



2022年第46期总367期

## 农业与资源环境信息工程专题

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2022年11月21日

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## ▶ 前沿资讯

### 1 . World Food Forum: FAO Digital For Impact is transforming agrifood systems (世界粮食论坛：粮农组织数字影响力正在改变农业粮食系统)

简介：The week 17-21 October 2022 was a crucial week for FAO. In that week, FAO (in conjunction with partners) organized three major forums which encouraged a diversity of perspectives and facilitated the rationalization and inclusiveness of debate on our agrifood systems. Besides the Hand in Hand Investment Forum, where 20 countries presented investment impact opportunities, held bilateral meetings and 3 regional initiatives were highlighted, the Science and Innovation Forum 2022 has been focusing more specifically on highlighting the centrality of science, technology and innovation for agrifood systems transformation; and the World Food Forum, led by global youth, aimed at bolstering innovation for sustainable development in support of ending hunger. Seizing the unique momentum of these 5 days of intensive dialogue, networking and investment pitching aimed at addressing the world's growing food crisis, the FAO Division of Digitalization and Informatics (CSI) took a bold action in organizing two important side-events. The first side event focused on 'AgroInformatics: Actionable Data for farmers and decision makers' and a second main session of the STI Forum on 'Digitalization of Agrifood Systems' with the presence of FAO Director General and the Chief Economist. These events' aim was to promote constructive dialogue and exchanges of best practices to enhance the undeniable potential of digital technologies for the agriculture of the future and explore new joint solutions. Through an emphasis on science, technology and innovation, both events offered an international and inclusive platform to spark discussions on the transformation and modernization of agrifood systems and showcased concrete examples of digital technologies that are accelerating the achievement of the Sustainable Development Goals and FAO Four Betters: better production, better nutrition, a better environment, and a better life, while leaving no one behind.

来源：FAO

发布日期：2022-10-25

全文链接：<http://agri.ckcest.cn/file1/M00/03/43/Csgk0YfMk9-AbXK1AAIJq5jE1P4035.pdf>

## ▶ 会议论文

### 1 . Europa: Increasing Accessibility of Geospatial Datasets (Europa: 提高地理空间数据集的可访问性)

简介：In this paper we introduce a novel platform for teams to develop rich, analysis-ready datasets for geospatial machine learning. Europa 1 1 <https://europa.granular.ai> addresses longstanding challenges that remote sensing and machine vision researchers face when developing datasets, including data sourcing, dataset development and sharing. By simplifying and accelerating the dataset creation process, Europa serves to expedite the pace of geospatial machine learning innovation. The platform enables users to develop feature-rich, spatio-temporal datasets using multiple sources of satellite imagery. Europa supports the development of datasets for segmentation, classification, object detection, and change detection problems. Europa also enables

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collaborative dataset development, with a management protocol for crowdsourcing labels and annotations. The web interface and API are built upon a resilient dataset management protocol that supports versioning, forking and access control, enabling greater research collaboration.

来源: IGARSS 2022 - 2022 IEEE International Geoscience and Remote Sensing Symposium

发布日期: 2022-09-28

全文链接: <http://agri.ckcest.cn/file1/M00/03/43/Csgk0YfMlnKANB1nABcGPXsHxuc978.pdf>

## **2 . Comprehensive Survey on Sustainable Smart Agriculture using IOT Technologies (利用物联网技术的可持续智慧农业综合调查)**

简介: Food demand has risen in both quality and quantity, demanding agricultural modernization and intensification. The Internet of Things (IoT) is a promising technology that is spawning a flood of innovative agricultural ideas. IoT-based solutions and products are being developed by research institutes and scientific organizations to address a variety of agricultural issues. By examining IoT technologies and their current implementation in a number of agricultural application sectors, this study provides a detailed literature evaluation. The complete literature evaluates performed for this examine became primarily based totally on a survey of studies articles posted in official journals over the past decade. A big wide variety of papers have been selected and organized into classes with care. The number one intention of the inquiry is to bring together all applicable research on IoT agricultural applications, sensors/devices, verbal exchange protocols, and community kinds. It additionally is going thru the foremost problems and roadblocks which might be being researched with inside the difficulty of agriculture.

来源: 2022 2nd International Conference on Advance Computing and Innovative Technologies in Engineering (ICACITE)

发布日期: 2022-07-18

全文链接: <http://agri.ckcest.cn/file1/M00/10/15/Csgk0GN14e-AeM2fAASB7pcMem4242.pdf>

### 科技报告

## **1 . The State of Food and Agriculture 2022-Leveraging agricultural automation for transforming agrifood systems (2022年粮食及农业状况--运用农业自动化推动农业粮食体系转型)**

简介: 联合国粮食及农业组织(以下简称“粮农组织”)发布《2022年粮食及农业状况》报告(以下简称“报告”)。报告主题为“运用农业自动化推动农业粮食体系转型”,对过去几十年来农业自动化的发展历程进行系统梳理,探讨如何通过农业自动化推动实现可持续发展目标,并就增大效益、减少风险提出若干政策建议。21世纪起,人工智能机器人逐步运用到农业领域。报告显示,过去使用大规模重型机械的做法或与环境可持续发展背道而驰,而近年来农业自动化的一些新进展,如精准农业和小规模设备的采用,则更有利于改善环境可持续性,增强抵御气候等冲击的韧性。报告指出,农业自动化的潜在效益是多方面的,这将有助于实现若干可持续发展目标:推动农业粮食体系转型,增强农业粮食体系的效率、生产率、韧性、可持续性和包容性;提高农业劳动生产率和利润率,改善农业工人的工作条件,在农村地区创造对青年有吸引力的新创业机会;减少粮食损失,改进产品质量和

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安全；加强环境可持续性和气候变化适应性。

来源：FAO

发布日期：2022-11-02

全文链接：<http://agri.ckcest.cn/file1/M00/10/15/Csgk0GN14LOAN-FuAL90Bj0fNmc782.pdf>

## **2 . Agricultural digitalization and automation in low- and middle-income countries: Evidence from ten case studies (中低收入国家的农业数字化和自动化：来自十个案例研究的证据)**

简介：Digital and automation solutions can solve labour bottlenecks, increase agricultural productivity, resilience and efficiency, and improve environmental sustainability. However, access is limited in low- and lower-middle-income countries, especially for small-scale producers. Based on ten case studies in sub-Saharan Africa, Latin America and the Caribbean and Asia, this study investigates the suitability of digital and automation solutions for small-scale producers, the main drivers and barriers to their adoption and the role of policies and regulations in creating an enabling environment. Findings show that technologies in the study countries are largely limited to smartphones and tablets, and related software tools (e.g. mobile applications). Most digital and automation solutions focus on crops, some on livestock and aquaculture, and a few on agroforestry. The most important adoption barriers include the high investment cost, lack of digital skills and knowledge and a lack of an enabling environment. Yet, advances in mechanization supported by digital technologies, and the development of hiring platforms foster adoption. The emergence of guidelines, strategic plans and policies that regulate and streamline automation should be encouraged, as should providing producers with information about the benefits and costs of digital and automation solutions. This study was developed as a background document for the FAO report The State of Food and Agriculture 2022 Leveraging automation in agriculture for transforming agrifood systems.

来源：FAO

发布日期：2022-11

全文链接：<http://agri.ckcest.cn/file1/M00/03/43/Csgk0YfM1T2AX2LcABSfwpD2sRU314.pdf>