International Journal for Housing Science and Its Applications

Publish September 9, 2025. Volume 47, Issue 1 Pages 443-451

https://doi.org/10.70517/ijhsa47137

Analysis of Talent Demand Characteristics in Agricultural Products Cross-border E-commerce Marketing and Reform Path of Supply-side Farmer Training

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Abstract Against the backdrop of rapid development in the global digital economy, agricultural products cross-border e-commerce has emerged as a crucial channel for promoting agricultural transformation, upgrading, and increasing farmers' income. However, the structural shortage of marketing talent and insufficient supply in the farmer training system have increasingly become major constraints to the sector's sustainable development. This paper systematically analyzes the competency characteristics, growth challenges, and practical demands of marketing talent in cross-border e-commerce for agricultural products. It identifies key supply-side shortcomings such as outdated training content, fragmented resource allocation, and overly uniform teaching models. In particular, the current training system fails to integrate digital skills, cross-cultural communication, and international market strategies, which are essential for success in the global e-commerce landscape. Furthermore, it proposes reform paths from the perspectives of industry chain integration, platform collaboration, competency certification, and incentive mechanisms. By fostering collaboration between various stakeholders, including e-commerce platforms, agricultural enterprises, and educational institutions, the paper suggests the establishment of a more coordinated and sustainable training system. The study emphasizes that the training system should align with industrial strategies, forming a long-term mechanism combining institutional support and internal motivation. The paper also highlights the importance of developing a comprehensive policy framework that supports talent cultivation, ensuring both immediate results and long-term success in the global marketplace. It argues that building a new farmer training system oriented by demand, grounded in practice, and aimed at long-term growth is essential for promoting the global reach of agricultural product brands and achieving rural revitalization.

Index Terms Agricultural products cross-border e-commerce, Talent supply, Farmer training reform

I. Introduction

With the deepening of globalization and the rapid growth of the digital economy, cross-border e-commerce of agricultural produce has emerged as a revolution force to bring forth new channels for rural economic modernization, promote the global market of domestic farm products, and provide new methods of increasing farmers' incomes [1]. As digital platforms have become focal points of global trade movements, the integration of agriculture onto these platforms is now not an option but a necessity that needs to be tackled with haste. However, alongside the dominant market trend, the sector has a structural stranglehold: a gigantic gap between the growing need for cross-border marketing capability and the limited availability of capable, responsive talent [2].

This shortage of talent, especially in marketing, is a significant hindrance to sustainable development and international competitiveness.

The existing farmer education system-traditionally concentrated on fundamental agricultural practices-is lagging in responding to the rapidly evolving requirements of the cross-border e-commerce environment. It remains mostly in isolation, outdated in terms of content, and unsuitable to the intersectional, cross-disciplinary nature of digital commerce [3]. Cross-border agricultural products e-commerce promotion today requires a blended skill set: international trade regulation proficiency, data-driven digital marketing nimbleness, creativity in brand building, and cultural competence in cross-border communication.

Under this situation, it is especially vital to rebuild the supply pattern of farmer training from a narrow "skill-oriented" to a comprehensive "industry-adaptive" paradigm with sensitivity to market and technological development. This article

discusses the changing talent demand situation in agricultural products cross-border e-commerce marketing, diagnoses major inadequacies in existing training supply mechanisms, and puts forward a portfolio of strategic reform channels responsive to actual industrial demands. The aim is to present cutting-edge theoretical analysis and policy prescriptions for constructing a high-quality, firmer rural talent force during the digital globalization era.

II. Analysis of Talent Demand Characteristics in Agricultural Products Cross-border E-commerce Marketing.

II. A. Cross-border E-commerce Marketing Is Evolving Toward Integrated Competency Demands

The cross-border e-commerce marketing industry is transforming from a one-operation-focused focus to a new phase where multidimensional and strategic capacities are integrated [4]. The market talent demand is no longer "platform competency" or "product posting" operators but now requires masters who possess compound versatile capabilities, such as brand construction, cross-cultural communication, platform logic, and user awareness. Especially nowadays, foreign markets' looking at agri-products is not just price and quality alone but also cultural, emotional, and identification of identity. To change this, there should be strong market understanding and adaptive communication skills [5].

