

Coffee Agroecology A New Approach To Understanding Agricultural Biodiversity Ecosystem Services And Sustainable Development

There is an urgent need to increase agricultural productivity in sub-Saharan Africa in a sustainable and economically-viable manner. Transforming risk-averse smallholders into business-oriented producers that invest in producing surplus food for sale provides a formidable challenge, both from a technological and socio-political perspective. This book addresses the issue of agricultural intensification in the humid highland areas of Africa – regions with relatively good agricultural potential, but where the scarce land resources are increasingly under pressure from the growing population and from climate change. In addition to introductory and synthesis chapters, the book focuses on four themes: system components required for agricultural intensification; the integration of components at the system level; drivers for adoption of technologies towards intensification; and the dissemination of complex knowledge. It provides case studies of improved crop and soil management for staple crops such as cassava and bananas, as well as examples

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of how the livelihoods of rural people can be improved. The book provides a valuable resource for researchers, development actors, students and policy makers in agricultural systems and economics and in international development. It highlights and addresses key challenges and opportunities that exist for sustainable agricultural intensification in the humid highlands of sub-Saharan Africa.

Tropical areas present ecological, cultural and political problems that demand analysis that is distinct from general ecological analysis. The tropical environment is special in many ways, from the lack of a biological down season (winter), to generally poor soil conditions, to a reliance on traditional methods of agriculture in an undeveloped soci
Landscapes are frequently seen as fragments of natural habitat surrounded by a 'sea' of agriculture. But recent ecological theory shows that the nature of these fragments is not nearly as important for conservation as is the nature of the matrix of agriculture that surrounds them. Local extinctions from conservation fragments are inevitable and must be balanced by migrations if massive extinction is to be avoided. High migration rates only occur in what the authors refer to as 'high quality' matrices, which are created by alternative agroecological techniques, as opposed to the industrial monocultural model of agriculture. The authors argue that the only way to promote such high quality matrices is to work with

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rural social movements. Their ideas are at odds with the major trends of some of the large conservation organizations that emphasize targeted land purchases of protected areas. They argue that recent advances in ecological research make such a general approach anachronistic and call, rather, for solidarity with the small farmers around the world who are currently struggling to attain food sovereignty. Nature's Matrix proposes a radically new approach to the conservation of biodiversity based on recent advances in the science of ecology plus political realities, particularly in the world's tropical regions.

Agroecology: A Transdisciplinary, Participatory and Action-oriented Approach is the first book to focus on agroecology as a transdisciplinary, participatory, and action-oriented process. Using a combined theoretical and practical approach, this collection of work from pioneers in the subject along with the latest generation of acknowledged leaders

Feeding the world's growing human population is increasingly challenging, especially as more people adopt a western diet and lifestyle. Doing so without causing damage to nature poses an even greater challenge. This book argues that in order to create a sustainable food supply whilst conserving nature, agriculture and nature must be reconnected and approached together. The authors demonstrate that while the links between nature and food production

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have, to some extent, already been recognized, until now the focus has been to protect one from the impacts of the other. Instead, it is argued that nature and agriculture can, and should, work together and ultimately benefit from one another. Chapters describe efforts to protect nature through globally connected protected area systems and illustrate how farming methods are being shaped to protect nature within agricultural systems. The authors also point to many ways in which nature benefits agriculture through the ecosystem services it provides. Overall, the book shows that nature conservation and food production must be considered as equally important components of future solutions to meet the global demand for food in a manner that is sustainable for both the human population and the planet as a whole.

Over the last five centuries, plantation crops have represented the best and worst of industrialized agriculture – "best" through their agronomic productivity and global commercial success, and "worst" as examples of exploitative colonialism, conflict and ill-treatment of workers. This book traces the social, political and evolutionary history of seven major plantation crops – sugarcane, banana, cotton, tea, tobacco, coffee and rubber. It describes how all of these were domesticated in antiquity and grown by small landowners for thousands of years before European traders and colonists sought to make a

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profit out of them. The author relates how their development and spread were closely associated with government expansionist policies. They stimulated the exploration of far off lands, were the focus of major conflicts and led to the enslavement of both native and displaced peoples. From the southern United States, Latin America and the Caribbean, to Asia and Africa, plantation crops turned social structures upside down leading to revolution and government change. The economies of whole countries became tied to the profits of these plantations, leading to internal power struggles to control the burgeoning wealth. Open warfare routinely broke out between the more powerful countries and factions for trade dominance. This book shows that from the early 1500s to today, at least one of the plantation crops was always at the center of world politics, and that this still continues today, for example with the development of oil palm plantations in Southeast Asia. Written in an accessible style, it is fascinating supplementary reading for students of agricultural, environmental and colonial history.

