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'Straightforward, honest, and uncompromising in describing the socio-political issues of food and the credible political options. There is not a policymaker on this planet who should not read this book. The authors know what they're talking about and their editors know who they're talking to. This is the best single summary of the political choices facing food and agriculture policymakers that has been written in this decade.' *Pat Mooney, Executive Director of the ETC Group* 

"This is a timely and valuable book about the most important "industry" of all, dominated by giant multinationals and governments of rich countries, who make the global rules. This concise overview is both authoritative and accessible for non-specialists – highly recommended to all who are concerned about food, health, and survival."

#### Felix R. FitzRoy, Professor of Economics, University of St Andrews and Research Fellow, IZA, Bonn

"This book is an excellent resource for those mapping the increasing control of our food chain by international players. The agreements that impact on the ability of nations to be food-sovereign and food-secure are described in lucid detail. This is useful information for scholars and policymakers." *Suman Sahai, Director, Gene Campaign, India* 

'In this volume, globally recognized legal and policy experts provide a comprehensive and outstanding analysis of the inter-relationships between intellectual property rights and systems for maintaining food quality, biosafety and plant biodiversity. These are demanding technical issues but have fundamental importance for the future of global agriculture. The book should be read by all concerned with how institutional and policy reforms in these critical areas will affect the livelihoods of poor farmers and the nutrition of societies world-wide.'

#### Keith E. Maskus, Professor of Economics and Associate Dean for Social Sciences, College of Arts and Sciences, University of Colorado at Boulder

'In a field dominated by slogans, mistrust, rhetorical claims and counterclaims, this is a welcome factual account – you do not have to agree with all it contains but it helps the reader towards a better understanding of the issues. That understanding could help create a critical mass of people who want the fair, practical and deliverable changes that will be essential as we move to meet the challenges of more people, climate change, equity and ecosystem conservation. Ownership may not be the issue – but control and choice are.' *Andrew Bennett, Executive Director, Syngenta Foundation for Sustainable Agriculture* 

"This book is an excellent collection of guideposts for perplexed students and scholars and a handbook for the seasoned diplomat seeking to make the world a better place for future generations." *Professor Calestous Juma, Kennedy School of Government, Harvard University* 

'Intellectual Property Rights (IPRs) appear mind-numbingly complex but are fundamentally important. This book outlines what the IPRs and food debates are, and why we should wake up and take notice. As the world enters a critical phase over whether, and how, to feed people healthily, equitably and sustainably, the need to understand IPRs is central. It unlocks the struggle over who controls our food futures.' *Tim Lang, Professor of Food Policy, City University, London* 

'Vital for everyone who eats, gardens, shops, or farms; indeed anyone who cares how communities, nations and the whole human species inhabit the earth. The authors map changes in control over food taking place through a web of international agreements about 'genetic resources', intellectual property rights, biological diversity, investment and trade. This is a powerful and accessible one-of-a-kind guide to the complex issues, agreements and law surrounding who controls the future of the world food supply and an indispensable tool in the fight for a democratic future.'

Harriet Friedmann, Professor of Sociology, Centre for International Studies, University of Toronto

"The influence of IPRs has increased and is increasing – but ought it to be diminished? Today IPRs increasingly deal with the necessities of life, in particular medicine and food. Read this book to learn how IPRs may affect world food supply and to understand the political battlefield."

Tim Roberts, Chartered Patent Attorney, UK, and Rapporteur to the Intellectual Property Commission of ICC

'As it informs, it draws attention to the far-reaching implications of international norms that impact on a basic need. I recommend it to all who play a role in the formulation of relevant international norms in whatever capacity, and regardless of the interests they may represent.'

Leo Palma, Deputy Director, Advisory Centre on WTO Law; formerly a Philippines negotiator at WTO, 1996–2001

'A long overdue analysis and critique of the premises underlying the push for a new 'Green Revolution', this book brings together seemingly disparate elements to show how, in combination with new intellectual property rules, they will create new dependencies and increase the marginalization of farming and poor communities. This book presents a cogent rebuttal of the industrialized and privatized model of food production prevalent in international trade and intellectual property norm-setting. An awareness of these elements will greatly assist civil society to participate in international negotiations.'

