Information Technology In Agri Food Supply Chains

Information and communication technologies (ICTs) to provide agricultural advice to smallholder farmers: Experimental evidence from Uganda

Information Technology and Career Education

Foundation Degree Information Technology (agri-food)

Intelligent Agrifood Chains and Networks

The Economics of Food Price Volatility

Encyclopedia of Agricultural, Food, and Biological Engineering

Management and Information Technology: New Challenges

How is Digitalization Affecting Agri-food?

The New European Rurality

Agricultural and Environmental Informatics, Governance and Management

Dynamics in Logistics

Driving Agribusiness With Technology Innovations

Digital technologies in agriculture and rural areas

Agricultural Supply Chains and Industry 4.0

Agri-Food 4.0

High Performance Logistics

Agri-Food 4.0

Digital Opportunities for Better Agricultural Policies

Integrated Processing Technologies for Food and Agricultural By-Products

Computer and Computing Technologies in Agriculture II, Volume 3

Agri-Food Supply Chain Management: Breakthroughs in Research and Practice

The Impact of Information and Communication Technology (ICT) on International Trade in Agri-food Products

Computer and Computing Technologies in Agriculture, Volume I

The Economic Benefits of New Information Technology

Ethics, Governance and Risk Management in Organizations

Report

Micro-electronics and Information Technology in the Canadian Agri-food Sector

Emerging Technologies in Agriculture and Food Science

Green
Public concern over issues such as urban sprawl, the conversion of agricultural land and the management of public lands has never been greater. Presenting a novel synopsis of the economics of land-use this book examines the critical issues involved, such as transportation and technological change, and the economic principles behind them. Chapters are specifically designed to demonstrate the types of land-use questions economic analysis
can answer; the types of methods that might be employed to answer the questions; and the potential uses of economic analysis in policy-making. The book is a key contribution to contemporary land-use studies, highlighting the main methodological and public policy issues that will be central to research on the economics of land-use change in the future.

Feeding our globally expanding population is one of the most critical challenges of our time and improving food and agricultural production efficiencies is a key factor in solving this problem. Currently, one-third of food produced for humans is wasted, and for every pound of food produced, roughly an equal amount of nonfood by-product is also generated, creating a significant environmental impact. In Integrated Processing Technologies for Food and Agricultural By-Products experts from around the world present latest developments, recognizing that while some by-products have found use as animal feed or are combusted for energy, new technologies which integrate conversion of production and processing by-products into higher-value food or nonfood products, nutraceuticals, chemicals, and energy resources will be a critical part of the transition to a more sustainable food system. Organized by agricultural crop, and focusing on those crops with maximum economic impact, each chapter describes technologies for value-added processing of by-products which can be integrated into current food production systems. Integrated Processing Technologies for Food and Agricultural By-Products is a valuable resource for industry professionals, academics, and policy-makers alike. Provides production-through-processing
coverage of key agricultural crops for a thorough understanding and translational inspiration. Describes and discusses major by-product sources, including physical and chemical biomass characterizations and associated variability in detail. Highlights conversions accomplished through physical, biological, chemical, or thermal methods and demonstrates examples of those technologies.

Despite a rapidly growing enthusiasm around applications of information and communications technologies (ICTs) to smallholder agriculture in developing countries, there are still many questions on the effectiveness of ICT-based approaches. This study assesses the effects of videomediated agricultural extension service provision on farmers’ knowledge and adoption of improved agricultural technologies and practices in Ethiopia. The study focuses on a program piloted by the Government of Ethiopia and Digital Green and poses three questions. First, to what extent does video-mediated extension lead to increased uptake of improved agricultural technologies and practices by smallholder farmers? Second, is video-mediated extension targeted at both spouses of the household more effective than when only targeted at the (typically male) household head? Third, how cost-effective is a video-mediated approach to extension provision? The study explores these questions with a randomized controlled trial designed to evaluate the video-mediated approach as applied to three priority crops (teff, wheat, maize) and three technologies (row planting, precise seeding rates, and urea dressing). The trial was implemented in 347 kebeles (village clusters) during the 2017
meher (rainy) season in Ethiopia’s four most agriculturally important regional states. Analysis of data from our surveys of 2,422 households and 896 extension agents indicates that the video-mediated approach is more effective than the conventional approach in achieving several key outcomes. Specifically, we find that videomediated extension reaches a wider audience than the conventional approach and leads to higher levels of agricultural knowledge and uptake of technologies in those kebeles randomly assigned to the program. While our results do point to greater participation and greater knowledge of female spouses in kebeles where both male and female spouses were targeted by the program, we do not find clear evidence that the more inclusive approach translated into higher uptake of the subject technologies and practices. Finally, we find that the video-mediated approach becomes less costly as the scale of operation increases.

