

Drones For Agriculture Far Eastern Agriculture

Over the past few decades, extensive research has been conducted on the applications of agricultural robots and automation to a variety of field and greenhouse operations, and technical fundamentals and their feasibility have also been widely demonstrated. Due to the unstructured environment, adverse interference and complicated and diversified operation process are the key of blocking its commercialization in robotic agricultural operations. Because of the development of automation techniques, smart sensors, and information techniques, some types of agricultural robots have achieved considerable success in recent years. This book intends to provide the reader with a comprehensive overview of the current state of the art in agricultural robots, fundamentals, and applications in robotic agricultural operations.

Agricultural drones are expected to revolutionize the way we conduct agronomic procedures and maintain natural vegetation on earth. This book explores the increasing importance of the role of aerial robots in managing agricultural farms and natural resources. *Agricultural Drones: A Peaceful Pursuit* provides a wealth of information on drone usage in agriculture. The book discusses the advanced sensors and imaging capabilities of drones that give farmers new ways to increase yields and reduce crop damage. An introductory chapter provides historical data, with details about various models of drones as well as the most recent and popular agricultural drones in usage. The book goes onto look at such topics as the use of drones for soil fertility, production agronomy, irrigation, weed control, pest and disease control, grain yield forecasting, and economic

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advantages from drone use. This timely and useful volume will be a valuable resource for faculty, agricultural extension officers, and farmers and farm consultancy agencies. This book would also serve as an excellent textbook for students in agriculture, engineering, geography, etc. Key features:

- outlines the advantages of using drones in agriculture, such as for the management of soil fertility, the study of natural resources and vegetation, the maintenance of adequate irrigation, and the control of weeds and pests
- covers the economic advantages of using drones in agriculture
- examines the regulatory aspects of agricultural drones
- provides actual examples of drone usage in agriculture

Agriculture is becoming increasingly knowledge intensive: farmers have to make more and more complex decisions on the use of their land, the selection of the agricultural commodities they plant, the choice of markets on which to sell their agricultural products and other key decisions that impact their livelihoods and that of society. The development of ICTs is a major driver of economic growth. It is also an accelerator for innovation and change. FAO has been promoting the use of ICTs in agriculture and has focused on ICT innovation in improving agricultural production and value chains. However, innovation is an elusive combination of people, processes and technologies. Many projects put technology alone at the core of proposed solutions intended to address emerging and existing challenges, but this is not a sustainable solution in many cases. Recently, FAO and the International Telecommunication Union, have jointly prepared a National e-Agriculture Strategy Guide which aims to help countries mainstream ICTs into agriculture and develop or revitalize e-agriculture strategies in line with agricultural goals and priorities. This paper is intended to assist policy-makers and stakeholders of e-agriculture in transition economies to map the policy and technological environment in their countries,

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would show case e-agriculture initiatives in Central and Eastern Europe and Central Asia and provide with recommendations on formulation of e-agriculture strategies.

Agricultural Drones A Peaceful Pursuit CRC Press

Farm fields can span hundreds of acres. With so much area to cover, checking crops and livestock can be difficult. But with an agricultural drone, this job becomes much simpler. In this e-book young readers will discover how drones help farmers maximize efficiencies and bring abundant harvests

Given the popularity of drones and the fact that they are easy and cheap to buy, it is generally expected that the ubiquity of drones will significantly increase within the next few years. This raises questions as to what is technologically feasible (now and in the future), what is acceptable from an ethical point of view and what is allowed from a legal point of view. Drone technology is to some extent already available and to some extent still in development. The aim and scope of this book is to map the opportunities and threats associated with the use of drones and to discuss the ethical and legal issues of the use of drones. This book provides an overview of current drone technologies and applications and of what to expect in the next few years. The question of how to regulate the use of drones in the future is addressed, by considering conditions and contents of future drone legislation and by analyzing issues surrounding privacy and safeguards that can be taken. As such, this book is valuable to scholars in several disciplines, such as law, ethics, sociology, politics and public administration, as well as to practitioners and others who may be confronted with the use of drones in their work, such as professionals working in the military, law enforcement, disaster management and infrastructure management. Individuals and businesses with a specific interest in drone use may also find in the nineteen contributions contained in this volume unexpected perspectives on this new field of

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research and innovation. Bart Custers is Associate Professor and Head of Research at eLaw, the Center for Law and Digital Technologies at Leiden University, The Netherlands. He has presented his work at international conferences in the United States, China, Japan, the Middle East and throughout Europe and has published over 80 scientific, professional and popularizing publications, including three books.

The FAO-ITU E-agriculture strategy guide (available at <http://www.fao.org/3/a-i5564e.pdf>) is actively being used to assist countries in the successful identification, development and implementation of sustainable ICT solutions for agriculture. The use of unmanned aerial vehicles (UAVs), also known as drones, and connected analytics has great potential to support and address some of the most pressing problems faced by agriculture in terms of access to actionable real-time quality data. Goldman Sachs predicts that the agriculture sector will be the second largest user of drones in the world in the next five years. Sensor networks based on the Internet of things (IoT) are increasingly being used in the agriculture sector to meet the challenge of harvesting meaningful and actionable information from the big data generated by these systems. This publication is the second in the series titled E-agriculture in action (2016), launched by FAO and ITU, and builds on the previous FAO publications that highlight the use of ICT for agriculture such as Mobile technologies for agriculture and rural development (2012), Information and communication technologies for agriculture and rural development (2013) and Success stories on information and communication technologies for agriculture and rural development (2015). The ultimate aim is to promote successful, scalable, sustainable and replicable ICT for agriculture (ICT4Ag) solutions.