Daniel Magraw, President and Chief Executive Officer of the Center for International Environmental Law

'*The Future Control of Food* makes an invaluable and much-needed contribution to understanding the international state of play regarding food access, food development and intellectual property laws. The book will be useful not only to intellectual property and trade negotiators, but also to bankers, farmers, food service providers, environmental activists and others seeking to understand how food production is currently regulated and will be regulated in the future.'

Joshua D. Sarnoff, Assistant Director, Glushko-Samuelson Intellectual Property Law Clinic, Washington College of Law, American University, Washington, DC

"This is a timely book, providing useful insights on how international policies can, directly, indirectly and inadvertently, impact on food security. All stakeholders engaged in policymaking that affects the human food chain have a lot to gain by reading it."

Emile Frison, Director General, Bioversity International

'This well-researched book condenses the essence of decades of negotiations concerning IPRs into a readable but disturbing narrative which juxtaposes detailed descriptions of the systems that privatize nature with examples of people's defence of agricultural biodiversity. For social movements and activists who want to defend food sovereignty, it is essential reading.'

Patrick Mulvany, Senior Policy Adviser, Practical Action/Intermediate Technology Development Group and Chair, UK Food Group

"This book unpeels the onion: it shows layer on layer of interests and pressures that will define how we feed, or do not feed, a world of nine thousand million people in 2050. We are in a time of new enclosures and privatization of what were public goods, such as biodiversity and genetic resources, through access and benefit sharing legislation, and of the food chain from gene to plate, through IPRs. If you want to understand the fault lines in our food systems, READ THIS BOOK.'

Clive Stannard, former Officer in Charge, Secretariat of the Commission on Genetic Resources for Food and Agriculture at the FAO

# The Future Control of Food

## A Guide to International Negotiations and Rules on Intellectual Property, Biodiversity and Food Security

Edited by Geoff Tansey and Tasmin Rajotte





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1. Food law and legislation. 2. Plant varieties—Patents—Government policy. 3. Produce trade—Law and legislation. 4. Intellectual property (International law) 5. Food industry and trade—Standards. 6. Biodiversity conservation—Law and legislation. 7. Genetic resources conservation. I. Tansey, Geoff. II. Rajotte, Tasmin. K3926.F88 2009 346.04'8—dc22 This book is dedicated to Sacha, Christine, Rachel and all the children of this world.

May you inherit a world filled with hope, peace, food and a diversity of life that sustains and nourishes all of the Earth's peoples.

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## Preface

Intellectual property (IP) rights are a source of hidden wealth worth trillions of dollars, and they impose hidden costs on the same scale. The rules of intellectual property range from confusing to nearly incomprehensible, and the professional practitioners who manage these rights sometimes seem to belong to a secret society. ... The IP system also determines when and how an innovation becomes available for others to use by defining boundaries around what is accessible and what is not. Intellectual property rights help determine which innovations are widely available and which are closed off, separating innovation haves from have-nots. ... Ever-stronger intellectual property protection is surely not a panacea to promote technology progress and wellbeing in all countries and industries ... intellectual property creates winners and losers and on balance it helps in some situations, hurts in others ... intellectual property shapes society – whether for better or for worse.

MICHAEL A. GOLLIN FROM Driving Innovation: Intellectual Property Strategies for a Dynamic World (Cambridge University Press, 2008)

In today's world, access to food is highly, and unacceptably, uneven. There is massive overproduction and over-consumption, and yet millions experience scarcity and hunger. This book looks at some of the forces and rules shaping the food system and who has control over it. In particular, it focuses on rules on intellectual property - for example patents, plant breeders' rights, trademarks and copyright and their relations to other rules on biodiversity, an essential requirement for food security. It looks through the lens of intellectual property (IP) at the future control of food and farming, because rules on IP are central to struggles over the distribution of wealth and power in the 21st century.

