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Promoting High-quality Development of Agricultural High-tech Industry Demonstration Area of the Yellow River Delta

Working Committee of Agricultural High-tech Industry Demonstration Area of the Yellow River Delta of Shandong Province

Agricultural High-tech Industry Demonstration Area of the Yellow River Delta of Shandong Province, Dongying 257000, China

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Abstract
To implement the national strategy for ecological protection and high-quality development in the Yellow River Basin, also to point out the development direction for Agricultural High-Tech Industry Demonstration Area of the Yellow River Delta (shorted as YRDHDA), it is necessarily to accurately grasp the strategic significance and role of modern agriculture in saline-alkali land in the Yellow River Basin, continuously improve and upgrade the top design. It is also needed to explore the novel modern agricultural development model of saline-alkali land and establish a model for rural revitalization by building an innovation platform in which highend resources will be gathered and new kinetic energy for high-quality development will be cultivated. The development is driven by building a modern industrial system and a high-quality development and growth pole. A market-oriented technological innovation mechanism and an industrial development demand-oriented achievement transformation mechanism are to be established which will be a leading demonstration for the nation's saline-alkali agriculture and the high-quality development of the Yellow River Basin.

Keywords
Agricultural High-tech Industry Demonstration Area of the Yellow River Delta; saline-alkali agriculture; high-quality development

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Abstract: The national strategy for ecological protection and high-quality development in the Yellow River Basin has pointed out the development direction for the Agricultural High-Tech Industry Demonstration Area of the Yellow River Delta (hereinafter referred to as YRDHDA). The YRDHDA should accurately grasp the strategic significance and role of saline-alkali modern agriculture in the Yellow River Basin, continuously improve and upgrade the top-level design, explore the novel modern agricultural development model of saline-alkali land, and establish a model for rural revitalization by building an innovation platform in which high-end resources will be gathered and new kinetic energy for high-quality development will be cultivated. The development is driven by building a modern industrial system and a high-quality development and growth pole. A market-oriented technological innovation mechanism and an industrial development demand-oriented achievement transformation mechanism are to be established, thus creating a leading demonstration zone for the high-quality development of saline-alkali agriculture in the Yellow River Basin. DOI: 10.16418/j.issn.1000-3045.20200115002-en

Keywords: Agricultural High-tech Industry Demonstration Area of the Yellow River Delta; saline-alkali agriculture; high-quality development

The Agricultural High-Tech Industry Demonstration Area of the Yellow River Delta (hereinafter referred to as YRDHDA) is located in the southern suburbs of Dongying City, Shandong Province. It covers an area of 350 square kilometers, and more than 90% is saline-alkali soil. Considering the high salinity and alkalinity, it has been selected as a natural testing ground for the development of modern saline-alkali agriculture. The YRDHDA is the second national agricultural high-tech industry demonstration zone approved and established by the State Council, aiming to explore new models and mechanisms such as modern saline-alkali agriculture, new scientific research platforms, agricultural park systems and mechanisms, and innovation-driven integrated development of urban and rural areas, thereby enabling this area to become a powerful engine for driving the adjustment of agricultural structure on the eastern coast and the transformation of development modes 

After several years of practice, preliminary results have been achieved in the perfection of infrastructure, construction of scientific research platform, gathering of high-end resources, cultivation of high-tech industries, and development of modern saline-alkali agriculture in YRDHDA.

During a visit to Shandong Province in 2013, General Secretary Xi Jinping stressed that “we should accelerate the construction of an agricultural operating system to figure out how to do farm work, promote the transformation of agricultural growth model to alleviate the resource and environmental constraints like land and water deficiency, and vigorously develop high-quality and safe agricultural products to meet daily needs”. On September 18, 2019, General Secretary Xi Jinping proposed a national strategy for ecological protection and high-quality development of the Yellow River Basin, pointing out that the Yellow River Basin is an important ecological barrier and economic zone in China and we should actively explore new ways of high-quality development with regional characteristics to win the battle against poverty in this important area. General Secretary Xi Jinping’s important instructions have pointed out the direction of high-quality development, proposed new and higher requirements, and brought YRDHDA a new development opportunity.