Without rapid progress in reducing and eliminating hunger and malnutrition by 2030, the full range of Sustainable

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Development Goals cannot be achieved. We can advance faster if we work together. In its quest to achieve a Zero Hunger world, the United Nations Food and Agriculture Organization (FAO) works in partnership with communities, governments, and organizations across Africa to address malnutrition, boost the productivity and resilience of small-scale farmers, share knowledge about innovative farming practices, and build sustainable food systems. FAO's bold approach focuses on empowering women and employing youth, providing them with the skills and resources (land, capital, emerging technology) they need to grow their own businesses and engaging them in the decisions that affect their lives. This book celebrates some of the progress made in communities across Africa, showcasing real-life examples of the ways we can work together to achieve Zero Hunger. While there is no magic bullet, many workable and innovative solutions are already out there to help men and women overcome the challenges they face in trying to earn a living and feed their families.

Transforming Agriculture with Artificial Intelligence. At a time where the world needs to produce more with fewer resources, artificial intelligence (AI) could help to transform agriculture worldwide. SPORE is the quarterly magazine of the Technical Centre for Agricultural and Rural Cooperation (CTA), offering a global perspective on agribusiness and sustainable agriculture. CTA operates under the Cotonou Agreement between the countries of the Africa, Caribbean and Pacific (ACP) group and the European Union and is financed by the EU.

The introduction of new technologies can be controversial, especially when they create ethical tensions as well as winners and losers among stakeholders and interest groups. While ethical tensions resulting from the genetic modification of crops and plants and their supportive gene technologies

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have been apparent for decades, persistent challenges remain. This book explores the contemporary nature, type, extent and implications of ethical tensions resulting from agricultural biotechnology specifically and technology generally. There are four main arenas of ethical tensions: public opinion, policy and regulation, technology as solutions to problems, and older versus new technologies.

Contributions focus on one or more of these arenas by identifying the ethical tensions technology creates and articulating emerging fault lines and, where possible, viable solutions. Key features include focusing on contemporary challenges created by new and emerging technologies, especially agricultural biotechnology. Identifying a unique perspective by considering the problem of ethical tensions created or enhanced by new technologies. Providing an interdisciplinary perspective by including perspectives from sociologists, economists, philosophers and other social scientists. This book will be of interest to academics in agricultural economics, sociology and philosophy and policymakers concerned with introducing new technology into agriculture.

Professional drones, agribusiness and precision farming. If you are a farmer, this book is a must-read. In plain language, environmental management expert, and licensed drone pilot, Louise Jupp explains the major benefits of commercial UAV/drone surveys to farmers worldwide. She unpacks drone technology, aerial surveys, advances in HD cameras, multispectral/thermal imaging, high-end software and analysis, application and commercial aviation law in a way that makes total sense to any agribusiness. Louise Jupp M.Sc Environmental Management expert and consultant offers UAV/drone surveys for farmers to provide high-end information that typically results in better crop management, increased crop yields and more profitable agribusiness.

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February issue includes Appendix entitled Directory of United States Government periodicals and subscription publications; September issue includes List of depository libraries; June and December issues include semiannual index

This book covers three main types of agricultural systems: the use of robotics, drones (unmanned aerial vehicles), and satellite-guided precision farming methods. Some of these are well refined and are currently in use, while others are in need of refinement and are yet to become popular. The book provides a valuable source of information on this developing field for those involved with agriculture and farming and agricultural engineering. The book is also applicable as a textbook for students and a reference for faculty.

Written by a globally prominent entomologist, *Agricultural Acarology: Introduction to Integrated Mite Management* provides tools for developing integrated mite management programs for agriculture, including management of plant-feeding mites, mites attacking bees and livestock, and stored products. Emphasizing the biology, ecology, behavior, and

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.

As the public and producers becomes more aware of the environmental and economic benefits of precision farming, there has been increased demand for quality training to accurately evaluate spatial variability within fields. Practical

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Mathematics in Precision Farming provides hand-on training and examples for certified crop consultants (CCAs), farmers, crop consultants, and students (both undergraduate and graduate) on how to conduct and analyze on-farm studies, write simple programs, use precision techniques to scout for pests and collect soil samples, develop management zones, determine the cost of production, assess the environmental consequences of precision techniques, understand soil test results, and develop site-specific nutrient and plant population algorithms. Using real agronomic examples, the reader is taught the crucial task of managing products and inputs for application at the right rate, place, and time.

