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## RESEARCH ON ECOLOGICULTURAL ENVIRONMENT UNDER THE BACKGROUND OF RURAL REVITALISATION

**Abstract:** In order to improve the development of rural areas, ecological agriculture has certain advantages because it is a comprehensive and complex type of agricultural industry. As the main force in the implementation of Rural Revitalisation (RurR) and ecological agriculture, farmers' ecological consciousness plays a crucial role in the final realisation of RurR strategy and the construction of ecological agriculture. This paper conducted a questionnaire survey on 1010 farmers in 8 districts of city A, and studied the ecological knowledge, ecological seriousness and attribution of ecological problems of farmers. Combined with the relevant research results, this paper formulated three strategies to promote the development of efficient ecological agricultural environment: strengthening rural ecological publicity, vigorously developing ecological agriculture, and actively giving play to the guiding role of the government.

**Keywords:** RurR, agricultural ecology, ecological consciousness, development strategy

### Introduction

Since the Really Useful Rigorous Research (RurR) Strategy was put forward, China's agricultural production has developed rapidly, and farmers' income has increased significantly. However, the implementation of RurR Strategy, not only to revitalise the economy, but also to consider the effective solution of ecological and environmental problems. The development of ecological agriculture is the inevitable choice to realise the development of rural economy. Meanwhile, the practice shows that the extensive agricultural production mode in traditional agriculture can no longer meet the requirements of agricultural development. It runs counter to the development of human society and is the main culprit of environmental pollution and ecological agriculture destruction. Due to the serious imbalance between the development of urban and rural areas, most scholars mainly analyse the environmental governance of urban areas as the research object, and there are few theories on the environmental governance of rural areas. In the research process of this paper, the rural governance environment as the main research object, aiming at the existing problems of environmental governance in rural areas of the domestic society for a comprehensive analysis and research, through the way of cause analysis to understand the influencing factors, and on this basis to put forward targeted solution strategies, to further clarify the role and responsibility of each subject.

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This paper conducted questionnaire survey among 1010 farmers in 8 districts of A City, studied the ecological knowledge, ecological conscientiousness and attribution of ecological problems of farmers, and formulated strategies for the development of efficient ecological agriculture environment according to the survey results.

## Literature review

In order to promote rural "Industrial prosperity, Ecological livability, Civilised rural customs, Effective governance, and Rich life", we must follow the law of rural development [1], implement relocation policy, improve modern infrastructure, and use modern science and technology to sell agricultural products. On the revitalisation of rural ecology. Cui et al. [2] believed that ecological construction is the foundation of RurR, and that "Scattered" and "Overall" ways should be used to promote rural ecological revitalisation. Tian and Zhang [3] believed that the development of green industry is very necessary, to promote the development of rural areas and green development, especially in the poor areas.

In addition, the meaning of "Ecological Consciousness " has not yet formed a unified standard. Yaalon [4] thought that ecological consciousness can be divided into three levels: shallow, medium and deep. García-Gallego [5] considered that ecological consciousness is a kind of responsibility. Rusyani et al. [6] pointed out that ecological consciousness belongs to perception. The ecological consciousness mentioned by Morton [7], Ahmad et al. [8] and Brugiattelli [9] included the attitude towards nature. Wu and Wu et al. [10, 11] put forward the demonstration of sustainable green development and green university, and draw some relevant conclusions.

In terms of ecological consciousness, Shpak et al. [12] put forward the influence of ecological consciousness in the field of education, which brings some related inspirations. Malayna [13] illustrated the relationship between ecological awareness and environmental management, and then apply it to the level of rural tourism. Rhodri [14] explained the definition of ecological consciousness and the history of its rise, giving a profound account of related concepts.

## Current situation investigation

To gather data for this paper, a combination of questionnaire surveys and interviews was employed. The questionnaire survey was conducted through face-to-face interviews administered by investigators. This approach was chosen for several reasons. Firstly, considering the respondents' lower education levels, there may be difficulties in understanding and efficiently completing the questionnaire. By conducting face-to-face interviews, the validity and recovery rate of the questionnaire responses are ensured. This personal interaction allows for clarifications and explanations, ensuring that respondents fully comprehend the purpose and significance of each question.