The constant requirement for updating of digital operations calls for the talent to possess the potential for instant learning and adaptation [6]. The periodic updates of platform policies, algorithms, fashion of content, and advertising styles demand cross-border e-commerce marketing talent to be endowed with the capacity for endless learning and a deep understanding of systemic knowledge paradigms. Such a capability far surpasses the technical stockability prevalent in traditional e-commerce industries and deals with more career-oriented long-term perspectives and rational judgment nurturing.

To calculate the increase in demand for talent during changes in demand for cross-border e-commerce marketing capability, the following formula is applicable:

$$\text{Talent} = \frac{\text{Required-Current}}{\text{Current}} \times 100\%\text{s} \tag{1}$$

II. B. Talent Scarcity Stems from Educational Gaps and Industrial Disconnection

Today, real qualified experts for agricultural cross-border e-commerce promotion are still very seldom. On the one hand, the majority of colleges and universities have not yet developed a nurturing curriculum system specializing in this industry yet [7]. Agricultural universities are still primarily delineating traditional domains like planting, processing, and agronomic management with little coverage of overseas market strategy, e-commerce channel architectures, or overseas compliance. Meanwhile, although e-commerce-related majors include cross-border modules, they lack also agricultural context and supply chain exposure, resulting in graduates who cannot keep up with industry-side requirements [8].

Industrially, cross-border e-commerce has not yet achieved mass-scale practice in agricultural businesses. Most domestic agribusinesses are still reluctant or indifferent, without strategic-thinking and long-term investment patience [9]. Consequently, prospective future young and outstanding talents are lacking stable development platforms, shifting step by step to more mature industries and creating a phenomenon of "soaring demand-limited supply-severe attrition."

II. C. Cultural Awareness and Emotional Communication Are Key Soft Skills

Agricultural products, differing from consumer or industrial products, necessarily bears cultural meaning and regional culture. Tea, chili, cereals, honey, and dried fruits are not commodities in the classical sense but symbolize ecological geography, local culture, and patterns of consumption. It is not possible for advertisers to convey the value proposition embedded in such products unless they possess a sharp realization of such cultural heritage. Successful [10]. cross-border agriculture brands are no longer based on price and quality, but on blending culture and building emotional ties. Only those with cultural semantics sense. are able to create successful brand stories and gain trust of consumers.

This sort of affective storytelling is not merely a demand on content generation skills but also on multilingual communication skills. In the case of global social media platforms, tone, rhythm, and value positioning must support local cultural norms—a critical determinant of whether a brand can "go viral." Unfortunately, these kinds of competencies are almost nonexistent in current farmer training systems and traditional education channels, a critical bottleneck to Chinese agri-food brand globalization [11].

II. D. Practical Field Experience Is the Hidden Threshold for Success

Compared with the philosophical e-commerce concepts learned in textbooks, cross-border e-commerce of agricultural products is very practical, and the marketing process involves a lot of real issues like platform comments, clearing of products, language translation, return and exchange communication, payment settlements, and penalty mechanisms of platforms [12]. T Such disjointed and interconnected processes of operations can contribute to overall failure in marketing when one link in the chain is compromised. Therefore, hands-on capability with experience in the field is particularly desirable in cross-border

e-commerce [13].

Statistically speaking, around 60% of success in cross-border e-commerce results from hands-on experience, whereas only 30% results from educational background and certificate. This indicates that practical experience is more influential than traditional academic certificates. But such practical skills are not usually found inside university classrooms or in short-term vocational training courses sponsored by government, but rather in frontline business enterprises or self-enterprise in countryside [14]. Current talent screening mechanism has not yet come to achieve these "practical skills," but inclines towards degrees and certificates, which stifles those truly talented, and leads to the loss of skill resources and disappointment.

To measure improvement in marketing outcomes as a result of hands-on experience, the following formula may be applied:

$$\text{Sales} = \frac{\text{Sales-Sales}}{\text{Sales}} \times 100\% \tag{2}$$

II. E. Career Pathways Require Clear Guidance and Institutional Support

The real reason for talent deficiencies is not just the shortage of skills but also in the lack of clear career development and stable investment routes [15]. Most young agripreneurs with digital skills and entrepreneurial ambitions lack clear-cut development routes and stable support mechanisms [16]. They are compelled to join low-ranking operational positions in large platforms or are members of peripheral, unsustainable rural start-ups. Lack of working competency evaluation mechanisms, sophisticated training infrastructures, and professional accreditation agencies usually results in frustration and turnover.

