2. Seed Production and Management Major**

The seed production and management major prioritize school-enterprise cooperation and have continuously improved educational quality and training levels by signing cooperation agreements and implementing an apprenticeship talent training model. The teaching faculty for this major is structured reasonably, with a robust team of instructors. The comprehensive and standardized practical teaching system includes the establishment of multiple training bases, providing students with extensive practical opportunities. Ongoing cooperation with enterprises further propels student employment and enhances their practical skills.[1]

## **2.3. Modern Agricultural Technology Major**

Established in 2018, the modern agricultural technology major has made significant progress in just four years. Under the guidance of the major's construction council, a part-time faculty resource repository has been established, enriching the teaching staff. The conditions for practical teaching continually improve, with on-campus and off-campus training bases maturing over time. The expansion of cooperation with multiple corporate entities has established partnerships that provide students with more practical opportunities.

## **2.4. Unmanned Aerial Vehicle Application Technology Major**

The unmanned aerial vehicle application technology major is an emerging field within the professional group and has initially established experimental and training facilities. Extensive collaboration with external partners, including multiple corporate entities, provides practical opportunities for students. The structured teaching faculty offers comprehensive education and training to students.

## **3. Analysis of the Relationship between Rural Revitalization and Modern Agricultural Professional Groups**

### **3.1. The Demand for Agricultural Modernization Drives the Construction of Modern Agricultural Professional Groups**

The implementation of the rural revitalization strategy requires the promotion of agricultural modernization, aiming to enhance agricultural productivity and increase farmers' income levels. Modern agricultural professional groups, as a form of organization and cooperative network, can meet the demands of agricultural modernization. The construction of professional groups can integrate agricultural production factors, promote the optimization and utilization of resources. Through the development of professional groups, different agricultural practitioners, technical service organizations, and enterprises can collaborate with each other, collectively driving the transformation and upgrading of agriculture. The construction of modern agricultural professional groups contributes

to elevating the technological level and management capacity of agricultural production. Professional groups can introduce advanced agricultural technology achievements, promote innovation and application of agricultural technology. Through technical training and consulting services, professional groups can assist farmers in mastering advanced agricultural production techniques, enhancing production efficiency, and product quality. Additionally, professional groups can organize technical research and innovation activities, further advancing agricultural science and technology.[2]

### **3.2. Modern Agricultural Professional Groups Promote the Integration and Optimization of the Agricultural Industry Chain**

Stakeholders within professional groups can form close partnerships, participating together in various stages of agricultural product cultivation, production, processing, and sales. Through resource sharing and collaborative coordination, professional groups can extend and upgrade the agricultural industry chain. Participants within professional groups can enhance the added value and market competitiveness of agricultural products through collaborative operations, centralized procurement, and unified sales. For instance, farmers can establish cooperative relationships with agricultural product processing enterprises through professional groups, directly selling agricultural products to these enterprises, thus avoiding losses and costs associated with intermediary stages. Moreover, professional groups can improve the quality and market competitiveness of agricultural products by integrating production, packaging, and logistics processes.

### **3.3. Modern Agricultural Professional Groups Provide Technological Support and Innovation**

Professional groups introduce and promote advanced agricultural technology achievements, offering technical training and consulting services to farmers, assisting them in adopting advanced agricultural production techniques. Professional groups stimulate innovation and application of agricultural technology. Through technical research and innovation activities, professional groups can drive the further development of agricultural science and technology. For example, professional groups can organize technical exchanges and collaborative research, facilitating the transformation and application of agricultural technology achievements. Furthermore, professional groups can promote the understanding and use of the latest agricultural technology through technical demonstrations and promotions.

### **3.4. Modern Agricultural Professional Groups Promote Diversification of Rural Economic Development**

Professional groups, through the establishment of cooperative relationships, provide value-added services and opportunities for diversified business operations for farmers.[3] Farmers can expand their economic activities beyond agriculture by collaborating with professional groups in areas such as agricultural product processing, rural tourism, and agricultural ecological preservation, thereby enhancing the development level of rural economies. The construction of professional groups injects new vitality into rural economies. For instance, farmers can engage in agricultural product processing through collaboration with professional groups, producing high-value-added agricultural products. Additionally, professional groups can assist farmers in developing non-agricultural industries such as rural tourism, supporting the diversification of rural economic development.

