Agricultural Sciences, 2025, 16(7), 661-680
https://www.scirp.org/journal/as
ISSN Online: 2156-8561
ISSN Print: 2156-8553

Problem Analysis and Countermeasure Research on the Management of Agricultural Administrative Law Enforcement Case Files and Archives

—Based on the Background of Digital Technology Empowering the Comprehensive Revitalization of Rural Areas

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How to cite this paper: Sheng, G.Y. (2025) Problem Analysis and Countermeasure Research on the Management of Agricultural Administrative Law Enforcement Case Files and Archives. *Agricultural Sciences*, **16**, 661-680.
https://doi.org/10.4236/as.2025.167042

Received: April 30, 2025
Accepted: July 26, 2025
Published: July 29, 2025

Abstract

Starting from the "Comprehensive Rural Revitalization Plan (2024-2027)" and the "Opinions of the Central Committee of the Communist Party of China and The State Council on Further Deepening Rural Reform and Promoting Comprehensive Rural Revitalization in a Solid Manner", with the modernization of agriculture and rural areas as the end point, and relying on the policy background of digital technology empowering comprehensive rural revitalization, Focusing on the bottleneck problems existing in the field of agricultural administrative law enforcement case file archives management, conducting in-depth investigations and analyses of the underlying causes of the problems, and proposing practical and feasible optimization measures. This article aims to enhance the "digitalization, standardization, scientification, and unification" level of agricultural administrative law enforcement case file management, providing solid theoretical support and basis for the steady development, continuous improvement, and innovative transformation of agricultural administrative law enforcement archives management.

Keywords

Agricultural Administrative Law Enforcement, Case File Management, Comprehensive Rural Revitalization, Digital Technology Empowerment, Problems and Countermeasures

1. Introduction

Realizing common prosperity is the essential requirement of socialism and the fundamental goal of implementing the rural revitalization strategy. The most difficult and arduous task to achieve common prosperity still lies in rural areas. Therefore, the flourishing digital technology has become a key driving force for achieving a prosperous life for farmers and empowering rural revitalization strategies [1]. Digital villages are pivotal in rural revitalization, offering a pathway to economic growth, improved living standards, and sustainable development in rural areas. They leverage digital technologies to overcome traditional development hurdles, enabling access to broader markets, enhanced agricultural productivity, and improved public services [2]. Thanks to the booming digital economy and the emergence of new technologies such as big data, live streaming, and cloud computing, rural areas are transforming from a single offline business model to a diverse online and offline integration [3]. In the rapid development process of rural revitalization, new agricultural business models and forms such as rural e-commerce, leisure agriculture, and deep processing of agricultural products are emerging one after another. The continuous optimization and adjustment of the agricultural industrial structure urgently requires a high level of agricultural administrative law enforcement case file archive management to match it. In addition, the law enforcement tasks in areas such as rural ecological environment protection and farmers' rights protection have become increasingly arduous, and the number of law enforcement cases has increased significantly. To this end, agricultural administrative law enforcement must adjust the scope and standards of archive collection, organization and preservation in a timely manner, so as to record the law enforcement process comprehensively, accurately and timely, and provide reliable basis for law enforcement actions. However, in the actual law enforcement process, due to the insufficient understanding of the emerging agricultural business forms by some law enforcement officers and archival managers, and the lack of thorough understanding of the requirements for law enforcement archive management in the digital and intelligent era, the standardization and scientificity of archive management work are seriously lagging behind, making it difficult to meet the urgent needs for administrative law enforcement archive management in the comprehensive revitalization of rural areas. The situation has become so severe that it can't be delayed! Through on-site investigations of rural agricultural administrative law enforcement agencies and observations of the actual process of archive management, the author discovered problems such as chaotic case file organization, incomplete data collection, and non-compliant storage conditions. In practice, the oral accounts and experiences collected from law enforcement officers and archivists regarding the challenges they face in archival management have also helped this paper identify the research issues.

Data have become a virtual factor of production, and when integrated with the traditional factors of labor, capital, and land form digital labor, digital capital, and digital land, thereby generating a multiplier effect that contributes to the compre-

hensive revitalization of rural areas [4]. Digital technology for rural revitalization not only improves the efficiency of rural administrative law enforcement archives management, but also focuses on the "digitalization, standardization, scientification and unification" level of archives management. First of all, big data and cloud computing technologies facilitate the precision and speed of archive information storage, retrieval and processing. The digital archive management system digitizes the case files of agricultural administrative law enforcement and stores them on cloud servers, allowing law enforcement officers and archive managers to access and retrieve archive information anytime and anywhere via the network, greatly improving the efficiency of archive management. Secondly, blockchain technology, with its characteristics of decentralization, immutability and traceability, strongly guarantees the security and reliability of agricultural administrative law enforcement case file information. With the continuous development of digital technology, the field of archival management is undergoing profound changes. The application of blockchain technology has brought significant breakthroughs to archival management. Its immutable nature ensures the originality and integrity of archival information, and all operation records can be traced throughout the process, which is convenient for regulatory authorities to conduct audits and can effectively prevent the risk of information leakage. The introduction of artificial intelligence technology has further enhanced management efficiency. Through intelligent algorithms, file classification and indexing can be automatically completed, significantly improving classification accuracy and processing efficiency. The intelligent question-answering system built with natural language processing technology can respond quickly to various archive query demands, providing convenient services for law enforcement officers, government departments and the general public.

