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Sino-German Agricultural Centre (DCZ) 中德农业中心



Sino-German Agricultural and Food Update 中德农业与食品通讯



No. 18 February - March 2022



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Published by



Sino-German Agricultural Centre
Room 201, Zhong Ou Hotel,
55 Nongzhan Beilu, Chaoyang District,
100125 Beijing, PR China
Info-dcz@iagleipzig.de
www.dcz-china.org

中德农业中心
北京市朝阳区农展北路 55 号中欧宾馆
201 室（麦子店街，近盛福大厦）
邮编：100125
Info-dcz@iagleipzig.de
www.dcz-china.org

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Sino-German Agricultural and Food Update

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Foreword

Dear partners and friends of the Sino-German Agricultural Centre,

this is the last edition of our Newsletter in Phase 2 of the Sino-German Agricultural Centre. But no worries, this is not the end, just another beginning: The 3rd Phase of the DCZ will seamlessly continue after 1 April and we are excited that IAK Agrar Consulting GmbH and IAMO succeeded in their bid and this team (although a bit reduced in size) can continue this journey and cooperation with the Chinese partners of the Foreign Economic Cooperation Center (FECC) of MARA and the Chinese Academy of Agricultural Sciences (CAAS).

In future we will publish a half-yearly DCZ Newsletter in the format of a journal. Additionally, a frequent news ticker with latest information on developments in agriculture in Germany and China, as well as on DCZ activities will be brought to you.

For this last edition we felt that it is time to look back on the past four years and asked four friends of the DCZ who have been closely involved in the implementation of this project at different stages to share their thoughts and memories which now constitute a different kind of Cover Story for this edition.

Nevertheless, the information usually provided in our Newsletters is not missing: several important policy documents and laws have been published in China, summaries of which you will find in the "Good to Know" section. The specific Five-Year Plans on "Promotion of Agricultural and Rural Modernization" and "International Cooperation in Agriculture" are of particular interest by candidly outlining the present challenges of rural and agricultural development and the expected key areas of international cooperation.

These are difficult times, and the war in Ukraine is always on our mind. We think of our friends in the Ukraine where IAK also implements an Agricultural Policy Dialogue and three other agricultural and agroforestry projects.

As always, we hope you find something of interest in this last edition of our newsletter. We will be back with new formats and information. Don't hesitate to give us some feedback or suggestions.

In one of the upcoming news tickers, we will then also introduce our DCZ team for this 3rd phase of the DCZ which runs from April 2022 to March 2025.

Please "stay tuned".



Dr. Jürgen Ritter
Managing Director
Sino-German Agricultural Centre (DCZ)

Cover Story

Phase 2 of the DCZ which ran from April 2018 to March 2022 comes to an end – and a new phase will commence on 1 April 2022. This is a time to look back on the past four years of our cooperation, so we asked four friends of the DCZ who have been closely involved in the implementation of this project at different stages to share their thoughts and memories which now constitute a different form of Cover Story for this edition.

We are very glad and grateful that we received these recollections from:

Mr. Friedrich Wacker, Director-General (ret.) of the BMEL who played an instrumental role in the establishment of the Sino-German Agricultural Centre and was a frequent speaker and participant in our flagship events in China and Germany.

Prof. Dr. Hu Xiangdong of CAAS who supported the DCZ activities by various contributions.

Dr. Rita Merkle who played an essential role as German lead expert of the climate change team when the DCZ together with experts from CAAS implemented the “German-Chinese Cooperation on Climate Change and Agriculture” in 2019.

Anne Veltes whose strong and efficient support during her internship at the DCZ was very welcome at a busy time and during the Agricultural Week in 2019.

Agricultural Centre in the Middle Kingdom

By Friedrich Wacker, Director General (ret.) of the BMEL

The Sino-German Agricultural Centre (DCZ) is an outstanding example of the BMEL’s international project cooperation. In this respect, it can also claim a special role in the external relations of Germany.

The DCZ is based on a joint initiative of the BMEL and its Chinese partner, the Ministry of Agriculture and Rural Affairs (MARA). The mandate to establish it was given in 2014 by then German Chancellor Angela Merkel and Chinese head of government Li Keqiang.

2014 was the year of the “horse” of the Chinese lunar calendar. The “horse” stands for power, movement, and creativity. Accordingly, both sides took a spirited and innovative approach to implementing the heads of government’s mandate.

The DCZ was intended to create a platform for dialog between politics, science and industry and professional practice. Moreover, it should provide a basis for networking and the presentation of existing independent projects such as the arable farming and agricultural technology demonstration park in Jiangsu, the animal breeding project or the exchange of young specialists.

In March 2015, the DCZ was officially opened by the ministers Christian Schmidt and Han Changfu. The balance of the work done since then can be assessed positively. The topics worked on are relevant for both sides, the results attract broad attention and make important contributions to core issues of food security against the backdrop of climate change and increasing resource scarcity.

The Sino-German Agricultural Week (DCAW), now in its seventh year, has established a successful format that appeals to a broad professional audience. High-ranking political participants, most recently Federal Minister (ret.) Julia Klöckner and Vice Minister Zhang Taolin, have emphasized its importance through their presence. The recognition for the DCZ and especially for the DCAW is also emphasized by the explicit mention in China’s 14th Five-Year Plan for International Agricultural Cooperation.

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DCZ former Political Director Friedrich Wacker at the launch event for phase 2, May 2018

Various factors have contributed to this track record:

With the Chinese “Foreign Economic Cooperation Center (FECC)”, a partner could be won for the cooperation, which has rich experiences in the organization of international cooperation relations. In addition, the renowned Chinese Academy of Agricultural Sciences (CAAS) was integrated into the DCZ’s scientific dialog.

It was important for both sides to link up with the political decision-making levels of the BMEL and MARA. This was achieved by establishing a steering committee as well as an exchange on general cooperation with China at Vice-Ministerial level. This should ensure that the results of the DCZ’s work can be directly incorporated into political decisions and receive the appropriate attention at the cabinet table.

The location of the DCZ at the FECC in central Beijing has also created spatial proximity to important political institutions, including the MARA or the German embassy, and im-

portant actors from business and science.