### **3.5. Modern Agricultural Professional Groups Promote Employment and Income Growth for Farmers**

Professional groups, by integrating agricultural production factors and providing value-added

services, create more employment opportunities for farmers. For example, under the organization of professional groups, farmers can participate in various stages of agricultural product production and processing, obtaining more employment opportunities. Furthermore, professional groups offer technical consultation, training, and management services as value-added services, assisting farmers in improving their skills and management abilities, thereby raising income levels. Through the organization of professional groups, farmers can collectively participate in the sales and marketing of agricultural products, sharing the benefits of value-added in the industry chain. In addition to creating employment opportunities and additional sources of income, the construction of modern agricultural professional groups can bring about other positive impacts. For example, through the development of professional groups, farmers can learn more about modern agricultural knowledge and skills, enhancing their qualifications and competitiveness. Additionally, the construction of professional groups can promote social interaction and mutual engagement among farmers, increasing social identity and sense of belonging. Through the organization and management of professional groups, farmers can collectively participate in the construction of social harmony and stability.[4]

### **3.6. Modern Agricultural Professional Groups Promote Rural Social Governance and Cultural Inheritance**

Participants within professional groups can establish close cooperative relationships and common interests, thus promoting social harmony and stability. Professional groups can provide more participating entities and management experience for rural social governance, increasing the efficiency and quality of rural social governance through organization and management. Furthermore, the construction of modern agricultural professional groups can promote the inheritance and development of rural culture. Professional groups can organize various forms of cultural activities and exchanges, facilitating the inheritance and development of rural culture. Through the organization and management of professional groups, the quality and coverage of cultural activities can be improved, injecting new vitality into the inheritance and development of rural culture. For example, professional groups can organize farmers to participate in cultural activities and festival celebrations, enhancing farmers' cultural identity and sense of belonging.[5]

## **4. Strategies for the Construction of Modern Agricultural Professional Groups in the Context of Rural Revitalization**

### **4.1. Construction of Professional Group Mechanisms**

#### **4.1.1. Establish a Long-term Mechanism of "Project-Driven, Coordinated Management" in School-Enterprise Cooperation**

In the context of the rural revitalization strategy, modern agricultural professional groups should proactively respond by establishing a long-term school-enterprise cooperation mechanism to promote talent development and industrial growth. By leveraging provincial internship and training bases of Hubei universities and collaborating deeply with enterprises such as the Hubei Modern Agriculture Vocational Education Group, establish a Modern Agriculture Collaborative Innovation Center with joint investments. Schools and enterprises should open up human resources, laboratories, and production bases to each other, with projects as the driving force, and jointly build experimental training centers, conduct collaborative research on new technologies, cultivate adaptable talents, and share the outcomes of cooperative projects to enhance the school's educational quality and the competitiveness of enterprises.[6]

#### **4.1.2. Establish a "Data Analysis, External Diagnosis, Internal Improvement" Mechanism for Quality Assessment in Professional Education**

In order to ensure the quality of education in modern agricultural professional groups, we propose to establish a Modern Agriculture Professional Group Construction Guidance Committee and invite renowned experts from government, industry, academia, enterprises, and alumni employers to conduct comprehensive evaluations. We will utilize third-party authoritative data organizations to evaluate and analyze results from skills assessments and graduation projects conducted by the Education Department, measuring changes in students' core professional skills rankings among similar programs statewide. This mechanism will help identify issues promptly and make necessary adjustments to continuously improve the quality of education.

### **4.2. Innovation in Talent Development Models**

#### **4.2.1. Implement the "Two Autonomies, Four Integrations" Talent Development Model**

To meet the personalized and diversified needs of talent development, modern agricultural professional groups should implement the "Two Autonomies, Four Integrations" talent development model. This model allows students to autonomously select courses within the professional group, including position-specific courses like seedling production, as well as elective modules such as bonsai creation and artistic flower arrangement. Through a combination of professional courses and specialized modules, students will meet the basic graduation requirements and enhance their comprehensive qualities.