Despite the fact that digital technology is an unstoppable trend in rural revitalization. There are still many problems and challenges in the management of agricultural administrative law enforcement case files at present. Based on the spirit of policy documents such as the Comprehensive Rural Revitalization Plan (2024-2027), this study systematically analyzes the existing problems and problems, and proposes measures such as strengthening education on the concept of the rule of law, promoting information sharing and communication, standardizing the process of collecting archives, and intensifying professional skills training. We aim to build a standardized, scientific, standardized and intelligent archive management system to provide solid law enforcement guarantee and information support for rural revitalization, effectively improve the management level of agricultural administrative law enforcement case files, and better serve the overall situation of "agriculture, rural areas and farmers" work in the new era.

2. Analysis of Problems

The prominent problems existing in the current management of agricultural administrative law enforcement archives. In law enforcement practice, there are

structural flaws in the archive collection system, and some key law enforcement documents and evidence materials have not been archived in a timely and complete manner. Such loopholes in the collection link directly lead to difficulties in case retrospection. The filing process is characterized by obvious arbitrariness. Different law enforcement officers have different standards when filing cases, and there is a lack of standardized norms for file organization. This chaotic situation seriously affects the efficiency of file retrieval and artificially increases the difficulty of handling cases for cross-regional assistance in case investigation. In addition, the conditions for keeping archives are not compliant, the facilities for keeping archives at the grassroots level are primitive and backward, the professional ability of archival managers is lacking, and the construction of the talent team is seriously lagging behind. These problems are intertwined to form systemic governance obstacles, which urgently need to be addressed by building a three-in-one governance system of "system + technology + talent" to promote the transformation of agricultural law enforcement archives management towards standardization, digitalization and professionalization. The following article will analyze the root causes of problems in the management of rural administrative law enforcement case file archives from four common aspects.

2.1. Insufficient Understanding of the Importance of Work

In grassroots agricultural law enforcement work, some law enforcement officers focus one-sided on on-site law enforcement links and neglect case file management. They even think that document preparation and file organization are only auxiliary work, and the imperfection of this link will not affect the overall law enforcement quality of the case and is of no consequence to the overall situation. This limitation of perception further leads to the failure of the original evidence obtained during the enforcement process to be properly preserved, and the case files are carelessly piled up in old cabinets or even abandoned in damp corners, ready to be eaten by insects or moldy at any time. In dispute resolution, some law enforcement officers only take photos of the scene with their mobile phones without marking key information or making inspection records, and these improper evidence collection practices can cause the evidence to lose its validity at some point in future litigation. In cases of agricultural supplies counterfeiting, if the sampling procedure is not fully recorded, the administrative penalty decision will be judged as illegal by the court. These actions not only undermine the authority of law enforcement, but also raise public doubts. The oversight in the management of archives mentioned above has had many negative effects on law enforcement practice. With the advancement of the rural revitalization strategy, the value of law enforcement archives has become increasingly prominent. Standardized archive management plays an important supporting role in rural governance. At present, digital transformation is changing the law enforcement model. After an electronic archive system was introduced in a certain township, law enforcement officers uploaded evidence in real time through mobile terminals, and the system

automatically generated standard case files, achieving full traceability throughout the process. Villagers can learn about the details of case handling through the query terminal, effectively enhancing the credibility of law enforcement. Practice has proved that case file management is an important link between law enforcement practice and the construction of the rule of law. Only by establishing a scientific and standardized archive management system can we provide a solid legal guarantee for rural revitalization and ensure that fairness and justice truly take root at the grassroots level.

2.2. The Operation of Archiving Is Not Standardized

The backward idea of "emphasizing investigation and punishment over evidence collection" has restricted the management of archives in grassroots agricultural law enforcement practice. In practice, the problem of incomplete collection of materials and inadequate collection of key evidence in administrative law enforcement cases is not uncommon. During law enforcement spot checks, many law enforcement officers tend to focus only on pesticide residue testing but neglect the collection of soil heavy metal data, which hinders subsequent traceability work. In cases of counterfeiting agricultural supplies, there are countless instances where law enforcement officers merely seized the fake fertilizers but failed to promptly request purchase receipts from the perpetrators, and as a result, they were given lenient or exempted penalties due to an incomplete chain of evidence. This "half-hearted" approach of law enforcement, which focuses on the act but not the root cause, allows lawbreakers to evade severe legal punishment. The chaos in case file management is also a cause for concern. Some township law enforcement stations keep records in handwritten ledgers, while others store them in dusty file boxes. In the evaluations at the grassroots level in some areas, it was found that there were serious cases of "separate" filing in different regions—in some areas, the interrogation records were bound separately, and in others, they were mixed with photos; Some areas are accustomed to taking pictures of the scene with mobile phones without marking the time and place, while others are accustomed to recording with voice recorders without organizing them into standard records. In all these cases, the lack of standardization and uniformity in management due to regional differences often leads to communication difficulties in cross-regional investigations. Of course, the "spontaneous" working habits of law enforcement officers and their lack of personal legal awareness and knowledge of archives management are all contributing factors to the lack of standardization and uniformity in archives management, which has turned law enforcement archives into confusing accounts that are hard to interpret. Fortunately, digital transformation is changing the situation. At present, many basic archives management departments have established "one case, one code" electronic archives systems, digitizing the entire process from case filing to case closure. Now, in the law enforcement command center, complete case data can be retrieved with just a click of the mouse. This shift is a vivid example of rural governance moving from

"rough management" to "fine governance".