The volume comprises the proceedings of the third International Conference on Dynamics in Logistics LDIC 2012. The scope of the conference targeted the identification, analysis, and description of the dynamics of logistic processes and networks. The spectrum ranged from the modeling and planning of processes and innovative methods like autonomous control and knowledge management to the new technologies provided by radio frequency identification, mobile communication, and networking. The growing dynamics in the area of logistics poses completely new challenges: Logistic processes and networks must rapidly and flexibly adapt to continuously changing conditions. LDIC 2012 provided a venue for researchers from academia and
industry interested in the technical advances in dynamics in logistics. The conference addressed research in logistics from a wide range of fields, e.g. engineering, computer science and operations research. The volume consists of two invited papers and of 49 contributed papers divided into various subjects including transport logistics, routing in dynamic logistic networks, modeling, simulation, optimization and collaboration in logistics, identification technologies, mathematical modeling in transport and production logistics, information, communication, risk and failure in logistic systems, autonomous control in logistic processes, global supply chains and industrial applications, and the Internet of Things in the context of logistics.

Food has a fundamental position in society, ensuring health, happiness and political stability. Consequently, the management of food chains and networks is one of the most important aspects of the modern food industry. Yet food is difficult to handle along long supply chains, with a limited window for storage and handling time, and the risk of spoiling if incorrectly handled or processed. These issues can lead to logistical problems that can severely affect product quality and freshness. Intelligent Agrifood Chains and Networks offers a timely discussion of the current state of food logistics, and indicates the major ICT problems that can occur during production, warehousing, transportation and retailing. Emphasis is given to new technologies and intelligent systems that are able to process time-dependent information, handle emergencies, and support logistics
operations in food management. In particular, the authors show how telematics and RFID can be implemented in the supply chain. The book also includes real-life case studies, in which actual food logistics problems and their solutions are presented, demonstrating how systemic and logistics approaches may be combined. The book is directed at academics, researchers, and students seeking the necessary background in terms of the interplay between the food supply chain and ICT. Its comprehensive review of current issues in the food supply chain will be of interest to managers and technicians working in the food industry, while its technological focus will be invaluable to food scientists and technologists working in research and industry environments.

The digital agriculture revolution holds a promise to build an agriculture and food system that is efficient, environmentally sustainable, and equitable, one that can help deliver the Sustainable Development Goals. Unlike past technological revolutions in agriculture, which began on farms, the current revolution is being sparked at multiple points along the agrifood value chain. The change is driven by the ability to collect, use, and analyze massive amounts of machine-readable data about practically every aspect of the value chain, and by the emergence of digital platforms disrupting existing business models. All this allows for drastically reduced transaction costs and pervasive information asymmetries that plague the
agrifood system. The success of the digital transformation, however, is not guaranteed as the risks it brings are numerous, including those related to data governance and inadequate competition within and between digital platforms. What’s Cooking: Digital Transformation of the Agrifood System investigates how digital technologies can accelerate the transformation of the agrifood system by increasing efficiency on the farm; improving farmers’ access to output, input, and financial markets; strengthening quality control and traceability; and improving the design and delivery of agriculture policies. It also identifies a key role for the public sector in maximizing the benefits of this process while minimizing its risks, through enabling an innovation ecosystem featuring open datasets, digital platforms, digital entrepreneurship, digital payment systems, and digital skills and encouraging equitable technology adoption.

