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Supplementary Papers

# ***Agricultural Science 2014 Supplementary Papers***

The papers in this volume introduce powerful new innovations in global supply chain networks. The best papers from the 2014 annual conference of the European regional subdivision of the Decision Sciences Institute (EDSI), they analyze the latest global trends associated with: Sustainability and corporate social responsibility Applications in modeling and decision techniques Social network analysis for better decision-making Innovation and entrepreneurship Relationship management ERP/Enterprise Business Intelligence Globalized manufacturing Performance and revenue management Risk management Business innovation

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management Supply chain operations management, and more The papers collected here will be valuable to wide audiences of faculty researchers, and students in diverse programs covering supply chain and/or operations management, and for others interested in the frontiers of decision science.

Sustainable Food Supply Chains: Planning, Design, and Control through Interdisciplinary Methodologies provides integrated and practicable solutions that aid planners and entrepreneurs in the design and optimization of food production-distribution systems operations and drives change toward sustainable food ecosystems. With synthesized coverage of the academic literature, this book integrates the quantitative models and tools that address each aspect of food supply chain operations to provide readers with easy access to support-decision quantitative and practicable methods. Broken

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into three parts, the book begins with an introduction and problem statement. The second part presents quantitative models and tools as an integrated framework for the food supply chain system and operations design. The book concludes with the presentation of case studies and applications focused on specific food chains.

*Sustainable Food Supply Chains: Planning, Design, and Control through Interdisciplinary Methodologies* will be an indispensable resource for food scientists, practitioners and graduate students studying food systems and other related disciplines. Contains quantitative models and tools that address the interconnectedness of the food supply chain Synthesizes academic literature related to sustainable food supply chains Deals with interdisciplinary fields of research (Industrial Systems Engineering, Food Science, Packaging Science, Decision Science, Logistics and Facility Management,

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Supply Chain Management, Agriculture and Land-use Planning) that dominate food supply chain systems and operations Include case studies and applications

Nitrogen (N) is potentially one of the most complex elements on Earth. It is necessary for all biological activity, but creates negative impacts on water and air quality. There is a balancing act between deficiency and surplus and the forms of N available further complicate our understanding of the dynamics. Biological fixation provides some plants with N supply while others are totally dependent upon N being available in the soil profile for the roots to extract. Nevertheless, the demand for N will increase because of human population with its increasing growth requires more production and thus more N. Understanding the global N cycle is imperative for meeting current and future nitrogen demands while decreasing

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environmental impacts. This book discusses availability, production, and recycling of N in air, water, plants, and soils. It features information on N impacts to soil and water quality, management of N in agroecosystems, and techniques to maximize the use efficiency while minimizing the risks of leakage of reactive N into the environment. This volume in the Advances in Soil Science series is specifically devoted to availability, production, and recycling of N with impact on climate change and water quality and management of N in agroecosystems in the context of maximizing the use efficiency and minimizing the risks of leakage of reactive N ( $\text{NO}_3^-$ ,  $\text{N}_2\text{O}$ ) into the environment. ? ?

The long-held tenets of the energy sector are being rewritten in the twenty-first century. The rise of unconventional oil and gas and renewables is transforming our economies and improving our

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understanding of the distribution of the world's energy resources and their impacts. A complete knowledge of the dynamics underpinning energy markets is necessary for decision-makers reconciling economic, energy, and environmental objectives. Those that anticipate global energy developments successfully can derive an advantage, while those that fail to do so risk making poor policy and investment decisions. Focused on solving the key challenges impeding the realization of advanced cellulosic biofuels and bioproducts in rural areas, *Biomass and Biofuels: Advanced Biorefineries for Sustainable Production and Distribution* provides comprehensive information on sustainable production of biomass feedstock, supply chain management of feedstocks to the biorefinery site, advanced conversion processes, and catalysts/biocatalysts for the production of fuels and chemicals using conventional and

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integrated technologies. The book also presents detailed coverage of downstream processing, and ecological considerations for refineries processing lignocellulosic and algal biomass resources. Discussions of feedstock raw materials, methods for biomass conversion, and its effective integration to make biorefinery more sustainable – economically, environmentally, and socially – give you the tools to make informed decisions.