At present, there is a general lack of uniform norms and common standards in the collation and binding of various agricultural law enforcement case files, and the collation and binding of archives are extremely unstandardized, which is also a chronic problem plaguing the modernization of agricultural law enforcement. Among them, the disorderly arrangement of materials due to the failure to strictly follow the chronological or logical order of case handling is the most serious of all problems in the non-standard binding of archives. In addition, the randomness of page numbering is an important problem that hinders the standardization of archival binding. Many case files have duplicate, missing or even skipped page numbers, causing great trouble for the daily management and access of archives. The quality of binding should not be overlooked either. Some units still use simple binding methods such as staples, which can easily cause materials to scatter during long-term storage and frequent use, not only affecting the integrity of the archives but also reducing the readability of the text. It is notable that in some areas, there is a lack of necessary review processes before filing the case files, resulting in problems such as typos, ambiguous expressions and data contradictions in the filed materials, which not only undermines the professional quality of the case files but also undermines the credibility of agricultural law enforcement. The root cause of these problems lies in the lag in standardization construction. To improve the management of agricultural administrative law enforcement archives, it is necessary to start from the source and establish a standardized operation system covering the entire process from filing, binding to review. By formulating uniform and standardized operation guidelines, clarifying the rules for sorting materials, page numbering standards and binding process requirements, and improving the filing and review mechanism, it is ensured that every archived material meets the professional standards of accurate content, clear structure and firm binding

2.3. The File Filing Process Is Cumbersome and Inefficient

The traditional working mode has led law enforcement officers to be trapped in the cumbersome work of document editing and organization, and the efficiency and quality of archive management are both very worrying. In response to this problem, some regions have innovatively established the "three Transformations and Three Enhancements Work System". Standardization has been achieved through process reengineering, integrating the cumbersome and fragmented review elements that were previously scattered across numerous links into a "three-in-one" template of case filing approval, investigation and evidence collection, and penalty decision, and developing an agricultural law enforcement cloud platform to achieve full-process electronicization. Law enforcement officers can use mobile terminals to complete operations such as making on-site records and uploading evidence, and the system automatically generates standardized documents. In terms of the coordination mechanism, a "three-color warning" system has been established. Yellow indicates missing materials, orange supervises over-

due cases, and red initiates responsibility tracing. The archives department can monitor the progress of cases in real time and intervene in advance to provide guidance. Practice has shown that digital transformation has significantly improved work efficiency. To ensure the application of the system, it is recommended to adopt the "three trainings and three tests" training model, namely: pre-job concentrated training on system operation, on-the-job simulated case handling practice, and post-job case study organization. Establish a "good or bad evaluation" system for law enforcement documents and incorporate the quality of archiving into performance assessment. It is worth noting that while promoting digitalization, the full life cycle management of archives must be improved simultaneously. There are still a large number of overdue files occupying warehouse space, which not only affects the efficiency of filing new files but also poses the risk of information misguidance. It is suggested to establish a "three-level appraisal mechanism", namely: initial verification of retention or abolition by the handling department, legality review by the legal institution, and collective decision-making by the archives committee. For case files that are indeed of no preservation value, they should be destroyed strictly in accordance with the procedures and electronic ledgers should be established to achieve dynamic and optimal allocation of archival resources

2.4. Inaccurate Definition of the Retention Period of Case Files

At present, there is a lack of a national standard for the retention period of agricultural administrative law enforcement case files, resulting in the retention of files varying from person to person, from place to place and from time to time. Some regions have adopted a one-size-fits-all approach, keeping archives indefinitely regardless of the nature of the cases, resulting in a large amount of storage space being occupied; In contrast, some grassroots units, in order to save costs, arbitrarily shorten the retention period and even destroy important case files in violation of regulations. This chaotic management model, moving from one extreme to the other, has caused many negative effects and even directly led to state compensation. To address this issue, there is an urgent need to establish a scientific "archive classification and preservation system". It is suggested to formulate differentiated preservation standards by referring to the relevant provisions of the Administrative Punishment Law and taking into account the characteristics of agricultural law enforcement. Specifically, for cases involving land transfer, ecological protection, etc., which have long-term reference value, set a retention period of 30 years; General administrative penalty cases are kept for 10 years; Summary procedure cases are retained for five years. At the same time, a dynamic assessment mechanism will be established, and experts will be organized every five years to re-appraise the value of the archives, and files that have no preservation value will be cleared in a timely manner. This precise management can free up storage space and ensure the integrity of law enforcement archives, providing a solid legal guarantee for rural governance. In addition, the problem of overdue archives

