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Brief Analysis: Seed Industry Strategy in China

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Introduction & Summary

In recent Chinese policy documents, seeds and the development of the Chinese seed sector increasingly gain importance. Even before the current **Document No.1**¹ named seeds explicitly “the foundation of agricultural modernization”, a seed industry based on national germplasm resources was seen as a crucial factor for food security. In light of a 95% self-sufficiency in homegrown seeds, the new objective “seed security” (种子安全) highlights the need for more advanced breeding methods to increase yields, while reducing the dependence on seed imports. In comparison, Chinese yields are often much lower than for instance yields in the US. For example, the largest corn harvest in 2019 in the US was 2.58 metric ton per mu, whereas Chinese yields only reached 1.66 ton per mu^[1]. Besides looking for methods to increase agricultural output, China’s decision to invest in the seed sector is also linked to the political strategy of promoting innovation also in the high-technology sector. In this context, seeds were named the “microchips of agriculture”, i.e. a core “technology” of the agricultural sector. Accordingly, the **14th Five-Year Plan** emphasizes the importance of constructing a Chinese seed bank in order to make better use of domestic germplasm resources. To strengthen the protection of intellectual property rights in the seed industry, **Judicial Interpretation II** aims at securing the breeders’ plant variety rights, balancing the interests of farmers and breeders, while providing guidance on how to deal with infringements. These key issues are also addressed by the recently adopted **Seed Industry Revitalization Action Plan**, which was signed by President Xi Jinping in July 2021.

Key Messages

- The seed sector and seed breeding technologies gain more importance in recent Chinese policies.
- The **14th Five-Year Plan**, published 2021, explicitly aims for enhancing seed breeding technology and hence, improving international competitiveness of Chinese seed enterprises.
- The 2021 **Document No.1**, called seeds the “foundation of agricultural modernisation” and mentions subsidy policies to help establishing commercial breeding systems.
- Both policy documents stress the importance of preserving and enhancing national germplasm resources as well as breeding technologies.
- The so-called **Judicial Interpretation II** sets stricter regulations and prosecution of infringements in order to protect plant variety rights of seed breeders to encourage innovation and the development of new varieties.
- To support the seed industry, the **Seed Industry Revitalization Action Plan** was issued this year, which targets barriers and promotes innovation in the breeding sector through financial support.

¹ The annually published Document No.1 is the first policy document of the year. It gives an outlook on the year’s policy priorities and traditionally has a strong focus on agriculture, rural areas, and farmers.

1. Seeds as the basis of agricultural modernisation in Document No. 1

In February 2021, China issued this year's Document No.1, stressing the efforts necessary to comprehensively promote rural vitalization and accelerate the modernization of agriculture and rural areas. Furthermore, for the first time the topic of developing the seed industry was covered in an independent paragraph, calling seeds the “foundation of agricultural modernisation”^[2]. According to the document, the protection, development, and utilization of agricultural germplasm resources will be strengthened, and long-term stable support for basic breeding research is promised, while key breeding projects are accelerated. A new round of a livestock and poultry genetic improvement plan and a project to upgrade the seed industry will be implemented. In addition, the protection of intellectual property rights in the breeding field will be strengthened. Meanwhile, subsidy policies are also addressed in the document with the aim to support leading enterprises in the seed industry to establish a sound commercial breeding system, to accelerate the construction of the “Southern Silicon Valley” (南繁育种研究中心), to strengthen the construction of seed production bases and improved seed breeding systems and to study the development of major varieties.

2. Seed resources in China's 14th Five-Year Plan for National Economic and Social Development and Long-Range Objectives for 2035

Five-Year Plans set the framework for China's development by setting medium and also long-term goals and several indicators to be achieved within the next five years. In March 2021, the 14th Five-Year Plan was published. The plan emphasises the development of agriculture and rural areas and comprehensively promotes rural revitalization^[3], aiming to improve the quality of agricultural products and the competitiveness of agriculture, and to enhance agricultural production capacity. Like Document No.1, it addresses that the protection and utilization of germplasm resources will be strengthened, and the construction of seed banks and the safety of seed sources will be enhanced. The research and implementation of seed technology is supposed to accelerate, the industrialized application of modern biological breeding technology in an orderly manner will be promoted, and the establishment of leading enterprises in the seed industry with international competitiveness will be encouraged.