Agricultural intensification, technology adoption, and institutions  
Ghana

Food Insecurity in India's Agricultural Heartland

Interdisciplinary Behavior and Social Sciences

Best Papers from the 2014 Annual Conference

From Farm to Fork

Planning, Design, and Control through Interdisciplinary

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### Methodologies

*This book provides a global perspective on the various issues that the industry has to face as well as to provide some key global strategies that can help coping with those global challenges, such as collaboration, strategic value chain planning, and interdependency analyses. It presents literature reviews, strategic research orientations, assessment of some current key issues, and state-of-the-art methodologies. The State of the World's Biodiversity for Food and Agriculture presents the first global assessment of biodiversity for food*



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*and agriculture worldwide. Biodiversity for food and agriculture is the diversity of plants, animals and micro-organisms at genetic, species and ecosystem levels, present in and around crop, livestock, forest and aquatic production systems. It is essential to the structure, functions and processes of these systems, to livelihoods and food security, and to the supply of a wide range of ecosystem services. It has been managed or influenced by farmers, livestock keepers, forest dwellers, fish farmers and fisherfolk for hundreds of generations. Prepared through a participatory, country-*

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*driven process, the report draws on information from 91 country reports to provide a description of the roles and importance of biodiversity for food and agriculture, the drivers of change affecting it and its current status and trends. It describes the state of efforts to promote the sustainable use and conservation of biodiversity for food and agriculture, including through the development of supporting policies, legal frameworks, institutions and capacities. It concludes with a discussion of needs and challenges in the future management of biodiversity for*

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*food and agriculture. The report complements other global assessments prepared under the auspices of the Commission on Genetic Resources for Food and Agriculture, which have focused on the state of genetic resources within particular sectors of food and agriculture.*

*Modeling and Optimization of Biomass Supply Chains: Top Down and Bottom Up Assessment for Agricultural, Forest and Waste Feedstock provides scientific evidence for assessing biomass supply and logistics, placing emphasis on methods, modeling capacities, large data collection, processing and*

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*storage. The information presented builds on recent relevant research work from the Biomass Futures, Biomass Policies and S2Biom projects. In addition to technical issues, the book covers the economic, social and environmental aspects with direct implications on biomass availability. Its chapters offer an overview of methodologies for assessing and modeling supply, biomass quality and requirements for different conversion processes, logistics and demand for biobased sectors. Case studies from the projects that inspire the book present practical examples of the implementation of*

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*these methodologies. The authors also compare methodologies for different regions, including Europe and the U.S. Biomass feedstock-specific chapters address the relevant elements for forest, agriculture, biowastes, post-consumer wood and non-food crops. Engineers in the bioenergy sector, as well as researchers and graduate students will find this book to be a very useful resource when working on optimization and modeling of biomass supply chains. For energy policymakers, analysts and consultants, the book provides consistent and technically sound projections for policy and market*

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*development decisions. Provides consistent ratios and indicators for assessing biomass supply and its logistical component Explores assumptions behind the assessment of different types of biomass, including key technical and non-technical factors Presents the existing modeling platforms, their input requirements and possible output projections This extensive Handbook captures a range of expertise and perspectives on the changing geographies and landscapes of energy production, distribution, and use. Combining established and emerging scholarship from across disciplines, the expert contributions*

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*provide a broad overview of research frontiers for the changing geographies of energy worldwide. Interdisciplinary in nature and broad in scope, it serves to answer a range of questions and provide the reader with conceptual and methodological foundations.*

*Modeling and Optimization of Biomass Supply Chains*

*OECD Food and Agricultural Reviews*

*Innovation, Agricultural Productivity and Sustainability in Turkey*

*The Tropical Oil Crop Revolution*

*A Workshop Summary*

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### *No-till Farming Systems for Sustainable Agriculture Concepts, Methodologies, Tools, and Applications*

Agriculture is the product of a complex mixture of behavioural, biophysical and market drivers.

Understanding how these factors interact to produce crops and livestock for food has been the focus of economic investigation for many years. The advent of optimisation algorithms and the exponential growth in computing technology has allowed significant growth in mathematical modelling of the dynamics of agricultural systems. The complexity of approaches has grown in parallel with the availability of data at increasingly finer



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resolutions. Farm-level models have been widely used in agricultural economic studies to understand how farmers and land owners respond to market and policy levers. This book provides an in-depth description of different methodologies and techniques currently used in farm-level modelling. While giving an overview of the theoretical grounding behind the models, an applied approach is also used. Case studies range from the application of modelling to policy reforms and the subsequent impacts on rural communities and food supply. This book also provides descriptions of the use of farm-level models in much wider fields such as aggregation and linking with sectoral models. Its purpose is to show the reader the methods that have been