An equilibrium in a balanced talent ecosystem should be achieved among base skill sharing and high-level capacity development and among experiential project incubation and knowledge transfer. Market mechanisms alone are insufficient to create such an ecosystem; collective institutional direction and policy facilitation are the hour of need [17]. Only by forming a closed-loop interaction between industry, education, and human capital development is the industry able to take its internal momentum—ensuring that marketing competence in agricultural cross-border e-commerce has a worthy niche, with dignity and long-term future, in the evolving global value chain.

III. Analysis of Supply-side Deficiencies in the Current Farmer Training System

III. A. Training Content Lags Behind Industrial Transformation

Currently, the course curriculum of training programs for farmers is also largely biased towards traditional agriculture, highlighting agricultural production practices, safety regulations, pest and disease control, and other outmoded paradigms. Owing to such lack of knowledge regarding digitalization, platformization, and international trends in content creation, training material has remained starkly mismatched to the actual needs of the rapidly changing cross-border e-commerce of agricultural products [18].

According to survey figures, over 70% of farmer training programs neglect relevant content regarding cross-border e-commerce, without any training in platform logic, user psychology analysis, content production, and cultural communication. As a result, students are still confused about actual applications after the training and fail to apply what they have learned to practical capabilities [19]. Even if some institutions attempt to incorporate e-commerce content into training, the format is superficial in style. The majority of programs simply list such topics as "how to register a cross-border platform account" or "how to post products," without a systematic approach for building the skills required and progressing. Training is therefore rendered a one-time information transmission instead of an ongoing efficient process for capability building.

This fragmented, one-off teaching mechanism not only cannot serve to help students conduct actual business operations but also has the effect of suppressing their confidence in participating in the new economy. To address this issue, training courses must catch up with current progress, increase coordination with cross-border e-commerce, and improve students' practical operational capacity by establishing a systematic, sustainable construction trajectory.

III. B. Fragmented Coordination Among Training Providers

The training supply system for farmers is marked by the operation of many agencies alongside one another in parallel and numerous institutions independently of each other. There is a lack of coordination even when government, agricultural colleges, e-commerce corporations, and social organizations are involved, and there is duplication of efforts and redundant investments. In the majority of regions, farm training remains promoted as an annual bureaucratic process, tied to budget cycles and bureaucratic logic, with no sustainable delivery mechanism. It is severely limited in adaptability to the fast-moving, highly market-driven nature of cross-border e-commerce.

Even though e-commerce platforms own frontline expertise and technical capability, their participation in training is superficial, centering on brand awareness or short-term marketing promotions, without institutionalized investment or long-term liability. Some agricultural extension workers try to train e-commerce on a part-time basis, but without sufficient

experience in operation, their teaching remains isolated from real practice. Overall, the career of farmer training for cross-border e-commerce is lacking in effective leadership, regulation in standardized course materials, and deep integration—severely sabotaging quality and efficiency in supply.

III. C. Undifferentiated Targeting Leads to Resource Mismatch

The variation within the farm community internally has been over looked for decades, and training requirements are typically managed as a "homogeneous audience" that results in failure to precisely match resource distribution with actual needs. Age disparity, educational level, learning capacity, and development aspirations mean that one set of content and model cannot address the actual pain areas of various groups fundamentally. For example, old farmers, due to their poor capacity for learning, are unable to process technical information, while for the young population, training material becomes outdated and boring and fails to arouse curiosity. Training has the tendency to enhance learners' psychological distance and anxiety regarding learning, thereby lowering their willingness to attend.

Besides, there is also structural inequality in training resource spatial allocation. Quality resources are largely located in central towns or demonstration zones, whereas poor rural villages and ordinary farmers have no accessible training channels. According to statistics (Figure 1), almost 70% of farmers cannot access training opportunities well matched to their needs, thereby rendering information marginalized groups, especially those most in need of skill empowerment, outside mainstream training networks. In the meantime, the gifted youth are also trapped due to the lack of institutional channels of development, leading to a two-fold problem of mismatched supply and wasted talent.

