

## Intellectual Property Rights In Agricultural Biotechnology Biotechnology In Agriculture Series

Invaluable book for anyone seeking to use intellectual property strategically and put intellectual property to work. When effectively and ethically managed, intellectual property can accelerate the development of lifesaving, poverty-alleviating innovations and provide access to them.

This research focuses on the current legal protection for agricultural biotechnological inventions in Europe and the U.S. It has been a subject of debate whether plants and agricultural biotechnological inventions which includes plants, transgenic plants and plant varieties, can be the subject of patent protection, in addition to or as an alternative to the protection afforded by plant variety rights. Biotechnological patents have been criticized for granting an excessive scope of protection to proprietors, whereas plant variety rights have been slighted for not providing enough protection. Hence, this research is built on a few main themes, namely; the discussion of IP protection for agricultural biotechnological inventions as currently in practice in Europe and the U.S., as well as the deliberation on the current system as practised in Malaysia. The research also discusses the issue of the interface between the patent regime and plant variety rights over agricultural biotechnological inventions as there are possible overlaps between the two systems, notwithstanding the exclusivity of protection of plant varieties under the PVR system. The research looks at the prospect for Malaysia as a developing country to enhance its current IP framework and legislation in order to develop its agricultural biotechnology industry. Hence, it focuses on whether there is a single system as a model of IP regime to be adopted by Malaysia in order to provide the best IP protection for its agricultural biotechnology industry. The comparative approach is inevitable, in referring to the European model and the American model as a guide. The relevant factors such as the different setting, society and economic strength are given due consideration in coming up with the proposal to amend the current intellectual property law and legal system in Malaysia. At the end, the thesis puts forward a model for Malaysia to further develop its system.

This dissertation consists of three essays that lie at the intersection of intellectual property rights (IPRs) and agricultural development in Africa. In the first, I use a random-effects GLS model on panel data to quantify the relationship between IPRs and agricultural R&D spending in 38 African countries. In the second, I shift the focus to a particular form of agricultural biotechnology, namely genetically-modified (GM) crops. This essay comprises interviews with two major U.S.-based agricultural biotechnology companies, the aim of which is to determine how important IPRs have been in impeding the commercialization of GM crops across Africa. The third essay takes a step back from agriculture specifically and centers on a major institutional barrier to effective IP protection on the continent. As will be shown, the intangibility and non-scarcity of intellectual property necessitates a capable state for its protection, which is largely absent in Africa. Taken together, the conclusions of the first two essays suggest that weak intellectual property rights are not currently a major barrier to agricultural development on the continent. The third demonstrates that even if they were, there are serious institutional impediments to implementing effective IP protection in the African context.

Addresses IPR issues important to the Agricultural Biotechnology for Sustainable Productivity (ABSP) initiative & international agricultural biotechnology collaborations in general. Contains sections on patents, licensing, international issues & recommendations. Documents on plant variety protection, patent types in biotechnology, licensing, cooperative agreements, trade questions & Uruguay round, the convention on biological diversity & many others.

Intellectual Property Rights in Agricultural Biotechnology

Intellectual Property Rights and Economic Development

A Case of Malaysia

A Handbook of Best Practices : Executive Guide

Technology and Productivity Growth in Agriculture

Intellectual Property Rights Protection and Agricultural Technology Transfer in East Africa

Intellectual Property Rights in Agricultural Research

*During the last twenty years, biotechnology has revolutionized agricultural research. The enormous potential, together with a landmark decision by the US Supreme Court to allow the patenting of genetically-engineered organisms, has encouraged the private sector to invest heavily in research, resulting in the rapid growth of a multi-million dollar industry. These changes have influenced the way in which information and materials are exchanged and combined with developments in global agricultural research have resulted in a worldwide need for scientists to be educated in the implications of intellectual property rights. This book presents definitive information on intellectual property law in a simplified form (with a minimum of legal jargon) not available in other texts on the subject. The first section begins with an introductory chapter and goes on to consider diverse issues including protection, transference and capacity building, both at the national and institutional level. The second section consists of eleven country and regional case studies from around the world which track the international variation in intellectual property law and its application to agricultural biotechnology. The presentation is intended for both scientists and policy makers in industrialized and developing nations*

