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Protection of Agricultural Genetic Resources in China

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Abstract

The protection of agricultural genetic resources, which represents a core element in the agricultural intellectual property (IP) system, will play an important role in realizing China's Rural Revitalization Strategy. In order to substantiate the need for improved agricultural property protection in China, the article examines existing issues in this area, including a weak understanding of IP protection on the part of rural people, imperfections in the existing legal framework, a lack of creative personnel working in the IP, inadequate support from government and other departments, as well as a lacking innovation mindset on the part of entrepreneurs. Proposed approaches for improving the legal awareness of agricultural genetic resource protection include increasing professional competencies in the aforementioned area and ensuring the participation of rural people in the protection of their agricultural genetic resources.

Keywords: rural revitalization strategy, agricultural genetic resources, legal awareness, China

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Защита сельскохозяйственных генетических ресурсов в Китае

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Аннотация

Сельскохозяйственные генетические ресурсы являются ключевыми элементами системы сельскохозяйственной собственности, а защита сельскохозяйственных генетических ресурсов играет важную роль в реализации «Стратегии возрождения сельских районов Китая». В данной статье подчеркивается необходимость защиты сельскохозяйственной собственности в Китае и рассматриваются существующие проблемы в этой области, в том числе слабая осведомленность о механизмах защиты среди сельских жителей, несовершенная правовая система, отсутствие творческих кадров в области интеллектуальной собственности, недостаточная поддержка правительства и других соответствующих ведомств, а также отсутствие инновационного мышления среди предпринимателей. В статье предложены пути повышения правовой грамотности населения в области охраны сельскохозяйственных генетических ресурсов, повышения профессиональных качеств людей в указанной сфере, обеспечения их участия в охране сельскохозяйственных генетических ресурсов.

Ключевые слова: стратегия возрождения сельских районов, сельскохозяйственные генетические ресурсы, правосознание. Китай

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Introduction

China is a country rich in agricultural resources. In addition to the physical means of agricultural production (land, soil, water, air, plant communities, watersheds, etc.), agricultural resources also comprise human resources, which applied knowledge can be expressed in terms of intellectual property (IP). Moreover, the protection of IP in rural areas involves not only the interests of the agricultural sector, including farmers, but also those of the state. At present, there are few special studies devoted to this topic; as a result, the protection of IP in the field of agriculture lacks corresponding legal and institutional support. Thus,

the question of how to effectively protect IP in the field of agriculture is one of the key issues faced by Chinese society today.

The protection of agricultural genetic resources is crucial in the agricultural property protection system. With the increasing dependence of agriculture on genetic resources held in various countries, the maintenance of resources becomes a strategic resource that determines sustainable development in human evolution towards an ecological civilization — and, ultimately, human survival per se (Xu, Pittock, Daniell, 2021). China already possesses rich agricultural genetic resources, both pertaining to traditional and

modern agriculture, as well as those involved in smart agriculture. Protecting the legitimate rights and interests of farmers involves not only an economic and political questions, but also raises legal issues. While the protection of agricultural genetic resources is generally accepted as forming one of the most important issues in the field of international property rights, such rights are typically exercised at the level of domestic legislation (Ou, Gong, 2021). China has specifically included the protection of agricultural genetic resources in its strategic focus on property rights, with special attention paid to the protection of farmers' legitimate rights and interests.

The proposal of the CPC Central Committee on formulating the 14th Five-Year Plan for National Economic and Social Development and the Long-term Goals of 2035¹, adopted at the fifth plenary session of the 19th CPC Central Committee, clearly stated that

China enjoys many of the strengths and conditions needed to continue developing into the future. On the other hand, unbalanced and inadequate development remains an acute issue, reform in key sectors and links still poses a daunting task, and China's innovation capacity remains below the level needed for high-quality development. The foundations of agriculture need to be further strengthened.

