中国工程科技知识中心
CKCEST China Knowledge Centre for Engineering Sciences and Technology

《“一带一路”战略背景下中国农业国际合作发展战略研究》专题快报

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【动态资讯】

1．Want to Build a Better Yield Model? Here’s Your First Step

【GRO】Accurately forecasting crop yields has broad implications for economic trading, food-production monitoring, and global food security. But creating predictive yield models for many country-crop pairs when reliable acreage data doesn’t exist presents a unique challenge—figuring out what crops are growing where. Gro Intelligence has built a number of yield models for crops in countries that lack good ground-based data, including Argentina, India, and Ukraine. A critical early step for such models is developing a crop mask to delineate where crops are growing and exactly what the crops are. Crop yield models are valuable because they take a complex set of variables including acreage, weather patterns, and vegetative health, and synthesizes them into an actionable piece of information for a variety of actors across the global supply chain.

链接:

https://gro-intelligence.com/blog/want-to-build-a-yield-model-heres-your-first-step

2．中国菌草技术走进联合国：推动“一带一路”农业合作的重要实践

【中国一带一路网】4月18日，中国常驻联合国代表团同联合国经济和社会事务部在纽约联合国总部共同举办“菌草技术：‘一带一路’倡议促进落实联合国2030年可持续发展议程的实质性贡献”高级别会议。第七十三届联大主席埃斯皮诺萨、联合国秘书长办公室主任维奥蒂和联合国主管经济和社会事务的副秘书长刘振民与会发言。莱索托、老挝、尼日利亚、马达加斯加、斐济、巴布亚新几内亚和中非等多国及国际组织代表约200人

出席。

链接:

https://www.yidaiyilu.gov.cn/xwzx/hwxw/86551.htm

3．中企承建的老挝万象市政供水项目为60多个村庄提供清洁自来水

【中国一带一路网】老挝首都万象市纳塞通县一栋崭新的办公楼里，自来水公司工作人员坎腊取出文件柜中成沓的申请表，对本报记者说：“以前，这里只有11个村子有自来水。今年2月底新管网铺设完成以来，已有1900多户村民来申请自来水入户，大家早就盼着用上清洁、方便的自来水了。”当地居民颂迈当天一大早就来到纳塞通县自来水公司申请自来水入户。拿着缴费收据，他高兴地对记者说：“我们再也不用喝发黄的井水了。感谢中国公司！“

链接:

https://www.yidaiyilu.gov.cn/xwzx/hwxw/86517.htm

4．中智自贸协定签署12年 智利出口中国樱桃、红酒等猛增

【中国一带一路网】《信使报》4月19日头版报道，2006年中智签订自贸协定之初，智利向中国出口的非铜产品329种、金额9.4亿美元，而 2018年达到618种、61.26亿美元，纸浆、樱桃和瓶装红酒增长尤为迅猛。2006年智利出口的非铜产品中仅3%销往中国，远低于美国（25%）和欧盟（20%）,12年后， 这一比例提升到15%，加上铜出口，去年智利向中国的出口总额超过250亿美元。文章援引智利驻华大使施密特、中智企业家协会智方主席席尔瓦、智利外交部国际经济总司长亚涅斯、外贸促进局局长奥瑞恩、智利全国农业协会秘书长马特等人观点，阐述了中国近40年的经济转型、财富增加和中产阶级群体扩张带来不断增长的购买力为智利带来巨大市场，而自贸协定大大降低了优质农产品等智利优势出口品种的关税，极大促进了非铜产品对华出口，尤其是纸浆、樱桃、铁、三文鱼和鳟鱼、鲜食葡萄、各类木制品、锂、瓶装红酒和猪肉，其中表现最为抢眼的是樱桃，出口额从2006年的100万美元增长为2018年的10亿美元。各界同时看好中智贸易发展潜力。

链接:

https://www.yidaiyilu.gov.cn/xwzx/hwxw/86414.htm

5．世行评价“一带一路”：将使全球实际收入增长0.7%-2.9%

【中国一带一路网】已完成和规划中的“一带一路”交通运输项目将使沿线国家和地区货运时间平均减少1.7%—3.2%，使全球平均航运时间下降1.2%—2.5%。“一带一路”建设将