needs to be addressed urgently. In the archives of many county-level law enforcement agencies, overdue case files are piled up like mountains, not only taking up a lot of storage space, but also seriously affecting management efficiency. Staff have to repeatedly search through old archives when looking for new cases, resulting in a significant decline in retrieval efficiency. The mixed placement of new and old files also increases the risk of retrieval errors. According to statistics, the county spends more than 200,000 yuan annually on the management of overdue archives. Some case files have acidified due to long-term storage, and the cost of restoration has increased by 15%, resulting in a serious waste of resources. In terms of information utilization, overdue case files also pose potential risks. Outdated law enforcement cases often contain invalid policy provisions, which can easily lead to inconsistent law enforcement standards and further increase law enforcement risks. The root cause of this management chaos lies in the lack of archive life-cycle management. To this end, it is proposed to establish a "three-level appraisal mechanism": first, the handling department will initially check the opinions on the retention or rejection of the case file, then the legal institution will conduct a legality review, and finally the archives committee will make a collective decision. For cases that are truly of no preservation value, they should be destroyed strictly in accordance with the procedures of the Archives Law, and electronic ledgers should be established. This dynamic management approach can significantly free up storage space, improve the efficiency of archive retrieval, and at the same time avoid law enforcement risks caused by outdated information.

3. New Requirements of the Digital Age

The advent of the digital age and the emergence of high technologies such as big data, cloud computing and AI have brought higher, newer and more difficult requirements for agricultural administrative law enforcement. With the help of key technologies such as 5G high-speed network and AI video detection and identification, the platform has the capabilities of intelligent perception, real-time monitoring, analysis, research and judgment, and early warning of law enforcement risks, comprehensively improving the efficiency of agricultural law enforcement [5]. Farmers have indicated that in organizing farms they would rank production information first, institutional information second, human information third, price information fourth and information on new technology fifth [6]. In order to better adapt to the requirements of The Times, we should strive to improve the modernization level of agricultural administrative law enforcement case file and archive management in the following eight aspects.

3.1. Coordinated Regional Development—Breaking down the "Information Silos" in Law Enforcement

Despite advancements in productivity and service delivery, challenges like digital divides and infrastructural gaps persist [2]. However, some problems have emerged in the development process of rural revitalization under the background of the

digital economy, such as urban and rural digital divide, low added value of agricultural products, large transportation resistance, high cost and imperfect digital rural governance system [3]. Localities can use blockchain technology to ensure the authenticity and traceability of data, and use artificial intelligence for intelligent analysis and early warning to help law enforcement officers quickly identify problems and precisely locate risks. By establishing a regular cross-regional law enforcement collaboration mechanism, setting unified standards and norms, breaking down information technology barriers, conducting regular joint law enforcement actions and experience exchanges, and forming a shared and co-governance law enforcement pattern, new impetus can also be injected into the modernization of agricultural administrative law enforcement.

3.2. Strengthening of Basic Support—Consolidating the Foundation for Rural Development

From Fujian's provision of 5G body cameras to each township law enforcement office to Xinjiang's construction of a 10PB "cloud-based disaster recovery and backup center", and from the "paper management" of the entire country to the "cloud-based governance" of Data China, the modernization of China's agricultural governance system can only be achieved by increasing law enforcement investment.

3.3. Standardization Construction—Issuing an "ID Card" to Each Case

According to statistics from the Ministry of Agriculture and Rural Affairs, by the end of 2023, the standardization rate of agricultural administrative law enforcement case files across the country had reached 85 percent, up 15 percentage points from 2020. Among them, the standardization rate was 90% in the eastern region, 85% in the central region and 80% in the western region. The number of agricultural administrative penalty cases across the country rose 18.3 percent year-on-year to 126,000 in 2023, the data showed. To cope with the management pressure caused by the surge in cases, various regions have innovatively established classification and grading standards: Shanghai has established a "red, yellow and blue" three-color early warning mechanism, and red-level cases need to be accompanied by drone aerial images and soil test reports; In Heilongjiang, for cases of straw burning, meteorological satellite monitoring data and village-level inspection records must be included; Guangdong has developed an "intelligent comparison system for law enforcement elements" that automatically checks the completeness of 28 key pieces of evidence.

3.4. Digital Transformation—Shifting Archives from "Sleeping" to "Awakening"

By the end of 2023, the electronicization rate of agricultural administrative law enforcement case files across the country had reached 75%, up 20 percentage

points from 2020, according to statistics from the Ministry of Agriculture and Rural Affairs. Among them, the rate was 80 percent in the eastern region, 75 percent in the central region and 70 percent in the western region. By the end of 2023, 32 provincial-level agricultural law enforcement platforms had been built across the country, but the coverage at the county and city levels was only 54%. To bridge the "digital divide", the Ministry of Agriculture and Rural Affairs has launched the second phase of the "Golden Agriculture Project", aiming to achieve by 2027: a national network for law enforcement data and a reduction in cross-regional collaborative investigation response time from an average of 7 days to 2 hours; The cloud storage capacity of video evidence for key cases will exceed 5000TB; The accuracy rate of AI-assisted generation of legal documents reached 92%.

3.5. Supervision System Innovation—Weaving a Three Dimensional Regulatory Network

According to statistics from the Ministry of Agriculture and Rural Affairs, by the end of 2023, the automation rate of agricultural administrative law enforcement case files across the country had reached 50%, an increase of 20 percentage points compared with 2020. Among them, the automation rate was 55% in the eastern region, 50% in the central region and 45% in the western region. To build a "three-dimensional" regulatory network, practical measures have been taken in various regions, such as Jiangxi's establishment of a "dual random and one open" intelligent lottery system, with an annual inspection rate of 8 percent at the provincial level; Hubei has launched a "code supervision" platform, which received 12,000 feedbacks from the public in 2023, with a handling rate of 98.7 percent. In Guangxi, a joint disciplinary list for dishonesty was established with courts, and 127 criminal cases were transferred in 2023, up 41 percent year-on-year.