Following a period of concerted efforts to construct mechanisms for applying the rule of law in rural areas, the Chinese legal system has become more mature. In 2019, the Guidance on Strengthening and Improving Rural Governance also advances clear

requirements for publicity and education concerning the rule of law in rural areas. According to the Guidance, the project aimed at improving the legal awareness of rural people should be implemented with a focus on cultivating a number of "leaders of the rule of law". The process of cultivating such "legal experts" should concentrate on the capacities of each individual to ensure the maximization of benefits and bring together all relevant forces to implement the rural revitalization strategy.

The importance of protecting agricultural genetic resources

(1) The protection of agricultural genetic resources should be realized through property rights. According to Article 2 of the United Nations Convention on Biological Diversity (CBD), "genetic resources" means any material of actual or potential value from plants, animals, microorganisms or other sources containing genetic functional units. Accordingly, "agricultural genetic resources" refers to the above materials in the field of agriculture. Genetic resources comprise not only genetic materials themselves, but also the results of research using genetic resources, as well as traditional knowledge generated during the process of using such resources.

For the legal protection of biological genetic resources, there are still academic disputes, which mainly focus on the protection of property rights, contract law, and intellectual property (Luo, 2021). Based on legal theory and judicial practice in China and abroad, it becomes rational to adopt the legal protec-

¹ Outline of the 14th Five-Year Plan for Economic and Social Development and Long-Range Objectives Through the Year 2035 of the People's Republic Of China. Available at: https://en.ndrc.gov.cn/policies/202203/P020220315511326748336.pdf

tion of property rights for agricultural genetic resources. The most important contributor to the value of agricultural genetic resources consists in the related genetic information. While it is very easy to obtain agricultural genetic resources, of which only a small amount of genetic material is necessary to obtain the corresponding genetic information, it remains more challenging to protect genetic information through property rights, creditor's rights, contracts, etc. Due to their inherent nature, therefore, agricultural genetic resources are best protected via the IP system.

According to the traditional view, genetic resources are not intellectual achievements. but the common material property of human beings, so they cannot be regarded as the object of IP (Li, 2023). Conversely, genetic resources can also be referred to as comprising a source of knowledge, describing the essential characteristics of the object of IP. Based on the principle of the sovereignty of genetic resources, unilateral legislation has become an important trend in the management of genetic resources and IP legislation at regional and national levels. Inasmuch as they comprise the object of IP, genetic resources thus not only meet legal validity criteria, but also obtain a solid foundation in international law. Since they also satisfy urgent practical needs, this becomes provide an appropriate foundation on which to base national IP legislation.

Due to their constituting basic and strategic resources of the country, agricultural genetic resources have become a key link in China's international agricultural IP strategy. According to the principle of national sovereignty acknowledged in CBD, there are no strict restrictions on the protection of biological genetic resources at the level of national legislation. The possibility of applying IP pro-

tection to biological genetic resources is due to the latter possessing the key characteristics of replicability and intangibility. A demand on the part of the provider or origin of genetic resources to participate in the sharing of benefits derived from the utilization of biological genetic resources by others is consistent with their IP content, which provides a realistic basis for the protection of associated IP rights. However, China's agricultural plant genetic resources require additional protections.

(2) In the context of the rural revitalization strategy, support for agricultural genetic resources is indispensable. Intellectual property rights are related to the modernization of the national governance system in terms of its increased capacity, high-quality development, the well-being of the people, the overall situation with regard to opening up of the country, as well as issues of national security (Miao, 2024).

In the context of the rural revitalization strategy, in order to further promote agricultural modernization and rural development, including a comprehensive deepening of rural reforms, IP rights become indispensable. As such, scientific and technological innovation in the field of agriculture, along with the corresponding progress in terms of rural development, cannot be separated from the protection of agricultural genetic resources (Ma, Sun, & Wang, 2024). Since agricultural IP rights mainly consist of the results of agricultural research created by mental labor combined with other non-material information, these aspects should be included within the scope of agricultural property rights. Generally speaking, agricultural property rights mainly cover the following specific rights: new plant varieties, geographical indications of agricultural products, patents and trademarks, trade secrets, and traditional

agricultural knowledge (Yu, Yin, 2023). Agricultural genetic resources pertain to a wider range of new plant variety rights, related patents, trademarks, and trade secrets.