#### **4.2.2. Innovate Diverse Professional Talent Development Features**

The Horticultural Technology program can promote talent development and teaching reform based on industry-education integration. To enhance entrepreneurial talent development, the modern agriculture program will establish a "Four-Level Upward" model. This model includes entrepreneurship fundamentals education, real project guidance, simulated company training, and authentic company elevation. It will introduce real enterprise cases and projects to stimulate student interest through simulated and authentic company operations. Additionally, the program will reform teaching and assessment methods, implement small-class teaching, and strengthen assessments of in-school performance, practical experience in enterprises, and company production and management to better cultivate entrepreneurial talents.

### **4.3. Curriculum System and Curriculum Development**

#### **4.3.1. Systematically Construct a "Modular" Curriculum System Targeting Emerging Agricultural Formats**

Modern agricultural professional groups should restructure the curriculum system based on the trends in industry development. The curriculum should be modular, integrating different modules such as cultivation techniques, facility agriculture, horticultural landscape design, and agricultural product processing within the professional group. For example, the "intelligent Agricultural technology" module is set up in the modern agriculture professional group, covering the operation and maintenance of intelligent equipment, data analysis, agricultural robots and other related courses, to meet the needs of agricultural modernization. In addition, corporate cooperation is introduced to combine real-world projects with courses to provide practical operation opportunities and increase practical experience.

#### **4.3.2. Establish a Curriculum Development Mechanism Focused on "Industry-Education Integration and Application-Oriented Education"**

To better prepare talents that meet the needs of rural revitalization, modern agricultural professional groups should establish a curriculum development mechanism emphasizing "industry-education integration and application-oriented education." Curriculum design should align with actual agricultural industry demands, with involvement from industry experts in teaching design. At the same time, modern agricultural professional groups should introduce enterprise cooperation, and bring enterprise needs and actual projects into the course content, so that students can directly participate in solving practical problems. For example, in cooperation with local agricultural enterprises, the "Agricultural Industry Project Management" course is offered, allowing students to participate in practical project management and accumulate practical experience.

#### **4.4. Construction and Utilization of Practical Bases**

##### **4.4.1. Establish an "Integrated, Comprehensive" System of Practical Bases**

Modern agricultural professional groups should establish a comprehensive system of practical bases, including agricultural demonstration gardens, facility farms, agricultural product processing facilities, and more. These bases should comprehensively cover various professional directions to meet the diverse practical training needs of students. In addition, modern agricultural professional groups can be combined with rural revitalization policies to encourage schools to cooperate with local governments and enterprises to build comprehensive experimental bases for modern agriculture and promote rural revitalization.

##### **4.4.2. Promote Diverse Operations of Practical Bases**

To make better use of practical bases, modern agricultural professional groups should promote diversified operations, encourage schools to cooperate with enterprises and cooperatives, utilizing practical bases for agricultural product production and processing to achieve economic benefits. Simultaneously, we need to open the bases to the community, hosting agricultural science popularization activities and training courses to enhance the social impact of these bases. Moreover, we need to actively explore the "Internet + Agriculture" model to facilitate digital management and intelligent operation of the bases.

#### **4.5. Faculty Development and Training**

##### **4.5.1. Establish a "School-Enterprise Cooperation, Joint Advancement" Training Mechanism**

Modern agricultural professional groups should establish a faculty training mechanism to help teachers better adapt to the demands of rural revitalization. Through school-enterprise cooperation, modern agricultural professional groups can invite enterprise experts to the school to share practical experience, improve teachers' practical operation ability and encourage teachers to participate in enterprise project cooperation, cultivate practical project management experience, so as to better guide students.

##### **4.5.2. Promote Interdisciplinary Exchange and Subject Integration among Teachers**

To improve teachers' comprehensive qualities, modern agricultural professional groups should encourage interdisciplinary exchanges and subject integration among teachers, encourage teachers to participate in industry exchange seminars to improve industry insight. At the same time, modern

agricultural professional groups can organize interdisciplinary research teams to promote the integration of agriculture, engineering, biology and other fields, train comprehensive teachers, and better meet the needs of rural revitalization.