1 Developing modern agriculture in saline-alkali land and creating a growth pole for high-quality development in the Yellow River Basin

China has 520 million acres of saline-alkali land, of which 104 million are in the Yellow River Basin. In addition, 80%
of the Yellow River Delta is saline-alkali land, serving as one typical representative in the world, and the saline-alkali land is vital for maintaining ecological balance and biodiversity. Scientific research has shown that in saline-alkali environments, the crops contain abundant specific and functional substances, which has provided unique conditions for the development of functional foods.

Ecologically efficient agriculture in saline-alkali land is designed based on the distribution of regional saline-alkali resources and ecological principles. We should rely on modern science and technology to fully utilize regional saline-alkali land resources and establish a high-efficiency agricultural system adapting to the ecological environment. It can promote regional water resource conservation and intensive use, thus ensuring ecosystem security and biodiversity in the saline-alkali land. The development of modern agriculture in saline-alkali land contributes to solving the contradiction between ecology and high efficiency and promoting the construction of ecological civilization. Therefore, developing saline-alkali agriculture is an intrinsic requirement for ensuring the ecological safety of the Yellow River Basin, the only way for accelerating the transformation and upgrading of traditional agriculture, and also an inevitable choice for comprehensive utilization of saline-alkali land and promotion of ecological protection and high-quality development.

Guided by the spirit of General Secretary Xi Jinping’s important speech at the Symposium on Ecological Protection and High-quality Development of the Yellow River Basin, YRDHDA has determined goal- and problem-oriented general guidelines for implementing the national strategy and driving high-quality development. Specifically, YRDHDA adopts innovation-driven development as the basic task and comprehensive utilization of saline-alkali land as the basic task to build it into a national agricultural innovation highland with international influence propelled by modern agricultural technology innovation, a high-tech industrial base focusing on characteristic seed, agricultural intelligent equipment manufacturing, big health and functional food, and high-end agricultural service, a rural revitalization model featuring the coastal saline-alkali ecology and supported by “new six productions” of agriculture, and a pilot demonstration zone for ecological protection and high-quality development of modern agriculture.

YRDHDA lays out “four functional zones,” namely technological innovation zone, rural revitalization model zone, coastal new kinetic energy industrial zone, and marine ecological protection zone. It focuses not only on “nine major actions,” including the construction of technological innovation center, the development of technological innovation center, characteristic seed industry, agricultural intelligent equipment manufacturing industry, big health and functional food industry, and high-end agricultural service industry, enterprise transformation and upgrading, and rural revitalization but also on the cultivation of “four major emerging industries.”

(1) Characteristic seed industry. YRDHDA emphasizes the development of national seed innovation industrial park, especially for the saline-alkali industrial crops, resource plants, facility fisheries, agricultural beneficial insects, and microbes, to forge a “seed industry silicon valley” or “seed industry town.” In addition, a seed industry cluster with saline-alkali characteristics focusing on seed industry scientific research, commercial transformation, experiment and demonstration, processing, storage and transportation, and exhibition trade will be cultivated.

(2) Agricultural intelligent equipment manufacturing industry. The core components such as control chips, operating systems, hub-type generators, high-torque tachometers of the third-generation intelligent agricultural machinery are developed and produced; the agricultural intelligent equipment manufacturing industry centered on intelligent unmanned system research and development, core component manufacturing, whole machine assembly, and market application and big data service will be cultivated.

(3) Big health and functional food industry. It highlights nutrition, safety, green, and health, and focuses on healthy foods, specialty functional foods, convenience foods, and nutrient-fortified foods. Functional foods can be developed from halophytes, medicinal plants, marine organisms, edible and medicinal fungi, dairy products, and microorganisms, so as to build YRDHDA into a research, development, and processing base for big health and functional foods.

(4) Agricultural high-end service industry. The public welfare service should be combined with market-oriented service; scientific and technological finance, testing and certification, property transactions, agricultural internet of things and e-commerce, big data services, professional farmers’ training, agricultural technology exchanges, exhibition and transactions, and other high-end scientific and technological services should be actively developed to cultivate a full-chain agricultural science and technology service system.

In implementing the national strategy for ecological protection and high-quality development, YRDHDA strives to construct a sustainable development pilot zone along the Yellow River and create a new situation for high-quality development.