Although IP rights are playing an increasingly important role in encouraging innovation, building brands, standardizing market order, and expanding opening-up in the field of rural revitalization, there are still many issues and shortcomings. These can be summarized as follows: (1) the insufficient creation of high-quality IP rights in key and core technologies in the agricultural field; (2) the need to improve transfer and transformation of agricultural genetic resources: (3) the need to further strengthen the role of the IP system in promoting high-quality rural economic and social development (Xie, 2023). At present, as well as lacking specialized research on the protection of agricultural genetic resources, lacks corresponding management procedures, China's legal system requires further development, resulting in the inadequate protection of property rights in rural areas. Thus, how to make an effective use of the property system to protect agricultural genetic resources becomes one of the key issues facing Chinese society today.

(3) Protection of agricultural genetic resources provides an institutional guarantee for scientific and technological innovation in agriculture. Although creators are stimulated to invest more time, manpower and capital costs to do research and development by the creation of innovative results, when the intellectual results of the creator cannot be effectively protected, there will be insufficient motivation and enthusiasm for innovation, thus curtailing investment. Since rural areas often lack clear protection of IP rights, the perceived benefits of intellectual achievements in agriculture may be lower than those in urban ar-

eas. Therefore, strengthening the protection of agricultural genetic resources for large-, small-, medium- and micro enterprises and farmers can provide institutional guarantees for agricultural scientific and technological innovation. This can boost the enthusiasm and confidence of agricultural workers to further promote the development of agricultural scientific and technological innovation.

(4) IP protection is an important measure to solve the issues of agriculture, rural areas and farmers. Strengthening the protection agricultural genetic resources, which requires the support of advanced enterprises and talented people who understand about the protection of IP rights, is an important measure for solving issues affecting rural areas. From a rural development perspective, the protection of agricultural genetic resources cannot be separated from the steady operation of agriculture, since affecting the growth and development of new professional farmers. Strengthening the protection of agricultural genetic resources can not only improve the economic benefits of large-, medium-, small- and micro enterprises in rural areas, helping to increase farmers' incomes, but can also improve the competitiveness of agricultural production.

Issues in the protection of agricultural genetic resources

(1) Poor awareness of legal protection of agricultural genetic resources. Since individual farmers, as well as small- and medium-sized enterprises (SMEs) in rural areas, often have a poor awareness of legal property rights protections as compared with urban enterprises and residents, when small and medium-sized enterprises or individual farmers in rural areas encounter IP infringement, they may lack the means to detect such infringements, take protective measures or

adopt emergency plans. At the same time, since most rural SMEs and farmers do not realize the seriousness of IP rights violations due to a lack of publicization of IP rights on the part of the government, available measures for punishing licensing infringements are rarely taken proactively and in a timely manner. Poor legal awareness of IP protection of agricultural genetic resources may also be due to an insufficient understanding of the right attribute and declaration process of relevant agricultural genetic resources on the part of agricultural scientific and technical personnel (Ren, Song, Ge, 2017).

- (2) Deficiencies in the legal system for the protection of agricultural genetic resources. At present, the regulations specifically related to the protection of agricultural genetic resources in China mainly include the Regulations of the People's Republic of China on the Protection of New Varieties of Plants issued by The State Council and the Measures for the Protection of Geographical Indications issued by the State Intellectual Property Office. While the legal protection of geographical indications is mainly based on international conventions and additional national legislation, the legal system for protecting property rights is inadequate in some important aspects.
- (3) Serious infringement of agricultural genetic resources. Compared with other secondary and tertiary industries, the agricultural industry has the characteristics of a long scientific research cycle, low confidentiality, and poor controllability. Due to these specific characteristics, the problem of protecting agricultural genetic resources against IP infringements in rural areas will become more serious in the future. In the long run, the weak protection of property rights may lead to criminal acts such as the illegal steal-

