


*Z*huziyuan Peiyu Jishu Chuangxin de
Zhunong Canyu Jizhi Yanjiu

石德金 著

竹资源培育技术创新的 竹农参与机制研究

 中国农业出版社

竹资源培育技术创新的 竹农参与机制研究

石德金 著

中国农业出版社

图书在版编目 (CIP) 数据

竹资源培育技术创新的竹农参与机制研究/石德金著.
北京: 中国农业出版社, 2008. 10
ISBN 978-7-109-12999-3

I. 竹… II. 石… III. 竹林—森林经营—研究—中国
IV. S795.06

中国版本图书馆 CIP 数据核字 (2008) 第 150798 号

中国农业出版社出版
(北京市朝阳区农展馆北路 2 号)
(邮政编码 100125)
责任编辑 张 欣

中国农业出版社印刷厂印刷 新华书店北京发行所发行
2008 年 7 月第 1 版 2008 年 7 月北京第 1 次印刷

开本: 850mm×1168mm 1/32 印张: 8.875

字数: 226 千字 印数: 1~1 500 册

定价: 25.00 元

(凡本版图书出现印刷、装订错误, 请向出版社发行部调换)

中 文 摘 要

本文以集体林权制度改革后竹农成为“家庭式企业”为背景，以提高竹业技术成果转化率和提升竹农技术素质为切入口，分析竹业技术的需求与供给的矛盾及其形成机理，在借鉴林业技术推广优缺点的基础上，提出竹农参与技术创新的基本观点，以期对林业技术推广体系进行补充和完善，使竹业科技迅速进村入户，从而促进竹农向有利于竹资源培育可持续发展的经营意愿和技术行为的转变，提高竹资源培育的科技竞争力，促进竹资源培育的健康发展。全文 11 章，分为五大部分：

第一部分包括第一章和第二章，主要阐述本文的选题背景、研究意义、国内外文献综述、研究的基本思路、研究方法、研究的基本内容、技术路线、研究特色以及全文的理论基础，为全文作了一个简要的介绍。

第二部分包括第三章和第四章，主要是构建竹农参与技术创新的模式。本部分首先分析了竹资源培育技术供求的脱节矛盾，并由此阐述了竹资源培育技术有效供给不足以及相应的原因、显性需求不足以及相应的原因，在此基础上进一步分析了导致竹资源培育技术供求脱节的主要原因是政府各级部门、科研机构、竹农之间存在一种“断层”关系，认为

这些利益相关者之间缺乏利益的联动性，也没有形成“责、权、利”相统一的利益的共同体。其次，为了解决竹资源培育技术供求的脱节矛盾，应该把政府各级部门、科研机构、竹农之间存在的“断层”关系“接续”起来，并提出了“接续”方法，即竹农参与技术创新模式的实施和运用。同时，在本部分也分析了构建竹农参与技术创新模式的基本要求、参与效果的指标、参与模式的基本思路以及此模式的基本运行机制和主要特色。

第三部分是第五章，主要是论证了竹农参与技术创新模式的可行性。本部分首先分析了构建竹农参与技术创新模式的基本条件，即现实基础条件、项目载体条件、科研机构条件、竹农参与条件和运营成本，以福建为例进行实证分析，认为在倡导“科技进村入户”的利好形势下，能够满足竹农参与技术创新模式的构建条件。其次，分析了竹农参与技术创新模式的效应，即运用竹农采纳技术的平衡点原理、农业踏板原理和期望理论分析了竹农参与技术创新模式的技术成果转化效应、竹农技术素质提升效应和运用资源配置理论分析了竹农参与技术创新模式的资源配置效应，认为竹农参与技术创新模式可以提高技术成果转化率，提升竹农技术素质，实现竹资源可持续发展的合理配置和促进科技资源配置的帕累托改进。

第四部分包括第六章、第七章、第八章和第九章，主要阐述了竹农参与技术创新模式的实施方法和步骤。首先，建立了竹农参与技术创新的成本、收益的基本算式，并运用博弈理论分析了竹农参与技术创新的参与意愿，认为在市场机制的作用下和政府的扶持下，当竹农或科研机构对自己的参与收益达到一定综合概率时，竹农或科研机构就愿意参与技

术创新或让竹农参与进来。

其次，从竹农参与技术创新的要求和可供参与资源的角度出发，在调查分析的基础上，确定了竹农参与技术创新的不同方式，认为首先应选定竹业专业户作为参与技术创新的首要对象逐步扩展到散户竹农。竹农的参与方式从作为顾问式转向顾问与合作式。同时，在本部分还论述了竹农参与度的确定以及竹农资源与科研机构资源“参与角色”的转换性，认为当竹农的竹林资源规模、竹农资金实力、技术素质等达到一定程度时，竹农会逐渐成为技术创新的主体。

第三，以竹农参与技术创新模式为基本框架，构建了竹农参与技术创新过程中参与步骤的基本路线图，并说明了竹农参与技术创新与实验室技术创新的区别，阐述了竹农参与技术创新的基本方法。