While the military use of drones has been the subject of much scrutiny, the use of drones for humanitarian purposes has so far received little attention. As the starting point for this study, it is argued that the prospect of using drones for humanitarian and other life-saving activities has produced an alternative discourse on drones, dedicated to developing and publicizing the endless possibilities that drones have for "doing good". Furthermore, it is suggested that the Good Drone narrative has been appropriated back into the drone warfare discourse, as a strategy to make war "more human". This book explores the role of the Good Drone as an organizing narrative for political projects, technology development and humanitarian action. Its contribution to the debate is to take stock of the multiple logics and rationales according to which drones are "good", with a primary objective to initiate a critical conversation about the political currency of "good". This study recognizes the many possibilities for the use of drones and takes these possibilities seriously by critically examining the difference the drones' functionalities can make, but also what difference the presence of drones themselves – as unmanned and flying objects – make. Discussed and analysed are the

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implications for the drone industry, user communities, and the areas of crisis where drones are deployed.

The future role of dwarf honeybees in natural and agricultural systems provides multidisciplinary perspective about the different facets of dwarf honeybees. The role of dwarf honeybee *Apis florea* assumes utmost importance in the context of pollinator decline throughout the world threatening stability of ecosystems and global food security. *Apis florea* is a low land species of south Asia extending more to the west than other Asiatic *Apis* species. It is an important pollinator of crops in hot and dry agricultural plains. The book is first of its kind which deals in details on varied aspects of *Apis florea* biology, management, conservation strategies for protecting biodiversity and enhancing crop productivity. The book aims to promote a large, diverse, sustainable, and dependable bee pollinator workforce that can meet the challenge for optimizing food production well into the 21st century.

Features: *Apis florea* provides source of livelihood in mountainous areas and marginal farmers. This book will for the first time present the beekeeping from the perspective of agricultural production and biodiversity conservation An excellent source of advanced study material for academics, researchers and students and programme planners Excellent pollinator of tropical and subtropical crops fruits vegetables etc less prone to diseases and enemies Covering the latest information on various aspects of *Apis florea* biology, this book brings the latest advances together in a single volume for researchers and advanced level students This book will be useful to pollination biologists, honeybee biologists in entomology departments, students, teachers, scientists of agriculture, animal behaviour, botany, conservation, biology, ecology, entomology, environmental biology, forestry, genetics, plant breeding, horticulture, toxicology, zoology, seed growers and seed agencies and shall serve as

Online Library Drones For Agriculture Far Eastern Agriculture

reference book for students, teachers, researchers, extension functionaries and policy planners.

The use of unmanned aerial vehicles (UAVs) or drones for management of crops, livestock, fisheries, forests and other natural resource-based activities represents a new technological frontier and opens up a range of exciting opportunities. The latest issue of ICT Update is dedicated to the use of this technology and associated systems in different parts of the world. This issue - available online and in print format in both English and French has been published in collaboration with Esri. It includes 12 articles, one interview and a section featuring selected online resources on the topic. Articles range from the use of UAVs to design an irrigation scheme in Nigeria, to feeding a locust monitoring scheme, from documenting illegal land occupancy in Panama to assisting smallholder farmers in monitoring their crops in Eastern Africa, and more.

This volume responds to the growing interest in adopting aerial robots (UAVs, or drones) for agricultural crop production, which are revolutionizing farming methods worldwide. The book provides a detailed review of 250 UAVs that examines their usefulness in enhancing profitability, yield, and quality of crop production. Recent trends indicate an increase in agricultural drone production and use. Millions of dollars have been invested in start-ups that produce agrodrones in the past several years. North America, Europe, China, and the Far East have excelled in offering a large number of UAV models. Some of them are versatile, a few are specific, and many of them are low cost. With so many drone models (over 1200) available, how do farmers and agricultural specialists choose the models best for them? This compendium examines the most useful drones and provides the pertinent details about each drone, its producer, cost incurred, and its pros and cons. It covers their technical

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specifications, suitability for various purposes, previous performances in farms, and possible benefits to farmers. It covers fixed-wing drones, fixed-winged (hybrid) VTOL helicopters, multi-copters, tilted-wing drones, etc. The book includes a few drones meant more for military or other purposes (e.g. recreation/fun) but that could be easily modified and adapted for the farming sector. The reviews compare activities among the UAVs, such aerial imagery of crops, ability to provide spectral analyses to collect useful data about a crop's growth patterns, and how they can be used to gauge crop canopy temperature (i.e. water stress index), determine grain maturity, and much more.

The geo-climatic conditions of South and South-East Asian countries are diverse and vulnerable to multiple natural hazards such as drought. Drought evolves over months or even years, affects a large spatial extent and causes enormous damages. Drought Risk Management in South and South-East Asia is a comprehensive reference on overall perspectives and scenarios on drought risk mitigation and management, based on researches and case studies from South and South-East Asian countries. Drought management is a complex area of work that requires active and continuous participation of the national, provincial and local governments, multiple ministries, and divisions. This book demonstrates the best practices of socio-economic and technological interventions to enhance drought risk management, which will help to develop plans and policies, and their implementation to reduce the impact of droughts. It also offers views of field practitioners on impacts of the interventions practised at the national, sub-national and local levels.

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