Trust and mutual respect are essential for the success of a partnership. Of decisive importance for the successful launch of the DCZ was therefore the support of the then Vice Minister Niu Dun, a connoisseur and friend of Germany. It was also important for the success of the complex negotiations to establish the DCZ that I succeeded in building a trusting relationship with my internationally experienced Chinese negotiating partner Tang Shengyao.

A Chinese proverb says: “Better to see once than to hear 100 times”. Intercultural bridges were built and professional exchanges deepened through a large number of reciprocal expert visits like, e.g., the meeting of the DCZ Steering Group in Bavaria, Germany, in 2019. The Chinese delegation, led by my counterpart Wang Hongqian, learned about successful approaches to promoting regional marketing and agrotourism. In front of the scenic backdrop of the foothills of the Alps, not only the work in the DCZ received important

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content-related impulses, but personal relationships were also established. Mutual meetings at the level of Ministers and Vice Ministers, such as the visit of the former minister Han Changfu to the BMEL on his 60th birthday, have also contributed significantly to the consolidation of political relations over the years.

Above all, the DCZ convinces with the results of its work. The negative consequences of highly intensive agriculture, such as the loss of biodiversity and soil fertility, are particularly evident in China and threaten the security of supply. The DCZ is working on concrete, practical solutions to these issues, combining the expertise of partners from science, industry, and professional practice.

Thus, in the first project phase, topics of resource-conserving land management, animal welfare and rehabilitation of degraded soils were addressed. The 2nd project phase, which began in April 2018 and will last until March 2022, follows on from this. The focus of the collaboration was on “digitalization”, “seeds” and “environmentally friendly animal husbandry”.

My personal assessment of the development of the DCZ is also positive: while working in a culture that initially seemed foreign and inscrutable to me, I met people who are characterized not only by competence and commitment, but also by joie de vivre and humor, far removed from all stereotypes.

The pandemic made collaboration difficult, as it did everywhere. By switching to virtual formats, the frequency and intensity of cooperation could be kept at a high level.

Currently, German-Chinese cooperation is overshadowed by geopolitical tensions, growing critical distance and the rupture of peace order in Europe. War, the current political upheavals and the suffering associated with them must not make us forget that global challenges such as climate change and the

fight against worldwide hunger continue to require our full attention. This can only be achieved through international solidarity. To this end, cooperation with China will continue to be indispensable in the future. The DCZ has a key role to play here as a specialist political and scientific platform.

The DCAW in November 2019 was already dedicated to the topic of “Climate Change in Agriculture”. It is planned to follow up on this in the third phase of the DCZ. BMEL and MARA have already agreed on the guiding themes of “environmentally friendly forms of production”, “prevention of food losses” and “development of rural areas”. Concrete, scientifically sound and practical contributions to the overarching issues of climate protection and adaptation, biodiversity conservation and food security can be expected from this.

The DCZ offers the opportunity to continue playing its role as a platform for dialog even under difficult conditions. Success factors for this are mutual trust, transparency, and the determination to translate work results into concrete political action. In addition, there must be greater success in aligning cooperation with mutual interests.

2022 is the Year of the Tiger, which stands for courage, energy, drive, and optimism. The DCZ could not have chosen better omens for the start of the third project phase!

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Experience with DCZ

By Prof. Dr. Hu Xiangdong, Institute for Agriculture Economics and Development, Chinese Academy of Agricultural Sciences (CAAS)

农业合作是中德关系中重要的组成部分，中德的农业合作已经成为中国与欧洲国家农业合作的典范，在这样的背景下，我与中德中心在过去的五年里开展了丰富的合作，我和我的团队积极参与到中德农业开放周的活动当中来，2021年12月我作为主持人，主持了中德农业周开放日中德农业合作研讨会，看到了中德在乡村振兴、智慧农业、绿色发展等各个方面都有广阔的合作前景；2021年1月我邀请中德中心的周耕裕主任参与到农科院主办的农经观察中来，就德国的乡村建设行动对中国的启示进行交流，与德国农业的合作远不止与中德中心开展的交流，2019年我和我的研究所接受了一名来自德国的交换留学生，中德两国的学生开展了近距离的交流。这些都为我们与德国的农业交流合作提供了丰富多样的形式。相信未来，中国与德国之间还会开展越来越多的交流合作。

In recent years, China and Germany have carried out extensive cooperation in agriculture. DCZ plays an important role. I am glad to have had rich experiences with DCZ in the past several years. My team and I have actively participated in the activities of Sino-German Agricultural Week. In December 2021, as Chairperson, I joined the workshop on Sino-German cooperation on “rural development and rural revitalization” during the 7th Sino-German Agricultural Week. I realize that China and Germany have broad prospects for cooperation in rural revitalization, smart agriculture, green development, and other aspects.

In January 2021, I invited Dr. Jürgen Ritter from DCZ to participate in the “Insights on



Prof. Hu Xiangdong at the 7th Sino-German Agricultural Week

Agriculture and Rural Affairs” hosted by CAAS and give a presentation on the experience of German rural construction. The cooperation with German agriculture is far more than the exchange with DCZ. In 2019, my Institute and I accepted an exchange student from Germany, students from China and Germany have carried out a lot of activities. All these provide rich and diverse forms for agricultural exchanges and cooperation between China and Germany. It is believed that more and more exchanges and cooperation will be carried out between China and Germany in the future.

A brief review on the component Climate Change and Agriculture

By Dr. Rita Merkle, German lead expert of the climate change team

In 2019, the DCZ had an additional component, the German-Chinese Cooperation on Agriculture and Climate Change. To say it right from the start: the cooperation can definitely be called a success story and therefore, this work will be continued and strengthened in the third phase of the DCZ. Currently, the second phase of the DCZ is coming to an end in March and I will take the opportunity to present some of my highlights of this collaboration to you shortly.