- ing of seeds and breeding from them. While this may on the one hand lead to dampened enthusiasm for innovation on the part of numerous agricultural scientific and technological personnel, it will also conduce to the popularization of property laws and regulations among the farmers due to their recognition of the huge economic value represented by agricultural genetic resources, which can be used to obtain economic benefits
- (4) Lack of talents in the field of agricultural genetic resources. The present era is characterized by competition for information and talent, especially in high-tech fields, where they are the main driving force behind scientific research teams (Dai, Chen, Zhang, He, Li. 2023). The protection of property rights in rural areas is no exception, since it requires teams with legal awareness and solid professional knowledge, who are familiar with the scientific research process, as well as having a good understanding of the basic situation and folk customs in rural areas. Therefore, it can be seen that the project aimed at fostering legal awareness of people in rural areas becomes crucial. However, rural areas of China are seriously affected by the phenomenon of brain drain, leading to a lack of talent in the field of property rights.
- (5) Lack of support from the government and other relevant departments for the protection of agricultural genetic resources. Due to the lack of publicity in rural areas, SMEs and individual farmers in rural areas suffer from a cognitive blind spot when it comes to the protection of agricultural genetic resources. This is compounded by a lack of corresponding reward mechanisms. The relatively low incomes associated with technological achievements in agriculture also affect the enthusiasm of personnel engaged in the promotion of IP technology and scientific research.

(6) Rural SMEs lack consciousness of independent innovation. The lack of awareness of independent innovation on the part of SMEs in rural areas as compared with urban enterprises means that less more attention is paid to the protection of traditional types of property rights in technology and production. Since SMEs in rural areas generally do not have departments or institutions dedicated to protecting intangible assets such as patents, they are often not aware that the protection of IP rights can bring economic benefits that promote their growth and development. In the long run, such small and medium-sized enterprises are likely to be acquired or even eliminated by more technologically-minded competitors. Thus, nurturing consciousness of independent innovation becomes a key driver in ensuring the legitimate rights and interests of SMEs in rural areas.

In an era characterized by the rapid development of the information industry and online technologies, the notion of "digital agriculture" has attracted wide attention. According to Wen Tiejun, digital agriculture should pay attention not only to the needs of end consumers, but also to the interests of producers, collating information about climate factors parameters and developing the standardization of agricultural products. Along with more traditional IP rights, it is also necessary to protect new business innovation achievements when promoting the increased awareness of property rights protection and innovation on the part of farmers.

The significance of raising "legal awareness"

(1) Guide villagers to safeguard their legitimate rights and interests and safeguard their rights rationally. In Chinese villages, "legal awareness"

is often associated with a certain reputation. Therefore, those engaged in promoting it must not only have emotional contact with the masses, but also a certain understanding of rural legal affairs and interpersonal relations. By entering into the "heart" of the matter, they will be better equipped to gain the trust of each party when helping to resolve contradictions and disputes. Thus, when complicated disputes arise in a village, improved legal awareness and critical thinking on the part of villagers will help them to solve problems that arise with connection to laws and regulations in order to safeguard their legitimate interests.

- (2) Attract more students and other people to participate in the development of the rule of law in rural areas. With the comprehensive deepening of the rule of law, rural actors who provide voluntary services and professional guidance such as legal publicity and consultation will receive increasing support and attention from society as the masses enhance their subtle awareness of the rule of law (Tianchong, Chen, 2014). The cultivation of "legal awareness" will attract more students into legal studies, as well as inspire other people to participate in the cultivation of legal talents to provide expertise in fields of agriculture-related law. Here, it will be no less important prioritize the cultivation of village cadres, local talents, and mediation experts.
- (3) Two-way interaction between rural autonomy and the rule of law. As one of the key elements in China's rural governance system, villager autonomy plays an important role in the development of rural rule of law. Villager autonomy and rural rule of law go hand in hand, since, in order to enhance the capacity and level of village autonomy, it will also be necessary to increase the legal consciousness of villagers. In order to promote democrat-

ic political order and self-governance, it will be necessary for rural inhabitants to achieve a certain level of education leading to an objective concept of rule of law. Therefore. the cultivation of "legal awareness" consists not only in the concrete embodiment of rural rule of law, but also represents an important aspect of villager autonomy, which can be seen as an effect of reciprocal interaction (Xiaojun, Lu, 2024). By establishing a cooperation mechanism between rural and urban providers of legal services, the cultivation of "legal awareness" involves the publicity and education of the rule of law. By prioritizing communication between urban and rural legal service providers, more people will understand the investigation and resolution of conflicts and disputes in terms of their benefits.