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employed to inform decision-makers about how to improve the economic, social and environmental goals required to achieve the aims of multidimensional policy. Why is societal transition not simply a matter of change management or normal policy design? South Africa is living proof of the ability of a society to reinvent and reinstall itself. With the advent of new societal challenges, came the need for real societal innovation, especially in sectors where it was never deemed necessary or possible before. This book asks: What type of governance is helpful for developing new societal institutions and systems that can overcome systemic crises in emerging economies and fragile communities? What emerges is a compilation of chapters that introduce

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different parts of a solution which can be used in developing both a growing body of practices of ?governed? societal transitions and the associated transition of governance. The Governance of Transitions ? The Transitions of Governance, in part, aims to provide building blocks which government and society could use to develop strategies for creating sustainable outcomes. It considers what kind of leadership, organisation or methods for accountability enable new types of governance and what the most important barriers are. Innovation and Future Trends in Food Manufacturing and Supply Chain Technologies focuses on emerging and future trends in food manufacturing and supply chain technologies, examining the drivers of change and

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innovation in the food industry and the current and future ways of addressing issues such as energy reduction and rising costs in food manufacture. Part One looks at innovation in the food supply chain, while Part Two covers emerging technologies in food processing and packaging. Subsequent sections explore innovative food preservation technologies in themed chapters and sustainability and future research needs in food manufacturing. Addresses issues such as energy reduction and rising costs in food manufacture Assesses current supply chain technologies and the emerging advancements in the field, including key chapters on food processing technologies Covers the complete food manufacturing scale, compiling significant research from

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academics and important industrial figures  
WINNER: ACA-Bruel 2015 - Prix des Associations With the growth of the food industry come unique logistics challenges, new supply routes, demand dynamics and investment re-shaping the future of the food logistics industry. It is therefore important for the food industry to innovate both with regards to demand management and sustainability of food sources for a growing population. Food Supply Chain Management and Logistics provides an accessible and essential guide to food supply chain management, considering the food supply chain from 'farm to fork'. Samir Dani shows the reader how to stay ahead of the game by keeping abreast of global best practice, harnessing the very latest technology and

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squeezing efficiency and profit from increasingly complex supply chains. Food Supply Chain Management and Logistics covers essential topics in food supply chain management, including: food supply chain production and manufacturing; food logistics; food regulation, safety and quality; food sourcing; food retailing; risk management; food innovation; technology trends; food sector and economic regeneration; challenges in International food supply chains; triple bottom-line trends in the food sector; food security and future challenges. Winner of the 2015 Prix des Associations, this book has been commended for its comprehensive coverage of the design, governance, supporting mechanisms and future challenges in the

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food supply chain.

The Internet of Things in the Modern Business  
Environment

Research in the Decision Sciences for Innovations in  
Global Supply Chain Networks

Supply Chain Management for Sustainable Food  
Networks

The Governance of Transitions - The Transitions of  
Governance

Proceedings of the Fifth International Forum on Decision  
Sciences

Reconsidering the Impact of Climate Change on Global  
Water Supply, Use, and Management

*This book brings together a collection of papers*

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*prepared for the Global Forum on Agriculture that took place at the OECD in December 2014.*

*The development of a sustainable agricultural system is a critical concern for any nation in modern society. By implementing proper supply chain processes, available natural resources and food can be better utilized. Agri-Food Supply Chain Management: Breakthroughs in Research and Practice is a compendium of emerging perspectives on the development of an effective agricultural value chain and the optimization of supply chain management within the agriculture and food*



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*sectors. Highlighting theoretical frameworks, real-world applications, and future outlooks, this book is a primary reference source for professionals, students, practitioners, and managers actively involved in agricultural development.*

*The book is a collection of studies dedicated to different perspectives of three dimensions or pillars of the sustainability of supply chain and supply chain management - economic, environmental, and social - and other aspects related to performance evaluation, optimization, and modelling of and for sustainable supply chain management, and thus*

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*presents another valuable contribution to sustainable development and sustainable way of life.*

*High and persistent inflation in India has presented serious macroeconomic challenges, such as widening the current account deficit, exposing India to global financial market turbulence, and slowing growth. A number of factors have caused high inflation, including food inflation feeding quickly into wages and core inflation, entrenched inflation expectations, sector-specific supply constraints (particularly in agriculture, energy, and*