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Visit of IPK Gatersleben

The first point I would like to mention is that it was the first time for all of us that scientists and experts from both countries - five from Germany and five from China - worked together over a longer period of time and had a real exchange at eye level. Adopting a comparative approach, we assessed the present status of knowledge in addressing climate change in crop production and in animal production and identified best practices in both countries together. Of course, there was the "classic" study tour to Germany in August 2019, but it was attended by scientists from both China and Germany, and in addition, for the first time, German scientists and experts also undertook a study tour to China together with Chinese colleagues, so that best practice examples of mutual interest in both countries could be jointly identified based on intensive discussions.

Our technical highlight in Germany was the visit of the Leibniz-Institute for Plant Genetics and Crop Plant Research (IPK) in Gatersleben, where climate simulations are conducted in a plant cultivation hall, referred to by the institute's staff as their "spaceship", and indeed we felt like we were in a spaceship.

Another highly interesting visit in Germany I would like to mention was our visit of the Global Field (Weltacker) in Berlin, an agri-food pedagogical project. We almost missed



Prof. Dong Hongmin (CAAS), Dr. Eva Sternfeld (DCZ), Benedikt Haerlin (Weltacker), Prof. Li Yu'e (CAAS), Dr. Rita Merkle (DCZ expert)

this visit because we had a very tight schedule, and our Chinese colleagues were escorted directly to the airport afterwards. In the end, the Chinese colleagues greatly appreciated this visit and considering setting up a similar project to raise awareness of the link between sustainable food consumption and agricultural production.

In China, we were presented with several superlatives. The most impressive, however, was the sheer size of the agricultural enterprises, which are often large companies that control the entire supply chain from primary production to retail. The food company we visited has about 100,000 ha of contracted land and 5,300 ha of its own land and produces about 20,000 swine per year. It was an example of a circular economy pilot project combining crop production with animal husbandry and biogas production. The biomass used comes exclusively from waste materials, including human faeces, and not from first-generation crop biomass. Biogas slurry is processed into biofertilizers for fertigation. Is it easier to implement the circular economy concept at this scale? Is it more resource efficient? Is there less food waste? These and many other questions came to us at the end of the two study tours.

The exchange has shown that there are several areas and topics with potential for

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Dr. Rita Merkle at the climate component study

further cooperation, some of which have already materialized as described. I am grateful and proud to have participated in this cooperation and wish the third phase a good continuation.

Memories of working and researching at DCZ

by Anne Veltes

During the second half of 2019, I had the unique opportunity to conduct a research semester for the completion of my master thesis while interning for the DCZ at the same time. The DCZ was a perfect fit for myself as it allowed me to do my fieldwork and research independently, while also gaining insights into their daily operations. The DCZ supported me greatly with my research. I was for example able to participate in conferences that were closely related to my research topic of organic production and food safety in China and was introduced to several interesting scholars researching in similar fields providing me with amazing insights into the scientific world.

During my fieldwork I had attempted to find answers to the research question of how consumers are experiencing and addressing food safety issues on Beijing's farmers' markets.



After an online search, as well as talks with colleagues at the DCZ, I was able to identify two different markets: the Beijing Organic Farmers Market and the Farm to Neighbours Market which I then both frequently visited. The first few times visiting the farmers' markets I simply strolled across them to see how they are set up, what they look like, what kind of products they sell, and just simply to get a first impression of how these markets operate. A highlight for me, after getting a feel for the markets' day-to-day business, was being able to visit organic small-scale farms located around Beijing. I greatly appreciated my DCZ colleague Dr. Aihemaitijiang Rouzi accompanying me on one of those visits where we interviewed two farmers, as well as several consumers on the topic of food safety together. That field visit ended in an amazing afternoon and a captivating conversation about many topics outside of food safety. Consumers named several reasons for visiting farmers' markets in general. Reasons were that the food is free from chemicals, pesticides, herbicides or additives, but also that shopping on organic markets contributes to a healthy lifestyle, that "seeing where the food is grown" plays a major role, or that the

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Anne Veltes at the 5th Sino-German Agricultural Week

food is more fresh. I was very surprised when one of my interviewees turned the tables and started asking me about food safety in Germany. She asked me: “In Germany food safety is not an issue, so why do they want to spend more money to eat organic?“. Nearly none of the consumers mentioned environmental reasons for shopping on farmers markets, which is a motivation often found in European or American farmers markets. Surprising for me was, that some consumers, even though they value organic products, had never heard of organic certificates and were not familiar with the government’s certification system in place for organic products.

Apart from the benefits for my studies and research interests, I learned a great deal about the work of the DCZ in terms of political and scientific dialogues between Germany and China. The highlight of my time at the DCZ was most definitely the 5th Sino-German Agricultural Week, which included a large number of interesting panels as well as an excursion to a modern agriculture site. During this week over 200 representatives from governments, think-tanks and the agribusi-

ness sector attended and I was able to again meet a large number of most remarkable individuals, some of which I am still in contact with.

At the DCZ I was able to learn a lot about state-of-the-art research and current political and economic discussions between Germany and China on agricultural practices. It was also interesting to see how different the Chinese and German counterparts of the DCZ work together and side by side, yet often have very different ideas on how to approach certain topics.

After having graduated, I joined a small company working with climate protection projects worldwide. I am still upholding my connection to China and am now concentrating among other topics on climate protection projects located in China. The DCZ is soon moving into its third project phase and will also focus on the topic of climate change and its connection to the agricultural sector. Since this is the topic I am most invested in, I am very much looking forward to the contributions the DCZ can and will make to this discussion in the near future.

Good to Know

Politics and Law

14th Five-Year Plan on Promotion of Agricultural and Rural Modernization (2021-25)

On 11 February 2022, the state council released the Five-Year Plan on *Promotion of Agricultural and Rural Modernization*. The 47-page document lists in 10 chapters a very extensive and detailed catalogue of measures to advance the modernization of the agricultural sector and rural development over the next five years. In the introduction, the text lists the achievements of the 13th Five-Year Plan, which is particularly celebrated as the decisive fight against poverty. In the years 2016-2020, 832 counties and a total of 128,000 villages were led out of extreme poverty. In an unusually open manner, the introduction also identifies the challenges ahead. *“The agricultural base remains weak. The area of degraded farmland is large, the ability of breeding science and technology innovation is insufficient, the ability to resist risks is weak. The rigid constraints of resources and environment are tightening, and the agricultural non-point source pollution is still prominent. The task of transforming agricultural development is arduous [...]. There are shortcomings in rural development [...], disaster prevention and mitigation systems such as flood prevention systems and drought control are not perfect [...]. The income gap between urban and rural residents is still large [...], there are many factors restricting employment of farmers, the aging of rural population is accelerating [...]. The task of consolidating and expanding the achievements in poverty alleviation is relatively arduous. The industrial foundation in poverty-alleviated areas is still not strong [...]. The foundation for poverty alleviation in some poverty-alleviated households is still relatively*

fragile and the task of preventing them from returning to poverty is relatively heavy.” (14th Five-Year plan, p.2-3).

