INTELLECTUAL PROPERTY RIGHTS
AND CLIMATE CHANGE

As the world confronts global warming, there is a growing consensus that the TRIPS Agreement could be a more effective instrument for mitigating climate change. In this innovative work, Wei Zhuang systematically examines the contextual elements that can be used in the interpretation of the TRIPS Agreement with a view to enhancing innovation and transfer of environmentally sound technologies. Zhuang proposes a balanced and pro-competitive interpretation that could be pursued by policy makers and negotiators. This comprehensive multidisciplinary study will help academics and policy-makers improve their understanding of the contemporary international legal regimes governing intellectual property rights and innovation and transfer of environmentally sound technologies. It also offers practical guidance for further developing a legal system capable of responding to the challenges posed by climate change.

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Intellectual Property Rights and Climate Change

INTERPRETING THE TRIPS AGREEMENT FOR ENVIRONMENTALLY SOUND TECHNOLOGIES

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Contents

List of Figures xiii
Foreword by Professor Carlos Correa xv
Acknowledgements xix
List of Abbreviations xxii
Table of Cases xxv
Table of Treaties, Declarations, Resolutions and Others xxxi

1 Introduction 1
  1.1 The Importance and Purpose of This Study 1
  1.2 The Scope and Structure of This Study 5

PART I INTELLECTUAL PROPERTY RIGHTS, INNOVATION AND TRANSFER OF ESTS 9

2 Concepts and Context: IPRs, Innovation and Transfer of ESTs 11
  2.1 Innovation and Transfer of Technology as Part of the Solution to Climate Change 11
  2.2 Describing Innovation and Transfer of Environmentally Sound Technologies 13
    2.2.1 Defining Environmentally Sound Technologies 13
    2.2.2 Describing Technology Transfer 16
      2.2.2.1 Definition of Technology Transfer 16
      2.2.2.2 Channels of Technology Transfer 18
  2.3 Fundamental Issues in Innovation and Transfer of ESTs 25
    2.3.1 ESTs as “Global Public Goods” 25
    2.3.2 Failures in the Markets for Technology and IPRs as a Policy Response 26
    2.3.3 The Concept of IP Rights and Their Justification 28
## Table of Contents

2.4 The Global Distribution of Innovation and International Transfer of ESTs: Evidence to Date

2.4.1 Literature Review: Who Owns ESTs and Who Are the Major EST Transferees? 32

2.4.2 Empirical Study: Global Distribution of Innovation and International Transfer of ESTs

2.4.2.1 High Concentration of EST innovations as Indicated by Patent Filing under PCT 38

2.4.2.2 The Direction of International Technology Transfer – Which Countries Are Deriving Income from IPRs? 41

2.4.2.3 The Strengthening of IPRs and the Rise of Revenue Transfer 43

3 International Legal Framework Governing IPRs, Innovation and Transfer of Technologies, Including ESTs

3.1 Introduction 47

3.2 The NIEO Approach to Regulate Innovation and Transfer of Technology

3.2.1 The Revision of the Paris Convention

3.2.1.1 Introduction to the Paris Convention 50

3.2.1.2 The Demand for the Revision of the Paris Convention 51

3.2.1.3 The Unfinished Negotiations for the Revision 53

3.2.2 The Unsuccessful Creation of an International Code of Conduct for the Transfer of Technology

3.2.2.1 The Major Characteristics of the Latest Draft 55

3.2.2.2 The Failure of the Code and Its Implications 57

3.3 Intellectual Property Rights and Technology Transfer under the TRIPS Agreement

3.3.1 The Emergence of the TRIPS Agreement 60

3.3.2 Global Minimum IPR Standards and Their Implications

3.3.2.1 Commitments to Global Minimum IPR Standards 65

3.3.2.2 The Implications of Global Minimum IPR Standards 69

3.3.3 Technology Transfer-Oriented Provisions of the TRIPS Agreement 74
Table of Contents

3.4 Technology Transfer and Intellectual Property Rights in International Climate Framework 78
  3.4.1 Technology Transfer under the UNFCCC Agreements 79
    3.4.1.1 The Principle of Common but Differentiated Responsibilities 79
    3.4.1.2 EST Transfer Commitments under the UNFCCC 82
    3.4.1.3 The Kyoto Protocol 87
    3.4.1.4 Technology Transfer in the Post-Kyoto Climate Regime 91
    3.4.1.5 The Adoption of the Paris Agreement 94
  3.4.2 Intellectual Property Rights in the International Climate Change Regime 96
    3.4.2.1 Technology Transfer and IPRs at the 1992 Rio Summit 96
    3.4.2.2 Divergent Proposals or Unilateral Actions on the Road to Copenhagen 98
    3.4.2.3 The Copenhagen Negotiations and Afterwards 104
  3.5 Conclusion 106