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*transportation), pass-through from a weaker rupee, and ongoing energy price increases. This book analyzes various facets of Indian inflation and their implications for the conduct of monetary policy in India. In particular, given the role of food inflation in driving inflation dynamics in India, several chapters are devoted exclusively to analyzing and managing food inflation. Building on the analysis of inflation dynamics, the book discusses the role of monetary policy in taming inflation, particularly given the costs of high and persistent inflation in India.*

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*Technological and Economic Perspectives*

*Cases from Southern Africa*

*Advanced Biorefineries for Sustainable Production  
and Distribution*

*Supply Chain and Logistics Management: Concepts,  
Methodologies, Tools, and Applications*

*Sustainable Food Supply Chains*

*Critical Role of Animal Science Research in Food  
Security and Sustainability*

*The success of the entire food supply chain depends on  
the prosperity of farms and local communities. The direct  
climate change risks faced by the agricultural sector are*

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*therefore also risks to businesses and food supply chains. Hence the importance of resilience at farm level, community level and business level when looking at food supply chain policy and management. Climate Change Adaptation and Food Supply Chain Management highlights the issue of adaptation to climate change in food supply chains, the management and policy implications and the importance of supply chain resilience. Attention is given to each phase of the supply chain: input production, agriculture, food processing, retailing, consumption and post-consumption. European case studies demonstrate the vulnerabilities of contemporary food supply chains, the opportunities and*

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*competitive advantages related to climate change, and the trans-disciplinary challenges related to successful climate adaptation. The authors argue for a redefinition of the way food supply chains are operated, located and coordinated and propose a novel approach enhancing climate-resilient food supply chain policy and management. This book will be of interest to students, researchers, practitioners and policymakers in the field of climate adaptation and food supply chain management and policy.*

*The human aspect plays an important role in the social sciences. The behavior of people has become a vital area of focus in the social sciences as well.*

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*Interdisciplinary Behavior and Social Sciences contains papers that were originally presented at the 3rd International Congress on Interdisciplinary Behavior and Social Science 2014 (ICIBSoS 2014), This book is a comprehensive summary of current global research on no-till farming, and its benefits and challenges from various agronomic, environmental, social and economic perspectives. It details the characteristics and future requirements of no-till farming systems across different geographic and climatic regions, and outlines what is needed to increase the uptake of no-till farming globally. Over 35 chapters, this book covers in detail the agronomic and soil management issues that must be*

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*resolved to ensure the successful implementation of these systems. Important economic, environmental, social and policy considerations are discussed. It also features a series of case studies across a number of regions globally, highlighting the challenges and opportunities for no-till and how these may vary depending on climate and geopolitical location. This book is a remarkable compilation by experts in no-till farming systems. The promotion and expansion of no-till farming systems worldwide will be critical for food security, and resource and environmental sustainability. This is an invaluable reference for both researchers and practitioners grappling with the challenges of feeding the*



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*world's rising population in an environment increasingly impacted by climate change. It is an essential reading for those seeking to understand the complexity of no-till farming systems and how best to optimise these systems in their region.*

*Biomass Supply Chains for Bioenergy and Biorefining highlights the emergence of energy generation through the use of biomass and the ways it is becoming more widely used. The supply chains that produce the feedstocks, harvest, transport, store, and prepare them for combustion or refinement into other forms of fuel are long and complex, often differing from feedstock to feedstock. Biomass Supply Chains for Bioenergy and*

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*Biorefining considers every aspect of these supply chains, including their design, management, socioeconomic, and environmental impacts. The first part of the book introduces supply chains, biomass feedstocks, and their analysis, while the second part looks at the harvesting, handling, storage, and transportation of biomass. The third part studies the modeling of supply chains and their management, with the final section discussing, in minute detail, the supply chains involved in the production and usage of individual feedstocks, such as wood and sugar starches, oil crops, industrial biomass wastes, and municipal sewage stocks. Focuses on the complex supply chains of the various*

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*potential feedstocks for biomass energy generation  
Studies a wide range of biomass feedstocks, including  
woody energy crops, sugar and starch crops,  
lignocellulosic crops, oil crops, grass crops, algae, and  
biomass waste Reviews the modeling and optimization,  
standards, quality control and traceability,  
socioeconomic, and environmental impacts of supply  
chains*

*Techniques, Applications and Policy*

*Agricultural Education*

*Challenges and Opportunities*

*Biomass and Biofuels*

*Top-Down and Bottom-up Assessment for Agricultural,*

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## *Forest and Waste Feedstock*

### *Knowledge-Driven Developments in the Bioeconomy*

The proceedings volume consists of academic papers on decision-making under uncertainty, smart decision, stochastic optimization, management simulation and its applications.