2 Creating a support system for high-quality development of modern agriculture in saline-alkali land dependent on science and technology

General Secretary Xi Jinping emphasizes that “agricultural development relies on science and technology.” The development of modern agriculture in saline-alkali land requires scientific and technological support. YRDHDA strives to build a platform for scientific and technological innovation and depends on modern agricultural high-tech to achieve the
scientific protection and sustainable development of saline-alkali land. Relying on the Yellow River Delta Modern Agricultural Technology Innovation Center jointly established by Shandong Province and the Chinese Academy of Sciences, and facing the needs of high-quality development of saline-alkali agriculture and the Yellow River Basin, YRDHDA highlights the frontier and key technologies of modern agriculture in saline-alkali land and integrates the scientific and technological strengths in domestic and foreign modern agriculture to construct eight innovation platforms.

(1) Locating observation of farmland ecosystem and intelligent agriculture research and development platform. YRDHDA carries out basic data application research and locating observation of saline-alkali agriculture, to provide big data public services including water, soil, gas, and biology for research and development teams of modern agricultural technology in the saline-alkali land. An agricultural production big data center will also be built at the Yellow River Delta Modern Agricultural Technology Innovation Center to provide public services such as decision-making consultation, operation management, and industrial development for China’s modern agriculture in saline-alkali land.

(2) A pilot-scale research and development platform for the new generation of clean energy intelligent agricultural machinery. Ten functional laboratories such as super high power intelligent network are constructed and ten key technologies like chips with independent intellectual property rights, core components, and unmanned operating systems are developed to break through the agricultural machinery technical bottleneck and promote the leap development of China’s agricultural machinery.

(3) A research and development platform for animal and plant molecular breeding in saline-alkali land. Eleven functional laboratories of genetic design, plant accelerator, herbivorous animal, and other aspects will be built to enhance water conservation, germplasm innovation of halophytes, and localization of herbivorous animal breeding.

(4) A research and development platform for big health and functional food. The function and extraction of active substances in halophytes and coastal marine organisms are analyzed to provide key technologies for and solutions to the development of big health and functional food and bio-pharmaceutical industry.

(5) A research and development platform for green agricultural inputs. The functional laboratories and pilot-scale workshops for the development and utilization of biological pesticides, biological organic fertilizers, biodegradable agricultural films, biological feeds, and beneficial insects are established to better remediate polluted soils, ensure the quality and safety of agricultural products, and control the agricultural non-point source pollution.

(6) A service platform for testing harmful factors in agricultural products. This platform is designed to test organic pollutants in agricultural products and food and aflatoxin in food.

(7) A research and development platform for utilization of rural organic waste resources. The super-large anaerobic reactor, bacterial fungus laboratory and fertilizer, soil, and crop analysis room are built, and the technologies for mixed raw material fermentation and industrial production of marsh gas from straw are developed for the reuse of rural waste resources and the development of the circular economy.

(8) A verification platform for comprehensive solutions to and services for saline-alkali agriculture. Targeting the service needs of saline-alkali agriculture, YRDHDA organizes the industrial technology research institute for high-end agricultural services and saline-alkali agricultural service companies. The intelligent unmanned agricultural machinery will be utilized to achieve integrated services such as rapid safety testing of agricultural products, financial insurance, and brand building, thus providing specialized services for modern saline-alkali agriculture, and enabling YRDHDA to serve as a solution provider of the Chinese Academy of Sciences.

A batch of major national and provincial scientific research projects can be implemented based on the aforementioned platforms, to advance the key technologies for modern saline-alkali agriculture, formulate new solutions, and cultivate high-level skilled talents, thereby putting the proposal of “developing agriculture by virtue of science and technology” by General Secretary Xi Jinping into practice.

YRDHDA also focuses on promoting the major transformations of agriculture from chemical agriculture to water-saving and high-efficiency ecological agriculture supported by biotechnology and big data, from traditional labor force-dominated mode to the professional farmer and robot-dominated mode, from single production to diversified development including production, ecology, life, and spiritual enjoyment, so as to create a new model of ecological wisdom, high-quality and efficient modern agriculture in saline-alkali land. A new way dependent on the innovative platform will be explored to ensure technical and talent supports for ecological protection and high-quality development in the Yellow River Basin.

3 Implementing new development concept and creating a leading area for ecological protection and green development in the Yellow River Basin

The saline-alkali land in the Yellow River Delta is less polluted, which is favorable for ecological protection. Since YRDHDA is located in the lower reaches of the Yellow River and Xiaoqing River, the upstream pollution still brings huge pressure to its ecological protection. Therefore, in order to promote the green development of YRDHDA, efforts must be made in four aspects.
(1) The intensive use of water resources will be strengthened to vigorously develop water-saving agriculture. The agricultural production in the saline-alkali land should be converted from flood irrigation to water-saving modes including surface irrigation, sprinkler irrigation, and micro-irrigation, to improve irrigation uniformity and irrigation water use.