Using real cases of food firms and agriculture supply chains as a context, How is Digitalization Affecting Agri-food? New Business Models, Strategies and Organizational Forms aims to understand the key themes in strategic and organizational research in this area. Despite the importance of food and agriculture in the current political and societal context, analysis of the impact of digitalization and information technologies on the industry is still limited. The objective of this monograph is to understand the direction of this change. With case studies of food firms and agriculture
supply chains it sets out to conceptualize food organizing and organizations as a fruitful object of inquiry, both at the intra and interorganizational levels. It aims to understand new business models, strategies, and organizational forms. Contributions in this stream of research have the potential to yield important and relevant insights for both scholars and societies. This book is written primarily for academics engaged in innovation management or strategy, or conducting organizational behavior research. It will also be of relevance to practitioners and managers in the agri-food industry.

Agri-Food 4.0: Innovations, Challenges and Strategies addresses new research on digital technologies in the Agri-Food industry, including smart packaging, smart warehousing, effective inventory control, blockchain technology, artificial intelligence, and other Industry 4.0 concepts. This book explores the impact of industry 4.0 on agricultural supply chains, exploring how changes such as increased digitisation, automation, and the digital value chain, will impact food production globally. At a time when increasing population and environmental degradation puts stress on food supply chains, traditional farming operation models struggle to maintain both sustainability and transparency. Industry 4.0 could lead to digitalised ways of farming and agricultural production processes that will transform the traditional operating and process models to digital, data-intensive methods focusing on analytics and decision-making practices. This book aims
to provider the reader with an understanding of the concept of Agriculture 4.0 in relation to supply chain management. Different applications of Agricultural 4.0 supply chains are discussed in relation to their respective advantages and disadvantages. Dr. Stella Despoudi is Lecturer in Operations and Supply Chain Management at Aston University and Adjunct Lecturer in Supply Chain Management at the University of Western Macedonia, Greece. Dr. Konstantina Spanaki is a Lecturer in Information Management at Loughborough University, UK. Dr. Oscar Rodríguez-Espíndola is a Senior lecturer in Operations and Supply Chain Management at Aston University and a member of the Aston CRISIS centre, UK. Dr. Efpraxia Zamani is a Senior Lecturer of Information Systems at the University of Sheffield, UK.

This book brings together research works, ideas, critical reviews and strategic proposals encompassing various ethical and corporate governance issues in workplaces and organizations around the globe. For the most part, organizations are managed by policies, guidelines and systems. Good ethics and solid corporate governance help to tie these three elements together so that an effective and successful organization is established. Alongside corporate governance, ethics play an integral role in ensuring the long term survival of businesses. Multidisciplinary in approach, this book provides a platform for scholars and researchers from various backgrounds and interdisciplinary expertise to showcase their research work, ideas, critical review and strategic proposals on the ethical aspects, governance and risk management issues in organizations. The book includes discussions of ethical
issues in a variety of organizations around the globe including the non-profit and non-governmental sector and also provides readers with ideas, guidelines and strategic recommendations for handling such issues.

For nearly a century, scientific advances have fueled progress in U.S. agriculture to enable American producers to deliver safe and abundant food domestically and provide a trade surplus in bulk and high-value agricultural commodities and foods. Today, the U.S. food and agricultural enterprise faces formidable challenges that will test its long-term sustainability, competitiveness, and resilience. On its current path, future productivity in the U.S. agricultural system is likely to come with trade-offs. The success of agriculture is tied to natural systems, and these systems are showing signs of stress, even more so with the change in climate. More than a third of the food produced is unconsumed, an unacceptable loss of food and nutrients at a time of heightened global food demand. Increased food animal production to meet greater demand will generate more greenhouse gas emissions and excess animal waste. The U.S. food supply is generally secure, but is not immune to the costly and deadly shocks of continuing outbreaks of food-borne illness or to the constant threat of pests and pathogens to crops, livestock, and poultry. U.S. farmers and producers are at the front lines and will need more tools to manage the pressures they face. Science Breakthroughs to Advance Food and Agricultural Research by 2030 identifies innovative, emerging scientific advances for making the U.S. food and agricultural system more efficient, resilient, and sustainable. This report
explores the availability of relatively new scientific developments across all disciplines that could accelerate progress toward these goals. It identifies the most promising scientific breakthroughs that could have the greatest positive impact on food and agriculture, and that are possible to achieve in the next decade (by 2030).

