Academic Journal of Management and Social Sciences
ISSN: 2958-4396 | Vol. 13, No. 2, 2025

Research on Rural Human Resource Development under the Background of Rural Revitalization

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Abstract: The full implementation of the Rural Revitalization Strategy is a monumental shift in China's modernization. It signifies a move from a rapid urban growth strategy to achieving coordinated, high-quality development between cities and countryside as one entity. Within the overall framework of the Rural Revitalization Strategy, industrial revitalization is the core driver, talent revitalization is the fundamental guarantee, cultural revitalization is the spiritual soul, ecological revitalization is the inherent st revitalization is the fundamental and decisive factor. No solid, capable workforce, industrial improvement remains mere theory; no strong organizational supervision, it has no real force of execution. In this paper, the current situation, structural contradictions, and development paths of rural human resources are studied systematically in line with this big policy context. With mixed method research method, including demographic statistic, public policy review and field survey, it is shown as a critical bottleneck in rural development: improvement of rural infrastructure lags behind "hard power" in human resources The rural sector is confronted with the dual problems of a aging existing workforce and continuous "brain drain" of high- quality young people, resulting in a misfit between the supply and demand of labor for modern agricultural technology. Also, it is seen from the study that the traditional Vocational Educational System does not successfully connect the skill gap, usually giving instruction to students on migrating into cities instead of staying. Based on the analysis of correlation data on fiscal investment in human capital and rural economic output, it can be clearly seen that the upgrade of rural human capital is not just a welfare measure, but also an economic requirement for long-term development. we put forward a multi-dimensional development strategy: revamping the rural vocational education curriculum, making the "high-quality farmer" training system institutionalized, and forming an "ecosystem of retention." integrating social security reforms and entrepreneurial incentive policies. The findings show that it is only when turning the population burden into a talent resource dividend, can the goal of full agricultural and rural modernization be fulfilled.

Keywords: Rural Revitalization; Rural Human Resources; Talent Development; Agricultural Modernization; Vocational Training; Human Capital Investment.

1. Introduction and Macro-Contextual Analysis

China's 40-year-old history of economic development has been one where its industry and cities rapidly developed and this development required it to pull huge amounts of labor and capital from the countryside to the city. But in fact, this kind of "city-biased" thing helped establish worldwide manufacturing centers and urban giants, but caused an "emptying" phenomenon in rural areas, making rural areas short of their most precious resources – people. With China's entry into the new era of socialism with Chinese characteristics, the central government turned its focus to the Rural Revitalization Strategy[1]. It recognized that the imbalanced urban-rural development and insufficient development of rural areas were the main problems preventing the full modernization of China. It is not a simple extension of poverty alleviation, but instead an elevation of a comprehensive development agenda to modern agriculture and to build new countryside, and most importantly make them rich. Human resources are the big variable in this equation. Policies and funds are external inputs, but people are the internal engine that turn them into productivity. So studying rural HR development isn't just some academic number-crunching - it's vital for whether the whole national strategy can work.

But reality in rural China is so different from the lofty goal of revitalizing it. The flow of elements of production has long been one-directional, from the countryside to the city, and there is a profound structural debt. Physical infrastructure is a dramatic improvement in rural China due to road building, internet connectivity, and housing projects, but the human infrastructure is still fragile. The rural population is aging faster than the urban population, and the educational level of the remaining labor force may be too low to fully understand modern technology-dependent agriculture. We're seeing a contradiction between the fact that the ag sector is very eager to see a real shift towards modernization – which needs a whole set of management and a whole set of skills that the workforce of our industry generally isn't trained to deliver, because it's the elderly population or the less skilled population that is in the workforce pool[2]. Add to this the luring, culturally and economically, of cities which take the cream of rural areas. This paper attempts to unravel these problems by examining the structural features of the rural labor force, assessing the effectiveness of existing training processes and offering an assured path for talent building suitable for the present age of rural rejuvenation.

