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前沿资讯

1．FarmSense launches FlightSensor, a real-time pest monitoring system for commercial farmers to efficiently manage pests and optimize crop yield(FarmSense 推出 FlightSensor实时害虫监测系统，供农民有效管理害虫并优化作物产量)

简介：Today, agtech startup FarmSense announces a limited product launch of their award-winning and internationally acclaimed real-time pest monitoring and identification device, FlightSensor™. This initial launch, which will consist of approximately 1,000 FlightSensor™ units, will be distributed to select commercial pest advisors, farm managers and growers in California. Originally launched as an incubator business at the University of California, Riverside, FarmSense's FlightSensor™ utilizes patented technology, artificial intelligence, machine learning, and real-time analytics to improve insect monitoring and crop management efforts. FarmSense's award-winning FlightSensor™ is a revolutionary step forward in pest management, saving growers not only time, labor, and money, but also reducing the need for pesticide use while improving crop yield.

来源：SeedQuest

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学术文献

1．An analysis on the role of blockchain-based platforms in agricultural supply chains(基于区块链的平台在农业供应链中的作用分析)

简介：The traditional agricultural supply chain (ASC) has been overwhelmed by several challenges, including financing risk, counterparty risk, and lack of consumer trust. Platforms based on blockchain technology combined with Internet-of-Things technology have emerged to address these challenges by improving supply chain visibility, guaranteeing the execution of contracts, and increasing the authenticity of products' provenance information in the ASC. This study analyzes how the adoption of a blockchain-based platform can affect the decisions of ASC participants and identifies how the platform creates value for the supply chain by addressing these three challenges. We consider a two-level supply chain featuring a typical cooperative and a buyer and establish stylized game models with and without the blockchain-based platform. By comparing equilibrium outcomes with and without the blockchain-based platform, we show that the involvement of the blockchain-based platform can lead to increased production quantity and total surplus of the supply chain. This can also motivate more sustainability/green investment to produce greener products. Interestingly, we show that the value of the blockchain-based platform decreases in the credibility of the business environment in which the supply chain operates. Furthermore, the buyer will always benefit from the established blockchain-based platform, whereas the cooperative can benefit in most cases but could be worse off under certain conditions. The adoption and operational costs could outweigh the benefits caused by the addition of the blockchain-based platform.

来源：Transportation Research Part E: Logistics and Transportation Review
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2．Big data in agriculture: Between opportunity and solution（农业大数据：机遇与解决方案）

简介：CONTEXTBig data applications in agriculture evolve fast, as more experience, applications, good practices and computational power become available. Actual solutions to real-life problems are scarce. What characterizes the adoption of big data problems to solutions and to what extent is there a match between them?OBJECTIVEWe aim to assess the conditions of the adoption of big data technologies in agricultural applications, based on the investigation of twelve real-life practical use cases in the precision agriculture and livestock domain.METHODSWe use a mixed method approach: a case study research around the twelve use cases of Horizon 2020 project CYBELE, varying from precision arable and livestock farming to fishing and food security, and a stakeholder survey (n = 56). Our analysis focuses on four perspectives: (1) the drivers of change that initiated the use cases; (2) the big data characteristics of the problem; (3) the technological maturity level of the solution both at start and end of the project; (4) the stakeholder perspective.RESULTS AND CONCLUSIONSResults show that the use cases' drivers of change are a combination of data-, technology, research- and commercial interests; most have at least a research drive. The big data characteristics (volume, velocity, variety, veracity) are well-represented, with most emphasis on velocity and variety. Technology readiness levels show that the majority of use cases started at experimental or lab environment stage and aims at a technical maturity of real-world small-scale deployment. Stakeholders' main concern is cost, user friendliness and to embed the solution within their current work practice.The adoption of better-matching big data solutions is modest. Big data solutions do not work out-of-the-box when changing application domains. Additional technology development is needed for addressing the idiosyncrasies of agricultural applications.SIGNIFICANCEWe add a practical, empirical assessment of the current status of big data problems and solutions to the existing body of mainly theoretical knowledge. We considered the CYBELE research project as our laboratory for this. Our strength is that we interviewed the use case representatives in person, and that we included the stakeholders' perspective in our results.Large-scale deployments need effective interdisciplinary approaches and long-term project horizons to address issues emerging from big data characteristics, and to avoid compartmentalization of agricultural sciences.We need both an engineering perspective to make things work in practice and a systems thinking perspective to offer holistic, integrated solutions.
来源：Agricultural Systems
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科技报告

1．Development of an e-commerce platform (D2C) for small and

medium-sized farmers and returned migrants agri-entrepreneurs(为中小农和返乡农民工开发电子商务平台（D2C））

简介：The feasibility study looks into the e-commerce ecosystem for agricultural products (D2C model) and examines the feasibility of developing a dedicated e-commerce platform for Moldovan farmers, including returning migrants engaged in agri-business. It also focusses on identifying the opportunities, optimal scenarios and interventions, as well as the premises needed to either launch a new e-commerce platform, or develop and upscale an existent one.

来源：FAO

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2．The digitalisation of agriculture-A literature review and emerging policy issues(农业数字化—文献综述和新出现的政策问题)

简介：数字化对解决农业面临的生产力、可持续性和复原力的挑战提供了潜力。来自国家调查和文献的关于数字农业在经合组织国家的使用和影响的证据表明，数字技术在作物农场中广泛使用，但在牲畜和特种作物中的使用证据较少。采用的使用障碍包括成本（前期投资和经常性维护费用）、用户友好性、对操作员技能的高要求、对算法的不信任和技术风险。各国政府在解决数字化使用瓶颈方面发挥着重要作用，例如确保农民更好地了解各种技术的成本和收益（包括提高生活质量等无形收益）；投资于人力资本；确保适当的创新激励；作为数据共享的知识经纪人和促进者，以促进包容、安全和有代表性的数据生态系统；并促进竞争市场。

来源：OECD

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