It presents some compelling and valuable results on the cutting-edge modeling methods and the practical case studies in the operations management process for power, transportation, and logistics companies.

Business practices are constantly evolving in order to meet growing customer demands.

Evaluating the role of logistics and supply

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chain management skills or applications is necessary for the success of any organization or business. As market competition becomes more aggressive, it is crucial to evaluate ways in which a business can maintain a strategic edge over competitors. *Supply Chain and Logistics Management: Concepts, Methodologies, Tools, and Applications* is a vital reference source that centers on the effective management of risk factors and the implementation of the latest supply management strategies. It also explores the field of digital supply chain optimization and business transformation. Highlighting a

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range of topics such as inventory management, competitive advantage, and transport management, this multi-volume book is ideally designed for business managers, supply chain managers, business professionals, academicians, researchers, and upper-level students in the field of supply chain management, operations management, logistics, and operations research.

This book is at the cutting edge of the ongoing research in bioeconomy and encompasses both technological and economic strategies to master the transformation towards a knowledge- and bio-based production

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system. The volume combines different international perspectives with approaches of the various fields of research. Bioeconomy is one of the future concepts of an economy which, while based on renewable biological resources, also predicts economic growth. Starting from a growth-economic as well as knowledge- and innovation-economic perspective the contributions give an overview of different existing patterns and cases and describe the basic prerequisites for the bioeconomy transformation. Therewith, the volume is a resource for experts and newcomers in the field of bioeconomy giving

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insight into the life cycle of bio-based products, detailing the latest advancements and how to turn them into economic growth. An interdisciplinary framework for managing sustainable agrifood supply chains Supply Chain Management for Sustainable Food Networks provides an up-to-date and interdisciplinary framework for designing and operating sustainable supply chains for agrifood products. Focus is given to decision-making procedures and methodologies enabling policy-makers, managers and practitioners to design and manage effectively sustainable agrifood supply chain networks. Authored by



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high profile researchers with global expertise in designing and operating sustainable supply chains in the agri-food industry, this book: Features the entire hierarchical decision-making process for managing sustainable agrifood supply chains. Covers knowledge-based farming, management of agricultural wastes, sustainability, green supply chain network design, safety, security and traceability, IT in agrifood supply chains, carbon footprint management, quality management, risk management and policy-making. Explores green supply chain management, sustainable knowledge-based

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farming, corporate social responsibility, environmental management and emerging trends in agri-food retail supply chain operations. Examines sustainable practices that are unique for agriculture as well as practices that already have been implemented in other industrial sectors such as green logistics and Corporate Social Responsibility (CSR). Supply Chain Management for Sustainable Food Networks provides a useful resource for researchers, practitioners, policy-makers, regulators and C-level executives that deal with strategic decision-making. Post-graduate students in the field of agriculture

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sciences, engineering, operations management, logistics and supply chain management will also benefit from this book.

Proceedings of the 3rd International Congress on Interdisciplinary Behavior and Social Science 2014 (ICIBSoS 2014), 1-2 November 2014, Bali, Indonesia.

2014 International Conference on Economics and Management (ICEM2014).

Climate Change Adaptation and Food Supply Chain Management

Soil Nitrogen Uses and Environmental Impacts Sustainable Supply Chain Management

Data and Research to Improve the U.S. Food

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Availability System and Estimates of Food  
Loss

**The industrial internet is a new and upcoming technology that is changing the practices of organizations and corporations everywhere. Through research and application, opportunities can arise from implementing these new systems and devices. The Internet of Things in the Modern Business Environment is an essential reference source for the latest scholarly**

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research on varying aspects of the interworking of smart devices within a business setting and explores the impact of these devices on company operations and models. Featuring extensive coverage on a broad range of topics such as supply chain management, information sharing, and data analytics, this publication is ideally designed for researchers, managers, and students seeking current research on the expansion of technology in

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commerce.