*"This report concludes that steps must be taken to meet the urgent need for sustainable practices in world agriculture if the demands of an expanding world population are to be met without destroying the environment or natural resource base. In particular, GM technology, coupled with important developments in other areas, should be used to increase the production of main food staples, improve the efficiency of production, reduce the environmental impact of agriculture, and provide access to food for small-scale farmers. However, concerted, organized efforts must be undertaken to investigate the potential health and environmental effects both positive and negative of GM technologies in their specific applications. These must be assessed against the background of effects from conventional agricultural technologies that are currently in use." -Publisher's website.*

*Over the course of history, different legal frameworks for protecting intellectual property have emerged. These instruments differ in their subject matter, extent of protection, and field of application, reflecting society's objective to balance the interests of creators and consumers for different types of intellectual works. These legal instruments are just one of the pieces that form a national system of intellectual property protection. Also crucial to the system's overall effectiveness are the institutions administering these instruments, the mechanisms available for enforcing IPRs, and the rules regarding the treatment of non-nationals. To address some of the issues concerning IPRs, this paper defines what they are and attempts to evaluate the relationship between the protection of intellectual property and economic activity in developing countries. It also summarizes the economic effects of IPRs in terms of creation and diffusion of knowledge and information; and market structure and prices. Furthermore, it discusses the reformation of IPRs regimes and makes recommendations for their administration and enforcement. This paper consolidates some of the research from the 'World Development Report 1998/1999: Knowledge for Development' and some contributions made at an Internet-moderated conference conducted by the Bank's TechNet program. It will be of interest to governments, investors, and international organizations.*

*Intellectual property rights, agriculture, and the world bank; Perspectives from international agricultural research centers; Perspectives from industry; Perspectives from national systems and universities; A model for international owned goods; Summary and implications for the world bank.*

*The Bioeconomy to 2030: Designing a Policy Agenda*

*Intellectual Property Rights (In Agricultural Biotechnology)*

*Crisis and Conflict in Agriculture*

*Intellectual Property and Agriculture*

*Intellectual Property and Traditional Knowledge in the Global Economy*

*Intellectual Property Rights and Agricultural Biodiversity*

*An Introduction for non-lawyers*

This book integrates a science and business approach to provide an introduction and an insider view of intellectual property issues within the biotech industry, with case studies and examples from developing economy markets. Broad in scope, this book covers key principles in pharmaceutical, industrial, and agricultural biotechnology within four parts. Part 1 details the principles of intellectual property and biotechnology, Part 2 covers plant biotechnology, including biotic and abiotic stress tolerance, GM foods in sustainable agriculture, microbial biodiversity and bioprospecting for improving crop health and productivity, and production and regulatory requirements of biopesticides and biofertilizers. The third part describes recent advances in industrial biotechnology, such as DNA patenting, and commercial viability of the CRISPR/Cas9 system in genome editing. The final part describes intellectual property issues in drug discovery and development of personalized medicine, and vaccines in biodefence. This book is an ideal resource for all postgraduates and researchers working in any branch of biotechnology that requires an overview of the recent developments of intellectual property frameworks in the biotech sector.

The proceedings of a seminar on the impact of plant breeders' rights in developing countries. Includes: the results of a study on plant breeders' rights in five Latin American countries; update of a 1983 study on plant breeders' rights in the U.S.; testing distinctness, uniformity & stability for plant variety protection; farmers' privilege, breeders' exemption & the essentially derived varieties concept; licensing of protected plant varieties -- international practice; possible effects of recent developments in plant-related intellectual property protection in Europe & the U.S.; & intellectual property rights & agriculture -- strategies & policies for developing countries.