(2) Modern biotechnology will be utilized to reduce fertilizer use but increase efficiency. In-depth cooperation with the Institute of Microbiology of the Chinese Academy of Sciences should be carried out, focusing on the development of rhizobia, azotobacteria, antibiological inductants, and other green ecological agricultural microbial products, to provide high-quality biological fungicides for ecological improvement of saline-alkali land. At the same time, the cooperation with the Institute of Soil Science, Chinese Academy of Sciences in Nanjing should also be emphasized to develop soil remediation agents and soil improvement technologies, thus effectively reducing the use of chemical fertilizers.

(3) Green prevention and control will be implemented to reduce the use of pesticides. Key construction of China’s first large-scale high-altitude radar warning and prevention and control platform for migratory pests: Nine aerial monitoring and warning stations and 30 high-altitude trap and control sites for migratory pests will be set in Shandong Province to realize early warning, “source” management, and green prevention and control of migratory pests. A three-dimensional, networked, intelligent, and informationized “firewall of major migratory pests” will be built in Shandong Province to reduce the impact of insect pests on the growth of crops. The use of pesticides will be significantly reduced to ensure the ecological safety of Shandong Province, the Northeast Region, and the Yellow River Basin, and promote the green and high-quality development of modern agriculture in the Yellow River Basin.

(4) The cyclic utilization of organic waste resources will be enhanced to create a model for green, ecological, and cycle development. The technologies for utilization of organic waste resources, like the distributed, assembled, and mobile small anaerobic fermentation tanks and pyrolysis devices, can be introduced to realize the resource utilization of rural domestic wastes. The adoption of such high technologies as dry-wet separation anaerobic fermentation and anaerobic pyrolysis will allow animal feces, urine, and other organic wastes to be converted into solid and liquid organic fertilizers, which can be directly returned to the field to solve difficulties in dealing with rural wastes, achieve zero emission, and cultivate a new model of circular agriculture.

4 High-level overall planning and creating a Qilu model for rural revitalization

YRDHDA highlights the regional characteristics of saline-alkali land and the advantages of resource agglomeration, adheres to scientific and technological innovation as the lead, and focuses on increasing farmer incomes. Guided by the “54321” work idea, YRDHDA takes industrial revitalization as the breakthrough, promotes the “revitalization” of industry, talent, culture, ecology, and organization, and emphasizes bright spots, and explores new paths for creating the Qilu model for rural revitalization.

“5”—Five characteristic towns including Dingzhuang Rural Town, Guangbei Agricultural Tourism Town, Saline-Alkali Seed Industry Town, Binhai Salt Industry Town, and Hongqi Automobile Town will be created. Dingzhuang Rural Town mainly relies on beautiful villages, modern farms, family farms, and demonstration bases to build a rural complex that integrates circular agriculture, creative agriculture, farming experience, and product display and trading. Guangbei Agricultural Tourism Town is developed based on the inheritance of history and farming civilization of Guangbei Farm and the introduction of cultural creativity, leisure tourism, and other emerging commercial activities, thus enabling people to experience “slow living” characterized by agricultural civilization, rural flavors, the history of educated youth, and unique retro and nostalgic charm. Saline-Alkali Seed Industry Town resorts to the scientific research platform of the characteristic seed industry in YRDHDA to transform the achievements in technology incubation of seed industry and field trials, and build a capital for saline-alkali seed industry that leads the development of modern agriculture. Binhai Salt Industry Town relies on 100,000 mu of salt fields in Binhai and Nan Heya Salt-Production Site of Shang-Zhou and excavates ancient salt well culture, to construct exhibition halls for salt industry culture, promote salt industry production display, experience, science popularization, and develop characteristic tourism with a focus on the coastal salt industry. Hongqi Automobile Town takes the intelligent networked car test field as the core and integrates wetland tourism resources in YRDHDA, to create a tourism base featuring driving experience, cultural popularization, leisure vacation, coastal sightseeing, and car camping.

