

# Contents

---

<b>Contributors</b>	<b>ix</b>
<b>Preface</b> <i>Catherine L. Ives</i>	<b>xi</b>
<b>Acknowledgements</b>	<b>xiii</b>
1 The Agricultural Biotechnology for Sustainable Productivity Project: a New Model in Collaborative Development <i>Catherine L. Ives, Bruce M. Bedford and Karim M. Maredia</i>	1
<b>Part I: Needs and Potential Uses of Agricultural Biotechnology: Perspectives of Developing Countries</b>	<b>15</b>
2 Addressing Agricultural Development in Egypt through Genetic Engineering <i>Magdy Madkour</i>	17
3 The Release of Transgenic Varieties in Centres of Origin: Effect on Biotechnology Research and Development Priorities in Developing Countries <i>Ariel Alvarez-Morales</i>	27
4 Current Status of Agricultural Biotechnology Research in Indonesia <i>Achmad M. Fagi and Muhammad Herman</i>	35
5 Agricultural Needs in Sub-Saharan Africa: the Role of Biotechnology <i>Cyrus G. Ndiritu and John S. Wafula</i>	49

<b>Part II: The Application of Biotechnology to Food Security Crops</b>	<b>61</b>
6 Development of Insect-resistant Maize and Its Potential Benefits to Developing Countries <i>Pam Robeff</i>	63
7 The Application of Biotechnology to Potato <i>Marc Ghislain, Maddalena Querci, Merideth Bonierbale, Ali Golmirzaie and Peter Gregory</i>	73
8 Development of Virus-resistant Sweetpotato <i>Maud Hinchee</i>	89
9 The Application of Biotechnology to Rice <i>Gurdev S. Khush and Darshan S. Brar</i>	97
<b>Part III: The Application of Biotechnology to Non-traditional Crops</b>	<b>123</b>
10 Current Advances in the Biotechnology of Banana <i>Oscar Arias</i>	125
11 The Application of Biotechnology to Date Palm <i>Mohamed Aaouine</i>	133
12 The Use of Coat Protein Technology to Develop Virus-resistant Cucurbits <i>Hector Quemada</i>	147
13 The Biotechnology of Oil Palm <i>Suan-Choo Cheah</i>	161
<b>Part IV: Issues Surrounding the Development, Transfer, Adaptation and Utilization of Agricultural Biotechnology for Emerging Nations</b>	<b>171</b>
14 Making a Difference: Considering Beneficiaries and Sustainability while Undertaking Research in Biotechnology <i>Joel I. Cohen</i>	173
15 Rice Biotechnology Capacity Building in Asia <i>Gary H. Toenniessen</i>	201
16 International Biosafety Regulations: Benefits and Costs <i>Robert J. Frederick</i>	213
17 Cassava Biotechnology Research: Beyond the Toolbox <i>Ann Marie Thro</i>	229
18 Fundación Perú: a Path to Capacity Building <i>Fernando Cillóniz</i>	247

**Part V: Developing and Accessing Agricultural Biotechnologies: 253  
International, US and Developing Country Issues, Perspectives  
and Experiences**

19	Transferring Agricultural Biotechnology: US Public/Private Sector Perspectives <i>Frederic H. Erbisch</i>	255
20	International Intellectual Property and Genetic Resource Issues Affecting Agricultural Biotechnology <i>John H. Barton</i>	273
21	Developing Capacity and Accessing Biotechnology Research and Development (R&D) for Sustainable Agriculture and Industrial Development in Zimbabwe <i>Joseph Muchabaiwa Gopo</i>	285
22	The Technology Transfer System in Thailand <i>Lerson Tanasugarn</i>	297
23	Trade in Conventional and Biotechnology Agricultural Products <i>Quentin B. Kubicek</i>	311
<b>Part VI: Can Developing Countries Turn Biotech into Business? 315 Moving Research Results into Products</b>		
24	Wild Biodiversity: the Last Frontier? <i>Nicolás Mateo</i>	317
25	Developing an Agricultural Biotechnology Business: Perspective from the Front Lines <i>Pamela G. Marrone</i>	335
<b>Index</b>		<b>343</b>