

AGRICULTURE, BIODIVERSITY AND MARKETS

Livelihoods and Agroecology
in Comparative Perspective



Edited by Stewart Lockie and David
Carpenter

Agriculture, biodiversity and markets

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Contents

<i>Tables, figures and boxes</i>	v
<i>Acronyms</i>	vii
<i>Contributors</i>	ix
<i>Acknowledgements and disclaimer</i>	xvi

1 Agriculture, biodiversity and markets <i>Stewart Lockie and David Carpenter</i>	1
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PART I AGROBIODIVERSITY IN CONTEXT

2 The ecological role and enhancement of biodiversity in agroecosystems <i>Miguel Altieri and Paul Rogé</i>	15
3 The human ecology of agrobiodiversity <i>David Dumaresq, David Carpenter and Stewart Lockie</i>	33
4 Multilateral and national regulatory regimes for agrobiodiversity <i>Gerald Moore</i>	47
5 Plant Breeders' Rights and on-farm seed-saving <i>C.S. Srinivasan</i>	61
6 International biosecurity frameworks to protect biodiversity with emphasis on science and risk assessment <i>Robert Black and Irina Kireeva</i>	77

PART II AGROBIODIVERSITY AND MODERNIZATION

7 Complementarity in the conservation of traditional and modern rice genetic resources on the Philippine island of Bohol <i>David Carpenter</i>	99
8 The contribution of biodiversity to modern intensive farming systems <i>Amani Omer, Unai Pascual and Noel Russell</i>	117
9 Genetic erosion and degradation of ecosystem services of wetland rice fields: A case study from Western Ghats, India <i>Nadesapanicker Anil Kumar, Girigan Gopi and Parameswaran Prajeesh</i>	137

PART III AGROBIODIVERSITY, STANDARDS AND MARKETS

10	Environmental certification: standardization for diversity <i>Tad Mutersbaugh and Dan Klooster</i>	155
11	Challenges of global environmental governance by non-state actors in the coffee industry: Insights from India, Indonesia and Vietnam <i>Jeff Neilson, Bustanul Arifin, C.P. Gracy, Tran Ngoc Kham, Bill Pritchard and Lindsay Soutar</i>	175
12	Geographical indications and biodiversity <i>Erik Thévenod-Mottet</i>	201
13	Value chain coordination for agrobiodiversity conservation <i>Jon Hellin, Sophie Higman and Alder Keleman</i>	213
PART IV AGROBIODIVERSITY AND PAYMENT FOR ECOLOGICAL SERVICES		
14	Paying for biodiversity conservation in agricultural landscapes <i>Sara J. Scherr, Jeffrey C. Milder and Seth Shames</i>	229
15	Targeting payments for ecological services <i>Edward Stone and JunJie Wu</i>	253
16	The ‘green box’: Multifunctionality and biodiversity conservation in Europe <i>Rosemarie Siebert</i>	269
17	Market instruments and collective obligations for on-farm biodiversity conservation <i>Stewart Lockie and Rebeka Tennent</i>	287
CONCLUSION		
18	Agrobiodiversity and sustainable farm livelihoods: Policy implications and imperatives <i>Stewart Lockie and David Carpenter</i>	303
	<i>Index</i>	315