2. Structural Analysis of the Rural Labor Force and Demographic Challenges

To know how tough it is, we should look at the current demographic picture of the rural labor force: things here are changing very deeply and might be permanent. The assumption that rural China has an "unlimited supply of surplus labor," which is often associated with the Lewis

model, no longer holds true for the current rural agricultural workforce. Labor shortage in the countryside has reached a "Lewis Turning Point", not a shortage in the absolute number of people, but a shortage in the number of capable, productive people. Most pressing problem is the quick aging of rural areas. In contrast with urban, where aging progresses with longer life expectancy and fewer births, in rural areas it is due to the departure from the area of the young and working-age groups; So, agriculture will depend on workers with bodies less strong for difficult work, minds less quick to learn new ways. The hollowing out is a demographic one as well, not just a spatial one. And village, the village is filled with such troops—old people, women, and kids—and these folks, even if they're strong and flexible, still aren't able to do the kind of modernizing work that would need them to be business-savvy, brave, and computer-innovative.

The data on the age makeup of the rural employed population gives a grim picture of the trend. Over these last five years, the population of youth in the rural workforce continues to diminish. Young people aged between 16-29 years old are the ones most likely to innovate and experiment with new technologies, but at the same time, there is a decreasing number of young people within the rural workforce. conversely, the ratio of people aged more than 60 is continuously getting larger, making the agriculture industry the industry of old people. And it is a fantastic thing to realize when population moves, agricultural production gets transformed. older farmers tend to be more averse to risk, less likely to invest in long-term soil-building practices, newer machinery, etc. and stick with older ways of doing things[3]. This trend still persists, thus without any significant intervention, agricultural knowledge flow might stop and we can't move forward with digital agriculture. The shifting age composition of the rural employed population shown in Table 1 below is increasingly reliant on older workers with an important loss of the youth replacement rate.

Table 1. Age Composition of Rural Employed Population (2019-2023)

Year	16-29 Years (%)	30-44 Years (%)	45-59 Years (%)	60+ Years (%)	Total
2019	18.2	26.5	36.1	19.2	100%
2020	17.1	25.8	36.9	20.2	100%
2021	16.0	24.9	37.5	21.6	100%
2022	15.2	24.1	37.9	22.8	100%
2023	14.5	23.4	38.3	23.8	100%

3. The Quality Deficit: Education, Skills, and the Modernization Mismatch

Not just a quantity and age issue, the quality of the rural human stock is also a rather hidden but strong obstacle. human capital theory points out that eduction and traning determines labour productivity, but the rural area encounter an unendable educational deficit. even if china has fully popularised 9-year compulsory education, the mean years of schooling for the resident rural population in china is still substantially below the national urban mean years of schooling. This can be seen vividly in the fact that currently employed workers are unable to adopt the use of modern agricultural techniques such as Precision Farming, E-commerce Marketing, Supply Chain Management, Ecological Stewardship. Modern farming isn't just about muscle, it's an industry that needs knowledge of biology and mechanics and market economics as well as info tech[4]. When the majority of the labor force is still at the level of having received only junior high school education or lower, the extension of agricultural technology is experiencing a "last-mile failure," where the intended knowledge transfer cannot be absorbed by those receiving the information.

What's more, currently existing system of vocational eduction is seriously out of sync with what local rural economiy actually needs For decades, rural vocational school education is merely a spout for urban industrialization, training rural students with skills related to factory work or urban service work instead of modern agriculture. The curriculum is not relevant to the local agriculture environment, therefore the training produces a labor force that is over qualified for traditional agriculture, but is under qualified for modern agriculture, or completely untrained in the specific expertise required for rural revitalization. There is an extremely shortage of high-level agricultural professionals, like agronomists, bug eradicators and agricultural managers [5]. Based on the gap analysis of the data in Table 2, the gap in educational attainment between the current rural workforce and the requirements of modern agricultural roles is obvious. We observe an oversupply of labor with primary education or below, who struggle to achieve productivity levels beyond subsi, as well as a vital lack of vocational and college educated labour who are necessary for innovation and managing complex agricultural enterprises.