This open access book develops a framework for advancing agroecology transformations focusing on power, politics and governance. It explores the potential of agroecology as a sustainable and socially just alternative to today's dominant food regime. Agroecology is an ecological approach to

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farming that addresses climate change and biodiversity loss while contributing to the Sustainable Development Goals. Agroecology transformations represent a challenge to the power of corporations in controlling food system and a rejection of the industrial food systems that are at the root of many social and ecological ills. In this book the authors analyse the conditions that enable and disable agroecology's potential and present six 'domains of transformation' where it comes into conflict with the dominant food system. They argue that food sovereignty, community-self organization and a shift to bottom-up governance are critical for the transformation to a socially just and ecologically viable food system. This book will be a valuable resource to researchers, students, policy makers and professionals across multidisciplinary areas including in the fields of food politics, international development, sustainability and resilience.

This publication summarizes the outcomes of the 2nd international Symposium on Agroecology.

This textbook applies basic concepts of ecology to address critical issues regarding food and agricultural systems. The intended audience is first year undergraduate students; it may also benefit higher-level undergraduates with an interest in agriculture and ecology. The level of science and general knowledge reflects this target group. The text is divided into five sections with 22 chapters in all. Each chapter has its own

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student learning objectives. The first two sections, “Context of Agroecology” and “Basics of Agroecosystems,” provide a sound basis for the further study of agriculture from an ecological standpoint. Section 3, “Digging Deeper into Agroecosystems,” explores the related issues of hunger, wastes, climate change, and biodiversity. It is suggested that students study these three sections before proceeding to section 4 or 5. Section 4, “Application of Agroecosystem Concepts,” introduces students to agricultural production and challenges them to use the concepts and ideas from the first three sections to critically evaluate such production systems. Section 5, “Agroecosystem Management,” brings the coverage full circle by examining global solutions and opportunities from both a scientific and social economic standpoint. Particularly these last four chapters offer both food for thought and inspiration for further work. The book’s goal is not to provide a comprehensive literature review; rather, it offers extensive data on and a stimulating analysis of the topic.

Good agroecological practices are indispensable for the development of sustainable agriculture. In this book, principles, diversity and applications of agroecological practices for a range of systems are presented, transforming scientific research and participatory knowledge of production into practical application. It illustrates a broad range of research and teaching being used within the farming community to demonstrate best practice and current state-of-play within the field.

Agroecological methods used in crop farming, grass-

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based livestock farming, fish production, and other complex farming systems are discussed. Conclusions are drawn from studies to provide an outlook on future trends of agroecological practices and on policies supporting implementation. Due to emphasis on real-life application, it is relevant not only to students of the agricultural sciences and public policy, but also to researchers, stakeholders and policy makers involved in the development of sustainable agriculture.

Providing the theoretical and conceptual framework for this continually evolving field, *Agroecology: The Ecology of Sustainable Food Systems, Second Edition* explores environmental factors and complexities affecting agricultural crops and animals. Completely revised, updated, and reworked, the second edition contains new data, new readings, new issues and case studies, and new options. It includes two completely new chapters, one on the role of livestock animals in agroecosystems and one on the cultural and community aspects of sustainable food systems. The author clearly delineates the importance of using an ecosystem framework for determining if a particular agricultural practice, input, or management decision contributes or detracts from sustainability. He explains how the framework provides the ecological basis for the functioning of the chosen management strategy over the long-term. He also examines system level interactions, stressing the need for understanding the emergent qualities of populations, communities, and ecosystems and their roles in sustainable agriculture. Using examples of farming systems in a broad array of ecological conditions, the