This is an examination of the origins and impact of the agreement on Trade-Related Intellectual Property Rights (TRIPS) negotiated during the Uruguay Round of GATT talks. The principal theme is that the TRIPS agreement is not in the best interests of the poorer countries, and that its imposition on them by the richer countries has more to do with the exercise of political and economic power than with the positive economic benefits the agreement's supporters claim it can deliver. To support this assertion the book critically examines the economic evidence regarding the impact of intellectual property rights on such important variables as export performance, foreign investment, and economic growth. The author provides a political economic analysis of why the poorer countries acceded to the TRIPS agreement, illustrated with case studies of two important industries where the struggle over intellectual property is especially strong: pharmaceutical and agricultural biotechnology sectors. Designed for use in advanced undergraduate and graduate courses in international political economy and international relations theory, the book offer a radical view of the process of globalization.

Arising from recent developments at the international level, many developing countries, indigenous peoples and local communities are considering using geographical indications (GIs) to protect traditional knowledge, and to promote trade and overall economic development. Despite the considerable enthusiasm over GIs in diverse quarters, there is an appreciable lack of research on how far and in what context GIs can be used as a protection model for traditional knowledge-based resources. This book critically examines the potential uses of geographical indications as models for protecting traditional knowledge-based products and resources in national and international intellectual property legal frameworks. By analysing the reception towards GIs from developing countries and advocates of development in the various legal and non-legal regimes (including the World Trade Organization, World Intellectual Property Organization, and the Convention on Biological Diversity and the Food and Agricultural Organization), the book evaluates the development potential of GIs in relation to ensuing changes in international intellectual property law in accommodating traditional knowledge. Teshager W. Dagne argues for a degree of balance in the approach to the implementation of global intellectual property rights in a manner that gives developing countries an opportunity to protect traditional knowledge-based products. The book will be of great interest and use to scholars and students of intellectual property law, public international law, traditional knowledge, and global governance.

Agricultural Biotechnology and Intellectual Property

Intellectual Property Rights for Agricultural Biotechnology

Translating Geographical Indications for Development

Agricultural and Agribusiness Law

Intellectual Property, Agriculture and Global Food Security

Local Knowledge, Intellectual Property and Agricultural Innovation

Intellectual Property Rights and Global Capitalism

This book provides a detailed and critical account of the emergence, development and implementation of plant variety protection laws in Asian countries. In so doing, the book explores how Asian countries can capitalise on the 'unused policy space' in international agreements such as TRIPS and UPOV, and in the CBD and the Plant Treaty.

The agricultural sector, and in particular plant breeding, is one area where this flexibility of intellectual property rights (IPR) is quite broad. This note argues that policymakers need to pay close attention to the role that IPRs can play in agricultural development by providing incentives for both domestic and foreign investments. The note explains the special nature of plant breeding that has given rise to unique forms of IPRs and reviews how this special nature is reflected in article 27(3) b of the TRIPS Agreement. The note also reviews how developing countries are choosing to meet their obligations. It highlights the concern that both bilateral and multilateral trade negotiations may exert pressure on countries to adopt IPR regimes that are more rigid than those required to support national agricultural development.

The TRIPS Agreement (for trade-related intellectual property rights) provides for the general protection of geographical indications (GIs) of product origin, including for example the special protection of wines and spirits and for the creation of a multilateral register for wines. The African Group of countries has been in the forefront of countries agitating in the World Trade Organization TRIPS Council for the extension of this special protection and of the multilateral register to industries which are of interest to developing countries, primarily agriculture. The so-called "extension question" is the central feature of the Doha Development Agenda at both the WTO and World Intellectual Property Organization. This book provides some empirical evidence and applied legal and economic reasoning to this debate. It provides both a general review of the key issues and a series of case studies from six Anglophone and four Francophone countries in Africa. These focus on major agricultural commodities such as coffee, cotton, cocoa and tea, as well as more specific and local products such as Argan oil and Oku white honey.

The signature of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement), which entered into force on 1st January, 1995, marked a turning point in efforts to strengthen and extend intellectual property protection. Under the terms of the Agreement, many developing countries are now committed to extending the scope of intellectual property rights to areas not formerly covered, such as micro-organisms, plant genetic material and techniques used for genetic manipulation. While the likely impact of strengthening intellectual property protection is a subject of intense debate and, indeed, has been at the forefront of preoccupations related to environmental degradation and the need to protect biodiversity, it is poorly researched. This paper reviews the different forms and scope of intellectual property rights relevant to technology transfer in agriculture; reviews the commitments made by developing countries under the TRIPS agreement and the alternatives ...