Special training programs will be designed in order to suitably match the requirement of different groups. For example, training flexibility of elderly farmers can be analyzed using the below formula:

$$\text{Older} = \frac{\text{Training}}{\text{Number}} \tag{3}$$

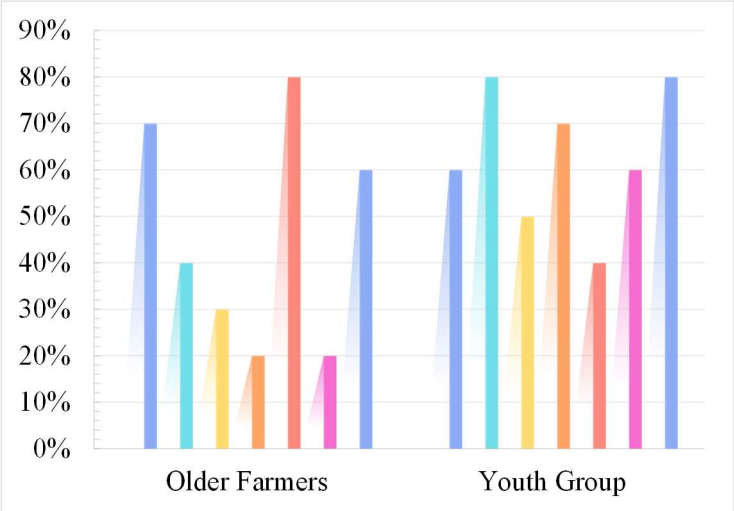

Figure 1: Differences in Training Content and Format Demands Across Different Groups

III. D. Practical Constraints Undermine Participation Motivation

Minimal attendance at training by farmers is not a sign of ingrained indifference, but a result of practical constraints and institutional disinterest. Most are forced to balance farm work, home tasks, and off-farm work, and it is extremely difficult to give time to full-time training. Even people who are willing to join are discouraged by high opportunity costs and unclear gains. Repeating delivery formats and absence of immediate feedback mechanisms also lower their feelings of achievement and perceived worth during the learning process, reinforcing psychological detachment.

Most importantly, training has nothing to do with known career destinations. There are no conventional talent spotting systems and replicable growth trajectories. Consequently, training outcomes do not find their way into job opportunities and do not connect effectively with entrepreneurial support or credit access. With a "learned but useless" reputation, farmers naturally lose faith in training initiatives—establishing a self-reinforcing cycle of "low appeal—low participation—low conversion."

III. E. Absence of Evaluation Mechanisms Hinders Feedback and Improvement

Most of the farmer training schemes still prioritize quantitative goals such as the number of sessions, total participants, and

course completion rates, without noting qualitative impacts and longitudinal effects. Some of the most important questions regarding whether the training dealt with real-world problems, whether it led to revenue gains, and whether trainees succeeded in establishing businesses or on online selling platforms are rarely examined or assessed in any systematic fashion. Most of the schemes thus end up being box-ticking exercises—sensationally good-looking on the outside, but shallow.

Participant feedback channels are lacking or ineffective, discouraging dynamic adaptation of teaching content to actual needs. There is no channel to track training efficacy, so one cannot identify high-quality trainers, great curricula, or successful pedagogical models. The training environment thus does not undergo internal incentives and competition, so excellence cannot be sustained or created meaningfully. At a deeper level, this failure to measure is an indication of policy short-sightedness and supply-side utilitarian thinking—resulting in not only wasted resources, but also lost trust.

IV. Exploring Supply-side Reform Paths for Farmer Training

IV. A. Restructuring Training Logic Around the Industrial Chain as the Core Axis

Good farmer training is not simple mechanical transfer; it must be an inner motivating force for local industrial upgrading and eco-green rural development. The innovation is to shatter the disintegrated model of "employment after training," and march instead towards a supply-side integrative approach that is demand-driven and based on the industrial chain. Through focusing on regionally desirable farm produce, the cross-border e-commerce potential of such produce, and then reverse-engineering competency frameworks and training goals, the training system can be infused directly into the region's overall economic trajectory with better precision and alignment.