4 The Effects of Minimum IPR Standards Shaped by TRIPS on Innovation and Transfer of ESTs 109
  4.1 Introduction 109
  4.2 Mandatory Minimum IPR Standards Under TRIPS 110
    4.2.1 Patents 111
    4.2.2 Trade Secrets 114
    4.2.3 Enforcement of IPRs 118
    4.2.4 Controversy over the Effect of Minimum IPR Standards on Technology Transfer 119
  4.3 The Positive Role of Minimum IPR Protection in Facilitating Innovation and Transfer of ESTs 121
    4.3.1 IP Rights as an Enabling Factor for Innovation of ESTs 122
      4.3.1.1 The Incentive Effects of IPRs on Innovation of ESTs 122
      4.3.1.2 The Role of Patent-Induced Information Disclosure in Innovation of ESTs 128
Table of Contents

4.3.2 Strong IP Rights as a Prerequisite for IP Holders to Transfer ESTs 132
  4.3.2.1 IPRs and FDI, Licensing and Trade 133
  4.3.2.2 IPRs as an Important Factor Influencing the Transfer of ESTs 137
4.4 The Potentially Negative Effects of Strong IPR Protection on Innovation and Transfer of ESTs 139
  4.4.1 The Exclusive Effects of IPRs on Innovation of ESTs 140
  4.4.2 IP Rights and Abusive or Anti-Competitive Practices in EST Transfer 143
    4.4.2.1 Patent Blockage 145
    4.4.2.2 High Licensing Fees 148
    4.4.2.3 Refusal to License 150
    4.4.2.4 Other Abusive or Anti-Competitive Practices 153
4.5 Concluding Remarks 155

PART II INTERPRETING THE TRIPS AGREEMENT FOR FACILITATING INNOVATION AND TRANSFER OF ESTS 157

5 Rules Governing Treaty Interpretation and the Elements against Which the TRIPS Agreement Should Be Interpreted 159
  5.1 Introduction 159
  5.2 Rules Governing Treaty Interpretation 162
    5.2.1 The Principle of Good Faith 164
      5.2.1.1 The Principle of Effectiveness 166
      5.2.1.2 The Link Between Good Faith and Legitimate Expectations 168
    5.2.2 Determining Ordinary Meaning under Article 31 170
      5.2.2.1 Ordinary Meaning 170
      5.2.2.2 “In the Light of Its Object and Purpose” 172
      5.2.2.3 “In Their Context” 174
      5.2.2.4 “Elements to Be Considered Together with the Context” 176
    5.2.3 Supplementary Means of Interpretation under Article 32 186
  5.3 The Object and Purpose of WTO and TRIPS 192
    5.3.1 The Sustainable Development Objective of the WTO 193
      5.3.1.1 Sustainable Development as an Objective of the WTO 194
Table of Contents

5.3.1.2 The Role of Sustainable Development in Interpreting TRIPS

5.3.2 The Object and Purpose of the TRIPS Agreement

5.3.2.1 Article 7: “Objectives”

5.3.2.2 Article 8: “Principles”

5.3.2.3 Interpreting the TRIPS Agreement in Light of its Objectives and Principles

5.4 Contextual Elements for Interpreting the TRIPS Agreement

5.4.1 Subsequent Agreement: The Doha Declaration

5.4.1.1 The Doha Declaration as a Subsequent Agreement under Article 31(3)(a) of the VCLT

5.4.1.2 The Doha Declaration: Its Context and Content

5.4.1.3 The Implications of the Doha Declaration

5.4.2 Relevant Subsequent Practices in the Interpretation of the TRIPS Agreement

5.4.3 Article 4.5 of the UNFCCC as Relevant Rules of International Law

5.5 Conclusion

6 Interpreting Patent–Related Flexibilities in the TRIPS Agreement for Facilitating Innovation and Transfer of ESTs

6.1 Introduction

6.2 Patentable Subject Matter Under Article 27

6.2.1 Non-Discrimination (Article 27.1) and ESTs

6.2.1.1 The Principle of Non-Discrimination under Article 27.1

6.2.1.2 “Non-Discrimination as to the Field of Technology” and ESTs

6.2.2 Patent Eligibility Requirements

6.2.2.1 Interpretation of the Patentability Requirements

6.2.2.2 The Relevance of the Patentability Requirements for WTO Members to Facilitate Innovation and Transfer of ESTs

6.2.3 Permissible Exclusions for ESTs?

6.3 Limits to Patent Rights in the TRIPS Agreement

6.3.1 Introduction
Table of Contents

6.3.2 Limited Exceptions to Patent Rights under Article 30

6.3.2.1 Conditions in General 259
6.3.2.2 Interpretation of the “Three-Step” Test 262
6.3.2.3 Examples of Relevant Exceptions under Article 30 for ESTs 270
6.3.2.4 Conclusion 272

