

东北农业大学博士论丛




# 黑龙江省

## 农业科技中介组织体系研究

Heilongjiangsheng Nongye Keji Zhongjie Zuzhi Tixi Yanjiu

潘文华 胡胜德 · 著

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## 摘 要

科学技术是经济发展的驱动力，如何促进科技与经济的结合，业已成为产业界、科技界乃至全社会的重要议题。科技中介服务是为促进科技与经济结合而产生的新型经济服务活动，是国家和区域创新体系的重要组成部分。我国农业科技中介组织体系随着社会主义市场经济体制的建立而逐步发展起来。目前我国小规模分散经营的农户难以与科技建立有效的对接，急需在农户与市场、农户与科技之间建立多种纽带，为农户提供产前、产中、产后的一系列技术和市场服务。发展农业科技中介组织，加强农村科技服务体系建设，已经成为发展现代农业的客观需要。本书选取黑龙江省农业科技中介组织体系的发展进行研究，无论是对农业科技中介的理论研究还是对黑龙江省农业科技中介组织体系建设的实践探索都是一个具有重要意义的论题。

本书采用的主要研究方法有访谈法、观察法、问卷调查法、比较法、案例法和系统论研究方法。为了了解黑龙江省农业科技中介组织的历史、现状和问题，采用了访谈、观察等方法，对多家单位进行走访调查，深入农村进行实践观察，并组织东北农业大学住黑龙江省农村的在校生进行了问卷调查，应用 SPSS 统计软件进行了统计分析，对发现黑龙江省存在的问题和影响因素的分析发挥了重要作用。本书还采用了比较分析方法，在对美国、日本、荷兰等各国农业科技中介组织体系经验总结的基础上，进行比较分析，从而归纳出国外农业科技中介组织体系发展对我国的启示。农业科技中介组织体系是一个复杂系统，本书运用系统方法设计了农业科技中介组织体系的结构框架，并运用系统论中的复杂网络理论，建立

了农业科技中介组织的具体刻画指标,结合具体案例对农业科技中介组织进行了测量分析和评价。

本书首先对农业科技中介组织体系的相关概念和理论基础进行了深入的探究。从对中介、中介组织、科技中介组织的概念分析,层层深入到农业科技中介组织、农业科技中介组织体系的概念界定,对农业科技中介组织的类型和体系的特征进行了划分和总结。农业科技中介组织是连接农业科学技术供给方与需求方之间的纽带和桥梁,为促进农业技术创新和技术转移提供专业化、社会化服务的组织。农业科技中介组织体系是农业科技中介组织机构及其与运行环境之间相互作用所构成的系统。在明晰相关概念的基础上,对与本研究紧密相关的技术创新理论、国家创新系统理论、系统论和公共物品等理论进行了深刻的理解分析,并阐释了相应理论对农业科技中介组织体系研究的启示,为后续的分析研究提供了深厚的理论基础。

为了准确把握黑龙江省农业科技中介组织体系的现状和问题,笔者进行了大量的实地调研和问卷调查。黑龙江省农业科技中介组织体系经历了从单一组织主体到多元组织主体的发展历程,现已初步形成多元化的农业科技中介组织主体格局。但是,目前黑龙江省农业科技中介组织体系仍然存在农民技术求助渠道不畅、农业科技研发与现实需求联系不紧密、政府科技中介服务僵化低效、农民科技信息获取手段落后等问题。科技中介是一个涉及技术、技术供给、技术需求以及科技中介自身建设与环境匹配的复杂过程,因此本书分别从科技中介体系内部因素和外部因素两个层面,分析了黑龙江省农业科技中介组织体系发展的影响因素。

世界农业发展的历史表明,发达的农业必定有完善的农业科技中介服务体系。本书介绍了美国、日本、荷兰、澳大利亚、印度等国农业科技中介服务的主要经验,印度的选取是鉴于我国和印度同属于发展中国家。以上各国的共同经验是农业科技中介组织体系主

体多元化,实现科研、教育、推广部门紧密结合;农业科技中介组织的人员录用、培训和考核都已形成制度,并能够拥有多渠道的资金筹集和发达的农业信息服务体系;需要特别强调的是,世界各国农业科技中介的发展都突出了政府的主导作用,可见,尽管农业科技中介服务植根于市场经济中,但不能完全依靠市场调节而自发发展,政府在促进农业科技中介组织中必须发挥主导作用。汲取各国发展的共同经验,研究总结世界农业科技中介组织体系的发展规律,有助于对黑龙江省农业科技中介组织体系的构建和对策的探索。对不同类型农业科技中介组织的评价是构建黑龙江省农业科技中介组织体系的基础。政府主办的农业科技中介组织、教育科研单位主办的农业科技中介组织、农民专业合作经济组织和企业主办的农业科技中介组织,都有各自的优势和局限性,因此也就有各自的适用条件。