3.6. Legal Guarantee—Ensuring that Power Operates under the Sunlight

According to statistics from the Ministry of Agriculture and Rural Affairs, by the end of 2023, the rate of public access to agricultural administrative law enforcement case files across the country had reached 60 percent, up 15 percent from 2020. Among them, the rate was 65% in the eastern region, 60% in the central region and 55% in the western region. At present, there are 127 regulations related to agricultural law enforcement in our country, but only 14 are related to the management of archives. To make up for the system's shortcomings, many places have carried out innovative explorations. For example, Zhejiang pioneered a "one case, one code" responsibility traceability system, putting all information such as law enforcement officers, approval processes, and rectification situations on the chain. Sichuan has established a "law enforcement credit bank," linking the quality of case files directly to personal promotion. Anhui has implemented a "transparent filing" system, and all administrative penalty decision documents are made public online except for those involving state secrets.

3.7. Talent Team Building—Forging Versatile Law Enforcement Experts

In response to the situation where the number of professionals in archival management is less than 3%, various regions have innovated their training models. For example, the agricultural law enforcement training base in Xinxiang, Henan Province, has adopted VR simulation law enforcement training. When farmers obstruct law enforcement, the system will automatically generate assessment reports based on the trainees' performance. This immersive training model has increased the pass rate of the archive management ability assessment for law enforcement officers from 63% to 89%. Another example is Jiangsu's implementation of the "Blue and Green Project", equipping young law enforcement officers with "archive mentors"; Yunnan has launched the "Law Enforcement Sharpshooters" selection, with the ability to manage case files included as a core assessment indicator; Ningxia has established an "electronic archive manager" certification system, with the first batch of 200 people obtaining professional qualifications, etc.

3.8. Service Capacity Enhancement—Making Archives a Resource for Governance

To activate the value of archives, various institutions and measures have been actively explored across the country. For example, Shandong has established an "Agricultural Law enforcement index system" to guide industrial layout by analyzing case file data; Shaanxi has developed an APP mini-program of "Explaining Law through cases" to expand the coverage of legal publicity. Liaoning has built a "credit profile system", incorporating 12 types of administrative penalty information into the enterprise credit information system to increase security resources for business transactions.

4. Countermeasure Research and Path Planning

4.1. Strengthen Awareness of the Rule of Law and Standardize Administrative Law Enforcement Procedures

In grassroots agricultural law enforcement practice, a "three-dimensional training system" needs to be established to enhance the legal literacy of law enforcement officers. Specifically, the improvement of the legal literacy of law enforcement officers requires the establishment of a three-dimensional training system covering legal knowledge education, law enforcement practice training, and professional ethics cultivation. Through the dual track of systematic training and regular assessment, the ability to administer according to law should be effectively enhanced; Innovation in the law enforcement supervision mechanism requires the establishment of a "full-cycle supervision chain", that is: Innovation in the law enforcement supervision mechanism requires the establishment of a full-cycle supervision system covering before, during and after the event. In the preparatory stage of law enforcement, a dynamic update mechanism for law enforcement standards should be established to transform the requirements of laws and regu-

lations such as the Administrative Penalty Law into operational law enforcement norms; In the enforcement stage, technical means such as body cameras and electronic monitoring systems are used to keep a full record of key links such as on-site inspection and investigation and evidence collection to ensure traceability of law enforcement actions; After the case is concluded, a special review of "one case, two checks" will be carried out to examine both the quality of case handling and the responsibility of law enforcement supervision. By building a complete closed loop that includes standard setting, process monitoring, result evaluation and rectification feedback, the law enforcement supervision will shift from fragmented inspection to systematic governance, effectively prevent inaction and misconduct in law enforcement, and promote the standardized operation of administrative law enforcement on the track of the rule of law.

4.2. Focus on Information Sharing and Optimize the Way Case Files Are Filed

Promoting informatization is the core task for improving the efficiency of agricultural administrative law enforcement. To this end, efforts should be made to build a unified information management platform covering the entire process from case filing to enforcement, ensuring that data can be entered, shared and queried in real time. Converting traditional paper materials into electronic archives through technical means will not only significantly improve the efficiency of archiving, but also effectively enhance the accuracy and reliability of the data. For example, electronic signature technology can be introduced to enable the online signing and circulation of law enforcement documents, thereby significantly shortening the case handling cycle. In addition, it is crucial to establish a cross-departmental data sharing mechanism to provide comprehensive and precise law enforcement data support for rural revitalization by breaking down the information barriers among departments such as agriculture and rural areas, market regulation, and ecological environment. The system also needs to have multi-level connection capabilities to ensure data intercommunication between the upper and lower levels and cross-regional collaboration, further enhancing the efficiency of law enforcement coordination. In the process of building the platform, great importance must be attached to data security protection, and multiple technical and management measures must be adopted to ensure the security of information. At the same time, regular maintenance and upgrades of the system should be carried out to enable it to adapt flexibly to changes in law enforcement requirements and trends in technological development. Through the continuous optimization of the information system, the modernization level of agricultural administrative law enforcement archives management will be significantly enhanced.