This kind of training no longer needs to be thought of as an add-on or short-term program, but as a permanent part of the end-to-end transformation of the farm chain. Training design ought to keep the whole "production—processing—marketing—service" value chain in mind, breaking it down into microscopic functional modules. For every step—whether seed variety standardization, value-added processing, digital onboarding of products, multimedia content development, or cross-border logistics and post-sales—especific job and skill sets must be defined. These can then be mapped out in competency modules, operational manuals, and scenario training, in a way that not only trains the trainees what to do but also why their job fits into the larger system. This kind of structure-based, industry-specific design keeps training functional and on-target, and enables trainees to experience functional belonging and strategic alignment in the learning process.

IV. B. Enhancing Platform Collaboration to Ground Practice-based Resources

The inherent nature of cross-border agri-e-commerce renders theoretical instruction insufficient by itself. Practice-based training must be employed, integrating platform-based operations, on-the-spot case study examination, and real-time data analysis into the curriculum itself. It entails close collaboration among training institutions, platform enterprises, foreign trade-oriented agricultural businesses, and veteran practitioners, with a three-dimensional convergence of theory, technology, and business logic. Such cooperation is required to create adaptive, platform-literate talent that can operate ever-more dynamic digital landscapes.

Platform businesses, especially global trade giants like Amazon, TikTok Shop, and Alibaba International, possess invaluable industry experience and operating infrastructure.

Their engagement can ground training back in the real world. For instance, training programs can be distributed "platform-integrated labs" filled with simulation interfaces in which learners work on actual seller dashboards, analysis tools, and virtual ad consoles to run mock campaigns or answer mock customer support issues. The sandbox practice labs allow learners to do no harm and learn from failure and iteration of strategies an experience much richer than detached teaching.

Moreover, having business managers, algorithm engineers, or successful vendors of these sites as guest speakers adds credibility and practicality to the training. These are individuals who can provide detailed insights into critical operations like listing optimization, inventory buffering for foreign warehouses, buyer persona analysis, and product-market fit through cultures. These industry voices also close the gap between "what's taught" and "what's required," so the knowledge transfer is applicable in the real world.

Beyond the classroom, they can be extended via co-certification arrangements or internships pipelines. For instance, trainees who successfully complete higher-level modules can be awarded platform-approved certifications, rendering them more work-ready or entering into verified seller agreements. City governments can also act as middlemen by offering subsidies or tax reliefs to platform businesses contributioning content, teachers, or data into public-interest learning initiatives—making collaboration a mutual value loop.

A worthwhile addition to this training system would be to employ a "failure casebook" method—a collection of real-world failures and congestion experienced by novice exporters or novice e-commerce sellers. These cases would be analyzed by pupils, identifying the causative factors (e.g., misdescription, customs violations, keyword mismatch), and proposing actions to prevent them. These thinking-exercise stimulate diagnostic thinking and immunize learners against avoidable blunders.

Without the real injection of platform intelligence and operational savvy, training is in jeopardy of being theoretical and irrelevant. With it, however, the training climate is not merely a koguntiver, but a success duplication path—firmly anchoring

talent development in the thumping epicenter of global digital commerce.

IV. C. Building a Tiered and Categorized Training System to Address Group Diversity

With the astronomical heterogeneity in the farming community, it is critical to move away from the one-fits-all training model and construct a differentiated and responsive system in terms of "competency level + development intent." Trainees need to be segmented into foundation, transition, and high-potential levels, and these levels will have s disparate knowledge bases, motivational levels, and career pathways. Course content needs to be organized in three serial levels: "awareness," with focus on conceptualization and attitude transformation; "skills," with focus placed on technical capability and applied expertise; and "operations," with focus placed on advanced management, strategic planning, and market implementation.

Along with this level organization, pedagogy as well has to become deconcentrated. In-class learning can be supplemented with on-ground simulations, project work, case studies, and electronic media. For the elder farmers, possibly with lower educational attainment or digital acclimatization, soft interventions such as story, pictorial illustration, role-play, and micro-course courses specially designed for mobile usage can reduce psychological resistance and enhance comprehension. For the returnee rural youth, who often happen to be digitally literate but otherwise rooted, training must incorporate entrepreneurship simulation, co-creation with platforms, live review of business plans, and mentor-guided acceleration programs to build both operational competence and strategic vision. For village cadres and other local organizers, and cooperative leaders, the focus needs to shift to models of governance, brand system building, and organizing training. By way of "lead goose" projects, they can function as local multipliers increasing the reach and depth of training across villages.