第四，从构建和顺利实施竹农参与技术创新模式的角度，论述了竹农参与技术创新的支持机制，包括利益共同体的形成、政府的资金和政策支持、科研体制改革以及相应的制度保障，如组建网络中心的配套资金必须落实到位、构建竹农素质教育培训基地、鼓励竹林地流转、完善竹业中介机构、完善科技特派员制度、完善乡村农民技术员制度、扩大女性农民技术员数量等，认为只有在这些支持机制的驱动下，才能顺利地构建竹农参与技术创新的模式和顺利地实施竹农参与技术创新的参与方式、参与步骤等，从而实现竹农参与技术创新模式的效应。

第五部分是第十章，本部分从竹业相对发达的福建永安市、竹业相对落后的福建武平县选取了两个竹资源培育专业户作为竹农参与技术创新机制的对比例证案例，来说明竹农

参与技术创新的参与模式、参与意愿、参与步骤、利益共同体的形成、政府扶持、科研体制改革等情况及评价，并进行参与模式的效应说明。

关键词：竹农；竹资源培育技术创新；参与

ABSTRACT

This article analyses the contradictions of the demand and supply of bamboo industry technology and the forming mechanism on the basis of the backdrop that is the bamboo farmers becoming the domestic enterprises after the reform of the collective forestry system and the start that is the aim to improve the conversion of bamboo technology and to improve the quality of bamboo farmers. On the basis of the references of the advantages and disadvantages of the spread of the forestry technology, it puts forward the basic viewpoints of bamboo farmers participating in the technological innovation for the aim that will not only be complementary to the forestry technologically promotional system for the bamboo technology entering into the household rapidly, but also be beneficial to bamboo farmers who will work towards the operating willingness and technological behavior that is beneficial to the sustainable bamboo cultivation. It will be helpful in improving the scientific competitiveness of the bamboo cultivation and in promoting the healthy development of bamboo cultivation. This article has 11 chapters in all, which is divided into five parts:

The first part includes the first chapter I and II mainly discussing the background of this thesis, the significance of research, the literature reviews made in home and abroad, the basic ideas and methods of the research, the basic content of the research, the technical line, the characteristics of the research and the theoretical basis of the whole thesis. All that makes a brief introduction.

The second part includes the chapter III and IV, mainly discussing the construction of the model about the bamboo farmers participating in the technological innovation. At first, this part analyses the advantages and disadvantages of the current forestry technology promotion so that it concludes the contradiction about the supply divorces from the demand of the technology of the bamboo cultivation. On the basis of that, it not only talks about the lack of effective supply of bamboo cultivation technology, but also it discusses the corresponding reasons, the dominant lack of demand and the corresponding reasons. On the basis of that, it analyses the major reasons attributing to the supply divorcing from the demand of the technology of the bamboo cultivation are the fault relation among the government department in all levels, scientific institutions and bamboo farmers which is considered not to form a interest community of the responsibility, the right and the benefit, because the interests of these stakeholders lack of a linkage among them. Secondly, in order to solve the divorcing contradiction of the supply and the demand of the bamboo cultivation

ABSTRACT

technology, it should connect the fault relation among the government department in all levels, scientific institutions and bamboo farmers. Of course, it also puts forward the method of connecting that is the implementation and the execution of the model of the bamboo farmers participating in the technological innovation. At the same time, it also analyses the basic requirements of bamboo farmers participating in the technological innovation, the index of participating effect, the basic idea of participating style and the basic operating system and characteristic of the model

The third part includes chapter V , mainly demonstrating the feasibility of the model of bamboo farmers participating in the technological innovation. This part analyses the construction of basic conditions of bamboo farmers participating in the technological innovation firstly. That is, the factually basic condition, the tool condition of the project, the condition of the scientific institution and the condition and the operating cost of bamboo farmers participating in the technological innovation. On the basis of the analysis of Fujian as an example, it will satisfy the constructing condition for the bamboo farmers participating in the technological innovation under the circumstance of the proposition of technology entering into the household. Secondly, it analyses the effectiveness of the model of bamboo farmers participating in the technological innovation. That is to analyze the effectiveness of the transition of the technology from bamboo farmers participating in the techno-

logical innovation and the effectiveness of the increase of the quality of bamboo farmers by making full use of the theory of the balance point which is bamboo farmers adopting the technology, the treadle theory and the aspiration theory. Furthermore, it analyses the arranged resources effectiveness of bamboo farmers participating in the technological innovation. It believes that it will improve the effectiveness of the transition of technology and the quality of bamboo farmers and gain the sustainable arrangement of the bamboo resources and the Pareto improvement.

The fourth part includes VI, VII, VIII and IX, mainly discussing the methods and the steps of bamboo farmers participating in the technological innovation. Firstly, it establishes the basic relative formula of the cost and the benefit coming from the bamboo farmers participating in the technological innovation. Furthermore, it analyses the willingness of bamboo farmers participating in the technological innovation through the way of game theory. On the basis of that, it believes that bamboo farmers and scientific institutions will participate in the technological innovation or scientific institutions will allow bamboo farmers to participate in the technological innovation under the circumstance of the marketing system, the help of the government and the overall probability of participating benefits from bamboo farmers and scientific institutions.