Optimizing the archiving process is the top priority and the most important link in improving the efficiency of archive management. First, sort out and streamline the process. Eliminate unnecessary links and procedures, standardize operations uniformly, clarify responsibilities and deadlines for filing. Secondly, estab-

lish a pre-review mechanism. Since law enforcement officers and archivists may not be the same person, it is necessary to embed archival operations and specific requirements in advance during the evidence collection stage. Standardize and normalize the archiving work in advance to avoid secondary or even more corrections for non-compliant operations. Again, digitize management. Through digital technologies such as barcodes, QR codes and RFID, the entire process of case file tracking is digitiized to improve the efficiency of retrieval and location. Build cross-departmental, cross-regional and cross-industry information sharing platforms, break down various types of barriers, remove the "walls", and ensure smooth online query and access of case file data to improve the efficiency of information utilization. Finally, enhance coordination and cooperation. Regular communication mechanisms should be established across departments, regions and industries to form a working synergy and jointly study and solve the key and difficult problems in the archiving work. We will promote process optimization and technological innovation, improve the quality and efficiency of agricultural administrative law enforcement archives management, and provide strong support for the modernization, informatization and efficiency of agricultural law enforcement work.

4.3. Attach Importance to Archive Collection and Improve the Quality of Case File Management

First of all, clarifying the scope of collection is the basis for ensuring the quality of case file management. The collection of archives should be combined with the requirements of the rural revitalization strategy and the actual situation of agricultural law enforcement, and a list of case file materials covering all areas of agricultural law enforcement should be studied and developed. The list should focus on core areas such as agricultural production safety, rural ecological protection, and protection of farmers' rights and interests, and comprehensively include key materials such as on-site inspection records, interrogation records, physical evidence images, test reports, and penalty documents. The standards for collecting various types of evidence should be clearly defined. For example, in cases of quality and safety of agricultural products, the entire chain of data from planting and breeding to processing and sales should be collected completely, including environmental inspection reports of the origin, use ledgers of input materials, production and processing records, and vouchers of circulation links, etc., to provide detailed basis for case handling and industrial supervision. Establish a dynamic adjustment mechanism to update the list content in a timely manner in accordance with law enforcement practice and policy orientation. For new areas and issues such as rural environmental governance and the development of ecological agriculture, additional requirements for collecting special materials such as pollution prevention and control law enforcement and the promotion of green technologies have been added. By conducting regular case file quality assessments and analyzing the changing trends of law enforcement hotspots, ensure that the collection of

files always keeps pace with the needs of rural revitalization. Secondly, strengthening quality review is an important link in improving the quality of case file management. A dual review mechanism for case file quality should be established, with legal institutions and archival departments jointly conducting pre-filing reviews. The focus of the review should be on the completeness and normativity of the materials, the closure and legality of the chain of evidence, the accuracy of the application of the law, and the appropriateness of the administrative handling decision. For flawed case files, a "problem list system" should be implemented, with clear requirements and deadlines for rectification. Innovatively implement the "review forward" approach, where legal personnel intervene and guide the fixation of evidence during the case investigation stage to ensure that key materials are not missing. Establish a quality review mechanism, conduct a second review of 10 percent of the filed case files each month, and carry out effective supervision through a dual linkage mechanism of "regular notification + performance assessment". Build an intelligent review support system with pre-set review rules and intelligent comparison algorithms to automatically verify elements such as the standardization of document format and the applicability of legal provisions. The system can generate quality analysis reports, dynamically display the distribution of high-frequency issues, and provide data support for precise improvement. At the same time, a mobile review terminal was developed to enable law enforcement officers to receive rectification prompts on-site and achieve closed-loop management of quality control.

4.4. Strengthen Personnel Training to Forge Versatile Talents in Archival Management

The study aims to enhance the skills of agricultural practitioners, thereby enhancing the strategy's dynamism and effectiveness [7]. The main source of the overall difference in the coupling and coordination between China's digital economy and rural revitalization is the inter-regional difference. To narrow the interregional gap, the main strategic roles of digital talents and rural residents should be brought into play [8]. To meet the demands of agricultural administrative law enforcement case file management in the digital age, it is suggested that relevant departments regularly organize archive management personnel to systematically carry out various types of training. The training should be based on the close integration of theoretical knowledge and practical skills, and the content should cover cutting-edge fields such as digital management of archives, information security protection, and resource development and utilization. To enhance the training effect, it is recommended to carry out on-the-job practical training simultaneously, arrange team members to participate in the process of case file organization, archiving and borrowing, and help them master the standardized operation norms in practice. When conducting various types of training, invite industry experts to give special lectures to explain the latest policies, regulations and technological applications, and organize team members to visit advanced regions

for on-site observation and learning of innovative management experience. It is recommended to adopt a dual approach of "bringing in and going out" to enhance and forge compound talents in archival management.

Improving digital transformation capabilities is an important task for archival management at present. It is recommended to implement the "Digital Empowerment Three-Year Plan" and conduct specialized skills training such as big data analysis and cloud computing platform operation in phases. Innovation breakthrough teams led by technical experts should be formed, a "technical mentorship system" should be established, "Evaluation Standards for Archival Digitalization capabilities" should be formulated, digital technology application capabilities should be incorporated into the performance assessment system, and a digital capability matrix should be constructed. Set up a special reward fund for digital innovation to encourage team members to actively explore technological innovations.