本书构建了黑龙江省农业科技中介组织体系。该体系由农业科技中介组织主体系统及其环境系统构成,组织主体系统包括组织主体和运行机制,环境系统包括法律环境、金融环境、政策环境和信息环境,它们共同对农业科技中介组织的运行起到影响作用。在体系构成的基础上,对农业科技中介组织进行了公益型、准市场型和市场型的划分,并对各主体创办的农业科技中介组织进行了职能定位。据此政府主办的农业科技中介组织应属于公益型农业科技中介,执行公益性职能;教育科研单位主办的农业科技中介组织和农民专业合作经济组织应属于准市场型农业科技中介,但其发展趋势将日益向市场性为主转变;企业主办的农业科技中介属于市场型中介,它以营利性服务为其职能。体系运行机制的设计包括准入机制、考核评价机制、利益分配机制、风险责任机制、信用机制和契约机制和协调联结机制等。为了对农业科技中介组织体系进行绩效评价,建立了综合评价指标体系,并利用复杂网络理论的评价指标,对具体的农业科技中介组织进行了实证分析和评价。

最后，本书提出了完善黑龙江省农业科技中介组织体系的对策与措施。政府农业技术推广部门要剥离经营性职能而充分发挥公益职能，通过建设区域服务站，加强基层农业技术推广组织的力量，并形成人员录用、培训和考核制度对农民专业合作经济组织负责人及其成员进行培训教育，大力发展并规范农民专业合作经济组织，使其成为农业科技中介组织体系中的基础力量；教育科研单位主办的农业科技中介组织要结合学科拓宽服务领域，加强经营性职能，同时建立必要的撤出机制以规避风险，逐渐走向市场化；扶持并监督企业发展农业科技中介，培育商业性农业科技中介公司；此外还要加强农业科技中介的法律、政策、金融、信息等环境的建设。

**关键词：**农业科技中介；组织体系；农业技术推广

## Abstract

The science and technology is the driving force of economic development, how to promote the union of technology and economy has become an important issue among the industrial circles, the scientific and technical circles, and even the whole society. The technical intermediary service is the new economic service, which promotes the union of technology and economy, it is an important component of national and regional innovation system. Chinese agricultural science and technology intermediary organization system develops gradually along with the establishment of the socialist market economic system. At present, in our country, it is difficult to establish an effective union between small scale separate management peasant household and agricultural technology. It is badly in need of many kinds of links between the peasant household and the market, the peasant household and technology, which can provide a series of technology and market services for the peasant household before the production process, during the production process, and after the production process. To develop the agricultural science and technology intermediary organization and strengthen the countryside science and technology services system has become an objective need in the development of modern agricultural. This article selects the development of agricultural science and technology intermediary organization system of Heilongjiang Province to conduct the research, it is a great significant thesis,

whether for the study of basic theories of the agricultural science and technology intermediary, or for the exploration practice of agricultural science and technology intermediary organization system of Heilongjiang province.

In this study, the main research methods contain interview, observation method, questionnaire survey, comparative method, case study and systematic research theory. Methods such as interview, observation method and so on are used in order to understand the history, current situation and problems of agricultural science and technology intermediary organization of Heilongjiang province. Visiting and investigating a number of units, practicing and observing deep into rural areas, also taking questionnaire survey for the Northeast Agricultural University students who live in rural area, executing statistical analysis with the application of SPSS statistical software, all-above mentioned played an important role in discovering the existing problems and analysis of influencing factors in Heilongjiang province. This article also uses comparative analysis method for comparative analysis, based on the experiences and summaries of the agricultural science and technology intermediary of America, Japan, Netherlands and other countries, and concludes the enlightenment for which the development of foreign agricultural science and technology intermediary organization system to our country. The agricultural science and technology intermediary organization system is a complicated system. This article using the system approach to design the framework of the agricultural science and technology intermediary organization system, and with the use of complicated network theory in the system theory, establishing the detail depiction indicators of the agricultural science and tech-

nology intermediary organization, combining with the specific cases measures, analyses and evaluates the agricultural science and technology intermediary organization.

First this book researches into the related concepts and basic theories of agricultural science and technology intermediary organization system, analyses concepts of intermediary, intermediary organization, technical intermediary organization, and gradually defines the concept of the agricultural science and technology intermediary organization and the agricultural science and technology intermediary organization system, then, divides and summarizes the character of agricultural science and technology intermediary organization's types and its system. The agricultural science and technology intermediary organization is the link between the agricultural science and techniques supplies and the demands, it is an organization which provides specialized services and socialized services, aims to promote agricultural technology innovation and technology transfer. The agricultural science and technology intermediary organization system is a system that resulting from the interaction between agricultural science and technology intermediary organization and its operating environment. Based on clearing related concepts, this article analyses the technical innovation, national innovation systems theory, system theory, public goods theory and so on closely related to this research, and explains the enlightenment that the corresponding theory works on agricultural science and technology intermediary system, and provides the profound theoretical foundation for the following research.