## **5. Future Development Prospects for the Construction of Modern Agricultural Professional Groups**

### **5.1. Technological Innovation and Smart Development**

As technology continues to advance, new technologies and equipment will be applied to the construction of modern agricultural professional groups. For example, the application of agricultural robots, drones, artificial intelligence, and other technologies will significantly increase agricultural production efficiency and quality while reducing costs, promoting sustainable agricultural development. Additionally, the application of technologies such as big data and cloud computing will assist modern agricultural professional groups in achieving more precise agricultural production management and decision-making. Furthermore, modern agricultural professional groups will emphasize smart development. For instance, smart agricultural robots can automate planting, fertilization, and spraying operations, greatly enhancing agricultural production efficiency and quality. Drones and satellite technology can enable remote sensing monitoring of farmland, providing timely alerts and decision support for crop growth and pest control.

### **5.2. Diversification and High-Quality Agricultural Product Production**

With the rise of consumer demands for health, safety, and environmentally friendly products, modern agricultural professional groups will place a greater emphasis on producing high-quality agricultural products. Examples include organic agricultural products, green agricultural products, and geographical indication agricultural products, which will become essential products within modern agricultural professional groups. Simultaneously, farmers within these professional groups will no longer focus solely on cultivating single crops but will engage in a variety of crops and animal husbandry. Diversifying production methods can increase the value and competitiveness of the agricultural industry chain while meeting market demands. To achieve high-quality agricultural product production, modern agricultural professional groups will place a greater emphasis on technological support and brand building. For instance, by utilizing technology to enhance the quality and nutritional value of agricultural products, developing new varieties and brands, and improving product value and market competitiveness. Additionally, enterprises within the professional group and agricultural cooperatives will strengthen brand building through brand promotion and marketing, increasing product recognition and reputation and expanding sales channels and market share.

### **5.3. Deepening Industrial Synergy and Resource Sharing**

Enterprises from various fields within professional groups will strengthen cooperation, creating synergies within industries and sharing resources and risks. For example, agricultural product processing enterprises and agricultural cooperatives can jointly invest in the construction of agricultural product processing plants, extending the industry chain and adding value to the value chain. Additionally, enterprises and agricultural cooperatives within the professional group can share resources such as technology, equipment, and sales channels, improving production efficiency and reducing costs. To achieve industrial synergy and resource sharing, modern agricultural professional groups will implement various measures. For example, establishing industry alliances and cooperatives to promote cooperation and communication among different enterprises and farmers.

Simultaneously, enhancing the sharing of financial and information flows to provide a solid foundation for industrial synergy.

#### 5.4. Improved Financial Support and Financing Services

In the future, financial support and financing services will be further improved, with governments and financial institutions jointly developing various financing schemes. These may include providing low-interest loans, offering guarantee services, and establishing risk compensation funds to help farmers address financing challenges. Additionally, rural financial markets will be developed, introducing diversified financial products and services to provide more convenient financial support and financing services to farmers. Simultaneously, robust financial supervision and risk control will be enforced to ensure the safe and rational use of funds and prevent wastage and losses. To further enhance financial support and financing services, modern agricultural professional groups will strengthen communication and cooperation between financial institutions and farmers. For example, establishing financial service teams to provide comprehensive financial consultation and services to farmers. Additionally, adopting differentiated financial service models to offer personalized financial products and services based on the characteristics and needs of different agricultural industries.

#### 6. Conclusion

In summary, the construction and practice of modern agricultural professional groups play a significant role in rural revitalization. The establishment of professional groups can promote agricultural modernization, diversify rural economic development, and facilitate the integrated development of rural society. However, the construction of professional groups still faces challenges and issues that require collaborative efforts to address. It is believed that with continuous practice and exploration, the construction of modern agricultural professional groups will achieve more remarkable results, injecting new vitality into rural revitalization.

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