IV. D. Expanding Pedagogical Boundaries to Enable Scenario-based Integration

Training farmers requires moving beyond the physical and perceptual borders of conventional pedagogy, into real-world production, marketing, and logistics settings. It must move from stationary teaching materials to active production areas—from lesson plans to fields, and from PowerPoint presentations to real e-commerce companies. Training bases like smart farms, farm processing plants, cross-border e-commerce warehouses, livestreaming studios, and rural digital service centers can be transformed into "experiential classrooms." They facilitate task-based learning in which trainees watch live issues, apply precise solutions, and step-by-step develop competencies. This form of immersive training complements the "learn—apply—reflect" process, anchoring learning gains on experience.

In addition, training will have to transition from single-shot intervention activity to persistent support mechanism—developing into a form of extended service. Since trainees will necessarily encounter real-time issues in opening accounts, developing content, managing fulfillment, or resolving cross-border customer complaints, they need timely, individualized advice. Therefore, a "remote support system" should be instituted to provide long-term, low-frequency, high-value engagement. WeChat advisory groups, video consulting channels, troubleshooting FAQs, and follow-up service dashboards are only a few examples of infrastructure that can be leveraged to create aclusive mentoring infrastructure.

This service-based model over the traditional classroom-only models amplifies the feeling of continuity, belonging, and personal importance. The learners can remain connected to the learning community, the drops are reduced, and the entrepreneurial momentum is maintained with the confidence that is built. Above all, it reframes the role of training from a fixed duration of schooling to an active, emergent collaboration in capability building in the real-world.

IV. E. Establishing Competency Certification Systems to Activate Internal Motivation

Unless the impact of training can be feasibly translated into recognition of personal worth and open career development lines, participation will dwindle to shallow participation or symbolic acceptance. It is therefore essential to construct industry-accredited, standardized, and credible certification mechanism specifically tailored to the context of cross-border agricultural marketing. This platform should establish multi-level qualification requirements for different occupations—such as platform operator, content creator, supply chain manager, or brand manager—along with a clear set of test parameters including theoretical grasp and practical application ability.

Interestingly, certification would not be a discrete process. It would be integrated into overall career blueprints, aligned with the use rights of platforms, job referrals, project incubation, government subsidy application, and credit facilitation schemes. This ensures that there is an organized "training—certification—employment—growth" conversion process where individual learning gains are balanced against tangible economic and social gains.

The governance and system design should be left not only to educational institutions, but to a consortium model of plural stakeholders: leading cross-border e-commerce platforms, agriculture enterprises, institutions of higher education, industry associations, and government ministries. Cross-sectoral collaboration provides both market sensitivity and professional expertise. Moreover, the certification system should be imagined as a living, adaptive framework. With platform rules, consumer habits, and technology in the digital space evolving constantly, certification standards need to be updated constantly to be relevant. It is only when certification keeps developing in tandem with the market in real time that it can

become a valuable resource for practitioners and as a long-term driver of motivation and talent renewal in the rural digital economy.

IV. F. Introducing Long-term Incentive Mechanisms to Ensure Sustained Participation

Sustainability of any training system is not just dependent on the content imparted, but on its capacity to facilitate sustained engagement, generate intrinsic motivation, and bring about concrete change in trainees' lives. In cross-border e-commerce, where barriers to entry are high and cycles of success are prolonged, farmers will not continue unless a transparent andplenishing roadway from skill acquisition to upgrading livelihood is evident. Material and symbolic long-term incentive systems—therefore—need to be institutionalized to anchor engagement and spur skill retention.

At the policy level, governments must link training success to real benefit streams that have a direct impact on the entrepreneurial and economic prospects of a farmer. These range from qualification for entrepreneurship subsidies for returning youth, approval of micro-credit loans, agricultural start-up financing, priority access to public service procurement, or even logistics vouchers for cross-border trade. These real linkages provide a "learning-to-benefit" chain of reasoning that goes beyond altruism and anchors training firmly in livelihood goals. Trainees with a clear vision of material benefits are much more likely to be invested and committed in the long term.

At the workplace level, a quasi-formal "talent matching system" has to be established for pairing trained personnel with local cross-border e-commerce companies, third-party logistics operators, or rural service providers. Governments or training centers can keep talent databases current, authenticated through verification, and proactively bridge supply-demand shortfalls in rural digital economies. This reduces the post-training "vacuum period" and accelerates translating knowledge into productive employment or entrepreneurial activity.