The author conducts large numbers of field investigation and questionnaire survey in order to grasp the current situation and

problems of the agricultural science and technology intermediary organization system of Heilongjiang Province. The agricultural science and technology intermediary organization system of Heilongjiang Province has experienced the development course from a single-structure main body to multiplex-structure main body, now has preliminarily formed the pluralism main structure. However, the agricultural science and technology intermediary organization system of Heilongjiang Province still have many problems such as: poor channels in farmers seeking the help of technology, disclose between agricultural science and technology research and the realistic demand, rigidity and poor efficiency of governmental science and technology intermediary, backwardness of the methods of farmers to obtain scientific and technical information. The science and technology intermediary is a complex process which is involved with technology, the technology supply, the technology demand, as well as the match of technology intermediary self-construction and environment. Therefore, this article analyzes the influencing factors of the agricultural science and technology intermediary organization system development of Heilongjiang Province, separately from the internal factor and the external factor of the technical intermediary system.

The history of the world's agricultural development indicates that the developed agriculture must have the accelerated agricultural science and technology intermediary service system. The experience of agricultural science and technology intermediary service from US, Japan, Holland, Australia will be introduced in this book, in view of the fact that our country and India are developing countries, so the India's experience is selected into this re-

search. The common experience of these countries is that the agricultural science and technology intermediary organization system subjects are multiple; the correlation of the scientific research, education, and the promotion department is tight; the personnel recruitment, training and assessment of agricultural science and technology intermediary organization have been institutionalized, meanwhile there are multi-channel to raise fund and developed agricultural information service system in these countries; What needs to stress specially, the agricultural science and technology intermediary development in all countries in the world highlight the governments' leading role, obviously, although the agricultural science and technology intermediary service takes root in the market economy, it cannot depend upon the market regulation completely, the government plays the leading role in promoting the development of agricultural science and technology intermediary organization. Learning from other countries' experience and summarizing the development principle of the world agricultural science and technology intermediary organization system are helpful to construct the agricultural science and technology intermediary organization system of Heilongjiang province and to explore the counter-measure. Evaluation on different types of the agricultural science and technology intermediary organization build the foundation of the agricultural science and technology intermediary organization system of Heilongjiang province. The agricultural science and technology intermediary organization held by the government, the agricultural science and technology intermediary organization and peasant specialized cooperative economy organizations by educational and research institutes, the agricultural science and technology in-

termediary organization by enterprises have respective advantages and the limitations, therefore, also have respective application conditions.

The agricultural science and technology intermediary organization system of Heilongjiang province is constructed in this book. This system constitutes of agricultural science and technology intermediary organization subjects system and environment system, organization subjects system includes organization subjects and operating mechanism; environment system includes law environment, finance environment, policy environment and information environment, they work together to influence the operating of agricultural science and technology intermediary organization. Based on the system construction, the agricultural science and technology intermediary organization is divided into three types, including public service, quasi-market and market-oriented, moreover, the functions of agricultural science and technology intermediary organization held by different subjects are positioned. According to this, the agricultural science and technology intermediary organization held by the government is of public service and provides public services, the agricultural science and technology intermediary organization and peasant specialized cooperative economy organization held by educational and research institutes are of quasi-market, but its development will gradually transfer to the market-oriented. The agricultural science and technology intermediary organization held by enterprises is of market-oriented, which provides profit-making services. The design of the system operating mechanism includes the admittance mechanism, assessment and evaluation mechanism, the benefit distribution mechanism, the risk responsibility mecha-

nism, the credit mechanism, the contract mechanism and the coordinated joint mechanism etc. a complex network system model is established in this article to evaluate the performances of agricultural science and technology intermediary organization, and the empirical analysis and the evaluation on specific agricultural science and technology intermediary organizations have been carried on by using this model. In addition, in this article an evaluation index system is also established for agricultural science and technology intermediary system.

Finally, the countermeasure and measure are put forward to improve the agricultural science and technology intermediary system of Heilongjiang province. The government agricultural technology extension department should peel the management function and display the public welfare function, strengthen the agricultural technology extension organization of the grass-root units through the construction of regional service stations, and form the institutions in personnel recruitment, training and assessment etc. to train and educate the principal and the personnel of peasant specialized cooperative economy organizations, meanwhile develop and regulate the peasant cooperative economic organizations to make them into the foundation strength in the agricultural science and technology intermediary organization system. The agricultural science and technology intermediary organization held by educational and research institutes should combine with subjects and extend its service scope, strengthen the management function, meanwhile, establish essential withdraw mechanism to avoid risks, and gradually transfer to the marketization. The agricultural science and technology intermediary organization held by enterprises should be suppor-

ted and its development should be supervised to foster commercial agricultural science and technology intermediary companies; furthermore, the environment construction of the agricultural science and technology intermediary including law, policy, finance, and information etc. should be strengthened.

**Key words:** agricultural science and technology intermediary; organization system; agricultural technology extension

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