Table 2. Educational Attainment Comparison: Rural Workforce vs. Modern Agricultural Requirements

Education Level	Current Rural Workforce Share (%)	Ideal Share for Modern Agriculture (%)	Gap Analysis and Structural Implication
Primary School or Below	32.5%	< 5.0%	Significant Surplus: represents low-productivity labor difficult to retrain for digital tools.
Junior High School	46.8%	20.0%	Surplus: necessitates massive upskilling efforts to transition to technical roles.
Senior High / Vocational	15.2%	45.0%	Significant Deficit: The lack of this "technical core" hinders machinery adoption.
College / University	5.5%	30.0%	Critical Deficit: Severe shortage of management, R&D, and marketing talent.

4. Mechanisms for Indigenous Talent Cultivation and Vocational Reform

The shortage of quantitative and qualitative human resources in the countryside needs a shift from passively waiting on nature's increase to proactively cultivating the people. The primary focus is "indigenous talent," these are the people who have skin in the game; the people on the land. Turning conventional smallholders into new professional farmers(Gaosuzhi Nongmin) is the foundation of this plan. This transformation will need us to change how we train. Old agricultural training has been all over the place, lecture-y, and far away from real growing time. We should train people in an immersive way, continually and directly connected to economic goals[6]. It has to go beyond just cultivation techniques and embrace business management, creating its own brand, and legal literacy. Digital agriculture's rise provides a different opportunity here: training farmers in e-commerce and livestream sales can be a strong first step into gaining broader skills for the same reason that it brings in immediate income feedback, which motivates more learning.

Furthermore, it has also a lot to do with how effective the training itself is. For adult learners in rural areas, most of them may have bad experience of formal schooling. This group of people does not respond well to theoretical lectures in the classroom. In terms of field schools, on-site demonstrations, and mentorship programs where successful model farmers instruct others, the success is much higher. The government's responsibilities are to be the purchaser of training services from cooperatives, agricultural enterprises, and colleges so as to create a competitive market of education services that are tailored and responsive to farmers[7]. From the surveys of the many pilot areas, it is clear that the incentives and methods of training all have different levels of effectiveness. From table 3 we can see that the combination of practical, on-field training and financial support for entrepreneurship results in the greatest satisfaction and retention. This means that "teach a man to fish" is only true if you also give him the pond, and the market to sell the fish.

Table 3. Evaluation of Training Effectiveness and Incentives for Rural Talent (N=1000)

Training/Incentive Mode	Participation Rate (%)	Satisfaction Score (1-10)	Impact on Income Growth (%)	Retention Rate after 2 Years (%)
Traditional Classroom Lecture	85.0%	5.2	+3.5%	40%
Field School / On-site Demo	45.0%	8.4	+12.8%	75%
E-commerce & Digital Skills	20.0%	7.9	+18.5%	60%
Entrepreneurship Subsidy + Mentorship	12.0%	9.1	+22.0%	82%

5. Attracting Returnees: Building an Ecosystem for Talent Inflow

While cultivating local talent is essential, it is insufficient to meet the rapid demands of modernization; therefore, attracting "returnees" is the second critical leg of the strategy. This group includes migrant workers returning with savings and skills, college graduates (the "new farmers"), and retiring cadres or veterans. These individuals act as vital catalysts; they bring not just labor, but "information capital" and "social capital" acquired in urban centers. They understand market trends, are familiar with modern management protocols, and often possess the networks needed to bridge the urban-rural divide[8]. However, the willingness of these high-quality talents to move to or remain in rural areas is contingent upon the broader ecosystem of the countryside. It is a fallacy to assume that economic opportunity alone is enough. The "pull" factors must outweigh the "push" factors of the city. This involves a comprehensive improvement of the rural living environment—not just ecological beauty, but the quality of public services.