The introduction also highlights the challenge of providing adequate nutrition to the world's largest population based on limited water and soil resources. At the same time, the text also points out that for the foreseeable future the Chinese agricultural sector will remain mainly in the hands of smallholders and that the success of modernizing the sector will depend on whether it is possible to make small farmers introducing new technologies. With regard to the most important strategic objectives, the plan focuses on food security and improving the living conditions in rural areas. Measurable indicators have been developed for key modernization objectives, out of which some are presented in the following table:

In the following 8 chapters, the corresponding measures to achieve the indicators are listed in detail. Many of these measures are also known from previous strategy papers and previous Documents No. 1. Chapter 2 focuses on food security and self-sufficiency in production of basic food items. In order to ensure the production targets for food cereals in the long term, the paper stresses the importance to maintain and improve the quality of arable soils. The focus here lies on black soil in Northeastern China, for which conservation tillage and measures to improve humus building are required as well as on rehabilitating Southern China's most acidified soils and Northern China's salinized soils.

With a stable production capacity of 55 million tons per year the supply of pork meat, one of China's strategically important foodstuffs, is expected to return to the pre-ASF crisis level. Grain cultivation continues to rely on functional cultivation zones, with the northeast, the Yangzi River Basin, and the coastal regions in the Southeast as zones for

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Indicators for agricultural and rural modernization				
Indicator	Base period values for 2020	Target value for 2025	Average annual growth rate (cumulative)	
Comprehensive grain production capacity (100 million tons)	—	>6.5	—	Binding
Total meat production (million tons)	77,48	89	2.8%	Anticipatory
High standard farmland area (million ha)	53	72	19	Binding
Comprehensive mechanization rate of crop cultivation and harvest (%)	71	75	(4)	Anticipatory
Comprehensive utilization rate of livestock and poultry manure (%)	75	>80	(>5)	Binding
Pass rate of routine monitoring of agricultural product quality and safety (%)	97.8	98	(0.2)	Anticipatory
Villages with access to paved roads (%)	—	>85	—	Anticipatory
Access to tap water in rural areas (%)	83	88	(5)	Anticipatory
Proportion of full-time teachers in rural compulsory education with bachelor's degree or above (%)	60.4	62	(1.6)	Anticipatory
Proportion of professional certified doctors among rural doctors (%)	38.5	45	(6.5)	Anticipatory
Townships (neighborhoods) that provide homes for the elderly (%)	54	60	(6)	Anticipatory
Growth rate of per capita disposable income of rural residents (%)	3.8	—	It is basically linked to	Anticipatory

Source: Excerpts from 14th Five-Year Plan on agricultural and rural modernization

rice cultivation, the North China Plain and the middle and lower reaches of the Yangzi for wheat cultivation, as well as Northeast China, the North China Plain and Shaanxi for corn cultivation. In the North China Plain an expansion of soy cultivation capacities is planned. Cotton production will remain concentrated in Xinjiang.

To promote the integration of science, technology and agribusiness, the establishment of a National Agricultural Science and Technology Innovation Alliance is announced. Research activities will focus particularly on the seed sector and animal genetics. The so-

called Nanfan Silicon Valley in Hainan, a cluster of research institutes and industries specialized in biotechnology breeding, will be further expanded. Furthermore, a strengthening of the domestic competitive agricultural machinery industry is envisioned. In particular, the development of smaller agricultural machinery shall be stimulated. Demonstration projects for agricultural mechanization are to be set up in 300 counties. In order to promote industrialization in rural regions, the establishment of modern agricultural industrial parks and agricultural modernization zones is planned. These industrial developments are also intended to create incentives

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for migrant workers and educated younger people to resettle in their home counties. At the same time, measures to improve the infrastructure and sanitation in the villages will continue continuously, including connecting villages to sewage systems and garbage collection. Efforts will also be made to improve education and training opportunities in rural areas, especially with regards to agricultural vocational training. In addition, health care in rural regions shall be improved.

One chapter is devoted to the improvement of the environmental quality in rural areas. The focus here lies on the control of agricultural non-point source pollution. The plan in particular aims for a reduced and more efficient use of chemical fertilizers and pesticides. The use of antibacterial drugs in animal husbandry shall also to be reduced and stricter controls for animal feed additives are to be carried out. Agricultural waste, including animal manure and straw shall be recycled. Furthermore, the use of degradable agricultural films as well as the controlled disposal of pesticide and fertilizer packaging is advised. It is planned to carry out additional surveys on soil contamination and to establish a classification system for soil quality. A long overdue price reform for water use in agriculture is proposed to create incentives for more efficient water use. For arable land, the introduction of rotational cropping and fallow cultivation is recommended, as well as the creation of ecological corridors.

In the last chapter, the plan also deals with agricultural projects in the international context. In particular, the setup of cooperation projects in the context of the Belt and Road Initiative are mentioned. Furthermore, the establishment of a demonstration park for agricultural technology exchange and training for member countries of the Shanghai Cooperation Organization is planned.