3. The legislation on the protection of intellectual property rights in the seed industry

In order to strengthen the judicial and administrative protection of intellectual property rights of the seed industry and to promote the high-quality development of the seed industry, on May 26, the Supreme People's Court and the Ministry of Agriculture and Rural Affairs (MARA) jointly held a forum on the protection of intellectual property rights in the seed industry and signed the “Memorandum of cooperation on strengthening the protection of intellectual property rights of seed industry”^[4].

On 7 July 2021, The Supreme People's Court of the People's Republic of China announced the “Interpretation (II) on Some Issues Concerning the Application of Law in the Trial of Cases Involving the Disputes over Infringement upon the Rights of New Plant Varieties” (“Judicial Interpretation II”)^[5], aiming to protect the interests of breed owners, severely crack down on infringements, promote independent innovation in the seed industry. There are 25 articles in the “Judicial Interpretation II”

with five core topics. The first is to expand the scope of protection, clarify that the objective of protection of plant variety rights is not restricted by breeding methods, and extend the scope of protection of plant variety rights to promised sales and infringement behaviour concerning acquisition, storage, transportation, and processing of seeds of protected plant variety.

The second is to increase the intensity of protection, enhance the timeliness and effectiveness of judicial protection, carry out punitive damages, forcefully deter against vicious infringements, and clarify comprehensive compensation for the overall interests of breeders.

The third is to reduce the difficulty of safeguarding rights, transfer the breeders' burden of proof to the accused infringers to facilitate the rights protection of the breeders and to make infringers bear adverse legal consequences.

Fourth, the legal system is to be improved, scientific research exceptions clarified, and breeding innovations encouraged; the rights of farmers for self-reproduction legally protected and the abuse of this kind of right prevented.

The fifth is to standardize the judicial expertise, clarify the selection of judicial expertise institutions, procedures, and judicial expertise requirements.

4. Seed Industry Revitalization Action Plan

On 9 July, the Seed Industry Revitalization Action Plan was signed at the 20th meeting of the Central Committee for Deepening Overall Reform. President Xi Jinping stressed efforts to promote the vitalization of the seed industry ^[6].

The Seed Industry Revitalization Action Plan emphasized the collection, identification, evaluation, utilization, and protection of genetic resources. It aims to strengthen basic and cutting-edge research, accelerate the implementation of major scientific and technological projects in agricultural biological breeding, and steadily promote the construction of innovation bases such as the Southern Silicon Valley. Enterprise innovation, protection of intellectual property rights and optimization of the business environment are also addressed. To implement full-chain and full-process supervision, the plan suggests to comprehensively use legal, economic, technical, administrative, and other means. Furthermore, current prominent issues such as counterfeiting and infringement will be strictly supervised, making the infringers pay punitive damages.

Conclusion

The Five-Year Plan is very important in China, as it illustrates one blueprint covering all fields for the development of the whole country. In the first year of the 14th Five-Year Plan, seeds definitely become a major keyword in policy documents as well as in the media and in speeches of politicians. Hence, the government now attaches higher importance to seeds than in earlier plans, as seeds are now linked to food security of the whole country. Although the Seed Industry Revitalization Action Plan is just a framework, it proposes a roadmap for financial support in the future, investment, and other stimulus policies, implying that the Chinese seed industry and relevant policies, regulations etc. will be emphasized and developed in the next five years. It is expected that the seed industry of plant and livestock will boost in response to the support of government and the driving force of the increasing

demands. However, the protection of intellectual property has a long way to go. Despite the efforts of many years, it is still especially difficult to monitor infringement in the seed sector due to the particularity of agriculture although the seed law has already been released in 2000. Therefore, the legislation on the protection of intellectual property rights in the seed industry (Judicial Interpretation II) was addressed again to guarantee the healthy development of the seed industry. The seed law is currently being revised and is expected to be issued this year, with more detailed regulations regarding seed varieties and its corresponding protection. The strict regulation on infringements will help professional breeding companies to grow international corporations with stronger competitive ability. During this period, the cooperation with other leading breeding organizations and countries is necessary and encouraged.

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