India is home to the world's largest hungry population and has a long way to go before it is anywhere near the mammoth task of achieving the United Nations' goal of ending hunger in 2030. It is ironic that this book raises the issue of "Hunger" in a state where it is least expected. Punjab is a state with mountains of food grains and overflowing godowns, with highest yields, and largest area under

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**irrigation. Not only that, it is the Green Revolution state of India, that has played the most prominent role in helping India achieve its goal of food self-sufficiency. By investigating the hydra-headed concept of food security in Indian Punjab, this book brings to fore the different dimensions of the deprivation of human capabilities and the intricate relationship between food security and economy, ecology, and state policy. Moreover, it is a wakeup**

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call for India; for if, this is the state of affairs in one of the more prosperous primarily agrarian states, what would be the situation in the poorer ones? The primary objective is to divert urgent attention to the issue of food security, as an important ingredient of human resource development. With a strong commitment to achieving the primary goal of human resource development, India's biggest burden could well become India's



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**greatest asset in the path to inclusive development.**

**Agricultural intensification has only taken off to a very limited extent in Ghana. Adoption of land productivity-enhancing technology is low, even in areas with proximity to urban markets. Rather, farmers have increasingly been adopting labor-saving technologies such as herbicides and mechanization, for which vibrant private supply channels are emerging. Further efforts to**

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strengthen the private mechanization supply chain would help meet the rising demand for tractor services.

Furthermore, mechanization could also help free up agricultural labor to perform other more labor intensive tasks.

The United States is one of the world's largest producers and exporters of a range of agricultural commodities, and the largest provider of foreign assistance, so U.S. policies have big

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effects on global food security and other global public goods linked to agriculture. On the positive side of the ledger, President Obama created the Feed the Future aid initiative to promote agricultural development in poorer countries as a tool to achieve the global goals of ending hunger and extreme poverty, which are mostly rural. But that generosity is undercut by U.S. support for farmers that distorts global markets and ignores

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negative spillovers for the rest of the world. In this book, Elliott focuses on three policy areas that are particularly damaging for developing countries: traditional agricultural subsidy and trade policies that support the incomes of American farmers at the expense of farmers elsewhere; the biofuels mandate, which in its current form increases market volatility while doing little if anything to mitigate climate change; and weak regulation of

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antibiotic use in livestock, which contributes to the global spread of drug-resistant super bugs. While noting that broad reforms are needed to fix these problems, Elliott also identifies practical steps that U.S. policymakers could take in the relatively short run to improve farm policies—for American taxpayers and consumers as well as for the poor and vulnerable in developing countries.

**Forest Value Chain Optimization and**

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## **Sustainability**

### **Rainwater Tank Systems for Urban Water Supply**

### **Opportunities for U.S. Leadership Proceedings of the 2014 OECD Global Forum on Agriculture**

### **Breakthroughs in Research and Practice Australasian Conference on Information Systems 2018**

The United States Department of Agriculture's (USDA's) Economic Research Service's (ERS) Food Availability Data System includes three

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distinct but related data series on food and nutrient availability for consumption. The data serve as popular proxies for actual consumption at the national level for over 200 commodities (e.g., fresh spinach, beef, and eggs). The core Food Availability (FA) data series provides data on the amount of food available, per capita, for human consumption in the United States with data back to 1909 for many commodities. The Loss-Adjusted Food Availability (LAFA) data series is derived from the FA data series by adjusting for food

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spoilage, plate waste, and other losses to more closely approximate 4 actual intake. The LAFA data provide daily estimates of the per capita availability amounts adjusted for loss (e.g., in pounds, ounces, grams, and gallons as appropriate), calories, and food pattern equivalents (i.e., "servings") of the five major food groups (fruit, vegetables, grains, meat, and dairy) available for consumption plus the amounts of added sugars and sweeteners and added fats and oils available for consumption. This fiscal year, as part of its initiative to



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systematically review all of its major data series, ERS decided to review the FADS data system. One of the goals of this review is to advance the knowledge and understanding of the measurement and technical aspects of the data supporting FADS so the data can be maintained and improved. Data and Research to Improve the U.S. Food Availability System and Estimates of Food Loss is the summary of a workshop convened by the Committee on National Statistics of the National Research Council and the Food and Nutrition Board of

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the Institute of Medicine to advance knowledge and understanding of the measurement and technical aspects of the data supporting the LAFA data series so that these data series and subsequent food availability and food loss estimates can be maintained and improved. The workshop considered such issues as the effects of termination of selected Census Bureau and USDA data series on estimates for affected food groups and commodities; the potential for using other data sources, such as scanner

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data, to improve estimates of food availability; and possible ways to improve the data on food loss at the farm and retail levels and at restaurants. This report considers knowledge gaps, data sources that may be available or could be generated to fill gaps, what can be learned from other countries and international organizations, ways to ensure consistency of treatment of commodities across series, and the most promising opportunities for new data for the various food availability series. This OECD Economic Survey of China

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examines recent economic developments, policies and prospects. Special chapters cover skills and education as well as rural development.

