



2023年第15期总387期

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中国农业科学院农业信息研究所

联系人：孔令博

联系电话：010-82106786

邮箱：agri@ckcest.cn

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▶ 前沿资讯

1 . Successful Launch of Agmip-Mena Platform: A Promising Start to Enhance Agricultural Modeling for Food Security in the MENA Region (成功启动 Agmip-Mena 平台：加强 MENA 地区粮食安全农业建模的良好开端)

简介：February 16, 2023, the regional AgMIP-MENA Platform was launched by ICARDA and Mohammed IV Polytechnic University (UM6P) in Morocco in cooperation with the global Agricultural Model Inter-comparison and Improvement Project (AgMIP).

The event brought together experts from around the world, especially the Middle East and North Africa (MENA) region, to advance the science and practice of agricultural modeling to enhance resilient crop production in the region. The platform aims to research future climate change impacts on agriculture at different scales, link biophysical and socio-economic models, and provides decision support to farmers and policymakers with science-based strategies.

During the event, a series of interventions were conducted to examine the prospective repercussions of climate change, water scarcity, population growth, and land degradation on the agri-food system in the MENA region. The discussions covered potential measures to alleviate these impacts, especially through better sharing and utilizing data (crop, climate, soil, survey, model outputs, etc.), better calibration and development of the models, and providing customized decision support to the farmers and other stakeholders.

The joint research questions for the platform to address in the future are minimizing agricultural risks, consistency in data recording protocols, and providing intelligent strategic solutions for achieving the SDG goals. These goals can be achieved through better collaboration among universities, research stations, extension systems, and private and public societies through better model development, data sharing, capacity development, and participation in multi-model activities.

来源：国际干旱地区农业研究中心（ICARDA）

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全文链接：<http://agri.ckcest.cn/file1/M00/10/2A/Csgk0GQucXCAZXQ3AAFpf1rP2c392.pdf>

▶ 学术文献

1. 1990 - 2021年蒙古高原年度丰水期水体数据集

简介：蒙古高原生态系统脆弱，土地荒漠化严重，是亚洲地区主要的气候敏感区域之一，其水资源的时空变化有重要的研究价值。本数据集利用Google Earth Engine (GEE) 平台，对近32年（1990-2021年）可用的高质量Landsat系列卫星影像进行处理。利用最小云量合成算法，得到每年的丰水期（6月）最小云量影像。计算NDWI后采用大津算法进行阈值分割，提取得到32年蒙古高原逐年丰水期30 m分辨率水体数据，最终结果以Geo TIFF格式保存。通过对比，数据集与JRC年度水体数据的永久水体和最大水体的一致性平均值分别为93.0%和90.9%，具有较高的可信度。数据集可以为蒙古高原水资源变化、生态建设规划、环境保护等提供数据支撑。

来源：中国科学数据(中英文网络版)

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全文链接：http://agri.ckcest.cn/file1/M00/03/58/Csgk0YiFJRuAMOHvABZ9_EpT4fY428.pdf

2 . The effect of animal husbandry on economic growth: Evidence from 13 provinces of North China (畜牧业对经济增长的影响: 来自华北13省的证据)

简介: Promoting animal husbandry industry is important to help strengthen the agricultural sector. This study starts from both socio-economic and natural factors perspectives. Based on an exploratory spatial analysis, spatial econometric model, and geographically weighted regression (GWR) model, selecting the 13 Provinces of North China as the study area, this study analyzes the spatio-temporal differences and the driving factors. This study found: 1) Between 2006 and 2017, the spatial and temporal differences of GDP in the 13 provinces were statistically significant, with increased total production values and a slowed growth of the industry. In addition, the study area showed an east-west dichotomy in husbandry industry. 2) GDP had shown obvious spatial agglomeration, of which areas with the high production value were in east of Beijing, and areas with low production value were in western Inner Mongolia, Xinjiang and Gansu. 3) Population, animal husbandry output values, numbers of large livestock, and cultivated areas had greatly influenced the GDP of 13 provinces in north China. 4) The three influencing factors on GDP in the 13 provinces were found to be population, animal husbandry output values, and the sizes of cultivated areas. We should synthesize these influencing factors, supplemented with public policy concessions and compensatory measures to develop policies for improving the level of local economic development. Based on this, this study aims to provide a reference for decision making to promote the coordinated development of livestock husbandry and economic growth in China, and even provide a scientific reference for the management of similar pastoral areas in the world.

来源: Frontiers in Environmental Science

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全文链接: http://agri.ckcest.cn/file1/M00/10/2A/Csgk0GQucH-AN-PgACu_eoxxgP0525.pdf

3 . Assessing complementary synergies for integrated crop–livestock systems under conservation agriculture in Tunisian dryland farming systems (评估突尼斯旱地农业系统保护性农业下作物–牲畜综合系统的互补协同作用)

简介: The aim of this paper is twofold. The first objective is to measure the technical efficiency of mixed crop-livestock (CL) smallholder producers operating under conservation agriculture systems in Tunisian rainfed areas. The second objective is to explore complementarities, synergies, and economies of diversification across the different production system components of these crop-livestock producers using the cross-partial derivative framework of output variables in the distance function. A simple random sampling process was employed to select and survey 59 CL smallholders operating under conservation agriculture. The collected data were analyzed using a stochastic input distance function in which synergies were estimated based on the second cross-partial derivative concept of output variables in the distance function. Results show that technical inefficiencies are significant in integrated crop-livestock systems, and there is evidence that economic diversification provides a productivity buffer against climate change threats. As a sustainable intensification strategy, this integrated system also offers a potential advantage. The results further contribute to the debate on crop diversification vs. specialization. Although an enhanced system integration could be a financially and ecologically viable option for mixed crop-livestock systems, more pathways for profitable and viable diversification of cereal-based or

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orchard-based systems remain to be explored.

来源: Frontiers in Sustainable Food Systems

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➤ 科技报告

1 . The State of the World's Land and Water Resources for Food and Agriculture 2021 – Systems at breaking point (2021 年世界粮食和农业土地及水资源状况—处于崩溃边缘的系统)

简介: Satisfying the changing food habits and increased demand for food intensifies pressure on the world's water, land and soil resources. However, agriculture bears great promise to alleviate these pressures and provide multiple opportunities to contribute to global goals. Sustainable agricultural practices lead to water saving, soil conservation, sustainable land management, conservation of natural resources, ecosystem and climate change benefits. Accomplishing this requires accurate information and a major change in how we manage these resources. It also requires complementing efforts from outside the natural resources management domain to maximize synergies and manage trade-offs.

The objective of SOLAW 2021 is to build awareness of the status of land and water resources, highlighting the risks, and informing on related opportunities and challenges, also underlining the essential contribution of appropriate policies, institutions and investments. Recent assessments, projections and scenarios from the international community show the continued and increasing depletion of land and water resources, loss of biodiversity, associated degradation and pollution, and scarcity in the primary natural resources. SOLAW 2021 highlights the major risks and trends related to land and water and presents means of resolving competition among users and generating multiple benefits for people and the environment. The DPSIR framework was followed in order to identify the Drivers, Pressures, Status, Impact and Responses. SOLAW 2021 provides an update of the knowledge base and presents a suite of responses and actions to inform decision-makers in the public, private, and civil sectors for a transformation from degradation and vulnerability toward sustainability and resilience.

来源: FAO

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