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book demonstrates how to use an ecosystem approach to design and manage agroecosystems for sustainability. One of the most pressing challenges facing the world today is how to sustainably feed a growing population while conserving the ecosystem services we depend on. Coffee landscapes are an important site for research on agrifood systems because they reflect global-scale dynamics surrounding conservation and livelihood development. Within them, we find both what is broken in our global agrifood system, as well as the grassroots struggles that strive to change the system by building socio-ecologically resilient, sustainable livelihoods. Research shows that smallholder shade coffee farmers steward high biodiversity and provide essential ecosystem services. At the same time, studies in the last decade demonstrate that many smallholder coffee farmers in Mesoamerica suffer annual periods of seasonal hunger, as well as pervasive poverty. This dissertation explores household livelihood strategies, with a particular emphasis on agroecology, and how they can contribute to build sustainable systems that secure food and maintain biodiversity in coffee communities of Chiapas, Mexico. Research was conducted using a mixed methods approach, which included the collection of quantitative and qualitative socio-ecological data through focus groups, surveys, semi-structured interviews, participant observation and plant inventories. Surveys were conducted with 79 households in 11 communities, all located within the buffer zone of a biosphere reserve. A stratified random sample of 31 households from these 79 were surveyed again to collect

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more in-depth data, including the collection of biophysical data in their subsistence and coffee land use systems. The following research questions were explored: 1) What are the major ecological, social, economic, and political drivers of seasonal hunger? 2) What is the relationship between agrobiodiversity (plant and livestock diversity) and food security (months of adequate household food provisioning and dietary diversity)? 3) What household livelihood assets and strategies contribute to or limit food security and food sovereignty? Across the sample population, total agrobiodiversity and maize and bean production were strongly correlated with improved food security. Coffee income was not strongly correlated with improved food security, which suggests that income is used for priorities within the household other than food, despite seasonal food shortages. Results demonstrate the importance of balancing subsistence and commodity (i.e. coffee) production in these communities, where subsistence food serves as a risk management strategy to buffer against volatility in coffee prices, in addition to offsetting income that might be used for food towards non-food expenses. Subsistence production, which typically applies agroecological practices in this site, also holds important cultural and environmental value. The results of this research indicate that government policy and development practice should enable farmers to maintain the social, ecological and cultural processes that support the management of agrobiodiversity for subsistence and coffee.

Dr. Melissa Vogt considers the influence of Rainforest

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Alliance and Fairtrade in coffee farming communities of Costa Rica from 2009-2019. Sustainability certifications schemes are working amongst a range of sustainability efforts, unique by their intra market location. The intentions of each certification scheme must be clarified prior to evaluation and their influence considered amongst contextually specific historic and contemporary considerations, and alongside the range of sustainability efforts. The advantages and disadvantages, opportunities for improvement and how alternative mechanisms might improve upon or complement sustainability certification schemes are explained. An epilogue considers how prioritisation of coffee as a cash crop may align with sustainability. The influence on biodiversity, community health and income, and the possible implication of reduced coffee crop density for consumers, the market and farming landscapes is considered. How sustainability standards might better encourage more ambitious sustainability in farming landscapes is for future consideration.

Profiles of 723 organizations that can help farmers meet their farming stewardship and profitability goals. Includes 1,000 individuals and more than 200 organizations in all 50 states. Covers 169 farmers and ranchers, 247 ag. researchers, 161 Coop. Extension Service personnel, 72 agribus. people, and 63 farm consultants. Lists their special skills and knowledge in crop, forage and livestock production, soil and water mgmt., marketing, organics, pest control, cropping systems, erosion control, irrigation methods, and livestock feed and health mgmt. systems.

Fair trade is a fast-growing alternative market

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intended to bring better prices and greater social justice to small farmers around the world. But what does a fair-trade label signify? This vivid study of coffee farmers in Mexico offers the first thorough investigation of the social, economic, and environmental benefits of fair trade. Based on extensive research in Zapotec indigenous communities in Oaxaca, *Brewing Justice* follows the members of the cooperative Michiza, whose organic coffee is sold on the international fair-trade market, and compares them to conventional farming families in the same region. The book carries readers into the lives of coffee-producer households and communities, offering a nuanced analysis of fair trade's effects on everyday life and the limits of its impact. *Brewing Justice* paints a clear picture of the dynamics of the fair-trade market and its relationship to the global economy. Drawing on interviews with dozens of fair-trade leaders, the book also explores the movement's fraught politics, especially the challenges posed by rapid growth and the increased role of transnational corporations. It concludes with recommendations to strengthen and protect the integrity of fair trade. This updated edition includes a substantial new chapter that assesses recent developments in both coffee-growing communities and movement politics, offering a guide to navigating the shifting landscape of fair-trade consumption. Debate about how best to ensure the preservation of