Assessing Intellectual Property Rights on Agricultural Biotechnology from a Social Action Perspective

Transgenic Plants and World Agriculture

Who Owns Life?

Intellectual Property Rights and Technology Transfer in Developing Country Agriculture

Literature Addressing the Suitability of IPR for the Protection of Indigenous Resources

Intellectual Property Rights and Agricultural Development

Intellectual Property Issues in Biotechnology

This introductory textbook provides an overview of the concepts necessary for an understanding of agricultural and agribusiness law. The text will help students of land-based industries with little or no legal background to appreciate and identify issues which may require referral or consultation with legal counsel. Each concise chapter addresses a different legal issue that those employed in agriculture and agribusiness may face, and both federal law and representative examples topics such as contracts, property law and estate planning, the book also covers more contemporary issues such as organic certification, animal law, genetically engineered crops and food safety. Agricultural law extends beyond those directly engaged in farming to those in agribusiness who provide services and inputs to farmers, buy farmers' products, store or transport products, manufacture food products, and serve as intermediaries between farmers and consumers. The book guide for those employed in agribusiness as well as agriculture.

This book examines the role of local knowledge in promoting agricultural innovation and legislative support for agricultural innovation through intellectual property laws and the protection of farmers' rights. In assessing the role of intellectual property in promoting agricultural innovation the book examines plant variety rights protection, the patenting of plant varieties and plant breeding methods: gene patents and climate change: open source biotechnology and agricultural innovation marketing of agricultural products. As a test bed for the application of the themes of the book, it applies a case study approach to look at the role of local knowledge and intellectual property rights in the cultivation of traditional rice varieties in Kerala, South West India and the extent to which this cultivation is supported by Indian legislation. The book concludes with an examination of the success of self-help groups, such as Farmers' Clubs. This book appeals to all readers interested in the role of local knowledge in agricultural innovation and legislative support for agricultural innovation at a time of increasing food insecurity. A special feature of the book is the case study approach. To date, the role of local knowledge and agricultural innovation has been almost entirely ignored and the role of intellectual property in this space has been largely ignored. The book is a result of a research collaboration between the University of Western Australia and Kerala Agricultural University, funded in part by the Australian Research Council.

The Role of Intellectual Property Rights in Agriculture and Allied SciencesCRC Press

This paper revises and updates the Campi-Nuvolari index of intellectual property protection for plant varieties (Campi and Nuvolari, 2015). The new index has been updated and provides yearly scores for the period 1961-2018 for a total number of 104 countries, which have legislation on plant variety protection in force. The new evidence highlights the tendency towards more similar and stronger systems of intellectual property rights (IPRs) worldwide, regardless of individual characteristics and of trade agreements with TRIPS-Plus provisions are major drivers of this process. In addition, certain features of countries such as the regulatory environment, and openness to trade, are also significant determinants of the evolution of IPRs systems. We conclude discussing other possible applications of the data.

Economic property rights in agriculture

Economic, Institutional, and Implementation Issues in Biotechnology

The World Bank's Role in Assisting Borrower and Member Countries

Case Studies of Agricultural Products in Africa

Evidence from a Worldwide Index of IPRs in Agriculture (1961-2018)

Intellectual Property Protection for Agricultural Biotechnological Inventions

Intellectual Property Rights and Agriculture in Developing Countries

*Describes the current status of biotechnologies and, using quantitative analyses of data, it estimates biotechnological developments to 2015. Using other inputs, it creates scenarios to 2030.*

*This volume sets out to explore the dialectic relation agriculture, crisis and conflict, and attempts to expand the knowledge on these interactions. Part 1 of the volume (chapters 1-6) discusses thematic issues and methodological approaches to understanding the intersection of agriculture, crisis and conflict. Part 2 (chapters 7-20) provides case studies that take a detailed approach to understanding agricultural contexts facing crisis and conflict, or the role played by agriculture within crisis and conflict. Studies are selected from areas that might be expected to feature in such a volume (the Middle East and North Africa, sub-Saharan Africa, South and Southeast Asia, and Latin America) as well as less obvious regions where conflict within agriculture refers not to widespread violence or wars but rather latent or simmering crisis (Central Asia and Europe). Crises stemming from politically-driven violence, natural disasters and climate change are covered, as well as competition over resources.*