To cultivate high-quality, versatile archival talents, it is necessary to break away from the traditional training model and establish an all-round capability enhancement mechanism. This can be done in the following aspects: First, implement the law enforcement business training system. Organize archival managers to systematically study professional knowledge such as regulations on administrative penalty procedures and norms for evidence collection, and gain a thorough understanding of the formation patterns and characteristics of law enforcement case files. By combining theoretical learning with practical guidance, we will effectively enhance the professional quality of archivists. Second, implement cross-departmental job rotation and exchange. Regularly send archivists to the front line of law enforcement for on-the-job learning, directly participate in on-site inspections, case filing investigations and other law enforcement activities, and gain an in-depth understanding of the entire process of law enforcement and case handling. This immersive learning experience helps archivists better grasp law enforcement needs and enhance the pertinence of archival management work. The third is to establish a two-way interaction mechanism. It is suggested that relevant departments regularly engage in dialogue and communication between archivists and law enforcement officers to achieve interconnection between the two links and facilitate effective connection of upstream and downstream work. Through the exchange and sharing of work and learning experiences between archivists and law enforcement officers, it can promote the deep integration of archival management and law enforcement practice, and achieve complementary advantages and coordinated development. These measures will effectively broaden the horizons of archival talents, enhance their comprehensive capabilities, and provide strong talent support for the innovative development of archival management work. In addition, to carry out the project to enhance strategic thinking, it is necessary to incorporate the rural revitalization strategy into the continuing education system. Introduce specialized courses and distinctive research on the practice of archival services for rural revitalization, and help organize archival managers to study the

archival management needs in areas such as land transfer and industrial support. In addition, archivists can be invited to participate in the formulation of the annual law enforcement plan, and they can be involved in the decision support process to provide specific data support for the development and utilization of archival resources for the formulation of law enforcement policies.

It is necessary to establish a dynamic assessment mechanism to ensure that the training results can be effectively translated into practical working ability. In general, the following techniques can be applied to assess these training results: First, assessments conducted before and after training. Prior to and during the training, evaluate the officers' performance and degree of understanding in archive management. The effectiveness of training can be directly measured by the increase in pass rates. Second, evaluation of practical operations. Use real-world tasks or simulated events to evaluate the officers' practical archive management skills. This assesses their capacity to use the information and abilities they acquired throughout training in practical settings. Third, feedback surveys. Get trainees' opinions about the instructors, training techniques, and content. This offers qualitative information about the training's efficacy and potential areas for development. It is suggested that the assessment results be linked to performance rewards and punishments, and that those who perform well in the assessment be commended and rewarded through positive incentives; For those who fail to meet the standards, negative incentives will be used for targeted coaching and refresher training. In addition, encourage the team to actively seek innovative ways to optimize the management process in their daily work, thus creating a virtuous cycle of "learning—practice—innovation" and continuously improving the professionalization level of archival management.

4.5. Build a Data Platform to Enhance the Digital and Intelligent Level of Archival Management

In order to improve the efficiency of archives management, efforts must be made in multiple aspects such as resource integration, platform construction, process standardization and technological innovation. In terms of resource integration, modern information technology means should be fully utilized to break down temporal and spatial, horizontal and vertical boundaries and establish a unified database of archival resource information. Specifically, through standardized data processing methods such as data cleaning, data sorting, and format conversion, scattered agricultural administrative law enforcement case files can be consolidated into a unified department to ensure the accuracy and completeness of the data, and also to avoid resource waste and inconsistent specifications caused by multiple constructions. In terms of platform construction, it is necessary to build a digital management platform with basic functions such as file entry, storage, retrieval and query, as well as advanced application functions such as intelligent classification and automatic summarization. In terms of process norms, promote the application of electronic signatures and electronic seals in combination with

anti-counterfeiting technology. Relevant departments should establish a technical platform for the online signing, circulation, delivery and execution of law enforcement documents based on digital technology. This will ensure the authenticity and legality of the documents and reduce the cumbersome process of paper document delivery, which can greatly improve the efficiency of case file archiving. In terms of technological innovation, workflow engine technology is used to promote the automation and intelligence of the process, and artificial intelligence technology is used to automatically identify common problems in the review process.