Tables, Figures and Boxes

Tables

3.1	Physical, biological, socio-economic and cultural determinants of agricultural productivity	34
6.1	Deliberate introductions of alien species that have invaded habitats and reduced biodiversity	85
7.1	Seasonal rice cropping calendar: Campagao	104
7.2	Most popular rice varieties planted in Campagao, 2002	107
7.3	Methods of seed supply, <i>panuig</i> 2002	108
8.1	Summary statistics for variables in the stochastic frontier models for cereal farmers in the East of England	120
8.2	Generalized Likelihood-Ratio Tests for SPF model for cereal farmers in the East of England (1989-2000)	122
8.3	MLE parameter estimates of the generalized Cobb-Douglas SPF model	124
8.4	Average crop output elasticities with respect to all the inputs in the model (1989-2000)	125
9.1	Species found within wet rice fields of Kerala	142
9.2	Characteristics of rice varieties of Wayanad	144
9.3	Status of traditional rice varieties cultivated in Wayanad District	145
10.1	Forest certification costs in Mexico	163
10.2	Representative coffee cultivation practices affecting agrobiodiversity	166
11.1	Comparison of environmental standards of five main sustainability codes for coffee	180
11.2	Certification scheme coverage in India, Indonesia and Vietnam	182
11.3	Top 10 destinations for South Sumatra Robusta in 2007	185
12.1	Examples of Geographical Indications	203
14.1	Farm and landscape management practices that can provide biodiversity conservation services	236
15.1	Agri-environmental programs in the 2008 US farm bill	259
15.2	Comparing targeting strategies	262
17.1	Classification of market-based instruments	289

Figures

2.1	A classification of dominant agricultural agroecosystems on a gradient of diversity and vulnerability to pest outbreak	18
2.2	The relationship between planned and associated biodiversity in promotion of ecosystem function	21
3.1	The human ecology of agroecosystems and agrobiodiversity	36
7.1	The Philippine archipelago, Bohol and Campagao	104
8.1	Change in elasticity of output with respect to biodiversity (1989–2000)	126
8.A1	Saddle point equilibrium in the biodiversity–marketable output (z_t, y_t) phase space	134
9.1	Western Ghats and Sri Lanka political boundaries and biodiversity hotspots	141
10.1	How Forest Stewardship Council certification works	161
11.1	Growth in coffee production across India, Indonesia and Vietnam	176
11.2.	Map showing Bukit Barisan Selatan National Park in the coffee-producing province of Lampung, Indonesia	184
11.3	The coffee-producing district of Kodagu in South India	187
11.4	A multi-strata coffee plantation in Kodagu	189
11.5	Dak Lak province in Vietnam’s Central Highlands	192
15.1	2002 US and EU PES expenditures	257
15.2	Historical US agri-environmental expenditures	258
15.3	Illustrations of threshold effects	263
17.1	Selected Queensland regional natural resource management groups	293

Boxes

5.1	Adaptations of patent law to plant variety protection	66
14.1	Integrating biodiversity in carbon payments in Antioquia, Colombia	240

Appendices

6.A	The theoretical model	132
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Acronyms

4C	Common Code for the Coffee Community
AMF	arbuscular-mycorrhizal fungi
ANAPQUI	Asociación Nacional de Productores de Quinoa, Bolivia
API	Agricultural Price Index
BDS	Business Development Services
BWI	Biodiversity and Wine Initiative, South Africa
CAFÉ	Starbucks Coffee and Farmer Equity Program
CAP	EU Common Agricultural Policy
CAR	WTO Corrective Action Request
CBD	Convention on Biological Diversity
CDBC	Community Development and Biodiversity Conservation
CDM	Clean Development Mechanism of the Kyoto Protocol
CFPRA	Campagao Farmers Production and Research Association, the Philippines
CGIAR	Consultative Group on International Agricultural Research
CITES	Convention on International Trade in Endangered Species
COAG	FAO Committee on Agriculture
CRP	US Conservation Reserve Program
CVSCAFT	Central Visayan State College of Agriculture, Forestry and Technology, the Philippines
Defra	UK Department for Environment, Food and Rural Affairs
DSB	WTO Dispute Settlement Body
EBI	CRP Environmental Benefits Index
ESS	Environmental Stewardship Scheme, UK
EU	European Union
FAO	United Nations Food and Agriculture Organization
FAO	Food and Agriculture Organization of the United Nations
FBA	Fitzroy Basin Association, Australia
FSC	Forest Stewardship Council
FV	Farmer Variety
GATT	General Agreement on Tariffs and Trade
GI	Geographical Indication
GlobalGAP	Global Partnership for Good Agricultural Practice
GMO	Genetically-modified organism
HCVF	High Conservation Value Forest
IBPGR	International Board for Plant Genetic Resources
IPPC	International Plant Protection Convention
IPR	Intellectual property right
IRRI	International Rice Research Institute
ISO	International Organization for Standardization
ISPM	International Standards for Phytosanitary Measures