*Scientists are becoming progressively more involved in developing methods for increasing agricultural productivity and designing plants with certain qualities. As such, genetic engineering has given plant breeders a means to exercise property rights over different varieties of plants. This has created many implications and given way to much controversy, with most objections being raised against the idea of owning life. With the use of comparative studies, this book discusses the legal, agribusiness and public policy issues that connect intellectual property protection with advancements in agricultural biotechnology.*

*"The instability of the global food supply system requires our urgent attention. There are no easy solutions but the starting point must entail a critical analysis of the existing institutions governing the ownership and exchange of the plant genetic resources that underpin our long-term food security. Dr Chiarolla's book makes a valuable contribution to the debate." --Graham Duffield, University of Leeds, UK This book captures some of the key issues underlying the ever-lasting food crises both at national and global levels. It demonstrates how global policies impact national and local actions while food insecurity seems to be a constant companion to many, in spite of decades of our work on securing food as a fundamental right for the poor." -- Balakrishna Pisupati, United Nations Environment Programme, Kenya "This thoughtful book raises important issues about ownership of agricultural resources, the environment and food security. Claudio Chiarolla has written an important book that challenges traditional notions of plant genetic resources and agricultural research. The author's detailed and thorough approach ensures that the book will make a valuable contribution to the debate about sustainable agricultural development and it is highly recommended to anyone interested in intellectual property rights and sustainable agriculture." --Duncan Matthews, Queen Mary, University of London, UK This well-researched book focuses on international governance of crop diversity and agricultural innovation. It highlights the implications that the future control of food, including access to agricultural resources and technologies, might have for global food security. Claudio Chiarolla analyses developmental implications of global regulatory reforms that impact on access to agricultural knowledge, science and technology for sustainable development. Current global arrangements fall short of halving the proportion of people who suffer from hunger in accordance with the Millennium Development Goals' framework. Therefore, the book proposes ways to achieve international equity in the way agricultural research is conducted, how its results are disseminated and the benefits shared. This definitive study will be appreciated by anyone interested in intellectual property, agricultural innovation, environmental policy, biotechnology and associated regulatory challenges. It will be a valuable resource for policymakers and practitioners, legislators, academic professionals, civil society activists and scholars in legal, environment and development studies.*

*Intellectual Property Rights and Commercialization of Agricultural Biotechnology*

*A Case Study of Uganda*

*Global Intellectual Property Rights*

*Intellectual Property Rights for Agriculture in International Trade and Investment Agreements*

*Intellectual Property Rights for Agricultural Biotechnology, Options and Implications for Developing Country*

*Intellectual Property Law and Plant Protection*

Intellectual Property Rights (IPRs) play an important role in the struggle for food security and encouraging agricultural research and development. This book examines these roles as well as the international relationship between IPRs, agricultural biotechnology, access to biological resources, food security and globalisation, paying particular attention to proposals for the protection of Farmers' Rights, traditional knowledge, GM crops and the impact of competition laws. It proposes a number of recommendations for action in deploying IPRs in order to reach greater food security globally.