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 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 papers in this volume comprise the refereed proceedings of the Second IFIP International Conference on Computer and Computing Technologies in Agriculture (CCTA2008), in Beijing, China, 2008. The conference on the Second IFIP International Conference on Computer and Computing Technologies in Agriculture (CCTA 2008) is cooperatively sponsored and organized by the China Agricultural University (CAU), the National Engineering Research Center for Information Technology in Agriculture (NERCITA), the Chinese Society of Agricultural Engineering (CSAE), International Federation for Information Processing (IFIP), Beijing Society for Information Technology in Agriculture, China and Beijing Research Center for Agro-products Test and Farmland Inspection, China. The related departments of China’s central government bodies like: Ministry of Science and Technology, Ministry of Industry and Information Technology, Ministry of Education and the Beijing Municipal Natural Science Foundation, Beijing Academy of Agricultural and Forestry Sciences, etc. have greatly contributed and supported to this event. The conference is as good platform to bring together scientists and researchers, agronomists and information engineers, extension servers and entrepreneurs from a range of disciplines concerned with impact of Information technology for sustainable agriculture and rural development. The representatives of all the supporting organizations, a group of invited speakers, experts and researchers from more than 15 countries, such as: the Netherlands, Spain, Portugal, Mexico, Germany, Greece, Australia, Estonia, Japan, Korea, India, Iran, Nigeria, Brazil, China, etc.
This report aims to identify the different scenarios where the process of digital transformation is taking place in agriculture. This identifies those aspects of basic conditions, such as those of infrastructure and networks, affordability, education and institutional support. In addition, enablers are identified, which are the factors that allow adopting and integrating changes in the production and decision-making processes. Finally identify through cases, existing literature and reports how substantive changes are taking place in the adoption of digital technologies in agriculture.

This is a fully rewritten and extended version of the successful first edition of a textbook which focuses on consumer-driven food product innovation using a systems-oriented approach. It integrates marketing and consumer sciences with technological aspects such as processing, logistics and information technology, and presents an integrated view of how new food product development is to be situated in a chain-oriented approach. Attention is also paid to the impact of changes in the environment of the agri-food system on food innovation, such as the changing consumer, the growing concern about food safety and new insights in human nutrition. Topics covered include changing markets, consumer perception of product quality, quality function deployment, the use of new and improved technology in food production, logistics and information technology, the role of regulation and legislation, quality management and control systems such as HACCP and TQM. The chapters of the first edition have been updated and extended. New chapters have been added, on consumer behaviour, corporate...
strategy, food safety and nutritional aspects of food innovation. Researchers and professionals in the food industry as well as students of food science, food technology and management will find this publication provides valuable information on the latest developments in the product innovation by agri-food systems.

"The conference was organized by the three editors of this book and took place on August 15–16, 2012 in Seattle."--Preface.

This book constitutes the thoroughly refereed post-conference proceedings of the 8th International Conference on Information and Communication Technologies in Agriculture, Food and Environment, HAICTA 2017, held in Chania, Crete, Greece, in September 2017. The 14 revised full papers presented in this book were carefully selected from the 55 accepted full papers out of 124 submissions. The selected papers span across various subjects, from ICT innovations and smart farming, to decision support systems, as well as precision farming, disease diagnosis using mobile devices, IoT for monitoring and controlling animal production, sensor-based solutions, GIS-based water management, environmental planning, information systems for monitoring of fish stocks and fisheries, information management in the agri-food sector, and forestry planning and management.

The papers in this volume comprise the refereed proceedings of the the First
International Conference on Computer and Computing Technologies in Agriculture (CCTA 2007), in Wuyishan, China, 2007. This conference is organized by China Agricultural University, Chinese Society of Agricultural Engineering and the Beijing Society for Information Technology in Agriculture. The purpose of this conference is to facilitate the communication and cooperation between institutions and researchers on theories, methods and implementation of computer science and information technology. By researching information technology development and the sources integration in rural areas in China, an innovative and effective approach is expected to be explored to promote the technology application to the development of modern agriculture and contribute to the construction of new countryside. The rapid development of information technology has induced substantial changes and impact on the development of China’s rural areas. Western thoughts have exerted great impact on studies of Chinese information technology development and it helps more Chinese and western scholars to expand their studies in this academic and application area. Thus, this conference, with works by many prominent scholars, has covered computer science and technology and information development in China’s rural areas; and probed into all the important issues and the newest research topics, such as Agricultural Decision Support System and Expert System, GIS, GPS, RS and Precision Farming, CT applications in Rural Area, Agricultural System Simulation, Evolutionary Computing, etc.