“4”—Four new types of communities, namely the suburban farm-type, mass entrepreneurship and innovation-type, industrial and professional-type, and leisure tourism-type, are built. The policy of linking the increase in urban construction land to the decrease in rural construction land, the renovation of hollow villages, and the village relocation and combination are combined to reclassify the 49 villages under the jurisdiction of YRDHDA. One characteristic development village, 20 agglomeration and upgrading villages, and 28 relocation and combination villages are identified to implement new community systems with multiple entities, perfect services, and standardized management. In 2020, four villages including Shangdao, Niezhai, Beizhangzhai, and Xiaozhuzhuang will be combined to build a new type of rural community.

“3”—The layouts of three production spaces, namely the saline-alkali agricultural experimental zone along the branch river, the agricultural high-tech demonstration zone along the
high-speed line, and the high-standard production base in the southern part of Dingzhuang will be optimized to speed up the circulation of rural land and plan the lands for agricultural science and technology experiments, science and technology demonstration and characteristic seed breeding, especially the demonstration bases for herbivorous animal husbandry, geo-authentic crude drug, quinoa, characteristic seed industries, etc. Relying on the industrialization platform of saline-alkali herbivorous animal husbandry of the Chinese Academy of Agricultural Sciences, as well as the enterprises like Greenfields and Huaao Dadi, the YRDHDA aims to construct an herbivorous animal husbandry base covering an area of 5000 mu. Depending on Dongying Guangyuan Biotechnology Co., Ltd., the YRDHDA will build a 3,000-mu saline-alkali production base of geo-authentic crude drugs. Under the guidance of the Shanghai Center for Plant Stress Biology of the Chinese Academy of Sciences, a quinoa germplasm innovation and industrialization platform will be established and a quinoa industrial base covering an area of 2,000 mu will be constructed. By utilizing the research and development platform of saline-alkali resource plants launched by the Institute of Botany, Chinese Academy of Sciences, the YRDHDA will construct a 10,000-mu production base of seedlings, vegetables, and pasture seeds.

“2” — A “new countryside” will be constructed and “new farmers” will be cultivated. With focuses on ground hardening, greening, brightening, beautification, and purification, the rural infrastructure facilities will be constructed; the public services will be improved; the public welfare undertakings like rural appearance renovation will be implement-ed. The “seven reforms” in rural areas will be promoted, and the follow-up maintenance and management of the renovated latrine pits and the “access to clean fuels in every village” will be ensured, to effectively resolve the prominent problems in agricultural green production and of rural non-point source pollution, and improve the rural living environment. The YRDHDA should continue to develop education as a priority, enhance community-level medical and health care services, strengthen the rural civilization cultivation, and accelerate new countryside construction. Moreover, it attaches importance to improving the skills of new professional farmers, providing oriented training and arrangement of rural talents, and constructing the training platforms for new professional farmers in technology innovation centers, allowing the scientific research, pilot-scale test, and demonstration platforms to be equipped with the practical training functions. “Giving classes in the factory and moving the factory to the school” to guarantee a continuous training of 3,000–5,000 people per year and nurture a group of new professional farmers who love agriculture, understand technology, and are skilled in business.

“1” — The path for rural revitalization characterized by the integration of science and technology with industry and the integrated development of production, town, and village will be adhered to. The scientific and technological innovation will be taken as the lead to deepen the agricultural supply-side structural reform, accelerate the integration, promotion, and transformation of agricultural scientific and technological achievements, and realize the organic integration of technology and industry. Moreover, the modern agricultural industrial system, production system, and management system will be constructed to comply with the development trend of urbanization and enhance the development of urban-rural integration. Promoting agriculture through industry and supporting rural development with urban areas should be highlighted to promote the free flow and equal exchange of urban and rural elements and rational allocation of public resources, and speed up the integrated development of production, town, and village, thereby creating a demonstration model of rural revitalization with strong agriculture, beautiful rural scenery, and rich farmers.

5  Deepening reforms and building a demonstration zone for institutional innovation in agricultural science and technology

The experimental zone for agricultural institutional innovation in the YRDHDA of the Chinese Academy of Sciences is built to explore new mechanisms and models of technology research and development, achievement transformation, and talent introduction, and stimulate the high-quality development of the YRDHDA.