6.3.3 Exhaustion of Rights and Parallel Imports

6.3.3.1 Exhaustion of Rights 273
6.3.3.2 Parallel Imports for Patented ESTs 276

6.4 Compulsory Licensing under Article 31

6.4.1 The Concept of Compulsory Licensing 278
6.4.2 Grounds for Granting Compulsory Licences

6.4.2.1 Grounds for Granting Compulsory Licences in General 282
6.4.2.2 Local Working Requirements and Non-Discrimination under Article 27 285
6.4.2.3 Enumerated Grounds for Compulsory Licences under Article 31 289

6.4.3 Conditions for the Grant of Compulsory Licences

6.4.3.1 Procedural Requirements 291
6.4.3.2 Substantive Requirements 293

6.4.4 Compulsory Licensing as a Policy Lever for EST Transfer

6.4.4.1 The Case of Improved Access to Medicine and Compulsory Licences 298
6.4.4.2 Compulsory Licences for Transfer of ESTs: Feasibilities and Opportunities 300
6.4.4.3 Compulsory Licences for Transfer of ESTs: Challenges 304

6.5 Conclusion 307

7 Interpreting Competition-Related Flexibilities in the TRIPS Agreement for Facilitating Innovation and Transfer of ESTs

7.1 Introduction 311
7.2 Article 8.2: Basic Principle

7.2.1 Scope of Application 315
7.2.1.1 Abuse of IP Rights 316
Table of Contents

7.2.1.2 Practices That Unreasonably Restrain Trade 318
7.2.1.3 Practices That Adversely Affect the
International Transfer of Technology 320
7.2.2 The Requirement That Appropriate Measures Be
TRIPS-Consistent 322
7.2.3 Relevance of Article 8.2 for EST Transfer 325
7.3 Article 40: Control of Anti-Competitive Practices in
Contractual Licences 326
7.3.1 Legal Effects of Article 40.1 327
7.3.2 Members’ Sovereign Power to Regulate
Anti-Competitive Licensing Practices under
Article 40.2 329
7.3.2.1 A Competition Approach to Regulate
IPR-Related Abusive or Anti-Competitive
Licensing Practices and Conditions 330
7.3.2.2 Examples of Anti-Competitive Practices 333
7.3.3 Relevance for EST Transfer 335
7.4 Article 31(k): Compulsory Licensing as a Remedy to
Anti-Competitive Practices 337
7.4.1 Interpretation of Article 31(k) 337
7.4.2 Relevance for the Innovation and Transfer
of ESTs 339
7.5 Conclusion 343

8. Conclusions and Recommendations 346
8.1 Introduction 346
8.2 Problems Identified 347
8.2.1 Global Asymmetries in the Innovation and
Transfer of ESTs 347
8.2.2 The Role of IPRs as a Contentious Issue in
International Climate Change Negotiations 348
8.2.3 The Mixed Effects of Minimum IPR Standards
Shaped by TRIPS on Innovation and Transfer
of ESTs 349
8.3 A Balanced and Pro-Competitive Interpretation of
the TRIPS Flexibilities 350
8.3.1 The Methodology of Legal Interpretation 350
8.3.2 Interpretation of Patent-Related Flexibilities 352
8.3.3 Interpretation of Competition-Related Flexibilities 354
## Table of Contents

8.4 The Insufficiency of Treaty Interpretation and Possible Remedies 355
  8.4.1 Factors Affecting the Sufficiency of Treaty Interpretation 356
  8.4.2 A Doha-Type Declaration on Intellectual Property Rights and Climate Change 358
    8.4.2.1 Potential Elements of the Declaration 359
    8.4.2.2 Potential Challenges and Solutions 361
  8.4.3 International Guidelines for Licensing of IPR-Protected ESTs 364
    8.4.3.1 The Need for International Guidelines for Licensing of IPR-Protected ESTs 365
    8.4.3.2 Potential Elements for Guidelines on Licensing IP-Protected ESTs 366
    8.4.3.3 Potential Benefits and Challenges of the Licensing Guidelines 368