But beyond material gains, identity and social belonging psychological motivations are no less significant. Training programs need to deliver not just competent individuals, but noble roles within the rural socio-digital context. These can be "New Farmer Lecturer Teams," "Rural E-commerce Ambassadors," or "Village Content Mentors"—institutional roles that signal differentiation and locate individuals within peer-led leadership networks. They can be combined with formal opportunities to co-teach, mentor newcomers, or lead local training chapters, thereby empowering graduates to be ecosystem builders.

The title change from "trainee" to "community leader" is especially potent. It speaks to deeper human aspirations for recognition, influence, and significance, making training a transformational rather than a transactional experience. These mechanisms also reinforce horizontal learning: when rural farmers see peers—individuals who speak their language, face their limitations, and share their context—achieving tangible success, they are much more likely to think that their own transformation is possible.

To support this, institutions must build emotional touchpoints into training infrastructure. These may be alumni networks, storytelling platforms, regular reunions, or even digital badges and social media shout-outs that publicly validate accomplishments. Coupled with access to continuous learning—modular updates, expert workshops, or startup incubators, for instance—the message is clear: engagement is not the destination, but the beginning of a sustained path towards agency and empowerment.

Such multilateral incentives—economic, identity, and purpose—can over time set fire to a sustainable, locally based ecosystem of rural digital talent. This ecosystem, once seeded, is self-perpetuating: successful trainees become mentors, trainers become advocates, and the community itself becomes the custodian of its own development. This is the ultimate aspiration of training systems that seek not only to impart knowledge, but to galvanize enduring change.

V. Optimizing the Institutional Environment and Stimulating Internal Motivation

V. A. Improving Institutional Design to Reshape the Policy Logic of Training

The most fundamental and initial step in cultivating sustainable cross-border e-commerce marketing talent is the reformulation of the institutional structure. Rather than putting farmer training at the margin of comprehensive work or treating it as a short-term policy choice, it needs to be established as a strategic cornerstone of the national rural revitalization strategy. Within the broader framework of talent-driven agriculture and industrial revitalization, farmers' training must be positioned not as a support instrument, but as a principal instrument of structural transformation, lifelong learning, and inclusive rural development. This repositioning entails a shift from disjointed projects to life-cycle-based integrated support systems.

Institutional transformation must prioritize the clarification of governance roles and the establishment of aligned interest structures at various administrative levels. Local governments should receive robust mandates for coordination, budgeting, monitoring, and performance evaluation. Meanwhile, top-down alignment should be balanced with bottom-up responsiveness, with scope for local customization without compromise on national consistency. To that end, a robust inter-departmental coordination mechanism—across agriculture, commerce, human resources, education, and digital economy bureaus—an effective inter-departmental coordination mechanism should be established to harmonize policy

objectives and avoid duplication in planning, financing, and implementation.

Most importantly, institutional innovation must prioritize mechanism building over program multiplication. More emphasis must be put on constructing sustainable ecosystems and less on launching duplicate pilots. This requires imposing integrated digital platforms to monitor training attendance, performance indicators, and post-training impacts, building a data basis for evidence-based policy-making. Only when institutional structures provide transparency, stability, and adaptability can training systems gain the resilience to achieve sustained structural transformation in rural economies.

V. B. Strengthening Policy Guidance to Encourage Multi-party Participation

A healthy training ecosystem cannot be the sole preserve of public sector initiative; it must be propelled by the collaborative efforts of a variety of actors like platform firms, vocational institutes, farmers' cooperatives, non-profit organizations, and social capital. Policy instruments must therefore be leveraged not only to guide public investments, but also to encourage private sector involvement and local innovation. The goal is to create an open, multi-stakeholder ecosystem led by the spirit of "co-construction, co-delivery, and co-benefit."

Of particular importance is the structured engagement of grassroots-level training institutes that have strong local connections in rural areas and digital platforms with industry-specific expertise. These stakeholders must be cultivated not only as service providers but also as co-creators in the policy space. Institutional guarantees—such as long-term contracts, inclusion in public procurement systems, and open access to training budgets—must be backed by performance-linked review and feedback systems. This would help dismantle the prevailing top-down structure where administrative directives have a tendency to override functional effectiveness.