When, from the 16th century onwards, the colonial powers reorganized the world to suit their economic interests, drew up state boundaries and secured resources for their use, they set the stage for trade patterns and future conflicts that still ring around the planet. Today, the colonies are mostly gone and there are around 200 nation states, yet through a series of quite unbalanced negotiations among these

states, the most powerful countries are still able to shape the rules of the world in their interests. Nowadays, their concerns include intangibles like IP and the use of genetic resources. The new international rules on these, agreed since the early 1990s, will do much to shape the future control of food. Yet these often complex and remote negotiations are little known or influenced by the billions of people who will be affected by them. This book is a guide to both the negotiations and these new global rules. At stake are the livelihoods of 2.5 billion people still directly dependent on agriculture and the long-term food security of us all. The IP regime, a new factor in many countries, along with a changing trade regime and new agreements on biodiversity, will help shape the kind of agricultural development in the future. It may include most of these 2.5 billion people, or it may exclude them. Either way their livelihoods will be affected. Moreover, all of us will be affected by the way these rules are written, since they will also help shape the food system, the kind of products it produces and the structures through which it delivers them. It is

important to know about the mix of rules because changes in one affect others, and concerns over IP overshadow many. Some of the questions that arise are:

- Will the rules facilitate and support the worthy but as yet unfulfilled goals of ending hunger and increasing food security espoused at food summits since the 1970s?
- Will they increase the capacity of those who need either more food or better food for a healthy life to produce or procure it?
- Will they promote fairer and more equitable practices among those engaged in ensuring that production reaches all who need it?
- Will they the IP regime in particular create incentives for more ecologically sound and culturally and socially appropriate farming, fishing and herding practices among producers of foodstuffs?

### Guide to the Book

The decision to produce this book was, in part, a response to concerns negotiators in various multilateral negotiations raised about the need for such a guide as well as the observation that negotiators or groups working in one area were often unaware of, and sometime undermining, what was happening elsewhere, which we encountered in the Quaker programme of work in this area.<sup>1</sup> In part, it is also a response to food security being the more neglected area by many governments and civil society groups compared with the new IP regime's impact on access to medicines and even access to knowledge. As a recent study noted: 'Unfortunately, for agriculgenetic resources and traditional ture, knowledge the benefit [for NGO involvement] does not seem to be visible and immediate, so ... the pressure for policy outcomes is not as great as for public health and access to medicines' (Matthews, 2006).

This guide seeks to inform a wider audience than negotiators so that civil society, researchers and academics, as well as those leading peasant and farmers' groups, small businesses and government officials, can take a more informed and active part in the complex process of negotiations that lead to international agreements. In that way, a broader range of interests will be in a better position to judge if the rules need amending and be better informed to work locally, nationally and internationally to secure global rules that promote a just and sustainable food system.

Part I begins with a brief overview of the contemporary food system, the basics of IP and its role in the food system. The central core of the book is Part II, which provides the background and a guide to negotiations and the key elements of the agreements. The different chapters aim to:

- help readers see how IP has spread into food and agriculture through various agreements;
- provide a short guide to the background and history behind each of the agreements;
- highlight key issues in each of these agreements and emerging trends;
- note connections to other negotiations multilateral, regional and bilateral – and national laws; and
- discuss the various interconnections and complex webs between the different rules and negotiations.

Part III includes discussion on some of the

various civil society reactions to these changing global rules and their impact on research and development in Chapter 8. Chapter 9 reflects on these international negotiations and makes a number of observations that may help those seeking to learn lessons from what has gone on. The final chapter briefly draws together some conclusions about the negotiating processes, alternative futures and the nature of innovation needed to face them. Finally, at the end of the book, we provide a table of further resources and institutions to contact for more information. Heike Baumüller was Programme Manager, Environment and Natural Resources, at the International Centre for Trade and Sustainable Development (ICTSD) up to the end of 2006. Among other areas, she coordinated ICTSD's project activities on biotechnology, fisheries, trade and environment, and biodiversity-related intellectual property rights from 2000, was the Managing Editor of the ICTSD publication BRIDGES Trade BioRes, and has published on a range of issues related to trade and sustainable development. She holds a master's degree in Environmental Studies from Macquarie University, Sydney, and is now working freelance as a consultant in Cambodia.