Secondly, on the basis of the investigation and the analysis, it identifies the different styles of bamboo farmers partici-

ABSTRACT

pating in the technological innovation from the requirement of bamboo farmers participating in the technological innovation and the perspective of the participating resources. It believes that it should select bamboo specializing in technological innovation as a prime target so that it changes the bamboo farmers as consultants into consultants and the cooperation, then gradually spread retail bamboo farmers. Meanwhile, in this part, it also demonstrates the selection of bamboo farmers' participation and the transition of bamboo farmers and scientific institutions as participating characters. Besides that, it also believes that bamboo farmers will gradually become the main body of technological innovation when the scale of bamboo forest, the bamboo farmers' financial strength and the technological quality all reach some certain level.

Thirdly, it establishes the basic technical line about the bamboo farmers participating in the technological innovation on the basic framework of the model of bamboo participating in technological innovation. It also demonstrates that the differences between innovation participated by bamboo farmers and that taking place in the laboratory. Then, it discusses the basic method of bamboo farmers participating in the technological innovation.

The fourth, it demonstrates the support system of bamboo farmers participating in the technological innovation including the form of the interest community, the support from the fund of the government and the policy, the reform of the sci-

entific system and the corresponding security system such as the timely place of matching funds to be set up networks, the establishment of the training center for improving the bamboo farmers, the encouragement of the transition of forestry lands, the improvement of bamboo intermediary organization, the supplement of the system of sending the scientific special commissioner, the supplement of the rural agronomist technician and the expanding of the number of women agronomist technician in the perspective of establishing and successfully executing the model of bamboo farmers participating in the technological innovation. It strongly believes that it will successfully establish the model of the bamboo farmers participating in the technological innovation and successfully execute the way and the step of bamboo farmers participating in the technological innovation so that to achieve the effectiveness of the bamboo farmers participating in the technological innovation under the drive of the support system.

The fifth part includes the Chapter 10, *mainly including the major case*. This part selects the two bamboo farmers specializing cultivation as the contrastive case of bamboo farmers participating in the technological innovation from Yongan in Fujian where the bamboo industry is relatively developed and from Wuping in Fujian where the bamboo industry is relatively underdeveloped to demonstrate the participating model, participating willingness, participating steps, the form of the interest community, the support of the government, the reform

ABSTRACT

of the scientific system and the evaluation of the phenomenon. Meanwhile, it also demonstrates the effectiveness of the participating model.

Key words: bamboo farmers; technological innovation of the bamboo resource cultivation; participation

目 录

第一章 导言	1
第一节 选题	1
第二节 研究意义	12
第三节 国内外研究综述	15
第四节 研究的基本思路和研究方法	28
第五节 研究的基本内容	31
第六节 本研究特色	32
第二章 理论基础	35
第三章 竹资源培育技术的供求矛盾	44
第一节 竹资源培育技术供求脱节的矛盾	44
第二节 竹业技术有效供给不足及其原因分析	46
第三节 竹业技术的显性需求不足及其原因分析	54
第四节 导致竹业技术供求矛盾的关联性分析	61
第四章 竹农参与技术创新模式的构建	65
第一节 解决技术供求矛盾的基本思路	65
第二节 竹农参与技术创新模式的雏形	67
第三节 竹农参与技术创新模式的基本框架	75
第五章 竹农参与技术创新模式的构建条件及 模式效应	82
第一节 竹农参与技术创新模式的现实条件	82

第二节 竹农参与技术创新模式效应分析	95
第六章 竹农参与技术创新的参与意愿	126
第一节 促进竹农参与技术创新的因素分析	126
第二节 竹农参与技术创新的博弈分析	134
第七章 竹农参与技术创新的参与方式	148
第一节 竹农参与技术创新的要求和可供参与的 资源	149
第二节 竹农参与技术创新的参与方式	152
第三节 竹农参与技术创新的参与度的选择	157
第四节 竹农资源与科研机构资源“参与角色” 的转换性	162
第八章 竹农参与技术创新的参与步骤	164
第九章 竹农参与技术创新的支持机制	174
第一节 竹农参与技术创新的支持机制之一：利益 共同体的形成	174
第二节 竹农参与技术创新的支持机制之二：政府 扶持	183
第三节 竹农参与技术创新的支持机制之三：科研 管理体制改革	197
第四节 竹农参与技术创新的支持机制之四：相应 制度改革和落实	203
第十章 竹农参与技术创新的例证案例	207
第一节 福建省永安、武平竹业对比描述	208
第二节 永安市竹农参与技术创新案例及其评价	211
第三节 武平县竹农参与技术创新案例及其评价	217
第四节 福建省永安、武平案例的简单对比	224
第十一章 主要结论及本研究的不足之处	227

目 录

参考文献	230
附录 1 竹农参与技术创新问卷	238
附录 2 福建农业女性化背景下农业技术采纳 现状调查	243
后记	262