4.6. Precise Management Processes, Using Digital Technology to Define Retention Periods

In the tide of digital transformation, using big data technology to build a case file management system for rural agricultural administrative law enforcement has become a key entry point for improving grassroots governance capacity. To build this system, it is necessary to take into account the uniqueness of agricultural law enforcement and leverage technological innovation to achieve an all-round improvement in management efficiency. First, conduct in-depth analysis of historical law enforcement data and establish an intelligent predictive management model. The model uses machine learning algorithms to incorporate multiple key indicators such as case type, nature of violation, and social impact into the analysis scope, and automatically generates differentiated retention period suggestions. This precise management approach can effectively address the many problems and drawbacks of the traditional one-size-fits-all model. Secondly, the introduction of blockchain technology to build an intelligent regulatory platform enables dynamic definition of custody periods. Take the revision of the Rural Land Contracting Law as an example. The system can automatically adjust the duration of relevant archives within 72 hours, and all change records are documented through the blockchain to ensure that the adjustment process is traceable and auditable. This "dual-engine drive" model, which combines front-end intelligent prediction with back-end dynamic correction, not only ensures the standardization of archive management but also gives different types of archives flexibility in the management process. In practical application, by precisely identifying high-value archives, reliable historical data support can be provided for the formulation of agricultural policies; Through the dynamic matching and adjustment of data, legal risks can be effectively prevented and various types of legal risks can be mitigated invisibly. In addition, the system can be connected to the "Golden Agriculture Project" for the construction of digital villages promoted by the Ministry of Agriculture and Rural Affairs, laying the technical and data foundation for building a unified national big data platform for agricultural law enforcement. In the future, we can continue to optimize the algorithm model and try to incorporate external variables such as climate anomalies and policy orientation into the data analysis dimension to form a forward-looking intelligent decision-making system. This

will not only enhance the efficiency of archive management, but also provide strong information support for the steady and far-reaching development of the rural revitalization strategy.

5. Conclusions

In the context of the digital and intelligent era where digital technology is empowering the rural revitalization strategy with unprecedented strength, the management of agricultural administrative law enforcement case files and archives is facing unprecedented opportunities and challenges. There are numerous obstacles to implementing digital and intelligent archive management in rural locations, chief among them being the following: First, the technical infrastructure has constraints. The reliable operation of blockchain and AI systems may be hampered by the absence of sophisticated technology and enough Internet infrastructure in many towns and townships. The lack of funding is the second problem. Rural communities with little financial resources may find it challenging to cover the high costs associated with the deployment and upkeep of these cutting-edge technologies. Thirdly, technological expertise is lacking. The operation, maintenance, and management of the system will be hampered by the absence of staff in rural areas who are knowledgeable about blockchain and AI technology.

However, by taking a few practical steps, these difficulties can be gradually overcome: Start by putting them into practice gradually. One option is to take a gradual approach. In order to progressively broaden the scope of implementation, pilot projects might be implemented initially in towns and townships that are technologically and economically advanced. The experiences and lessons learnt can then be shared with other regions. The second is resource integration and government backing. To provide the assistance required for the deployment of blockchain and AI systems, the government can expand funding for towns and townships, combine resources from different departments, and fully resolve financial and technical issues. Third, make training and applications simpler. Create streamlined blockchain and AI applications based on the real-world circumstances of rural towns and townships, and train local staff to improve their technical and business acumen, guaranteeing the efficient use of these systems.

This study focuses on the key issues in this field and adopts the thinking approach of "problem diagnosis—cause analysis—countermeasure optimization" to systematically explore the optimization path of agricultural administrative law enforcement file management.

The research finds that the problems restricting the modernization process of current agricultural administrative law enforcement archives management mainly manifest in the following three aspects: First, the construction of digital infrastructure lags behind, making it difficult to meet the demands of modern management; Second, the incomplete standardization system affects the normativity and uniformity of archives management; Third, the coordination mechanism across departments, regions and industries is not sound, which restricts the sharing and

governance of archival resources. To address these issues, the research proposes to take digital transformation as the main line and promote the iterative upgrade of agricultural administrative law enforcement archives management towards digitalization, standardization, unification, scientification and informatization through a series of measures such as strengthening the application of digital technology, improving the standardization system and perfecting the coordination mechanism.

The theoretical value of this study lies in breaking through the single perspective of traditional archives management, organically integrating digital technology with the rural revitalization strategy, expanding the research dimension of agricultural administrative law enforcement archives management, and increasing the breadth and depth of the research. The practical significance of this study lies in that by taking the thinking path of "technology empowerment—standard guidance—collaborative governance strategy", it provides a feasible transformation plan for solving the problems of grassroots law enforcement archives management, helps improve the efficiency of agricultural administrative law enforcement, and provides strong digital and information technology support for the steady and far-reaching implementation of the comprehensive rural revitalization strategy.

One of the limitations of the study lies in the limited scope of data acquisition and the insufficient in-depth analysis of the differences in different regions and law enforcement scenarios; On the other hand, the practical effects of some of the countermeasures and suggestions need to be further verified, especially the compatibility of digital technology with grassroots law enforcement processes requires more empirical research support. Further research can be carried out in the following aspects: First, expand the research sample and conduct multi-regional and multi-type comparative studies; Second, develop practical digital management tools and build a theoretical model of collaborative innovation in technology, institutions and culture; Third, establish a dynamic assessment mechanism to track the implementation of policies in a timely manner and optimize and adjust them.

Looking ahead, with the continuous advancement of digital technology and the in-depth implementation of the rural revitalization strategy, the digital transformation of agricultural administrative law enforcement archives management is imperative. Digital rural construction is a key strategic direction to promote China's rural revitalization and alleviate global climate problems [3]. It is suggested that relevant departments strengthen top-level design, promote the deep integration of digital technology and archival management, focus on cultivating compound talents, deepen data sharing and business collaboration among departments, and provide strong support for improving the modernization level of the rural governance system and governance capacity.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

Fund Program

This article is a phased achievement of the 2025 Jiaozuo Municipal Government Decision-making Research Bidding Project "Research on the Development of Rural Wealth-Creating Industries in Jiaozuo City" (Project Number: 2025-31-6).

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