By 2050 the world's population is projected to grow by one-third, reaching between 9 and 10 billion. With globalization and expected growth in global affluence, a substantial increase in per capita meat, dairy, and fish consumption is also anticipated. The demand for calories from animal products will nearly double, highlighting the critical importance of

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the world's animal agriculture system. Meeting the nutritional needs of this population and its demand for animal products will require a significant investment of resources as well as policy changes that are supportive of agricultural production. Ensuring sustainable agricultural growth will be essential to addressing this global challenge to food security. Critical Role of Animal Science Research in Food Security and Sustainability identifies areas of research and development, technology, and resource needs

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for research in the field of animal agriculture, both nationally and internationally. This report assesses the global demand for products of animal origin in 2050 within the framework of ensuring global food security; evaluates how climate change and natural resource constraints may impact the ability to meet future global demand for animal products in sustainable production systems; and identifies factors that may impact the ability of the United States to meet demand for animal products, including the need for trained

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human capital, product safety and quality, and effective communication and adoption of new knowledge, information, and technologies. The agricultural sector worldwide faces numerous daunting challenges that will require innovations, new technologies, and new ways of approaching agriculture if the food, feed, and fiber needs of the global population are to be met. The recommendations of Critical Role of Animal Science Research in Food Security and Sustainability will inform a new roadmap for

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animal science research to meet the challenges of sustainable animal production in the 21st century.

This book explores the challenges of sustainable agri-food supply chains. It presents and discusses nine cases of organizational innovation, covering different phases of food production and facing different challenges, by proposing alternative models to the traditional paradigm of scale and leverage to design supply chain in these industries. Biomass Supply Chains for Bioenergy and



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Biorefining

Handbook on the Geographies of Energy

The State of the World's Biodiversity for Food  
and Agriculture

Agricultural Productivity and Producer  
Behavior

in Victoria & the Faculty of Agriculture,  
University of Melbourne

The Economics of Hunger in Punjab

Productivity growth in the Turkish  
agricultural sector is supported today by  
better technologies, crop varieties and

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animal breeds. Yet improvements have slowed since the late 2000s, and the productivity gap between agriculture and the rest of the economy remains large. Changes in the planet's climate in recent years have led to significant impacts on natural resources and ecosystems. New strategies must be adopted in order to support the protection and continued development of numerous natural resources. Reconsidering the Impact of Climate Change on Global Water Supply, Use, and Management is a pivotal reference source

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for the latest scholarly material on the relationship between global climate changes and the planet's water ecosystems. Highlighting relevant environmental, social, and economic issues, this book is ideally designed for academics, researchers, policy makers, students, and practitioners interested in the impacts of climate change on global water resources. ICEM2014 is to offer scholars, professionals, academics and graduate students to present, share, and discuss their studies from various perspectives in

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the aspects of social science. The ICEM2014 is hosted by Advance Information Science Research Center and is sponsored by DEStech Publication, Inc., South China University of Technology, Guangdong University of Foreign Studies. This proceedings tends to collect the up-to-date, comprehensive and worldwide state-of-art knowledge on economics and management. All of accepted papers were subjected to strict peer- reviewing by 2-4 expert referees. The papers have been selected for this proceedings based on originality,

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significance, and clarity for the purpose of the conference. The selected papers and additional late-breaking contributions to be presented will make an exciting technical program on conference. The conference program is extremely rich, featuring high-impact presentation. We hope this conference will not only provide the participants a broad overview of the latest research results on economics and management, but also provide the participants a significant platform to build academic connections. ICEM2014 would

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like to express our sincere appreciations to all authors for their contributions to this conference. We would like to extend our thanks to all the referees for their constructive comments on all papers; especially, we would like to thank to organizing committee for their hard working.

Agricultural yields have increased steadily in the last half century, particularly since the Green Revolution. At the same time, inflation-adjusted agricultural commodity prices have been

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trending downward as increases in supply outpace the growth of demand. Recent severe weather events, biofuel mandates, and a switch toward a more meat-heavy diet in emerging economies have nevertheless boosted commodity prices. Whether this is a temporary jump or the beginning of a longer-term trend is an open question. Agricultural Productivity and Producer Behavior examines the factors contributing to the remarkably steady increase in global yields and assesses whether yield growth can continue. This research also

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considers whether such growth will impose significant environmental externalities. Among the topics studied are genetically modified crops; changing climatic factors; farm production responses to government regulations including crop insurance, transport subsidies, and electricity subsidies for groundwater extraction; and the role of specific farm practices such as crop diversification, disease management, and water-saving methods. This research provides new evidence that technological as well as policy choices