使沿线国家和地区的实际收入增长1.2%—3.4%，全球实际收入增长0.7%—2.9%，从而促进实现共同繁荣。近日，世界银行发布一系列研究文章，探讨“一带一路”建设对沿线国家和地区基础设施建设、国际贸易和跨境投资、包容性和可持续增长等方面的影响。世行认为，“一带一路”建设是“深化区域合作、促进跨大陆互联互通的宏伟举措，将改善交通基础设施、提升地区经济环境水平，从而大幅降低贸易成本，促进跨境贸易和投资，显著推动沿线国家和地区乃至全球经济的增长”。

链接:

https://www.yidaiyilu.gov.cn/xwzx/hwxw/86418.htm

6．中国援助赞比亚玉米粉加工厂项目动工

【中国一带一路网】中国援助赞比亚玉米粉加工厂项目17日在赞比亚卢萨卡省琼圭举行开工奠基仪式。赞总统伦古为项目动工揭牌。伦古表示，玉米粉加工厂的建设将有助于稳定粮食价格、创造更多就业机会。中国是赞比亚全天候的朋友，希望两国继续深化友谊。中国驻赞比亚大使李杰表示，中赞两国友谊源远流长，双方共同建设“一带一路”、落实中非合作论坛北京峰会成果取得新进展，在政治、经济、人文交流等各领域的交流与合作取得丰硕成果。他说，玉米粉加工厂的建设将有助于赞比亚有效保障粮食供应、提高人民收入、促进经济和社会协调发展。

链接:

https://www.yidaiyilu.gov.cn/xwzx/hwxw/86333.htm

7．Solving the mystery of fertilizer loss from Midwest cropland

【GRO】Farmers can't predict their annual corn harvest with certainty, but with the help of new research, they can now pinpoint specific parts of their fields that consistently produce either good or bad yields. Not only will this save them time and money; it will solve one of the most widespread environmental problems facing crop-producing regions -- nitrogen loss.

链接:

https://www.sciencedaily.com/releases/2019/04/190415154636.htm

8．How much nature is lost due to higher yields?

【Science Daily】The exploitation of farmland is being intensified with a focus to raising yields. The degree to which yields actually increase as a result and the extent of the simultaneous loss of biological diversity have to date been under-researched factors. An

international team of scientists has now evaluated data from worldwide research in which both yield and biodiversity were examined before and after intensification measures.

链接:

https://www.sciencedaily.com/releases/2019/04/190410095939.htm

9．Saving Japan’s seed heritage from “free trade”

【**GRAIN**】I recently had the opportunity to interview Masahiko Yamada, formerly Japan's Minister of Agriculture and now one of the country's foremost food sovereignty activists. We met at an international Economics of Happiness Conference in Prato, Italy, where Yamada delivered a keynote speech about the birth of a new citizens’ movement to protect Japan's food-crop heritage from corporate take-over. Keen to learn more, I ask Yamada for an interview before he departs Italy. With only an hour to spare, we rush off to find a caffetteria with a spare table. Joining us as translator is Keibo Oiwa, author of Slow is Beautiful: Culture as Slowness, the book that inspired the Slow Living movement in Japan. Over a strong cup of Italian coffee, Mr. Yamada responds to my many questions.

链接:

https://www.grain.org/en/article/6169-saving-japan-s-seed-heritage-from-free-trade

10．The Belt and Road Initiative: Chinese agribusiness going global

【**GRAIN**】One of the world’s biggest e-commerce companies, Beijing-based JD.com, says it will soon be able to deliver fruit from anywhere in the world to the doorsteps of Chinese consumers within 48 hours. It takes highly integrated global infrastructure—connecting farms to warehouses to transportation to consumers—to achieve a goal like this. China’s new mega-infrastructure plan, the Belt and Road Initiative (BRI), will help make JD.com’s vision a reality. It will also increase the concentration of global food production and distribution, potentially pushing small-scale farmers, fisherfolk, forest peoples and rural communities further to the margins. There are also serious concerns that BRI could worsen land grabs, human rights abuses, indebtedness, and environmental and health impacts in target countries.