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## Acronyms and Abbreviations

A2K	access to knowledge
AATF	African Agricultural Technologies Foundation
ABIA	American Bioindustry Alliance
ABS	access and benefit sharing
ACP	African, Caribbean and Pacific
AIA	Advance Informed Agreement
AIPPI	Association Internationale pour la Protection de la Propriété Industrielle
	(International Association for the Protection of Intellectual Property)
AnGR	Animal Genetic Resources
ASSINSEL	Association Internationale des Selectionneurs pour la Protection des
	Obtentions Végétales (International Association of Plant Breeders)
ASTA	American Seed Trade Association
AU	African Union
BCH	Biosafety Clearing House
BiOS	Biological Open Source
BIRPI	Bureaux Internationaux Réunis de la Protection de la Propriété Intellectuelle
	(United International Bureaux for the Protection of Intellectual Property)
BSE	Bovine Spongiform Encephalopathy (mad cow disease)
CATIE	Centro Agronómico Tropical de Investigación y Enseñanza (Tropical
	Agricultural Research and Higher Education Centre)
CBD	Convention on Biological Diversity
CDP	Cooperation for Development Programme
CESCR	Committee on Economic, Social and Cultural Rights
CGIAR	Consultative Group on International Agricultural Research
CGRFA	Commission on Genetic Resources for Food and Agriculture
CHM	clearinghouse mechanism
CIAT	International Center for Tropical Agriculture
CIMMYT	International Wheat and Maize Research Institute
CIPIH	Commission on Intellectual Property Rights, Innovation and Public Health
CIOPORA	International Community of Breeders of Asexually Reproduced Ornamental and Fruit Varieties
CITES	Convention on International Trade in Endangered Species of Fauna and Flora
COP	Conference of the Parties
CRC	Convention on the Rights of the Child
CSO	civil society organization
DFID	UK Department for International Development
DSM	dispute settlement mechanism
EARO	Ethiopian Agricultural Research Organization
EC	European Community
ECOSOC	United Nations Economic and Social Council
EDV	essentially derived variety

EEC	European Economic Community
EFTA	European Free Trade Association
EoF	expressions of folklore
EPAs	economic partnership agreements
EPO	European Patent Office
EU	European Union
FAO	UN Food and Agriculture Organization
FiRST	Financial Resource Support for Teff
FIS	Fédération Internationale du Commerce des Semences (International Seed
	Trade Federation)
FTAs	free trade agreements
FTO	freedom to operate
GATT	General Agreement on Tariffs and Trade
GEF	Global Environment Facility
GMO	genetically modified organism
GFAR	Global Forum on Agricultural Research
GURTs	genetic use restriction technologies
HPFI	Health and Performance Food International
IBC	Institute of Biodiversity Conservation
IBPGR	International Board for Plant Genetic Resources
ICBGS	International Cooperative Biodiversity Group
ICC	International Chamber of Commerce
ICESCR	International Covenant on Economic, Social and Cultural Rights
ICTSD	International Centre for Trade and Sustainable Development
IFPRI	International Food Policy Research Institute
IGCGRTKF	Intergovernmental Committee on Genetic Resources, Traditional
or IGC	Knowledge and Folklore (more commonly IGC)
IIFB	International Indigenous Forum on Biodiversity
IMP	intellectual monopoly privilege
INBio	National Biodiversity Institute, Costa Rica
INGER	International Network for Genetic Evaluation of Rice
IP	intellectual property
IPRs	intellectual property rights
ISF	International Seed Federation
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
	(also referred to as the Treaty)
IUPGRFA or IU	International Undertaking on Plant Genetic Resources for Food and
	Agriculture (also referred to as the Undertaking)
KFC	Kentucky Fried Chicken
LDC	least developed country
LMMCs	Like-Minded Megadiverse Countries
LMOs	living modified organisms
LMOs-FFP	living modified organisms for food, feed and processing
MATs	mutually agreed terms
MDGs	Millennium Development Goals
MEA	multilateral environmental agreement