Furthermore, face-to-face interviews facilitate a deeper understanding of respondents' perspectives, enabling more objective and accurate data collection. The direct interaction between the investigators and respondents fosters a sense of trust and openness, leading to more genuine and insightful responses. This method enhances the quality and reliability of the collected data. Additionally, the use of random sampling techniques ensures that the results obtained from the questionnaire survey reflect the overall ecological awareness of

farmers in City A. By selecting respondents at random, the sample becomes representative of the larger population, reducing bias and increasing the generalisability of the findings.

### Current situation analysis

In order to ensure the universality of questionnaire survey results, this survey selects rural residents from 8 municipal districts of A city by random sampling according to the actual situation. A total of 1010 questionnaires were sent out in this survey, and 1000 were collected with a recovery rate of 99 %, among which 910 were valid with an effective recovery rate of 90.1 %.

#### *Ecological knowledge of farmers*

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#### (1) Farmers' awareness of ecological environment knowledge

Table 1

Farmers' understanding of circular economy, green food, ecological agriculture and ecological civilisation construction [%]

Do not know	Know a little	More understanding	Know very well
31.7	66.5	1.3	0.5

This study takes the popular ecological terms in recent years as the research object, and discusses the farmers' understanding of the ecological environment. As shown in Table 1, farmers do not have a deep understanding of the ecological aspects, such as circular economy, ecological agriculture and ecological civilisation. The results show that Chinese farmers generally know little about ecological knowledge, and most of them are not very clear even if they have heard or heard about the awareness of ecological protection.

#### (2) Main sources of environmental knowledge among farmers

Table 2

Main sources of farmers' environmental protection knowledge [%]

Government propaganda	TV	Newspapers and magazines	Internet	Listen to the radio	Other
0.0	80.5	0.0	7.2	0.1	12.2

The findings presented in Table 2 highlight the primary sources through which farmers acquire their understanding of environmental protection. Television emerges as the most influential channel, with a significant majority of respondents (80.5 %) obtaining environmental protection knowledge through this medium. This dominance of television as an information source is noteworthy and suggests its effectiveness in reaching rural communities. The visual nature and widespread accessibility of television make it a powerful tool for disseminating environmental awareness messages to farmers.

In contrast, the Internet plays a relatively smaller role, with only 7.2 % of respondents reporting it as a source of environmental protection knowledge. This lower percentage may be attributed to factors such as the educational background and age distribution of the farmers. While internet usage is increasingly prevalent in rural areas, its adoption may still lag behind due to limited access or lower digital literacy levels among certain demographic

groups. Efforts to bridge this gap and promote online resources as a valuable channel for environmental education can enhance knowledge dissemination among farmers.

Interestingly, the government's policy propaganda appears to have limited impact in increasing farmers' understanding of environmental protection. This finding raises important considerations for policymakers and highlights the need for more effective strategies to effectively communicate environmental policies and initiatives to the farming community. Recognising the potential influence of television and the growing role of the internet, there is an opportunity to leverage these channels to enhance the delivery of government-led environmental awareness campaigns and ensure that relevant information reaches farmers more effectively.

Improving the effectiveness of government policy promotion and diversifying information dissemination channels can contribute to a more comprehensive and well-informed understanding of environmental protection among farmers. By addressing these challenges and capitalising on the strengths of different media, policymakers can foster a greater sense of environmental responsibility and encourage sustainable practices in agricultural communities.

#### *Farmers' ecological cognition*

##### (1) Farmers' cognition of the seriousness of rural environmental pollution and ecological damage

Table 3

Farmers' cognition of current rural environmental pollution and ecological damage [%]

Very serious	More serious	Less serious	No problem	Do not know
0.0	51.3	48.7	0.0	0.0

The findings presented in Table 3 reveal that among the sampled farmers, 51.3 % perceive the current level of environmental pollution and ecological damage as "more serious", while the remaining respondents consider it to be "less serious". This indicates that a significant majority of farmers acknowledge the existence of environmental challenges in rural areas. However, it also suggests that there is a lack of awareness regarding the severity of these environmental problems. It is crucial to bridge this gap in understanding and increase farmers' awareness of the magnitude of environmental issues to foster proactive engagement and promote sustainable practices in agricultural communities.