链接:

https://www.grain.org/en/article/6133-the-belt-and-road-initiative-chinese-agribusiness-going-global

【文献速递】

1．“一带一路”现代农业发展的新机遇

作者：李坤;;殷朝华

文献源：农业经济,2019

摘要：当下实现农业的可持续发展,满足未来90亿人的吃饭需求,是全世界的共同追求,"一带一路"战略的实施无疑是最明智的选择。本研究针对"一带一路"给世界农业尤其是沿线国家带来的机遇,沿线双边国家的农业空间格局、贸易情况,提出中国农业与外合作的战略,首先是构建农业对外开放格局,给农业"走出去"铺路,顺势打造农业领域的中国品牌,做世界农业的强有力引导者。

链接:

http://agri.ckcest.cn/file1/M00/06/6B/Csgk0FzFTSKAUmg9ABzLmyaAJRg619.pdf

2．The role of agriculture as a development tool for a regional economy

作者：Efstratios Loizou;;Christos Karelakis

文献源：Agricultural Systems,2019

摘要：In any turbulent economic environment, sectors of economic activity behave and resist differently depending on the causes of the turbulence. Some sectors present a unique resistance in economic aberrations, have a resilient attitude and play the role of the stabilizer, supporting growth and employment. Such sectors are usually related with people basic needs; in the current economic crisis, the agriculture and food sector stand out. The present study endeavours to examine the potentials of agriculture in promoting an integrated development in a regional rural economy, through capturing and recording its interconnections with other sectors of economic activity. Input-Output analysis was applied along with the construction of a regional model intending to examine both the contribution of the primary sector in the regional economy, as well as the impact of the Common Agricultural Policy (CAP) reform on the entire local economy. By employing an analytical tool, it is demonstrated that the impact of the new CAP is not limited to the primary sector, but it - directly and indirectly affects other sectors, as well as the total output, employment and household income of the region. Results suggest that agriculture is an important driver of growth throughout the region, contributing to the increase of the local gross output by approximately €300mil. only by the inflow of funds, while 14% of it is diffused into sectors other than agriculture.

链接:

http://agri.ckcest.cn/file1/M00/06/6B/Csgk0FzDHsyAalu3AAT9yT52NWk763.pdf

3．Modelling long-term risk profiles of wheat grain yield with limited climate data

作者：Gennady Bracho-Mujica;;Peter T.Hayman

文献源：Agricultural Systems,2019

摘要：Long-term, continuous, accurate, daily weather records for precipitation, temperature and solar radiation are critical inputs for modelling long-term climate risk in cropping systems. However, comprehensive weather data often exhibit short record length and missing or inaccurate records, which can lead to inconsistencies. Using risk profiles (cumulative probability curves of crop yield) as a tool for quantifying the performance of cropping systems under climate variability, this study examines how sensitive risk profiles of a worldwide staple food crop are to temporal coverage of climate data, and additionally to the presence of extreme weather events. Here, we focused on the risk profile of modelled wheat grain yield across the Australian grain-belt using high-quality weather records. To test the effect of the discontinuity and limited record length often found in weather records, long-term risk profiles (i.e. obtained for a baseline period of 100 years, from 1917 to 2016) were compared with long-term risk profiles constructed using variable temporal coverages (record lengths 10, 20, …, 90 years, and three sampling periods: random, continuous and non-continuous). Long-term risk profiles based on >40 years showed reasonable small bias and root mean square errors when compared to those built for the baseline period, implying that even relatively short climate records can produce reliable long-term performance indicators. Long-term risk profiles able to account for severe frost and heat events required longer climate records (60 years). For most locations in Australia, long-term risk profiles built using data from the last 1040 years also revealed negative yield trends which may be partially attributed to climate change. Results were consistent across soils and different simulated sowing dates. Findings highlight rainfall as the main climate driver of wheat productivity and the importance of the record length and period considered for extreme weather event analysis in agricultural studies.

链接:

http://agri.ckcest.cn/file1/M00/06/6B/Csgk0FzDIO6AZ2TqACh63tegA44906.pdf

4．Crop diversification and resilience of agriculture to climatic shocks: Evidence from India

作者：Pratap S.Birthal;;Jaweriah Hazrana

文献源：Agricultural Systems,2019

摘要：Indian agriculture is highly vulnerable to climate shocks, such as floods, droughts and heat-stress. In this paper, using a dynamic panel-data approach we have assessed the impact of rainfall-deficit and heat-stress on agricultural productivity, and subsequently evaluated effectiveness of crop diversification in mitigating their adverse effects. The findings show that both rainfall-deficit and heat-stress damage agricultural productivity, and the damage increases with increase in their severity. Nevertheless, we find crop diversification as an important ex anteadaptation measure to climatic shocks and its adaptation benefits are more apparent against severe shocks and in the long-run. Our findings reinforce the dynamic role of crop diversification in improving resilience of agricultural production systems to climatic shocks.