ITCPGR	International Technical Conference on Plant Genetic Resources
MAO	Municipal Agricultural Office, the Philippines
MASIPAG	Farmer-Scientist Partnership for Development
MBI	Market-based incentive /Market-based instrument
MEA	Millennium Ecosystem Assessment
MSSRF	MS Swaminathan Research Foundation, India
MV	Modern Variety
NAFTA	North American Free Trade Area
NASAA	National Association for Sustainable Agriculture, Australia
NGO	non-governmental organization
NOP	USDA National Organic Program
NQ Dry Tropics	North Queensland Dry Tropics Natural Resource Management Group, Australia
NTFP	non-timber forest product
OECD	Organisation for Economic Co-operation and Development
OIE	World Organisation for Animal Health
PBR	plant breeders' rights
PDO	Protected Designation of Origin
PES	payments for environmental services/payments for ecosystem services
PGI	Protected Geographical Indication
PGRFA	plant genetic resources for food and agriculture
PO	people's organization
PPB	Participatory Plant Breeding
PPM	production and processing method
PRA	pest risk analysis
PRONAA	Programa Nacional de Apoyo Alimentaria (Peru)
PVCA	participatory value chain analysis
PVP	Plant Variety Protection
SEARICE	South East Asian Regional Initiative for Community Empowerment
SMTA	Standard Material Transfer Agreement
SPF	stochastic production frontier
SPS Agreement	Agreement on The Application of Sanitary and Phytosanitary Measures
TE	technical efficiency
TRIPS	WTO Agreement on Trade-Related Aspects of Intellectual Property Rights
TV	Traditional Variety
UNEP	United Nations Environment Program
UPOV	International Union for the Protection of New Varieties of Plant
UPOV Convention	International Convention for the Protection of New Varieties of Plant

US	United States
USDA	United States Department of Agriculture
WIPO	World Intellectual Property Organization
WTO	World Trade Organization
WWF	World Wide Fund for Nature

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1

Agriculture, Biodiversity and Markets

Stewart Lockie and David Carpenter

It is widely accepted that the sustainability of the global ecosystem in general, and of agriculture in particular, is dependent on the preservation, enhancement, and exploitation of biological diversity. Biological diversity—both wild and cultivated—underwrites the sustainability of agricultural production through the provision of the raw genetic material needed to drive innovation and adaptation, and through the provision of ecosystem processes and services that play important functional roles in agricultural systems. Agricultural biodiversity—or agrobiodiversity—plays a pivotal role in the livelihoods of all farmers regardless of resource endowment or geographical location. It provides the basic resources farmers need to adapt to varying conditions in marginal environments and the resources required to increase productivity in favourable areas. Clearly, there is a very close relationship between biodiversity and the livelihoods and well-being of agricultural communities. The need to protect and enhance agricultural biodiversity seems obvious. But what exactly does it mean to protect or enhance agricultural biodiversity? And how is this best achieved? As compelling as the case for agrobiodiversity may appear, these seemingly simple and straightforward questions demand complex and wide-ranging answers.

In introducing the topic of agriculture, biodiversity and markets this chapter will therefore attempt two, seemingly contradictory, things. On the one hand, it will ‘muddy the waters’ by problematizing the notion of biodiversity as it is applied to agricultural systems and their sustainability. On the other, the chapter will seek to restore some clarity by highlighting the conceptual issues, research questions, and policy dilemmas that must be addressed if we are to use biodiversity to make significant improvements to the livelihoods and sustainability of agricultural communities. The argument will be put that the case for promoting biological diversity within agricultural systems is not as obvious as may first appear. Scale effects, species interactions and migration, temporal variability, human values and activities, market relationships, and a host of other factors, conspire to render absolute measures of on-farm species diversity potentially misleading. By itself, in