Operationally, policy activation mechanisms must transition from relying on top-down "external pushes" to designing structures that generate "internal pulls." For example, a special "Cross-border Agricultural E-commerce Talent Development Fund" can be established at the municipal or provincial level with formalized disbursement criteria linked to measurable outcomes. Farmers who complete accredited training and achieve core performance indicators—initial sales, store activation, or branding milestones, for example—can be rewarded with tiered performance bonuses, interest-free start-up loans, or priority access to entrepreneurial support services.

V. C. Building Growth Pathways to Form a Sustainable Incentive Chain

Sustainable talent development depends as much on front-end training as on the visibility, availability, and perceived value of long-term development pathways. Institutional design must produce a formal \"entry—advancement—leadership" career path, integrating competency certification, skill-level benchmarking, title advancement, and project incubation into an integrated system that facilitates vertical mobility. If experts can envision a trajectory of professional rise and economic prosperity, training is redefined from a time-limited intervention to a life-long developmental channel. Re-returning rural youth, local leaders, and emergent digital entrepreneurs must be particularly addressed through provision of credential-based professional identity legitimation, social prestige, and institutional affirmation—attaining both material achievement and psychological dignity.

For circular reinforcement, organizations must also encourage high-caliber personnel to reinvest their abilities in their communities, assuming a role shift of "trainee" to "mentor" through institutionalized processes. Creating a "Digital Rural Talent Database" can both find high-achieving people and recruit them as local trainers, co-designers of courses, and hands-on instructors. Through co-teaching and knowledge-sharing, they not only pull others along but also solidify their leadership. This two-way talent mobility not only deepens the coverage and reach of the training network but also sows a culture of peer mentoring and bottom-up leadership, generating a virtuous circle of self-sustaining rural capacity building.

V. D. Emphasizing Cultural Leadership to Cultivate a Sense of Belonging

The ultimate purpose of institutional design is beyond transferring skills and productivity increases—it is about satisfying people's higher-order needs for meaning, respect, and identity. In cross-border agricultural e-commerce, practitioners are not merely "platform users" or "transaction handlers," but the new pioneers of a renewed rural narrative. Practitioners are cultural interpreters, value narrators, and digital bridge-builders. Policy systems, therefore, need to embed aspects of cultural leadership and symbolic recognition. By inventing honor systems, bestowing "New Farmer Role Model" awards, hosting regional skills competitions, and showcasing innovation in public, institutions can offer aspirational identities that nurture intrinsic motivation and shared pride.

Most importantly, institutional care must involve emotional significance and social infrastructure. For rural youth experimenting with content creation and battling algorithmic adaptations in rural towns, economic rewards are not enough. It is these extended-term social security programs—such as affordable shelter, comprehensive health care, children's education, and digital infrastructure—that are required to eliminate existential burdens and offer enabling conditions for root-billed development. Only when the institutional system places people—not numbers—at its centre and take-responsibly-charge

toward their aspirations and concerns is training able to be an actual lever for life change and rural revitalization.

VI. Conclusion

The development of agriculture cross-border e-commerce is transforming the link between traditional agriculture and the world economy, as well as presenting rural talent structures with unprecedented challenges and opportunities. In this new situation, farmers' training is no longer just a means of obtaining skills—it has become a strategic tool for building regional competitiveness and promoting rural modernization. It is only through coordinating talent demand and training supply in a strategic fashion, reconstructing institutional mechanisms, and optimizing content systems that the digital divide between farmers and the world economy can be eliminated effectively.

True reform ultimately does not rely on outside imposition, but on people's inner growth and fulfillment of self-worth. The aim of supply-side reform in farmer training is not the "teaching of platform use," but the cultivation of a new type of rural entrepreneur that is deeply rooted in local culture and connected to the global market. When the training systems finally attune to personal ambitions and offer dignified, long-term career paths, rural China will witness the emergence of digitally literate, agriculturally skilled, and market-oriented talents that will power the worldwide growth of Chinese agricultural products.

Acknowledgements

This work was supported by Key Project of Philosophy and Social Science Research in Anhui Province's Universities in 2023: A Study on the Path and Policy of Organic Connection between Anhui Small Farmers and Modern Agriculture: From the Perspective of Small Farmers as the Main Body (2023AH051651)

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