(Eva Sternfeld, DCZ)

Source: http://www.gov.cn/zhengce/content/2022-02/11/content_5673082.htm

2022 Document No. 1 released

On February 22, 2022 the Central Committee of the CCP and the State Council released the 2022 Document No. 1, a policy document that outlines the main task for agriculture and rural development of the ongoing year. In contrast to last year's document, that celebrated the eradication of extreme poverty and the shift to the tasks of rural revitalization, this year's document focuses on the still tremendous challenges ahead for China's rural development. It mentions the still ongoing fight against the COVID-19 pandemic, the weak recovery of the world economy and for the first time also "severe challenges from climate change" (probably referring to last year's extreme weather disasters). The document stresses two major objectives: securing food security and avoiding the return of poverty for a larger proportion of population. To ensure food security and lower the reliance on imported food among other measures. The document calls to expand the output of soybean and other oil crops by promoting crop rotation between soy and maize in Northeast China as well as intercropping in other regions. In contrast to No. 1 documents in previous years, international trade and the importance of diversification of imports is not mentioned any more. For the first time this year's document mentions the importance of research on mid to long-term impacts of climate change on agriculture.

See also summary on <https://www.dcz-china.org/nachrichten-agri-news-d-en/china-released-no-1-document-for-2022.html>

Seed Law Amendment adopted

On the afternoon of December 24, 2021 the 32nd meeting of the Standing Committee of the 13th National People's Congress concluded in the Great Hall of the People in Beijing. After voting at the meeting on current agricultural legislation, the delegates passed the decision to amend the Seed Law. The New Seed Law will take effect on March 01, 2022.

In recent years, various regions have intensified the law enforcement in the seed industry, but the phenomenon of seed infringement such as counterfeiting and arbitrage is still frequent, while the collection of evidence for the protection of rights is difficult. Seeds are an important basis for ensuring national food security and the effective supply of important crops, and there is still a big gap of seed sources between China and developed countries in terms of quantity and quality. Seed infringement occurs frequently, and the legitimate rights and interests of farmers could not be effectively protected, which may even cause potential risk to food security. The decline in the types and quantities of domestic germplasm resources is obvious, and the loss of some excellent germplasm resources of forests and grasses occurs from time to time through trade, scientific research, cooperation, and other channels.

The new amendment to the Seed Law focuses on strengthening protections for new plant varieties. In this respect, the amendment makes three key changes. Firstly, consistent with UPOV '91, it expands the scope of protection to include the "harvested material" of a protected plant variety, in addition to its "propagating material". The amendment also grants protections for a protected variety in additional stages of commercialization: from production, propagation, and sale, to offering for sale, export, import, and storage.

Secondly, the amendment introduces the

concept of "Essentially Derived Varieties" (EDVs) under UPOV '91. It defines the term essentially in the same way as UPOV '91: an EDV is one that is "predominantly derived from the initial variety, or from a variety that is itself predominantly derived from the initial variety"; is "clearly distinguishable from the initial variety"; and "except for the differences resulting from the act of derivation, conforms to the initial variety in the expression of the essential characteristics that result from the genotype or combination of genotypes of the initial variety". An EDV regime would expand the scope of the so-called breeder's right because commercialization of an EDV requires authorization of the rightsholder of the initial variety. The amendment authorizes the State Council to prescribe the steps and measures for implementing the EDV regime. The State Council will do so when it amends the regulations on the Protection of New Plant Varieties.

Thirdly, the amendment increases the damages for infringement of the breeder's right. Willful infringement with "serious circumstances" may lead to up to quintuple punitive damages. The amendment, moreover, raises the maximum statutory damages to RMB 5 million, from RMB 3 million.

The new Seed Law will escort the development of China's seed industry in the following aspects: the new law protects the rights of new plant varieties in the whole chain from the production of propagating materials to harvested materials, which can solve more practical problems in seed infringement to better protect the legitimate rights and interests of right holders. Seed intellectual property rights will be better protected and truly and effectively stimulate the original innovation of the seed industry, while the law facilitates the activation of international cooperation in science and technology in the seed industry and the introduction of the latest excellent varieties from abroad. Further

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intensifying the crackdown on fake and inferior seeds in the production and operation of seeds is conducive to protecting the interests of the people and safeguarding the healthy and safe development of the seed market. Further strengthening the conservation of germplasm resources from a legal perspective will provide a better germplasm basis for future breeding innovations, and even have important implications for global biodiversity.

(Li Yumei, DCZ)

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[ZmY4MDgXODE3ZGVhOVMx-ODAxN2RIYzVkNDIOYzAyMTA%3D](https://fjk.npc.gov.cn/detail2.html?ZmY4MDgXODE3ZGVhOVMx-ODAxN2RIYzVkNDIOYzAyMTA%3D) (Accessed: 24.12.2021)

China's 14th five-year plan for international cooperation in agriculture

On January 18, 2022, the Ministry of Agriculture and Rural Affairs released *14th Five-Year Plan for International Cooperation in Agriculture*. The plan includes five sections such as background, general outline, main goals, regional cooperation, and guarantee measures.

The document starts with a review of the achievements in 13th five-year plan in the international cooperation for agriculture sector in China. According to the document, China currently has agricultural cooperation with

140 country or regions among which 80 of them signed onto "Belt & Road" agricultural cooperation agreements. The agricultural trade of China increased from 182.7 billion USD in 2016 to 246.8 billion USD in 2020 which made China the world's first biggest importer and the fifth biggest exporter of agri-food products.

Rural revitalization efforts, the urgency of global food security, the need to achieve carbon neutrality and new regional trade pacts like RCEP (Regional Comprehensive Economic Partnership, a trade pact that includes China and 14 other Asia-Pacific countries) provide China with great opportunities to intensify international agricultural cooperation with respective partners.

The plan mentions the following international organizations as main target group to deepen cooperation and exchanges such as WTO, WFP, G20, CGIGAR, FAO, IFAD, APEC, CSAM, GIAHS, and BRICS. The plan also states that China especially will strengthen its agriculture cooperation with "Belt & Road" and RCEP countries. It states that agricultural trade, technology exchange, improving international food governance, and external agricultural aid will be the main areas for international cooperation with China.

ASEAN, RCEP and "Belt & Road" countries are identified as the main partners in Asia for agricultural cooperation, the "Mekong River project" is mentioned as an example. For Western Europe, the plan mentions that the function of the Sino-German Agriculture Centre (DCZ) will be strengthened, and the reach of Sino-German Agriculture Week will be broadened. Especially the promotion of Sino-German cooperation in climate change is mentioned. The plan suggested that further cooperation with Eastern European countries in the agricultural trade would be accelerated. With Russia, soy bean cooperation will be continued and new Sino-Russian

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experimental farms will be promoted. Sino-British cooperation mechanism would also be explored. The plan also outlined further cooperation with countries from other regions such as USA, Canada, Australia, Brazil and Argentina in agricultural trade and other relevant issues.