Cultivators and livestock farmers are increasingly arranging innovative
technical and scientific estimations with the aim to enhance agricultural sustainability, effectiveness, and plant health. Innovative farming technologies incorporate biology with smart technology (computers and sensor devices) exchanging information with one another autonomously in a structured farm management system. This book presents reviews on innovative techniques and methodologies to complement conventional plant control and breeding attempts toward enhancing crop yield and production. Reviews covered in this volume include: -Active compounds from pomegranate seeds -Application of Enterococci and their bacteriocins for meat biopreservation -Technological advancement in the detection and identification of plant pathogens -Machine learning for precision agriculture -Use of remote sensing technology and geographic information systems for agriculture and environmental observation The information presented in this volume will provide helpful updates for students, technology experts and professionals in the food security and sustainable agriculture sectors.

Examining the full cycle from farm to fork, this book reviews the current status of green processing in the agriculture and agri-food sector, and provides strategies for enhancing the use of environmentally-friendly technologies for production and processing.

Modern web-based applications are pertinent for businesses, as they often encourage their core competencies and capabilities. As such, the agribusiness sector must begin to take advantage of the open networks and
advances in communication and information technologies in order to grow their businesses exponentially. Driving Agribusiness With Technology Innovations highlights innovative business models and theories that encourage the use of emerging technological advances to produce thriving enterprises. Featuring extensive coverage on relevant topics including digital environments, mobile agriculture, supply chain platforms, and internet marketing models, this publication is an important reference source for business managers, practitioners, professionals, and engineers who are interested in discovering emerging technology trends for agribusiness.

"This book has compiled chapters from experts from around the world in the field of supply chain management and provides a vital compendium of the latest research, case studies, frameworks, methodologies, architectures, and best practices within the field of supply chain management"--Provided by publisher.

This fifteen-chapter monograph edited by Joanna Paliszkiewicz is an interesting read that focuses on light to moderate topics in the areas of management and information technology. The topics are from cryptocurrencies and their online exchanges in Poland to using the concept of blockchain in agribusiness, using virtual reality, creating knowledge and innovation in family businesses, the importance of social media in education, risk analysis, security and forensic science, and effective communication in
The monograph continues with topics of CRM/ERP implementation in SMEs in Poland, big data/agri-food industry and innovative solution for knowledge management, the impact of digital technologies on competences, digitization in agriculture, and the impact of merchandising on consumer behaviour. Although there is little connection in terms of reading structure form one chapter to the next, each chapter uniquely stands alone to offer insights into the topic it examines in a very simple and understandable manner.

This handbook is a reference for those interested in information technologies and emerging management practices in China. The emphasis on information technologies and management provides a unique proposition and gives characteristics of flexibility and adoption to diverse audiences. The subject area is a combination of global information technology and management along with strategic management of IT. The handbook exploits state-of-the-art and emerging trends in theory and technology. This handbook is primarily designed for a professional and academic audience.