(1) A market-oriented institutional innovation of saline-alkali agriculture led by scientific research institutes will be carried out. In accordance with the principle of “scientific and technological supply to meet market demand,” a technology research and development system with in-depth integration and collaborative innovation of “production, study, and research” will be built. ① A diversified investment mechanism for research and development will be explored. For basic application projects (special science and technology plans), stable and continuous government investment support will be strengthened. For technological innovation and achievement transformation projects with good industrial prospects, the social capital will be introduced through risk compensation, post-subsidy policy, or enterprise-commissioned research and development. ② The management and use mechanisms of project funds should be innovated. An innovative model of “expert team + company” will be built to encourage expert teams to register entity companies in the YRDHDA. Project funds and the special ones supported by YRDHDA will be directly allocated to the company’s account and can be deployed independently by the project leader. ③ The salary incentive mechanism for the expert team will be innovated. For the project leaders and high-level talents who strive to make key technological breakthroughs and undertake major pilot projects, the annual salary system and project-based salary system will be implemented, and the

required expenditure will be included in the project funds and separately checked. The talent team will be given the right to independently dispose of the scientific and technological achievements, and the R&D team will be allowed to independently carry out the transfer and transformation of achievements. The scientific research and life-supporting service mechanism will be innovated. The state-owned company affiliated to the YRDHDA will form a modern and professional team offering agricultural scientific research services and recruit a group of professional scientific research assistants, to provide “nanny” and “one-stop” services for farming, management, and harvesting, as well as the professional scientific research services such as experimental data acquisition, sample processing, safety management, and achievement transformation. The life and office logistics support should be ensured; the expert departments and housing subsidies will be provided as appropriate; the characteristic hospital, business, leisure, culture, and other public service facilities will be constructed to create a first-class humanistic environment for innovation and entrepreneurship.

(2) A demand-oriented achievement transformation mechanism will be built. In accordance with the needs of industrial development in the YRDHDA, the channel between the technological innovation chain and the industrial transformation chain will be opened. The innovation achievements will be transformed with the enterprises as the main body or by the scientific and technical personnel in the form of technology investment. The scientific and technical personnel and the enterprise should form a community of shared interests, thereby improving the transformation efficiency and success of scientific and technological achievements. The scientific research institutes such as the Chinese Academy of Sciences and university research teams will be supported to establish enterprises in the YRDHDA for the transformation of scientific and technological achievements. The proportion of the earnings from the transformation of scientific and technological achievements owned by the research and development team should be no less than 70%. The right to use and disposal of the scientific and technological achievements and the revenue distribution right will be delegated in the form of financial support. If the scientific and technological achievements are transformed in the YRDHDA, all the resulting revenues go to the research and development team to widen their channels for innovation and wealth increase. The financing channels for the transformation of scientific and technological achievements will be expanded, and a multi-level and multi-channel investment mechanism for the transformation of innovative technological achievements should be established. The management mode of “management committee + company + industrial fund” and the operation pattern of “platform + company” will be implemented, and the investment and financing platform will be launched to revitalize high-quality assets. The state-owned equity will be transferred; the emergency loan fund and asset management operation companies will be established to issue corporate and enterprise bonds and expand the capital scale. A modern agricultural industry fund will be set up to attract social capital to flow in the modern agricultural industry, major scientific research platforms, and high-tech projects. The capital investment mode in the YRDHDA will be innovated. The venture capital fund and angel investment fund for the transformation of scientific and technological achievements will be set up to support achievement transformation. After the successful transformation of the achievements, the shares owned by the YRDHDA will be withdrawn. The guidance, equity participation, and follow-up investment will be used to cultivate technology-based small and medium-sized enterprises. The technology and financial innovation will be deepened and the commercial banks will be encouraged to develop related credit financial products, so as to propel technological innovation with capital.

(3) A flexible and efficient mechanism for talent introduction, cultivation, and retention will be built. High-level talents will be introduced by adopting the appointment system, annual salary system, and project-based salary system. According to the needs of innovative research and development, the job settings and responsibilities and employment terms should be clarified in the form of contracts, and the personnel funds are not included in the control range of gross performance salary. The “dual employment system” is employed to promote the flow of scientific research personnel at the in-system units. The professional titles should be mutually recognized and the scientific research personnel can be recommended as the candidates for “Taishan Scholars” and “Yellow River Scholars.” An open and high-level innovation team (“high-level talent team inside and outside the YRDHDA + local talent team”) will be organized. A high-level talent training system will be built. The Chinese Academy of Sciences should be supported to jointly train high-level talents like graduate students with Shandong Agricultural University and Qingdao Agricultural University.

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