(Ahmatjan Rouzi, DCZ)

Source: http://www.gov.cn/zhengce/zhengceku/2022-01/29/content_5671168.htm

Science

Nationwide soil quality survey announced

China's third national soil census will take place between 2022 and 2025, according to an announcement by the State Council. The census aims to gather nationwide data on the quality of the nation's arable land, including crops, horticulture, forest, and grasslands. Degraded land that could be reclaimed for agricultural production will also be covered by the census.

The census will focus on four aspects determining land quality: geographical conditions, physical and chemical properties, soil type and land use, including irrigation facilities, planting methods, agricultural plastic usage and input of fertilizers and pesticides.

According to the proposed timeline, the census will take four years to complete

- 2022: prepare census, carry out pilots
- 2023-2024: roll out census nationwide
- 2025: analyze and review results

A National Soil Census Leading Group under the State Council was established to coordinate and lead census-related activities across departments and levels of government.

Source: China Policy, 22.2.22

DCZ Activities

DCZ Participation in Preparation Workshop of the 5th CIIE Crop Seeds Subsection

On December 27, 2021 the China Seed Association held a workshop on a new subsection for crop seeds of the 5th China International Import Expo (CIIE). Mr. Zhang Yanqiu, President of China Seed Association, presided over the meeting. A total of 25 representatives from the Sino-German Agricultural Centre (DCZ), Sino-US Agricultural and Food Cooperation Project, Asian Association of Crop Science and other institutions, as well as international seed companies such as Bayer, Syngenta, Limagrain, BASF (China), KWS (China), etc. participated in the workshop. Dr. Jürgen Ritter, Director of the DCZ, and Professor Li Yumei, DCZ Advisor Agribusiness Dialogue, attended the symposium.

The 5th CIIE to be held in November 2022 will set up a new subsection for crop seeds with an exhibition area of 1200 square meters, which will demonstrate the latest technologies and characteristic achievements, promote international exchanges among seed enterprises, share the cutting-edge technological progress and industrial trend of the global seed industry, jointly discuss and promote the transformation and upgrading of the seed industry and promote practical cooperation in the seed industry. It will also promote scientific and technological innovation and the transformation of achievements in the seed industry. In promoting the integration of upstream and downstream of the seed industry chain, this subsection will invite many professional audiences such as Chinese agricultural service institutions, agricultural technology extension practitioners, agricultural research institutes, seed industry and state-owned land-reclamation enterprises to meet their needs, to help domestic and

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foreign seed industry enterprises deepen cooperation and promote the healthy development of the industry. In addition, in order to serve the needs of innovation and development of the seed industry, the 5th CIIE will invite representatives of government departments, international organizations, domestic and international scientific research institutions and enterprises to exchange and discuss the new situation, new technology, new achievements and new equipment in the seed industry.

At the invitation of the China Seeds Association, the participants at the workshop mainly discussed the issues regarding booth design, expenses for participating in the exhibition, import of exhibition commodities, exhibition content, disposal of exhibition goods, etc. Zhang Yanqiu, President of China Seed Association, pointed out that, at present, environmental protection, digitization and technological innovation are important issues in China's agricultural field. The establishment of the subsection for crop seeds is not only a high-end platform for germplasm resources display, core technological innovation and seed enterprise communication, but also a precious platform for seed enterprise brand publicity and international corporation of seed industry to address their demands and wishes. Dr. Jürgen Ritter introduced that the mission and responsibility of the DCZ is to build a dialogue platform for agricultural policies, business and research between Germany and China. He suggested that videos of German experimental fields and Sino-German agricultural cooperation could be broadcasted in the subsection, German experts could be invited to contribute to the forum and present the latest achievements of Sino-German cooperation in the seeds sector. Professor Li Yumei suggested to build the subsection into a professional and characteristic zone and an educational platform of agricultural science for the public. Representa-

tives from international seed companies and associations agreed that including this new subsection for crop seeds at the 5th CIIE is conducive to strengthening public awareness of seed industry and improving the overall brand image of seed industry enterprises. It is a new opportunity for the seed industry in China and the world. Besides that, some concerned issues e.g. cost control, building a uniformly organization to coordinate the work of exhibitions, attracting audiences, allowing exhibitors to invite cooperative customers to attend the meeting were also discussed.

(Li Yumei, DCZ)

DCZ in the Media

Interview with Farmer's Daily on Document No. 1

DCZ managing director Dr. Jürgen Ritter had been interviewed by Farmer's Daily (Nongmin Ribao) on DCZ's take of the Document No. 1, China's important guideline for the agricultural policies in the ongoing year (see also short summary of the document in section "Good to know " of this issue). Excerpts of the interview appeared in the online edition of the paper on March 3 in an article titled "Mutual learning from experience and joint revitalization - representatives in China and foreign experts discuss the 2022 Central Document No. 1" The article features quotes from the FAO representative, from IFAD representative, and researcher from the Korean Rural Economic Research Institute and Dr. Ritter for DCZ.

Full article in Chinese:

<http://cvonet.com/news/detail/540720.html>,
<http://www.meat360.cn/news/detail/540720.html>

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DCZ Publications

Chinese “Digital village” initiatives and the digitalization of agriculture. DCZ study by Aihemaitijiang Rouzi

In this paper DCZ expert Aihemaitijiang Rouzi takes a closer look on recent digital village initiatives in China and relevant policies such as “Digital Rural Development Guideline 1.0”. He shows that Chinese tech giants like *Alibaba*, *Pinduoduo* and *Huawei* are key players in

the development. But there also still limitations and constraints, such as lack of standardization, lacking competence and digital skills of farmers, as well lacking regulation of involved Tech Firms.