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agricultural biodiversity is caught in a counter-productive polemic between proponents and critics of market-based instruments and agricultural modernization. However, it is argued in this book that neither position does justice to the range of strategies that farmers use to manage agrobiodiversity and other livelihood assets as they adapt to changing social, economic, and environmental circumstances.

When first published in 2009, Nature's Matrix set out a radical new approach to the conservation of biodiversity. This new edition pushes the frontier of the biodiversity/agriculture debate further, making an even stronger case for the need to transform agriculture and support small- and medium-scale agroecology and food sovereignty. In the first edition, the authors set out a radical new approach to the conservation of biodiversity. This is based on the concept of a landscape as a matrix of diverse, small-scale agricultural ecosystems, providing opportunities to enhance conservation under the stewardship of local farmers. This contrasts with the alternative view of industrial-scale farms and large protected areas which exclude local people. However, since then the debate around conservation and agriculture has developed significantly and this is reflected in this updated second edition. The text is thoroughly revised, including: a reorganization of chapters with new and timely topics introduced,

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updates to the discussion of agroecology and food sovereignty, bringing it in line with the current debates, greater coverage of the role of agroecology, in particular agroforestry, as an important component of climate change adaptation and mitigation, highlighting recent studies on the role of intensive agriculture in climate change and loss of biodiversity, and more attention given to the discussion of land sparing versus land sharing. By integrating the ecological aspects of agriculture and conservation biology, with a political and social analysis as well as historical perspective, the book continues to set a progressive agenda and appeals to a wide range of students and professionals.

This handbook includes contributions from established and emerging scholars from around the world and draws on multiple approaches and subjects to explore the socio-economic, cultural, ecological, institutional, legal, and policy aspects of regenerative food practices. The future of food is uncertain. We are facing an overwhelming number of interconnected and complex challenges related to the ways we grow, distribute, access, eat, and dispose of food. Yet, there are stories of hope and opportunities for radical change towards food systems that enhance the ability of living things to co-evolve. Given this, activities and imaginaries looking to improve, rather than just sustain, communities and ecosystems are needed, as are fresh perspectives

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and new terminology. The Routledge Handbook of Sustainable and Regenerative Food Systems addresses this need. The chapters cover diverse practices, geographies, scales, and entry-points. They focus not only on the core requirements to deliver sustainable agriculture and food supply, but go beyond this to think about how these can also actively participate with social-ecological systems. The book is presented in an accessible way, with reflection questions meant to spark discussion and debate on how to transition to safe, just, and healthy food systems. Taken together, the chapters in this handbook highlight the consequences of current food practices and showcase the multiple ways that people are doing food differently. The Routledge Handbook of Sustainable and Regenerative Food Systems is essential reading for students and scholars interested in food systems, governance and practices, agroecology, rural sociology, and socio-environmental studies.

This text reflects the immense current growth in interest in agroecology and changing approaches to it. While it is acknowledged that the science of ecology should be the basis of agroecological planning, many analysts have out-of-date ideas about contemporary ecology. Ecology has come a long way since the old days of "the balance of nature" and other romantic notions of how ecological systems function. In this context, the new science of

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complexity has become extremely important in the modern science of ecology. The problem is that it tends to be too mathematical and technical and thus off-putting for the average student of agroecology, especially those new to the subject. Therefore this book seeks to present ideas about ecological complexity with a minimum of formal mathematics. The book's organization consists of an introductory chapter, and a second chapter providing some of the background to basic ecological topics as they are relevant to agroecosystems (e.g., soil biology and pest control). The core of the book consists of seven chapters on key intersecting themes of ecological complexity, including issues such as spatial patterns, network theory and tipping points, illustrated by examples from agroecology and agricultural systems from around the world.

