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农业与资源环境信息工程专题

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科技报告

1．三个阵营、一个目标：科研数据管管理、公开以及FAIR原则的交汇

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前沿资讯

1．A New Tool Can Help Root Out Deforestation from Complex Supply Chains(新的工具可以从复杂供应链中清除不必要的森林砍伐)

简介：It's a common quandary: More than 360 companies have committed to eliminating deforestation from their supply chains by 2020. Most will miss this target. The complexity of agricultural supply chains—which contain a labyrinth of intermediaries between farm and final product—makes achieving this goal exceedingly difficult.

来源：世界资源研究所（WRI）

发布日期:2019-06-10

全文链接:https://www.wri.org/blog/2019/06/new-tool-can-help-root-out-deforestation-complex-supply-chains

2．Drones: the next generation of farming(无人机：新一代农业)

简介：Dust swirls in the wind as a dirt bike roars by. Birds are chirping. And a drone buzzes, hovering above the grass field. That is the reality on a 'test farm' in the small town of Bentelo, where ITC researchers help local farmers on their way towards precision farming.

来源：国际地理信息科学与地球观测学院（ITC）

发布日期:2019-05-28

全文链接:https://www.utoday.nl/science/67029/drones-the-next-generation-of-farming

学术文献

1．Production planning of supply chains in the pig industry(养猪业供应链的生产计划)

简介：This paper presents a production planning model for managing the pig herd production system operating as a Pig Supply Chain (PSC). The model is formulated as a multiperiod mixed-integer linear programming (MILP). The production system may represent a large farmer, a private company or a cooperative managing several farms operating according to the so-called three site system (sow, rearing and fattening farms; the latter under all-in-all-out management). The model is intended for practical use and illustrated with a case study based on a real instance in Catalonia (Spain). The model helps PSC managers when making decisions by providing an overall view for planning production over time. The objective is to maximize the total revenue calculated by the total amount of sales to the abattoir minus production costs. The latter depend on the feeding system, veterinary and medical care, labor and transportation. Practical results include a schedule of animal transfers between farms, batch management and deliveries to the abattoir from fattening farms, number of trips and the occupancy rate of all facilities. Bottlenecks in the production process regarding flow of animals, throughput and capacities along the PSC were

detected beforehand allowing the company to react accordingly. Then, as three fattening farms were found to be redundant, farm occupation rate could be improved by 22% purchasing additional piglets. We estimated a maximum purchase price of 70.15 Euros per piglet beneficial for the company.

来源： Computers and Electronics in Agriculture

发布日期: 2019-06

全文链接: http://agri.ckcest.cn/file1/M00/06/81/CsgkOFOUTZSAQprfABGSTuKEqXM891.pdf

2．Farmers and their data: An examination of farmers' reluctance to share their data through the lens of the laws impacting smart farming(农民和数据：调查农民是否不愿通过影响智慧农业的法律共享数据)

简介： The absence of legal and regulatory frameworks around the collection, sharing and use of agricultural data contributes to the range of challenges currently being faced by farmers considering adoption of smart farming technologies. Many laws potentially influence the ownership, control of and access to data, in this paper we examine the attitudes of farmers to the collection, control, sharing and use of their farm data. Australian agriculture and the attitudes of Australian farmers to the adoption and uptake of smart farming technologies is used to highlight the tensions., however the issues and challenges raised are common to many agricultural industries throughout the world. We combine insights from a survey of Australian farmers with a legal analysis of the way in which agricultural data are collected, controlled, shared and used. We argue that the lack of transparency and clarity around issues such as data ownership, portability, privacy, trust and liability in the commercial relationships governing smart farming are contributing to farmers' reluctance to engage in the widespread sharing of their farm data that smart farming facilitates. At the heart of the concerns is the lack of trust between the farmers as data contributors, and those third parties who collect, aggregate and share their data. The aim of this paper is to examine the issues giving rise to this lack of trust. We conclude with recommendations on how to address these concerns and facilitate the improved adoption of smart farming technologies, focusing on the need for the social architecture of the agricultural data relationships to change. To achieve this change, open dialogue, education and awareness raising and good data governance are essential to help build trust in the adoption of smart farming systems.

来源： NJAS - Wageningen Journal of Life Sciences

发布日期: 2019-05-08

全文链接: http://agri.ckcest.cn/file1/M00/06/81/CsgkOFOUS6KARD-dAAnzjTQaJE4826.pdf

科技报告

1．Three camps, one destination: the intersections of research data management, FAIR and Open（三个阵营、一个目标：科研数据管管理、公开以及FAIR原则的交汇）

简介：开放数据、FAIR原则（可查找，可访问，可互操作和可重用）和研究数据管理（RDM）是三个重叠但不同的概念，每个概念都分别强调了处理和共享研究数据的不同方面，它们在宣传和影响研究数据的处理方面具有不同的优势，如果将这些部分统一应用，则有很大的空间可以丰富数据的使用。本文探讨了每个独立的概念以及它们相交和重叠的情况。除了提供更清晰的定义外，这将有助于研究人员和相关工作人员，如图书管理员和数据管理员更好的管理和共享他们的数据，了解这些概念如何最好地用于倡导环境。FAIR和open都专注于数据共享，确保以促进访问和重复使用的方式提供数据服务。相比之下，数据管理是关于从概念入手的数据管理方法。通常它不对数据的访问做出任何假设，但如果数据对其他人有意义则必不可少。公平和公开的概念是更高层次的愿望，本文认为，这是一种可以吸引研究人员参与其中并从一开始就鼓励良好数据实践的有效方法。

来源：UKSG

发布日期:2019-05-22

全文链接:https://insights.uksg.org/articles/10.1629/uksg.468/