Cultivation of rural "legal awareness" to promote the protection of agricultural genetic resources

Rural "legal awareness" refers to those who have good legal literacy and certain legal knowledge among local villagers, are willing to actively participate in the practice of the rule of law, and can play a leading role in demonstrating its benefits. The Guiding Opinions on Strengthening and Improving Rural Governance (2019) state the necessity of cultivating "legal awareness" in rural areas by focusing on the cultivation of a group of "legal leaders". In November 2021, the Ministry of Justice, together with the Publicity Department of the CPC Central Committee, the Ministry of Civil Affairs, the Ministry of Agriculture and Rural Affairs, the National Rural Revitalization Administration, and the National Office of Law Popularization. issued the 'Norms for the Training of Rural People' (Trial Implementation), which clearly stipulates the selection, training, use, management, assessment, and other related work aimed at increasing people's "legal awareness". Here the focus is placed on cultivating "legal awareness" among village cadres, mediators, Party members, experts, and other villagers who are enthusiastic about public welfare undertakings. In the process of cultivating "legal awareness", it is necessary to consider different factors such as age, gender, education, and social position.

If people living in rural areas want to narrow the economic gap between themselves and the urban population, the introduction of large, small and medium-sized enterprises and professional and technical personnel in the system of property protection of agricultural genetic resources will be essential. For instance, in addition to the inherent geographical advantages conferred by its capital city status, the rapid development of Beijing is inseparable from the opportunities brought by IP protection. Thus, the cultivation of "legal awareness" in rural areas is of great significance in terms of promoting the protection of agricultural genetic resources.

(1) Enhanced rural legal awareness of protection of agricultural genetic resources and dissemination of law. Based on the discussed problems arising in the protection of agricultural genetic resources, it is clear that education and publicity relating to IP protection of agricultural genetic resources in rural areas must be vigorously promulgated. In order to improve awareness of the benefits, it will be necessary to carry out professional training so that the relevant actors will develop expertise in protecting agricultural genetic resources based on local realities. On the basis of continuous publicity and education, the enthusiasm and creativity of villagers and enterprises in the study of IP law must be stimulated, leading to continuous improvements in the level knowledge in this field and protection awareness. In order to publicize the IP environment in rural areas, slogans or hand-copied flyers can be posted on bulletin boards and other public places in rural streets.

(2) Carry out training in various forms to improve the professional quality of legal experts. Training, examination and other mechanisms for those responsible for legal training will include the issue of certificates and badges to structure recruitment procedures where a certificate is required for employment purposes. At the same time, the list of legal experts and the public board should be established among the members of the local Party branch, including dynamic supervision so that incompetent employees receive adequate warnings, including the termination of employment if necessary.

Various forms of incentive and assessment mechanisms should be adopted. For instance, the two committees of rural legal services may organize regular "Who is a qualified legal expert?" activities, as well as assessing and rewarding legal experts according to the laws and regulations involved in the village cases. This can not only stimulate the learning motivation of local legal experts, but also play an effective supervision role.

(3) Open up channels to ensure the participation of legal experts in the entire process protecting agricultural genetic resources property. As part of the entire process of creating, protecting, managing and applying agricultural genetic resources, legal experts will provide legal guidance across the process of property pro-

tection of agricultural genetic resources holders, including rights application, infringement prevention, and relief following infringement. Legal experts will participate in judicial protection, administrative protection, collaborative protection, source protection and other aspects of the IP legal policy system.