Energy in Agroecosystems: A Tool for Assessing Sustainability is the first book on energy analysis that is up-to-date and specifically dedicated to agriculture. It is written from an agroecological perspective and goes beyond the conventional analysis of the efficient use of energy. The book provide a methodological guide to assess energy efficiency and sustainability from an eco-energetic point of view. Case studies from both Europe and America, which are representative of today's most used scales of analysis (crop, farm, local or national) and the different farm management practices

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(traditional, industrialized, and contemporary organic), apply this methodology This book will be of primary interest to researchers, practitioners, and students working in the areas of agroecology, sustainable agriculture, environmental science, energy analysis, natural resources management, rural development and international development. This book provides an overview of the intricacies of plant communication via volatile chemicals. Plants produce an extraordinarily vast array of chemicals, which provide community members with detailed information about the producer's identity, physiology and phenology. Volatile organic chemicals, either as individual compounds or complex chemical blends, are a communication medium operating between plants and any organism able to detect the compounds and respond. The ecological and evolutionary origins of particular interactions between plants and the greater community have been, and will continue to be, strenuously debated. However, it is clear that chemicals, and particularly volatile chemicals, constitute a medium akin to a linguistic tool. As well as possessing a rich chemical vocabulary, plants are known to detect and respond to chemical cues. These cues can originate from neighbouring plants, or other associated community members. This book begins with chapters on the complexity of chemical messages, provides a broad perspective on a range of ecological interactions

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mediated by volatile chemicals, and extends to cutting edge developments on the detection of chemicals by plants.

Debate about how best to ensure the preservation of agricultural biodiversity is caught in a counter-productive polemic between proponents and critics of market-based instruments and agricultural modernisation. This book argues that neither position does justice to the range of strategies that farmers use to manage agrobiodiversity and other livelihood assets as they adapt to changing social, economic, and environmental circumstances. Chapters explore relationships between the exploitation and conservation of agricultural biodiversity and the livelihoods of agricultural communities, and evaluate the capacity of national and multilateral institutions and policy settings to support the protection and capture by communities of agrobiodiversity values. The place of ecosystem services in valuing biodiversity in the marketplace is emphasized. A number of authors assess the potential for market-based instruments and initiatives to encourage the protection of biodiversity, while others compare agrobiodiversity/community relationships, and the effectiveness of instruments designed to enhance these, across international boundaries. The book takes a comparative approach, drawing on empirical case studies from across the developed and developing worlds. In doing so, the book does not simply point to similarities and differences in the experience of rural communities. It also shows how global trade and multilateral institutions bring these otherwise disparate communities together in networks that exploit and/or preserve agrobiodiversity and other resources.

The Craft and Science of Coffee follows the coffee plant from its origins in East Africa to its current role as a global product

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that influences millions of lives through sustainable development, economics, and consumer desire. For most, coffee is a beloved beverage. However, for some it is also an object of scientific study, and for others it is approached as a craft, both building on skills and experience. By combining the research and insights of the scientific community and expertise of the craftspeople, this unique book brings readers into a sustained and inclusive conversation, one where academic and industrial thought leaders, coffee farmers, and baristas are quoted, each informing and enriching each other. This unusual approach guides the reader on a journey from coffee farmer to roaster, market analyst to barista, in a style that is both rigorous and experience based, universally relevant and personally engaging. From on-farming processes to consumer benefits, the reader is given a deeper appreciation and understanding of coffee's complexity and is invited to form their own educated opinions on the ever-changing situation, including potential routes to further shape the coffee future in a responsible manner. Presents a novel synthesis of coffee research and real-world experience that aids understanding, appreciation, and potential action. Includes contributions from a multitude of experts who address complex subjects with a conversational approach. Provides expert discourse on the coffee value chain, from agricultural and production practices, sustainability, post-harvest processing, and quality aspects to the economic analysis of the consumer value proposition. Engages with the key challenges of future coffee production and potential solutions.

The world relies on very few crop and animal species for agriculture and to supply its food needs. In recent decades, there has been increased appreciation of the risk this implies for food security and quality, especially in times of environmental change. As a result, agricultural biodiversity

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has moved to the top of research and policy agendas. This Handbook presents a comprehensive overview of our current knowledge of agricultural biodiversity in a series of specially commissioned chapters. It draws on multiple disciplines including plant and animal genetics, ecology, crop and animal science, food studies and nutrition, as well as social science subjects which explore the socio-economic, cultural, institutional, legal and policy aspects of agricultural biodiversity. It focuses not only on the core requirements to deliver a sustainable agriculture and food supply, but also highlights the additional ecosystem services provided by a diverse and resilient agricultural landscape and farming practices. The book provides an indispensable reference textbook for a wide range of courses in agriculture, ecology, biodiversity conservation and environmental studies.