Appendix 371

Bibliography 373

Index 411
Figures

2.1 Share of claimed priority patents of ESTs vs. all technologies under PCT (1999–2011) page 39
2.2 The patenting trend as measured by annual share of claimed priority patents filed under the PCT in the EST fields from 1999 to 2011 40
2.3 Share of charges for the use of intellectual property, payments (BoP, current US$) (2005–2011) 42
2.4 Share of charges for the use of IP, receipts (BoP, in current US$) (2005–2011) 43
2.5 The trend of annual net incomes from licensing fees and royalties of all technologies (1986–2012, in current billion US$) 44
Foreword

The implications of intellectual property have been extensively studied in some areas, such as those relating to public health and, to a lesser extent, food security. A large number of books, journal articles and other documents have been published on issues relating to access to medicines, and on modalities of intellectual property protection for seeds. There is also a growing number of scholarly contributions and other studies on such protection as applied in the field of environmental technologies, including on the role that patents may play as incentives for innovation or as potential obstacles for the dissemination of those technologies.

Despite the global consensus about the need to address the effects of climate change, the North-South divergences that have characterized the debates on intellectual property, public health and food security have also emerged in relation to environmental technologies. There is great disagreement on the best ways in which the development and diffusion of the required technologies will be encouraged. Thus, in the negotiations conducted in the context of the United Nations Framework Convention on Climate Change (UNFCCC), some developing countries submitted proposals aiming at the exclusion from patent protection of environmentally sound technologies (ESTs) or subjecting them to compulsory licenses. One developing country submitted to the Council for TRIPS in WTO a proposal to carve out an exception under the TRIPS Agreement for such technologies. Not surprisingly, these proposals have encountered a strong opposition from developed countries, which account for an overwhelming share of the granted patents relating to ESTs worldwide.

The impact of intellectual property in relation to ESTs also became an important issue in the debates leading to the adoption of the Sustainable Development Goals (SDGs). In its Synthesis report on the Sustainable Development Goals, UN Secretary General called upon governments to
“make substantial progress in the development, transfer and dissemination of such technologies and knowledge to developing countries on favourable, concessional and preferential terms”, and to “ensure that our global intellectual property regimes and the application of the flexibilities of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) are fully consistent with and contribute to the goals of sustainable development”.

The subject of development and diffusion of ESTs is particularly complex, because – unlike the case of medicines and seeds – ESTs comprise a wide range of technologies including, inter alia, solar photovoltaic, geothermal, wind, and carbon capture technologies. The modes of production and exploitation of ESTs vary significantly, as well as the extent to which patents and other forms of intellectual property rights may prevent competition and, in particular, the transfer of technology to developing countries to deal with the effects of climate change. Despite the progress made in some fields in countries such as China and India, the North-South technological asymmetry is, overall, deep and limitations to the access to protected technologies may not only undermine national and regional but also global efforts regarding adaptation to and mitigation of climate change.

This book contains what is perhaps the first comprehensive study on the characteristics and possible implications of the international intellectual property and technology transfer regime as applied to ESTs. To this end, the author delves into the foundations of intellectual property and reviews the historical developments that have led to the current international system, including the failed initiative to adopt an International Code on Transfer of Technology. As a starting point for characterizing the problem existing in this field, the book presents an exhaustive literature review and explores which countries are major ESTs creators, which countries derive income from intellectual property rights associated to those technologies, and how the TRIPS Agreement influences the trends of technology transfer. Valuable insights on the available empirical information are provided in this respect. Importantly, this book is the outcome of an interdisciplinary research combining economics and various disciplines of national and international law, including law of the treaties, WTO law and competition law.

Although the study of international intellectual property rules is the core of the book, it also examines the EST transfer obligations under the UNFCCC Agreement, and the extent to which they have been complied with. The author explores who the obligation-bearers are, whether EST transfer commitments are binding on Parties, what kinds of mechanisms exist for the implementation of EST transfer and whether they are adequate. This analysis
is of particular importance to understand the failure of the current system to ensure a wide dissemination of climate change mitigation and adaptation technologies.

As noted, the author undertakes a thorough analysis of the minimum standards incorporated into the TRIPS Agreement and the room they leave for innovation through imitation and technology transfer to developing countries. This study is particularly relevant for ESTs. But the discussion of the main interpretive issues presented by the TRIPS Agreement and the positions taken by WTO panels and the Appellate Body provide useful elements to consider the extent of obligations under that Agreement in any field of technology. The same comment applies to the detailed analysis of the patent- and competition-related provisions of said Agreement. Without losing its focus on ESTs, the careful interpretation (based on the principles of the Vienna Convention on the Law of Treaties) offered by the author is relevant and useful beyond the field of ESTs.