Conclusion

In order to promote the development and revitalization of rural areas, it is necessary not only discuss the theoretical protection of agricultural genetic resources, but also to set out a roadmap for protecting agricultural genetic resource IP that is adapted to the practical agricultural conditions in rural areas. The economic benefits obtained by rural areas should be shared between large-, medium-, small- and micro enterprises, including individual farmers and their families. Cultivating legal awareness thus plays an indispensable role in the revitalization of rural areas and promoting rural rule of law. In the process of cultivating legal awareness, combined with IP protection of agricultural genetic resources, a system of great significance in the rural revitalization strategy, focusing on providing training for legal experts, and ensuring that they can lead the improvement of IP protection in rural areas. The increased competency of rural legal cadres to employ the rule of law as a means of resolving contradictions, maintaining stability, and promoting efficient working, will also play a positive role in helping rural revitalization by ensuring the IP protection of agricultural genetic resources.

REFERENCES

- Dai, X., Chen, Y., Zhang, C., He, Y., Li, J. (2023). Technological revolution in the field: green development of Chinese agriculture driven by digital information technology (DIT). *Agriculture*, 13(1), 199. https://doi.org/10.3390/agriculture13010199
- Li, Y. (2023). Analysis of the Status Quo of Intellectual Property Protection in China in the Era of Big Data. Science of Law Journal, 2(5), 1–5. https://doi.org/10.23977/law.2023.020501
- Luo, Y. (2021, January). Intellectual Property Protection of Biological Genetic Resources. In: 6th Annual International Conference on Social Science and Contemporary Humanity Development (SS-CHD 2020) (pp. 313–316). Atlantis Press. https://doi.org/10.2991/assehr.k.210121.066
- Ma, D., Sun, D., Wang, Z. (2024). Exploring the Rural Revitalization Effect under the Interaction of Agro-Tourism Integration and Tourism-Driven Poverty Reduction: Empirical Evidence for China. *Land*, 13(1), 60. https://doi.org/10.3390/land13010060
- Miao, F. (2024). Research on the Impact of Intellectual Property Protection on Industrial Structure Upgrading. International Journal of Frontiers in Sociology, 6(4), 49–54. https://doi.org/10.25236/IJFS. 2024.060409
- Ou, M., Gong, J. (2021). Farmland transfers in china: from theoretic framework to practice. International Journal of Environmental Research and Public Health, 19(1), 217. https://doi.org/10.3390/ijerph19010217
- Ren, D., Song, W., Ge, Z. (2017). The study of agricultural intellectual property and intelligent agriculture development strategies in China. *Journal of Service Science and Management*, 10(3), 230–250. https://doi.org/10.4236/jssm.2017.103020
- Tianchong, Y., Chen, S. (2014). The Predicament and Outlet of the Rule of Law in Rural Areas. In: SHS Web of Conferences (vol. 6, p. 01011). EDP Sciences. https://doi.org/10.1051/shsconf/20140601011
- Xiaojun, L., Lu, X. (2024). Understanding Public Perceptions of Chinese Law and the Legal System: Legal Experiences Matter. *China*: An International Journal, 22(1), 164–181. https://doi.org/10.56159/chn. 2024.a920962
- Xie, B. (2023). Chinese Chain Shop Enterprise Management Status Quo and Countermeasures. *Academic Journal of Management and Social Sciences*, 4(1), 36–37. https://doi.org/10.54097/ajmss.v4i1.11503
- Xu, H., Pittock, J., Daniell, K. A. (2021). China: a new trajectory prioritizing rural rather than urban development? *Land*, 10(5), 514. https://doi.org/10.3390/land10050514
- Yu, L., Yin, B. (2023, August). Research on the Current Situation, Problems and Countermeasures of National Geographical Indication Products in Beijing. In: 2023 2nd International Conference on Urban Planning and Regional Economy (UPRE 2023) (pp. 4–13). Atlantis Press. https://doi.org/10.2991/978-94-6463-218-7_2

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