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influence agricultural productivity.  
Food Supply Chain Management and Logistics  
Innovation and Future Trends in Food  
Manufacturing and Supply Chain  
Technologies  
Issues in Agricultural Trade Policy  
Proceedings of the 2014 OECD Global Forum  
on Agriculture  
Agri-Food Supply Chain Management:  
Breakthroughs in Research and Practice  
OECD Economic Surveys: China 2015  
Farm-Level Modelling

***Global production of soybeans and palm***

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***oil has increased enormously in the tropics over the last two decades. The Tropical Oil Crop Revolution provides a broad synthesis of the major supply and demand drivers in their production; their economic, social, and environmental impacts; and the future outlook to 2050. The planting of these crops is controversial because they are often sown on formerly forested or savanna lands, rely on large farmers and agribusiness rather than smallholders***

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***for their development, and largely supply export markets. This book provides a comparative perspective on their expansion with exports increasingly concentrated in Southeast Asia and South America. Because these crops are used for food, cooking, animal feed, and biofuels, they have entered the agriculture, food, and energy chains of many countries, linking consumers across the world to distant producers in a handful of exporting countries. This***

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***book is a profound examination of the economic, social, and environmental impacts of the oil crop revolution in the tropics. While both economic benefits and social and environmental costs have been huge, the outlook is for reduced trade-offs and more sustainable outcomes as the oil crop revolution slows and the global, national and local communities converge on ways to better manage land use changes and land rights.***

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***Rainwater tank systems have been widely adopted across the world to provide a safe local source of water in underdeveloped rural areas, a substitution for mains water for non potable end uses in water stressed urban areas, as well as providing flooding control in monsoonal climates such as Korea, or combined sewer systems such as Germany. The importance of these systems in cities has grown, as water managers seek to***

***provide a range of decentralised solutions to supply constraints of current water supply systems, whilst reducing the impact of urban development on the natural environment, and increasing resilience to the impacts of climate change. Rainwater tank systems are now often implemented under integrated urban water management (IUWM) and water sensitive urban design (WSUD) philosophies, which take a holistic view of the urban water cycle. Rainwater Tank***

***Systems for Urban Water Supply is based on a comprehensive, multi-million dollar research program that was undertaken in South East Queensland (SEQ) Australia in response to the Millennium drought when the water supply level in the regions drinking water dams dropped to 17% in July 2007 and the area came close to running out of water. In particular, the book provides insights and detailed analysis of design, modelling, implementation, operation, energy***

***usage, economics, management, health risk, social perceptions and implications for water quality/quantity of roof water runoff. The approaches and methodologies included in Rainwater Tank Systems for Urban Water Supply inform and validate research programs, and provide insights on the expected performance and potential pitfalls of the adoption of rainwater tanks systems including: actual harvested yield and resulting mains water savings, optimal***



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***sizing for rainwater storages and roof collection systems, expected water quality and implications for managing public health risks, modelling tools available for decision support, operation and management approaches of a decentralised asset at the household scale and community acceptance. The book is suitable for use at undergraduate and post graduate levels and is of particular interest to water professionals across the globe, who are***

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***involved in the strategic water planning for a town, city or a region. It is a valuable resource for developers, civil designers, water planners, architects and plumbers seeking to implement sustainable water servicing approaches for residential, industrial and commercial developments.***

***Agricultural Education remains fundamental to civilization. It is the most consistent productive income of Australia, which is one of the world's***

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***very few net agricultural exporters. Victoria, with only about three percent of the Australia's area, has been its major source of agricultural output. These three factors - underpinning civilization, creating wealth, and intensity in south-eastern Australia - make Victorian agriculture and its education of national importance and international significance. The Faculty of Agriculture at the University of Melbourne, at times complemented by La Trobe University***

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***and such colleges as Burnley, Dookie, Gilbert Chandler, Glenormiston, Longerenong, Marcus Oldham and McMillan, has underpinned sustained rises in productivity and profitability. But coordination and consistency have not always been its hallmarks. This history reveals that Agriculture at Melbourne began amidst controversy, grew to fame under a great Dean, at times rested on its laurels and others was dragged into organisational***

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***experiments. Its 22 Deans over its 110 years typify the calling evident in its staff. Frequently a leader, the Faculty has recently strengthened its animal sciences by joining with the veterinary sciences - but that is for a future history.***

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