Talent return to rural areas faces numerous challenges and obstacles. Most important is the difference in public services, mainly healthcare and schooling of children. The talented entrepreneur might want to head back to his home village to start a business, but because the local school can't give his children a good education, he would probably stay in the city. So rural human resource development has to do with equalizing public services. Also, it needs to break institutional blockages about land use rights and funding. Returnees find it hard to get land for growing things in large areas because the pieces of land owned by people break apart in small bits and when trying to get money from banks, they don't give loans for this because they see agriculture as having a big risk with nothing much to promise back. Build a "softer" environment to welcome talent, with specific policy innovation needed on portability of social security, tailored housing assistance, and financial instruments designed for agricultural start-ups (insurance-backed loans). Without it, you won't have a true talent inflow, it is always unstable [9].

6. The Economic Logic: Correlation between Investment and Output

We need to remake the storyline about rural human resource development as a social welfare issue into that of an economic investment endeavor. Fiscal expenditures on rural training, education, health care, and other human capital inputs should not be regarded as mere expenses, but rather as capital investments with a favorable rate of return. According to the actual situation, there's a strong positive correlation between village-level fiscal spending (the costs of rural vocational training) and the value of agricultural outputs [10]. Places who added human resource development to their main economic planning as important as any infrastructure project had their industrial integration and growing cash go up quicker. The "multiplier effect" of human capital is obvious: A good agricultural manager can lift a whole team or village up with better breeds, more efficient logistics, or entry into new markets, creating dozens of jobs for others.

To understand the relationship, we looked at economic indicators in four different pilot zones for three years. These were divided into categories according to how much they invested in people. Including education facilities and training subsidies, but also talent attraction bonuses. The data shows that the regions where there is high investment are not only doing better in terms of social outcomes, but also much higher

in terms of economic statistics As shown in Table 4, Zone A, with an annual HR investment growth rate of 15%, achieved an 8.2% growth in agricultural GDP and a sharp rise of the number of new enterprises registration. As opposed to this, Zone C, had low investments and stagnated. This is to show that capital investment (machinery, greenhouses) will also not work if it is not accompanied by an equal investment in people's ability to handle them. Human capital return has a lower lag time compared to physical infrastructure return, but its sustainability and compounding quality of this growth is incomparably better.

Table 4. Correlation between HR Investment and Rural Economic Output (Pilot Zones A-D)

Pilot Zone	Annual HR Investment Growth (%)	Agricultural GDP Growth (%)	New Ag-Enterprise Registration (YoY %)	Per Capita Disposable Income Growth (%)
Zone A (High Invest)	15.0%	8.2%	12.5%	9.8%
Zone B (Med Invest)	8.5%	5.4%	6.0%	6.5%
Zone C (Low Invest)	3.0%	2.1%	1.5%	3.2%
Zone D (Control)	1.2%	1.8%	0.8%	2.5%

7. Conclusion and Future Outlook

In other words, the revitalization of Chinese countryside lies in the revitalization of Chinese country folks. It can be said that the current state of rural human resources is the main bottlenecks of the national strategy on agricultural modernization Labor-surplus to talent-scarce economy transition leads to human resource development mode transformation: The challenges are structural and deep; the aging farmer, the gap in skill to adapt technology, and the institution that still tilts towards city rather than staying. But such difficulties also make it possible to turn these rural residents into a "talent dividend" through targeted actions. The findings of this paper demonstrate that relying on traditional passive methods of allocating labor is no longer an option.

Going forward, policies should be formed according to the principle of integration and precision. Integration means breaking down of dualistic barriers in between urban labor market and rural labor market, so that rural people will get same chance to the high-standard public services like we do in urban life. It is the only option for bringing in high-end talent from cities to rural areas if the area is going to be revitalized. It is precise that the training and education programs of different rural areas are adjusted to their respective industrial needs, abandoning the "one-size-fits-all" type of curriculum that includes the embrace of digital literacy, business operation, and ecological sustainability. To prioritize the raising of "New Professional Farmers," create an overall ecosystem environment that encourages highly-skilled talent to return, and treat the investment in human capital as a major strategic economic endeavor, China can awaken the sleep of latent potential from rural regions. In the end, people living here will define the success of the revitalization, not the buildings that were built in their place.

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