Based on the analysis carried out, the author confirms a number of “TRIPS flexibilities” allowed by the TRIPS Agreement. Although there is a vast literature on the subject, she specifically explores how to make the TRIPS Agreement a more efficient and effective instrument for facilitating innovation and transfer of ESTs through legal interpretations.

Among other important contributions made by this book, it is worth mentioning the empirical study on the global distribution of innovation and international transfer of ESTs based on the latest available data; a comprehensive study of the effects of the minimum standards contained in the TRIPS Agreement on innovation and transfer of ESTs to developing countries; a thorough exploration of the contextual elements for interpreting the TRIPS Agreement for facilitating innovation and transfer of ESTs; and concrete recommendations on how relevant TRIPS provisions could be interpreted to that end. The author proposes in this respect a Declaration on intellectual property and climate change (similar to the Doha Declaration on the TRIPS Agreement and public health) with a view to confirming a balanced and pro-competitive interpretation of the TRIPS Agreement. Given the limited guidance provided by competition-related provisions in the Agreement, the author also briefly recommends international guidelines for licensing of intellectual property protected ESTs.

Carlos Correa
Buenos Aires
Foreword
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This book would not have been possible without the support of many people and institutions. I take this opportunity to extend my sincere gratitude and appreciation to them.

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xix
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Abbreviations

ALBA Bolivarian Alliance for the Peoples of Our America
AWGLCA Ad Hoc Working Group on Long-Term Co-operative Action
BASIC Brazil, South Africa, India and China
BRIC Brazil, India, China and Russia
CBD Convention on Biological Diversity
CBDR Common but differentiated responsibilities
CCS Carbon capture and storage
CDIP Committee on Development and Intellectual Property
CDM Clean Development Mechanism
CETs Clean energy technologies
CFI Court of First Instance
CIEL Centre for International Environmental Law
CISDL Centre for International Sustainable Development Law
CJEU Court of Justice of the European Union
CO$_2$ Carbon dioxide
COP Conference of the Parties
CSP Concentrated solar power
DOC Document
DSU Dispute Settlement Understanding
EC European Community
EGTT Expert Group on Technology Transfer
EPO European Patent Office
ESTs Environmentally sound technologies
EU European Union
List of Abbreviations

FDI  Foreign direct investment
FRAND  Fair, reasonable and non-discriminatory
FTA(s)  Free Trade Agreement(s)
G77  The Group of 77
GATS  General Agreement on Trade in Services
GATT  General Agreement on Tariffs and Trade
GEF  Global Environment Facility
GHGs  Greenhouse gases
GPRS  General packet radio service
GSP  Generalised System of Preferences
HFC-134a  Tetrafluoroethane
ICC  International Chamber of Commerce
ICTSD  International Centre for Trade and Sustainable Development
IDEA  Innovation, Development and Employment Alliance
IGCC  Integrated Gasification Combined Cycle
ILO  International Law Commission
IP  Intellectual Property
IPC  International Patent Classification
IPCC  Intergovernmental Panel on Climate Change
IPRs  Intellectual property rights
IUCN  International Union for Conservation of Nature
LED  Light-emitting diode
MEAs  Multilateral Environmental Agreements
MFN  Most favoured nation
MNCs  Multinational companies
NGOs  Non-governmental organisations
NIEO  New International Economic Order
OECD  Organisation for Economic Co-operation and Development
OPEC  Organisation of the Petroleum Exporting Countries
PATSTAT  Patent Statistical Database
PCT  Patent Cooperation Treaty
PV  Photovoltaic
R&D  Research and development
SAIC  State Administration for Industry and Commerce
SBI  Subsidiary Body for Implementation
SBSTA  Subsidiary Body for Scientific and Technological Advice
## List of Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>SIDCs</td>
<td>Small island developing countries</td>
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<tr>
<td>SMEs</td>
<td>Small and medium enterprises</td>
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<td>SPS Agreement</td>
<td>Agreement on the Application of Sanitary and Phytosanitary Measures</td>
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<td>TBT Agreement</td>
<td>Technical Barriers to Trade Agreement</td>
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<td>TEC</td>
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<td>TOT Code</td>
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Table of Cases

**WTO REPORTS**


<table>
<thead>
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<th>Table of Cases</th>
</tr>
</thead>
</table>


Table of Cases xxvii


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Table of Cases


Table of Cases


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