Download is available at <https://www.dcz-china.org/dcz-publications.html>

Autonomous Agricultural Machinery. Policy Brief by Jens Fehrmann

In this policy paper, Jens Fehrmann, a researcher at the chair for Agricultural Systems and Technologies TU Dresden, looks into recent trends for robotization and automatization in agriculture. Robots are identified as the key technology that can help to save labor costs and make agricultural production more sustainable. At present there are 136 robot models from 109 manufacturers from 26 countries around the world available, with the US with a total of 30 companies the leading manufacturing country. A considerable number of these autonomous machines are developed to reduce the input of herbicides and pesticides. 36 robot models are developed for physical plant protection or weeding, others are used for chemical plant

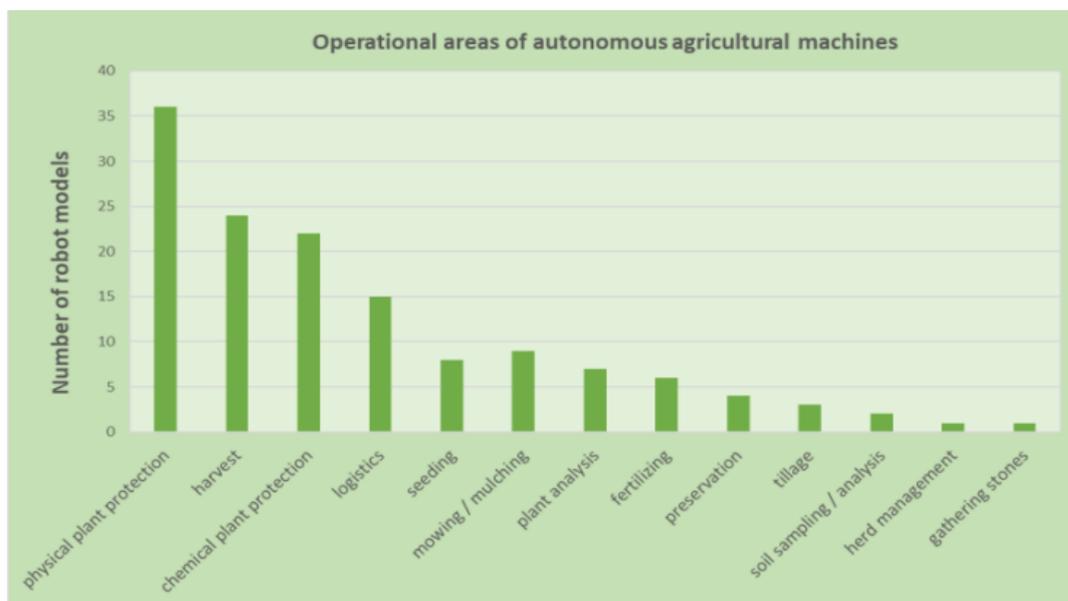


Figure 1: Operational areas of autonomous agricultural machines [2]

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Photo: DCZ

protection. The second driver to use robots is to reduce labor costs, so a number of robots are developed for labor intensive tasks such as harvesting and other operational tasks.

The author also describes the economic efficiency of robots and concludes that under certain conditions small robots are already competitive with conventional technology. The profitability depends on the number of machines required and if they can be used in multiple processes. He finally looks at requirements for policies to regulate the nascent autonomous agricultural machinery market, such as the need to regulate the question of liability for damage caused by

machines and regulations concerning data infrastructure, data exchange and data sovereignty.

The study can be downloaded at <https://www.dcz-china.org/dcz-publications.html>

Publications

Prevention and control strategies of African Swine Fever. Progress on pig farm repopulation in China. Yuanjia Liu et. al *Viruses* 2021, 13, 2552

Since the first outbreak of African Swine Fever (ASF) until late 2021 China has reported 203 outbreaks nationwide and about 1.193 million pigs had to be culled because of the disease. In this paper researchers from South China Agricultural University, the Pig Research Institute affiliated to DaBeiNong (DBN), a large agriculture high-tech enterprise and the Chinese Academy of Agricultural Sciences (CAAS) analyze the lessons that could be drawn from three years fighting the disease.

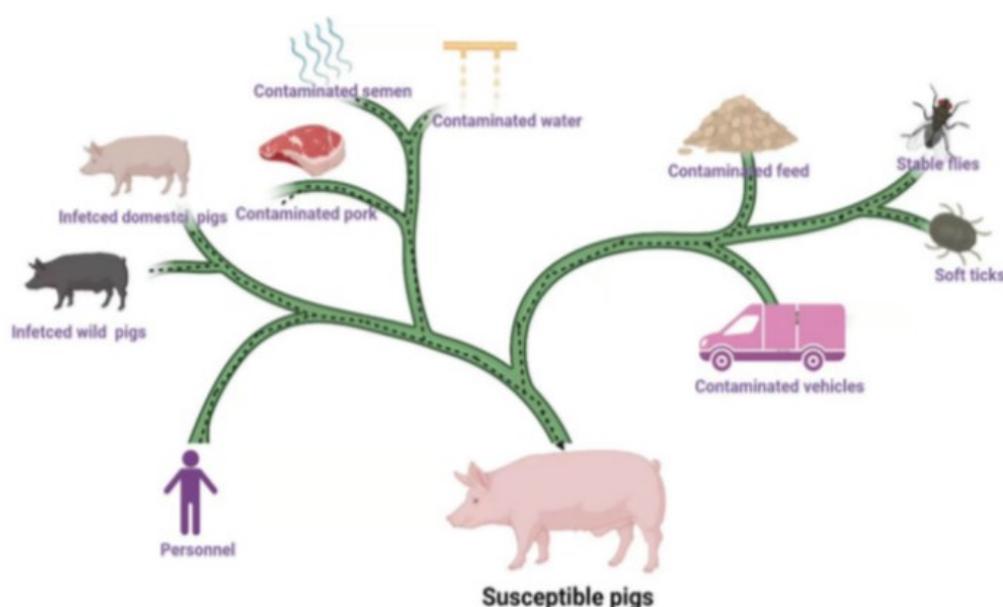


Figure: Possible sources of ASF infection
Source: Yuanjia Liu et. al 2021

Sources of Infection

Humans were found to be the main distributors of the ASF virus. In 40 % of cases the virus had been transmitted by people and vehicle, 42% was caused by swill feeding, whereas infected pigs and infections by wild boars only played minor roles.