##### (2) Farmers' perceptions of major rural environmental problems

Among the various rural environmental problems highlighted in the study, residents ranked domestic waste as the most serious concern, with 37 % of respondents expressing this view. Air pollution followed closely behind, with 34 % of respondents recognising it as a significant issue. Poultry manure was also identified as a concern by 25 % of participants. These findings shed light on the specific areas where residents perceive the greatest environmental challenges within rural communities.

Notably, the prevalence of domestic waste and its impact on farmers' production, daily life, and the overall aesthetics of rural areas is particularly evident. The disposal and management of domestic waste present significant challenges, affecting multiple aspects of rural life. Improper waste management can result in environmental degradation, health hazards, and compromised living conditions for farmers and their communities. Therefore,

addressing the issue of domestic waste and implementing effective waste management strategies becomes crucial for improving the overall environmental quality in rural areas.

By recognising these specific areas of concern and understanding their impact on farmers' lives, policymakers and relevant authorities can prioritise the development and implementation of targeted interventions and initiatives. Effective waste management systems, air pollution control measures, and sustainable agricultural practices can be established to mitigate the identified environmental problems and improve the overall well-being of rural communities.

Table 4

Rural environmental problems [%] with the greatest impact on farmers' lives

Water pollution	Air pollution	Domestic waste pollution	Sound pollution	Livestock manure	Straw burning	Fertilisers, pesticides and mulch	Other
0.0	34.4	37.3	0.0	25.1	0.0	2.2	1.0

The investigation conducted sheds light on a crucial finding: every single respondent interviewed exhibits a certain level of consciousness when it comes to the issue of environmental pollution in rural areas. It is evident that they are highly attuned to ecological problems that arise specifically in rural settings, demonstrating an acute sense of responsibility. Their willingness to actively participate in rural environmental protection endeavours is commendable. However, despite these positive aspects, it is disconcerting to observe that the overall ecological awareness among farmers in A city remains suboptimal. This calls for urgent attention and efforts to enhance environmental education and promote sustainable practices within the farming community.

## Policy proposal

The popularisation and dissemination of rural ecological cultural knowledge are crucial for enhancing farmers' understanding and engagement in environmental governance. By equipping farmers with a deeper understanding of rural ecological cultural knowledge, they can actively participate in political processes in a more organised manner, thereby fostering a new governance model that promotes sustainable development and environmental protection.

In this regard, it is imperative for governments at all levels to assume a leadership role in environmental protection efforts, particularly within rural villages and towns. Active and comprehensive publicity and education campaigns on rural environmental issues should be conducted. An investigation conducted in a city revealed that the dissemination of rural environmental information in that area was limited, primarily limited to slogans and village affairs announcements. This one-dimensional approach needs to be expanded and diversified to effectively reach and engage rural communities.

Additionally, the current state of rural economic development in City A is not promising, with agricultural development lagging behind and relying heavily on chemical fertilisers and pesticides to boost production. To address this challenge, a shift towards science and technology-driven agricultural practices is crucial. The development of ecological, efficient, and intensive modern agriculture should be prioritised. This shift not only aligns with the inevitable trend of China's agricultural development but also plays

a vital role in enhancing farmers' ecological awareness and improving the overall rural ecological environment.

By integrating ecological principles, sustainable practices, and technological advancements into agricultural development, City A can pave the way for a more environmentally conscious and resilient rural sector. This transformation will contribute to the preservation of natural resources, mitigation of environmental degradation, and ultimately foster the well-being of both farmers and their surrounding ecosystems.

## Conclusion

After the rural revitalisation strategy was proposed, farmers' ecological consciousness has received more and more attention. The study found that the survey respondents were all aware of the existence of environmental pollution in rural areas, were more concerned about the ecological problems around rural areas, and were willing to participate in rural environmental protection actions. In addition, the article analyses the factors affecting farmers' ecological awareness in City A, China, in terms of farmers' simple pursuit of economic benefits, lack of environmental education, and inadequate ecological publicity. After conducting a thorough investigation and analysis, this manuscript proposes means and methodologies to cultivate ecological consciousness among farmers in A city. These include fortifying rural ecological publicity, promoting the development of ecological agriculture, and proactively guiding the government's role.

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