Based on principles of the conservation and optimization of biodiversity and of equity and sustainability, this book focuses on the ecology of the coffee agroecosystem as a model for a sustainable agricultural ecosystem. It draws on the authors' own research conducted over the last twenty years as well as incorporating the vast literature that has been generated on coffee agroecosystems from around the world. The book uses an integrated approach that weaves together various lines of research to understand the ecology of a very diverse tropical agroforestry system. Key concepts explored include biodiversity patterns, metapopulation dynamics and ecological networks. These are all set in a socioeconomic and political framework which relates them to the realities of farmers' livelihoods. The authors provide a novel synthesis that will generate new understanding and can be applied to other examples of sustainable agriculture and food production. This synthesis also explains the ecosystem services provided by the approach, including the economic, fair trade and political aspects surrounding this all-important

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global commodity.

The present book is composed of modern theoretical and applied studies that highlight the core principles and evidence of sustainable agriculture. This work is systematically divided into two sections, which summarize crucial insights into this theme, such as agroecological concepts, case studies, soil health, and agroforestry systems. The chapters included in this book have been written by researchers whose expertise allows the relatively complex sustainable agroecosystem-related topics to be easily understood by any reader.

Therefore, the target audience comprises not only scholars and specialists in the field but also common people and enthusiasts about this theme. Such chapter's collection is certainly a valuable resource about agricultural sustainable principles and a pleasure reading for those who are willing to dive more deeply into the study of "sustainability of agroecosystems."

Our morning cups of coffee connect us to a global industry and an export crisis in the tropics that is destroying livelihoods, undermining the cohesion of families and communities, and threatening ecosystems. Confronting the Coffee Crisis explores small-scale farming, the political economy of the global coffee industry, and initiatives that claim to promote more sustainable rural development in coffee-producing communities. Contributors review the historical, political, economic, and agroecological processes within today's coffee industry and analyze the severely depressed export market that faces small-scale growers in Mexico and Central America. The book presents a series of interdisciplinary, empirically rich case studies showing how small-scale farmers manage ecosystems and organize collectively as they seek useful collaborations with international NGOs and coffee companies to create opportunities for themselves in the coffee market. The

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findings demonstrate the interconnections among farmer livelihoods, biodiversity, conservation, and changing coffee markets. Additional chapters examine alternative trade practices, certification, and eco-labeling, discussing the politics and market growth of organic, shade-grown, and Fair Trade coffees. Combining interdisciplinary research with case-study analysis at scales ranging from the local to the global, *Confronting the Coffee Crisis* reveals the promise and the perils of efforts to create a more sustainable coffee industry.

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This Open Access book presents feedback from the

‘Territorial Agroecological Transition in Action’- TATA-BOX

research project, which was devoted to these specific issues.

The multidisciplinary and multi-organisation research team

steered a four-year action-research process in two territories

of France. It also presents: i) the key dimensions to be

considered when dealing with agroecological transition:

diversity of agriculture models, management of uncertainties,

polycentric governance, autonomies, and role of actors’

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networks; ii) an operational and original participatory process and associated boundary tools to support local stakeholders in shifting from a shared diagnosis to a shared action plan for transition, and in so doing developing mutual understanding and involvement; iii) an analysis of the main effects of the methodology on research organisation and on stakeholders' development and application; iv) critical analysis and foresights on the main outcomes of TATA-BOX, provided by external researchers.

Landscapes are frequently seen as fragments of natural habitat surrounded by a 'sea' of agriculture. But recent ecological theory shows that the nature of these fragments is not nearly as important for conservation as is the nature of the matrix of agriculture that surrounds them. Local extinctions from conservation fragments are inevitable and must be balanced by migrations if massive extinction is to be avoided. High migration rates only occur in what the authors refer to as 'high quality' matrices, which are created by alternative agroecological techniques, as opposed to the industrial monocultural model of agriculture. The authors argue that the only way to promote such high quality matrices is to work with rural social movements. Their ideas are at odds with the major trends of some of the large conservation organizations that emphasize targeted land purchases of protected areas. They argue that recent advances in ecological research make such a general approach anachronistic and call, rather, for solidarity with the small farmers around the world who are currently struggling to attain food sovereignty. Nature's Matrix proposes a radically new approach to the conservation of biodiversity based on recent advances in the science of

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ecology plus political realities, particularly in the world's tropical regions.