MFN	most favoured nation
MLS	multilateral system of access and benefit sharing
MOP	Meeting of the Parties
MSF	Médecins Sans Frontières
MTA	material transfer agreement
NGO	non-governmental organization
OECD	Organisation for Economic Co-operation and Development
PBRs	plant breeders' rights
PCDA	Provisional Committee on Propsals related to a WIPO Development Agenda
PCT	Patent Cooperation Treaty
PGRFA	plant genetic resources for food and agriculture
PIC	prior informed consent
PIIPA	Public Interest Intellectual Property Advisors, Inc.
PIPRA	Public Intellectual Property Resource for Agriculture
PVP	plant variety protection
QIAP	Quaker International Affairs Programme
QUNO	Quaker United Nations Office
R&D	research and development
RR	Roundup-Ready
SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice
SCP	Standing Committee on the Law of Patents
SMTA	Standard Material Transfer Agreement
SPLT	Substantive Patent Law Treaty
TCEs	Traditional cultural expressions
TK	traditional knowledge
TRIPS	Agreement on Trade-Related Aspects of Intellectual Property Rights
UDHR	Universal Declaration of Human Rights
UK	United Kingdom
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNPFII	United Nations Permanent Forum on Indigenous Peoples Issues
UPOV	International Union for the Protection of New Varieties of Plants [Union
	Internationale pour la Protection des Obtentions Végétale]
US	United States of America
USDA	United States Department of Agriculture
USPTO	United States Patents and Trademarks Office
WHO	World Health Organization
WIPO	World Intellectual Property Organization
WTO	World Trade Organization

## Part I

# A Changing Food System

Food connects us all. Yet the oft-repeated pledges to create a well-fed world in which hunger is abolished are still words, not reality. What has changed since the 1990s is the creation of new global rules made in different negotiating fora by groups and ministries dealing with different interests. These are reshaping the framework in which people working in the food system operate. It is a system in which different actors vie for power and control over the area that they work in, seeking to minimize or offload the risks they face and maximize or optimize the benefits they get.

Part I of this book provides a brief guide to the contemporary food system, the range of actors and interests in it, the tools they seek to use for control, and the increasingly important role of laws, rules and regulations, not just nationally but globally. Next, it outlines the basics of 'intellectual property' and then briefly examines the growing importance of rules on patents and other forms of intellectual property in shaping future food systems and certain issues surrounding these.

NTRODUCTION

## Farming, Food and Global Rules

#### Geoff Tansey

This chapter first gives a brief overview of today's dominant food system in which four key words – power, control, risks and benefits – are seen as vital for the major actors in the system. It discusses the dynamics of the system and then provides a brief background to the legal fiction that is intellectual property – patents, copyright, plant variety protection, trademarks, and so forth – and associated concerns as global rules on it continue to grow. Finally, the chapter looks at the growing role of intellectual property in food and farming and the concerns surrounding this.

#### Introduction

Serious doubts have been raised about the longterm viability of the industrial farming model that is spreading from the industrialized world to other countries. Yet the long-term viability of farming is central to ensuring food security for everyone on this planet (Box 1.1). Many now call more ecologically sustainable for approaches to farming built around biodiversity and ecology. Yet others, sure of humankind's inventive capacity or responding to their industry's interests, promote further intensification and industrial approaches to farming as the way forward. Thus the future direction of farming is highly contested (Lang and Heasman, 2004).

What is clear is that there are serious flaws in a food system that globally leaves more than 850 million people undernourished and over 1 billion overweight (300 million of them obese). Some 2 billion people also suffer from vitamin and micronutrient shortages. Undernutrition in pregnant women and young babies can have irreversible effects for life, while obese people's lives are threatened by diet-related noncommunicable diseases such as diabetes and heart attacks.