Back cover blurb Rising agricultural productivity has driven improvements in living standards for millennia. Today, redoubling that effort in developing countries is critical to reducing extreme poverty, ensuring food security for an increasing global population, and adapting to changes in climate. This volume presents fresh analysis on global trends and sources of productivity growth in agriculture and offers new perspectives on the drivers of that growth. It argues that gains from the reallocation of land and labor are not as promising as believed, so policy needs to focus more on the generation and dissemination of new technologies, which requires stepping up national research efforts. Yet, in many of the poorest nations, a serious research spending gap has emerged precisely at the time when the challenges faced by agriculture are intensifying. The book focuses on how this problem can be redressed in the public sector, as well as on reforms aimed at mobilizing new private sector actors and value chains, particularly creating a better enabling environment, reforming trade regulations, introducing new products, and strengthening intellectual property rights. On the demand side, the book examines what recent research reveals about policies to reduce the barriers impeding smallholder farmers from adopting new technologies. Harvesting Prosperity is the fourth volume of the World Bank Productivity Project, which seeks to bring frontier thinking on the measurement and determinants of productivity to global policy makers. ‘As rightly argued by the authors, growth in agricultural productivity is the essential instrument to promote development in low-income agriculture-based countries. Achieving this requires research and development, upgrading of universities, reinforcement of farmer capacities, removal of constraints to adoption, and the development of inclusive value chains with interlinked contracts. As important, such efforts also need to be placed within a context of comprehensive agricultural, rural, and structural transformations. However, in many countries implementation of the requisite policies has been lagging. This book, with contributions from many top experts in the field, provides the most up-to-date presentation of this argument and explains in detail how to successfully put its ideas into practice. Governments, the private sector, and civil society organizations need to study it carefully to turn the promise of agriculture for development into a reality.’ Alain de Janvry and Elisabeth Sadoulet Professors of the Graduate School, University of California at Berkeley

This book presents the perspectives of policy-makers and economists on a highly topical subject. Plant breeding patents, the ownership of biological innovation and associated intellectual property rights (IPR) are the subject of increased attention worldwide. They are particularly relevant in the field of agricultural biotechnology, but until recently evoked little policy analysis.IPRs

are particularly relevant in the field of agricultural biotechnology. They are issues affecting public and private sector organizations and companies, and are significant for developing as well as developed countries.

This important volume provides a basic understanding of the different forms of intellectual property rights in agricultural science. It provides an abundance of information on the use of IP laws in agriculture and allied subjects and their proper implementation in real-life practice. The chapter authors discuss different kinds of IP laws and their current status in developed as well as developing countries throughout the world. The protection of biological resources is crucial for food security for future generations. Biological resources are the source of several important genes. Researchers are interested in the development of plant varieties that can increase crop production, withstand dramatic climatic changes, etc. Protecting intellectual property rights in plant varieties and the rights of farmers and others are discussed in this volume. It also looks at new trends and developments in the field involving new IP strategies and the application of IP laws in agriculture and biotechnology and in the management of plant genetic resources.

Seeds of Change

Intellectual Property Rights and Food Security

Designing a Policy Agenda

Analysis of the Implications of Strengthened Intellectual Property Rights to Agriculture of Developing Countries and Responses of Selected Public Research Institutions in Southeast Asia

Agriculture and Intellectual Property Rights

A Plant Breeding Perspective

Implications for Public Servants

Intellectual property rights, such as patents, can reduce access to knowledge in genetics, health, agriculture, education and information technology, particularly for people in developing countries. Global Intellectual Property Rights shows how the new global rules of intellectual property have been the product of the strategic behaviour of multinationals, rather than democratic dialogue. The final section of the book suggests strategies aimed at developing more flexible standard for poor countries, and for keeping knowledge in the intellectual commons.

Governments: some views on their changing roles and strategies of governance. Public goods and services: governmental or proprietary?. The Department of Agriculture and its attached agencies: goods and services: governmental or proprietary?. Intellectual property rights: property or rights?. Ownership of Public Intellectual property rights: are public servants excluded?. Agricultural biotechnology: a unique species of intellectual property?. Public officers and employees: perpetual or manspitory constitutional servanthood?.

Policymakers in DC responsible for nat. ag. research are considering the implications of IPR for biotech. This is because DCs want to acquire & use new technol's in ag. research, & the pressure exerted on DCs in int'l. negotiations to strengthen their IPR legislation. This volume summarizes the increasing significance of IPR for ag. biotech. & current international trade & development-related debates on IPR & DC responses to these issues. Analyzes the complexities, options & implications regarding IPR in relation to national technology objectives, commentary and materials

Modifications in Intellectual Property Rights Law and Effects on Agricultural Research

Intellectual Property Management in Health and Agricultural Innovation

Rhetoric and Reality

Intellectual Property Rights in Agriculture

The Privatisation of Crop Diversity

Knowledge, Access and Development