链接:

http://agri.ckcest.cn/file1/M00/06/6B/Csgk0FzDIkWAC3BZABYsXQURAJM016.pdf

5．Associations between global indices of risk management and agricultural development

作者：Elesandro Bornhofen;;Thiago Gentil Ramires

文献源：Agricultural Systems,2019

摘要： Different countries around the globe have different levels of vulnerability to risks because of several factors, e.g. degree of development, governance, infrastructure, among others. The probability of occurrence of certain risks as drought and unfavorable tax policies have a direct impact on the development of the agribusiness in a given country. Hence, the aim of this study is to combine a set of risk managementindices in a global scale with agribusiness performance indicators, focusing on the 96 most relevant countries regarding the agribusiness GDP (Gross domestic product). We selected 27 indicators for risk management collected from the InfoRM database and seven for agribusiness performance from the FAOSTAT database. All data used in this research are public available. The data were scaled, and then analyzed through multivariate techniques, specifically using principal component analysis (displayed in biplots) and unsupervised K-means clustering in R software. The results suggest that monitoring the indicators of risk management (InfoRM) and the establishment of strategies to shrink them may have a positive effect on the agribusiness performance of a given country. For the agribusiness improvement, nations should elaborate strategies for the joint enhancement of the indicators discussed here, observing the existing associations. The implications of the use of risk management indexes

and agricultural performance indicators are discussed.

链接:

http://agri.ckcest.cn/file1/M00/06/6B/Csgk0FzDJBiAf-d3ADCHI_p_slo664.pdf

6．中国农业企业沿一带一路走向世界

作者：王莉莉

文献源：中国对外贸易,2019

摘要：农业合作一直是"一带一路"建设中的重头戏,"一带一路"沿线是中国开展农业合作的重点区域。泰国的大米、挪威的鳕鱼、澳大利亚的牛肉、智利的车厘子……中国市场上进口的农产品越来越多,而外国的餐桌上也摆上了来自中国的特色农产品。近年来,我国农业对外投资合作令人瞩目——截至2017年底,我国共有717家境内企业在境外设立了851家涉农企业,投资存量173.3亿美元,与2016年同期相比增长10%,2017年全年新增投资22.5亿美元.

链接:

http://agri.ckcest.cn/file1/M00/06/6B/Csgk0FzFULSAYPgpABST_4nQDrk830.pdf

7．Farmers' preferences for high-input agriculture supported by site-specific extension services: Evidence from a choice experiment in Nigeria

作者：Oyakhilomen Oyinbo;;Jordan Chamberlin

文献源：Agricultural Systems,2019

摘要：Agricultural extension to improve yields of staple food crops and close the yield gap in Sub-Saharan Africa often entails general recommendations on soil fertility management that are distributed to farmers in a large growing area. Site-specific extension recommendations that are better tailored to the needs of individual farmers and fields, and enabled by digital technologies, could potentially bring about yield and productivity improvements. In this paper, we analyze farmers' preferences for high-input maize production supported by site-specific nutrient management recommendations provided by an ICT-based extension tool that is being developed for extension services in the maize belt of Nigeria. We use a choice experiment to provide ex-ante insights on the adoption potentials of site-specific extension services from the perspective of farmers. We control for attribute non-attendance and account for class as well as scale heterogeneity in preferences using different models, and find robust results. We find that farmers have strong preferences to switch from general to ICT-enabled site-specific soil fertility management recommendations

which lend credence to the inclusion of digital technologies in agricultural extension. We find heterogeneity in preferences that is correlated with farmers' resource endowments and access to services. A first group of farmers are strong potential adopters; they are better-off, less sensitive to risk, and are more willing to invest in a high-input maize production system. A second group of farmers are weak potential adopters; they have lower incomes and fewer productive assets, are more sensitive to yield variability, and prefer less capital and labor intensive production techniques. Our empirical findings imply that improving the design of extension tools to enable provision of information on the riskiness of expected outcomes and flexibility in switching between low-risk and high-risk recommendations will help farmers to make better informed decisions, and thereby improve the uptake of extension advice and the efficiency of extension programs.