For decades, governments have made fine commitments to end hunger and deal with malnutrition, notably at the World Food Summit held at the UN Food and Agriculture Organization's Headquarters in Rome in 1996 (Box 1.2). They have also recognized, at least since the first global conference on the environment in Stockholm in 1972, that the environmental impact and consequences of human activity on the planet are fundamental to our survival. Yet it took almost 20 years before the central role of biodiversity as the basis for healthy ecosystems was addressed internationally (see Chapter 5).

Agricultural biodiversity, which has been developed through the creative activity of farmers over thousands of years (Chapter 6),

### Box 1.1 Levels and elements of food security

Globally, food security depends on a range of things, including:

- our ability to minimize/manage/react to climatic change and disruptions to food production by holding suitable stock levels and having emergency distribution arrangements in place; and
- ensuring new technologies enhance this capacity and do not increase the risk of major disruptions in food supply through unforeseen consequences on ecological viability.

Regionally and nationally it includes:

- maintaining the capacity to produce and/or import the food requirements of a population and ensuring a distribution system or entitlements that enable all people within the borders to produce or acquire the food they need (by production, purchase or special schemes);
- maintaining an R&D (research and development) system that includes farmers and is able to deliver continued improvements to all aspects of production systems used by the full range of farmers in the country and cope with variability (agro-ecological and economic) and climatic changes; and
- ensuring both rural and urban dwellers are able to secure their livelihoods and so have access to the food they need, either from direct production, purchase or barter.

At the community and household levels it requires:

- continued ability to maintain livelihoods that allow production/procurement of food needs in an appropriate manner;
- use of risk management strategies suitable to local needs and customs to prevent impoverishment;
- prevention of conflicts and of the use of food as a weapon;
- support for those in marginal areas/environments to increase productivity, or if they are forced out for there to be alternative livelihood possibilities available; and
- equitable gender and inter- and intra-household distribution.

Source: Adapted from Tansey (2002)

and is a necessity for food security, was discussed in the 1980s and 1990s. Concerns over genetic erosion and the continuing loss of the many varieties of plants important for human survival led to a major conference of the UN Food and Agriculture Organization (FAO) in 1996 and a Global Plan of Action to combat the loss of plant genetic diversity. Unfortunately, similar losses of animal genetic diversity are only now beginning to be addressed (Box 6.6) and action on both is far from adequate.

Another recent change has been the rapid extension of a legal system (patents) developed to encourage innovation in inanimate objects into the area of living organisms. This was led by the US in the 1980s. It is linked to the commercial application of insights from a major revolution in our understanding of biology that allows new techniques such as genetic engineering and its application in medicine and agriculture in particular. For some, the whole idea of extending patents into the living world is intrinsically wrong. For others, problems only arise should there be adverse consequences. The push to extend patents has not only come from commercial interests in biology but also from developments in information science and the ability to digitally encode and manipulate all kinds of information.

#### Box 1.2 Fine words, poor implementation

*Everyone has a right to a standard of living adequate for the health and wellbeing of himself and his family, including food.* (Universal Declaration of Human Rights, 1948)

States Parties ... recognize the fundamental right of everyone to be free from hunger. (International Covenant on Economic, Social and Cultural Rights, 1966)

Every man, woman and child has the inalienable right to be free from hunger and malnutrition in order to develop fully and maintain their physical and mental faculties. Society today already possesses sufficient resources, organizational ability and technology and hence the competence to achieve this objective. Accordingly, the eradication of hunger is a common objective of all the countries of the international community, especially of the developed countries and others in a position to help. (World Food Conference, 1974)

We pledge to act in solidarity to ensure that freedom from hunger becomes a reality. (International Conference on Nutrition, 1992)

We, the Heads of State and Government, or our representatives, gathered at the World Food Summit at the invitation of the Food and Agriculture Organization of the United Nations, reaffirm the right of everyone to have access to safe and nutritious food, consistent with the right to adequate food and the fundamental right of everyone to be free from hunger.

We pledge our political will and our common and national commitment to achieving food security for all and to an ongoing effort to eradicate hunger in all countries, with an immediate view to reducing the number of undernourished people to half their present level no later than 2015.