This study—which includes a pilot intervention in Kenya—aims to further the state of knowledge about the emerging trend of disruptive agricultural technologies (DATs) in Africa, with a focus on supply-side dynamics. The first part of the study is a stocktaking analysis to assess the number, scope, trend, and characteristics of scalable disruptive technology innovators in agriculture in Africa. From a database of 434 existing DAT
operations, the analysis identified 194 as scalable. The second part of the study is a comparative case study of Africa’s two most successful DAT ecosystems in Kenya and Nigeria, which together account for half of Sub-Saharan Africa’s active DATs. The objective of these two case studies is to understand the successes, challenges, and opportunities faced by each country in fostering a conducive innovation ecosystem for scaling up DATs. The case study analysis focuses on six dimensions of the innovation ecosystem in Kenya and Nigeria: finance, regulatory environment, culture, density, human capital, and infrastructure. The third part of the study is based on the interactions and learnings from a pilot event to boost the innovation ecosystem in Kenya. The Disruptive Agricultural Technology Innovation Knowledge and Challenge Conference in Nairobi, Kenya, brought together more than 300 key stakeholders from large technology companies, agribusiness companies, and public agencies; government representatives and experts from research and academic institutions; and representatives from financial institutions, foundations, donors, and venture capitalists. Scaling Up Disruptive Agricultural Technologies in Africa concludes by establishing that DATs are demonstrating early indications of a positive impact in addressing food system constraints. It offers potential entry points and policy recommendations to facilitate the broader adoption of DATs and improve the overall food system.
conflict, food security remains an issue around the world and especially in developing nations. Rapid changes in technology over the last decade has brought a renewed focus on how information and communication technologies (ICTs) and application systems are deployed to improve rural competitiveness. Unfortunately, agricultural stakeholders in developing countries, particularly in Africa, have not been able to reap comparable benefits from adopting agricultural information systems as compared to their counterparts in the developed economies. Understanding the challenges that hinder the effective adoption of agricultural information systems and identifying opportunities or innovations is imperative to improve the agricultural sectors and overcome the problems in these developing economies. Opportunities and Strategic Use of Agribusiness Information Systems is an essential reference book that examines the key challenges that hinder the effective adoption of agricultural information systems. Moreover, it identifies and evaluates opportunities for the strategic deployment of ICTs and information systems to drive agricultural development for the benefit of agricultural sector stakeholders in emerging countries. While highlighting such topics as agricultural entrepreneurship, food value chain, and innovation systems, it is intended to provide sound and relevant frameworks and tools that will aid agricultural industry practitioners, smallholder farmers, and managers of agricultural extension systems looking to make more effective and responsible decisions when selecting, planning, deploying, and managing agribusiness information systems. It is additionally targeted for agricultural funding organizations, government policymakers,
Information and communication technologies related to digital networks enable the continued rise of entrepreneurial business opportunities and inventive business models. E-Entrepreneurship and ICT Ventures: Strategy, Organization and Technology provides a unique and quintessential overview of the current state of conceptual and empirical research at the interface of e-business and entrepreneurship research. Contributing an enhanced understanding of the important interface of e-business and entrepreneurship, this reference publication brings together leading academics and practitioners from around the world, offering essential reading material for students, educators, managers, entrepreneurs, and political decision makers interested in applying and fostering e-business concepts in an entrepreneurial environment.
are at the very heart of the climate change crisis. Evidence on climate change reveals that it will affect farming first, through changes to rainfall regimes, rising temperatures, the variability and seasonality of the climate and the occurrence of more frequent extreme events (heatwaves, droughts, storms and floods). In addition to findings ways to mitigate greenhouse gas emissions, farmers will need to develop farming systems resilient to fluctuating environmental and socioeconomic conditions. It is thus a great challenge to support ambitious climate targets while satisfying the needs for food, feed, bio-based products and energy for a global population projected to reach 10 billion by 2030. Few books on the market integrate environment studies and climate-smart food production. This book fills the knowledge gap by covering all the relevant aspects in one reference: starting with microclimate management, climate change and food systems, and resilience of mixed farming and agroforestry systems, chapters address agricultural soil management, integrated water management in small agricultural catchments, citizen-driven food system approaches in cities, and ICT-enabled agri-food systems. By focusing on the most recent advances in the field while analyzing the potential of already applied practices, this book can serve as a handbook for regulators and researchers looking to understand all aspects of food production and distribution in this changing environment.

Recent digital innovations provide opportunities to deliver better policies for the agriculture sector by helping to overcome information gaps and
asymmetries, lower policy-related transaction costs, and enable people with different preferences and incentives to work better together. Drawing on ten illustrative case studies and unique new data gathered via an OECD questionnaire on agri-environmental policy organisations' experiences with digital tools, this report explores opportunities to improve current agricultural and agri-environmental policies, and to deliver new, digitally enabled and information-rich policy approaches.