链接:

http://agri.ckcest.cn/file1/M00/06/6B/Csgk0FzE_XCAeqs8AETK9vgPkas177.pdf

8．中国与东南亚农产品贸易现状与潜力分析——基于“一带一路”倡议

作者：安晓宁;;辛岭

文献源：中国农业资源与区划,2019

摘要：[目的]文章利用2007—2016年联合国贸易统计数据,从贸易总量、贸易结构等相关数据切入,研究"一带一路"倡议下,中国与东南亚11国①农产品贸易的现状,双边农产品的出口比较优势与贸易互补性以及潜在合作空间,挖掘中国与东南亚国家农产品贸易潜力,为双边农产品贸易的进一步拓展提出建议。[方法]采用显示性比较优势指数、贸易强度指数进行实证分析。[结果]"一带一路"倡议下,中国与东南亚农产品贸易关系更加紧密;"一带一路"倡议有效促进了中国农产品出口东南亚,改善了中国在与东南亚国家农产品贸易中的逆差地位。[结论]东南亚农产品出口优势整体强于中国,双方农产品出口优势存在较大差异,农产品贸易存在较强的互补性且具有一定的增长潜力。

链接:

http://agri.ckcest.cn/file1/M00/06/6B/Csgk0FzFUaKAa2zCAAiuBzYlrXE763.pdf

9．“一带一路”倡议下中国畜牧业国际合作前景与对策

作者：丁琳琳;;李思经;;钟钰

文献源：世界农业,2019

摘要：农业是"一带一路"国际合作的重要领域,畜牧业是其中一项重要内容。近年来,"一带一路"畜牧业合作的发展环境有所改善,支撑体系不断完善。从市场规模、产业基础和

发展趋势来看,畜牧业产能合作、科技合作、投资合作、贸易合作和产业治理合作,还有很大的发展潜力与空间;同时,也面临综合风险高、环境变化大、融资难、经济效益欠佳、人才缺乏等问题和挑战。建议采取加快"一带一路"区域畜牧业经济研究、扩容多元化的资金投入、畅通多渠道的信息共享、凝聚多方面的合作力量4项措施,推动"一带一路"畜牧业合作。

链接:

http://agri.ckcest.cn/file1/M00/06/6B/Csgk0FzFUwuASyYjAAiuBzYlrXE379.pdf

10．农产品国际贸易对我国农业经济增长的影响

作者：吴玉鑫

文献源：农业经济,2019

摘要：自从改革开放以来,我国的农产品贸易开始起步发展,进入21世纪后,发展的速度进步非常大。然而我国的农产品国际贸易出现贸易逆差,经过研究发展,造成逆差的主要原因是商品的出口量没有进口量多,农产品的国际贸易在正向上推动了我国的经济发展,农产品贸易通过影响我国产业的结构,以及对其进行优化,在直接或者间接上促进了我国经济水平的提高。为了加快农产品国际贸易的发展速度,需要完善农村的基础设施,进而促进农村的生产力,提高生产质量,以此来提高进口定价权。

链接:

http://agri.ckcest.cn/file1/M00/06/6B/Csgk0FzFT1aAX-n3ABVlk3uMvc0467.pdf

【行业报告】

1．2019 Global food policy report?

发布源：IFPRI

发布时间：2019-04-09

摘要：The International Food Policy Research Institute (IFPRI), established in 1975, provides research-based policy solutions to sustainably reduce poverty and end hunger and malnutrition. IFPRI's strategic research aims to foster a climate-resilient and sustainable food supply; promote healthy diets and nutrition for all; build inclusive and efficient markets, trade systems, and food industries; transform agricultural and rural economies; and strengthen institutions and governance. Gender is integrated in all the Institute's work. Partnerships, communications, capacity strengthening, and data and knowledge management are essential components to translate IFPRI's research from action to impact.

The Institute's regional and country programs play a critical role in responding to demand for food policy research and in delivering holistic support for country-led development. IFPRI collaborates with partners around the world.

链接:

http://agri.ckcest.cn/file1/M00/06/6B/Csgk0FzFtt-AKne9AM870LV2QYM116.pdf

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