Food should not be used as an instrument for political and economic pressure. We reaffirm the importance of international cooperation and solidarity as well as the necessity of refraining from unilateral measures not in accordance with the international law and the Charter of the United Nations and that endanger food security. (World Food Summit, 1996)

In 1970, there were about 960 million hungry people. Today there are just over 100 million less<sup>\*</sup>. There are, of course, many more people in the world today than at the time of the first World Food Summit in 1974 – called after a major famine in Ethiopia in the early 1970s, indicating that there has been progress in feeding people since then. However, this progress has not gone far enough. Food production in general – although not in sub-Saharan Africa – has kept pace with or exceeded population growth. Moreover, obesity was not a major global concern then, although it worried some, especially in the US.

The world is in danger of failing to meet the relatively modest aim agreed in the 1996 World Food Summit of halving the *number* of hungry people by 2015. Even this aim was watered down further in the Millennium Development Goals, where it became the more modest goal of halving the *proportion* of hungry people, which may also be missed.

*Note:* \* In 1969–1971 there were just over 960 million people undernourished in developing countries. This had fallen to 820 million in 2001–2003, with a further 24.7 million in countries in transition and 9.3 million in industrialized countries making a total of 854 million.

Source: FAO, see www.fao.org/faostat/foodsecurity/index\_en.htm for details

In a world with global markets, enterprises and problems, national responses and rules are no longer sufficient to tackle sensitive food, environmental and economic issues. New global negotiating processes have led to a range of new treaties on trade, biodiversity, and plant genetic resources for food and agriculture which were influenced by the concerns of some countries about patents and other forms of intellectual property (IP).

#### New institutions, new challenges

In the 21st century, new institutions producing global rules are reshaping the framework in which people concerned with food operate – from smallholders and farm families to global corporations. However, because of the political weight which they command in developed countries, the latter have a disproportionate impact in shaping the increasingly changing global rules within which different actors in the food system have to operate.

Some key questions arise from these changes: What will the long-term impact of these global rules be? Whose interests will they serve? Will they help make the food system more functional, in reducing all forms of malnutrition, from under- to over-nutrition, in an ecologically sustainable manner? But to address these we need an understanding of just what the rules are, how they arose and what may be done with them in the future. This book provides a guide to some of the global rules that:

- govern trade, in particular those that link trade rules to those on patents, copyright, trademarks and other forms of IP. These privilege some to the detriment or exclusion of others, in theory for the social and economic benefit of all (Chapters 2, 3 and 4);
- aim to conserve and promote the use of the enormous biodiversity on the planet

and ensure the sharing of the benefits from using this (Chapter 5); and

• make special provision for agricultural biodiversity in the field of plants (but not yet that of animals), dealing with its unique characteristics as a way of safeguarding future food security globally (Chapter 6).

Different interests have been driving the various negotiations on these rules, which have also led to the creation of new global institutions. Perhaps the most important of these is the creation, in 1995, of the World Trade Organization (WTO), which came out of the Uruguay Round of trade talks begun in 1986 under the General Agreement on Tariffs and Trade (GATT). The key difference between the WTO and existing UN organizations - specialthe ized agencies like World Health Organization (WHO) and the FAO or that dealing with the Convention on Biological Diversity (CBD), which administratively is part of the UN Environment Programme (UNEP) - is that the WTO has a binding dispute settlement mechanism backed by sanctions. This means that countries that fail to follow its rules face real consequences, which is not the case for most other international bodies, except the UN Security Council.

When the WTO was set up, it brought agriculture fully under the trade regime for the first time, as well as introducing rules on plant and animal health (sanitary and phytosanitary standards) and IP. IP rules were introduced into the WTO against the wishes of developing countries, however, and with relatively little involvement of most stakeholders in developed countries. Instead, they were promoted and initially drafted by a small group of transnational actors from four major industries - film, music, software, and pharmaceuticals and biotechnology (Drahos, 1995; Drahos and Braithwaite, 2002; Matthews, 2002; Sell, 2003). This group saw that in global markets they needed global rules on IP if their business model was to survive and they were to capture