Their research further shows that the virus can survive for a long time and thus making it difficult to control ASF. In feces and contaminated pens the virus could survive for several days up to weeks. In pig blood, soft ticks and frozen meat it can survive for up to 5 years. At least 30 minutes disinfection procedures are required to inactivate the ASFV, however according to the paper in most pig farms the duration of the procedure is much shorter.

Transmission route

Oral intake of virus-contaminated feed or water was identified as the most important transmission route. The virus could also be spread by infected animals through feeding and drinking systems. Aerosol transmission caused by pigs sneezing and coughing or by dust of virus carrying dried feces is another, but less likely transmission route given that the half life of the virus in the air is about 20 minutes. Not very likely is insect-borne transmission. Although soft ticks of the *Ornithodoros spp.* are the most common vector of the virus, the distribution of those *Ornithodoros* species that have been confirmed to transmit ASF have not been reported in China. It was also found that stable flies can be infected by ASF but it is not clear whether they play a role in the transmitting the disease. More likely is the transmission through contaminated medical equipment such as shared immunization needles. There is no evidence that ASF can be transmitted by semen although ASFV had been detected in semen of infected boars.

Prevention and Control Strategies

Vaccination seems to be the best strategy to control ASF but so far according to the authors no efficient ASF vaccine is available. There is also research under way to breed ASF-resistant pigs by either gene-editing technology or by collecting and screening natural ASFV resistant pigs that have survived outbreaks. In March 2020 a Chinese research team reported to have successfully bred an ASFV-resistant domestic pig.

Another important prevention and control strategy is choosing the right disinfectants and application methods. The paper includes a table listing different disinfection agents and their application. Since the virus is very persistent, disinfection duration should at least last for 30 min. Heating rooms to 70°C for 20 minutes could kill the virus. The efficiency needs to be monitored by regular ASFV nucleic acid tests. It is recommended to conduct strict inspection and quarantine for imported pig-derived products at international airports, railway stations and harbors.

For infected farms the authors propose a 3-km protection zone and a 10-km surveillance zone around the farm and a strict restriction for transportation of pigs in this area. Affected farms need to be depopulated and culled pigs properly disposed. Implementation of strict biosecurity measures are crucial for effectively cutting of transmission routes of the virus. In a table the authors list eight important prerequisites for bio-security, these include 1) location of a pig farm in a certain distance of other pig farms, slaughterhouses and residential areas. 2) gilt introduction safety, 3) pig farms should be fenced off to prevent outsiders from entering the farm, 4) routine disinfection, 5) vehicles and good should be disinfected in a closed drying room by temperatures above 60°C. 6) Strict isolation and hygiene measures to reduce risk that ASFV is brought in by employees, 7)

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proper disposal of sick and dead pigs, 8) Stop swill feeding and develop feed production technologies to inactivate possible ASFV in feed ingredients.

Pig Farm repopulation

The outbreak of ASF led to a severe reduction of China's pig population, efforts to rebuild the sector were slow and only by late 2021, the number of breeding sows reached 45.6 million and total pig population reached 439 million heads, close to numbers of pre ASF times. The rebuilding was mostly achieved by large pig-raising enterprises whereas many of small and medium-sized pig farms did not survive.

Available for download at <https://www.mdpi.com/1999-4915/13/12/2552/htm>

See also summary at <https://www.pigprogress.net/health-nutrition/health/asf-china-lessons-learnt-after-4-years-of-infection/>

Upcoming Events 2022

With the ongoing Corona crisis all dates of conferences and trade fairs tbc.

Date	Location	Event	Contact
March 2022			
30-31	Beijing	China International Smart Agricultural Equipment Exhibition	Beijing National Agricultural Exhibition Center
April 2022			
25- May 8	Kunming	UN Biodiversity Conference COP 15 of Convention on Biological Diversity (2nd phase)	
May 2022			
11-13	Shanghai	Biofach Shanghai	Shanghai World Expo Exhibition and Convention Center www.biofachchina.com/en
June 2022			
28-30	Villmar, Germany	Organic Field Days (Ökofeldtage)	Hessische Staatsdomäne Gladbacher Hof www.oeko-feldtage.de

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About DCZ

The **Sino-German Agricultural Centre's** (DCZ) activities are bridging the interest between politics, academia and businesses between China and Germany in the spheres of agriculture and food.

As a joint initiative of the **German Federal Ministry of Food and Agriculture (BMEL)** and the **Ministry of Agriculture and Rural Affairs of the People's Republic of China (MARA)** the DCZ was established in March 2015 as a central contact and information office to foster a dialogue between Germany and China in the agricultural and food sector. In April 2018, the project entered its 2nd phase.

In charge of project execution are the **IAK Agrar Consulting GmbH** (leadership) and the **Leibniz Institute of Agricultural Development in Transition Economies (IAMO)**. Operative project partners in China are the **Foreign Economic Cooperation Center (FECC)** and the **Chinese Academy of Agricultural Sciences (CAAS)**.

With its specific key issues, the DCZ intensifies the dialogue with and among relevant stakeholders of the agriculture and food sectors.

For more information and regular updates please check the dcz-website: www.dcz-china.org

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Imprint

This issue was compiled by the international DCZ team. For enquiries and subscription please send an email to info-dcz@iakleipzig.de

Any news about upcoming events and conferences to share? Please send your information to e.sternfeld@iakleipzig.de

Address: Room 201, Zhong Ou Hotel, 55 Nongzhan Beilu, Chaoyang District, 100125 Beijing, PR China

Website: www.dcz-china.org

DCZ on LinkedIn: <https://www.linkedin.com/company/dcz-china/>

The Sino-German Agricultural Centre (DCZ) (project no.: CHN 18-01) is supported with funds from the Federal Ministry of Food and Agriculture (BMEL) via GFA Consulting Group GmbH and implemented by IAK Agrar Consulting GmbH as leading company in a consortium with Leibniz Institute for Agricultural Development in Transition Economies (IAMO).

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