Issues In Agroecology – Present Status and Future Prospectus not only reviews aspects of ecology, but the ecology of sustainable food production systems, and related societal and cultural values. To provide effective communication regarding status and advances in this field, this series connects with many disciplines such as sociology, anthropology, environmental sciences, ethics, agriculture, economics, ecology, rural development, sustainability, policy and education, and integrations of these general themes so as to provide integrated points of view that will help lead to a more sustainable construction of values than conventional economics alone. Such designs are inherently complex and dynamic, and go beyond the individual farm to include landscapes, communities, and biogeographic regions by emphasizing their unique agricultural and ecological values, and their biological, societal, and cultural components and processes.

Based on principles of the conservation and optimization of biodiversity and of equity and sustainability, this book focuses on the ecology of the coffee agroecosystem as a model for a sustainable agricultural ecosystem. It draws on the authors' own research conducted over the last twenty years as well as incorporating the vast literature that has been generated on coffee agroecosystems from around the world. The book uses an integrated approach that weaves together various lines of research to understand the ecology of a very diverse tropical agroforestry system. Key concepts explored includ.

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Agroecology is the science of applying ecological concepts and principles to the design, development, and management of sustainable agricultural systems. The Ecology of Agroecosystems highlights a collection of alternative agricultural methodologies and philosophies and provides an interdisciplinary approach that bridges the sociopolitical and historical context of agriculture. It includes the technical issues in a serious and ecological fashion and captures the complex merging of ecology, agriculture, politics and economics in both a historical and contemporary context. Readers will learn not only about the ethical and moral elements related to producing food of questionable quality while possibly impairing the environment, but also about the soil chemistry involved.

This book takes a transdisciplinary approach and considers multisectoral actions, integrating health, agriculture and environmental sector issues to comprehensively explore the topic of sustainable diets. The team of international authors informs readers with arguments, challenges, perspectives, policies, actions and solutions on global topics that must be properly understood in order to be effectively addressed. They position issues of sustainable diets as central to the Earth's future. Presenting the latest findings, they:

- Explore the transition to sustainable diets within the context of sustainable food systems, addressing the right to food, and linking food security and nutrition to sustainability.
- Convey the urgency of coordinated action, and consider how to engage multiple sectors in dialogue and joint research to tackle the pressing

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problems that have taken us to the edge, and beyond, of the planet's limits to growth. - Review tools, methods and indicators for assessing sustainable diets. - Describe lessons learned from case studies on both traditional food systems and current dietary challenges. As an affiliated project of the One Planet Sustainable Food Systems Programme, this book provides a way forward for achieving global and local targets, including the Sustainable Development Goals and the United Nations Decade of Action on Nutrition commitments. This resource is essential reading for scientists, practitioners, and students in the fields of nutrition science, food science, environmental sciences, agricultural sciences, development studies, food studies, public health and food policy.

Coffee Agroecology A New Approach to Understanding Agricultural Biodiversity, Ecosystem Services and Sustainable Development Routledge

The idea that resilience plays a role in mitigating the effects of disaster and climate change is becoming widespread across the development community. As a result, efforts have been made to translate the concept of resilience into actionable metrics to better understand it. In this paper, we use panel micro-data from coffee farmers in Guatemala severely affected by a widespread attack of *Hemileia Vastatrix* (leaf rust). This covariate shock provides a unique opportunity to a) check if greater resilience capacity is associated with better reaction to exogenous shock; and b) explore the key drivers of response mechanisms. Ultimately, this paper looks at how resilience enhancing and agroecological

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Interventions must be combined to reduce the negative effects of leaf rust. Findings show a negative impact of the shock on households' well-being; the strategic role of resilience in mitigating those negative effects; and provide evidence on how an approach that enhances both absorptive and adaptive capacity, can be beneficial for coffee producers.

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