

《中国农业发展战略研究》专题快报

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【动态资讯】

1. India government keen on reducing chemical fertilizer use by 10 percent

【AgNews】 India government is keen on reducing the use of chemical fertilisers by at least 10 per cent to promote organic fertilizers and has started giving subsidies for city compost, Chemicals and Fertiliser Minister DV Sadananda Gowda said in the Lok Sabha on Monday. "The government's intention is to reduce at least 10 per cent of the fertilizers being used by the farmers, thereby promoting the use of organic fertilizers. So, we have started giving subsidies for city compost and we are encouraging it. "The Prime Minister wants to see that by the end of 2021, the import should be minimized. At present, we are importing about 65 lakh metric tonnes. We want this to be stopped. For that, several initiatives have been taken and five factories which were shut during 2002 are being revived," he said.

链接:

<http://news.agropages.com/News/NewsDetail---30999.htm>

2. Irrigated farming in Wisconsin's central sands cools the region's climate

【EurekaAlert!】 MADISON - New research finds that irrigated farms within Wisconsin's vegetable-growing Central Sands region significantly cool the local climate compared to nearby rain-fed farms or forests. Irrigation dropped maximum temperatures by one to three degrees Fahrenheit on average while increasing minimum temperatures up to four degrees compared to unirrigated farms or forests. In all, irrigated farms experienced a three- to seven-degree smaller range in daily temperatures compared to other land uses. These effects persisted throughout the year. The results show that the conversion of land to irrigated agriculture can have a significant effect on the regional climate, which in turn can

affect plant growth, pest pressure and human health in ways that could be overlooked unless land uses are accounted for in forecasts and planning.

链接:

https://www.eurekalert.org/pub_releases/2019-07/uow-ifi062619.php

3. 巨野农村垃圾实现“四分类”——可沤垃圾不出村,就地变身有机肥

【中华人民共和国农业农村部】经过5年的探索,巨野县农村生活垃圾已实现“四分类”:可沤肥垃圾、可回收垃圾、不可回收垃圾和有害垃圾四类,垃圾总量比原来减少了三分之一以上。可沤垃圾不出村,就地转化有机肥,全县由此每年可生产20万方有机肥。2014年,巨野县大力推行城乡环卫一体化建设。当时巨野县对农村垃圾实行的是“村收、镇运、县处理”的模式。村收、镇运、县处理”模式带来的后果是,县城垃圾处理场“压力山大”,当时的现状是:全县生活垃圾进场量由原来的每天一百多吨增加到近五百吨。农村垃圾进城,一方面增加了运输成本,另一方面也使垃圾处理能力达到极限。5年前,巨野县开始在200多个村推行垃圾分类试点,号召村民自觉实行“厨余垃圾不出户,可沤垃圾不出村”,从源头上减少垃圾进场量。巨野县通过举办培训班、发放明白纸等群众易于接受的形式,主要推行“两次四分”的垃圾分类法,垃圾分类逐步被试点村群众接受、认可。建立了一套“农户+保洁员+志愿者”的长效保洁机制。巨野县农村垃圾分类一举解决了“农村垃圾进城”问题。紧接着,巨野县又提出厨余垃圾不出户,可沤的垃圾不出村,能转换为有机肥的垃圾,以村为单位,在村内消化掉,这样,农村垃圾总量和原来相比能减少70%以上。目前,巨野县正遵循减量化、资源化、无害化的原则,稳步推进农村垃圾分类工作,村民垃圾分类参与度超过50%,资源回收率达到30%,建成一批关键性的垃圾终端处理设施。

链接:

http://www.moa.gov.cn/xw/qg/201907/t20190702_6320096.htm

4. 明年辽宁省千余村将实现生活污水收集处理

【中华人民共和国农业农村部】辽宁省提出以解决农村水体污染、改善农村水体质量与环境为目标,积极稳步梯次推进农村生活污水治理工作。到明年,全省要新建生活污水集中收集处理系统300套,完成供水人口在1万人或日供水1000吨以上的饮用水水源保护区划定工作,完成农村黑臭水体排查并开展治理试点示范,使全省千余行政村生活污水实现收集处理。积极开展农村黑臭水体治理。今明两年要形成全省农村黑臭水体清单,确定污染状况和污染源,分析黑臭成因,制定治理方案,明确治理任务和措施。在群众反映比较强烈的典型区域,开展黑臭水体治理试点,取得经验后在全省推广。同时要将村屯房前屋后有治理保护任务的微小河沟和常年水面面积1平方公里以下的微小池塘纳

入河长制湖长制，实行常态化管理。

链接:

http://www.moa.gov.cn/xw/qg/201907/t20190702_6320062.htm

5. 'Planting green' cover-crop strategy may help farmers deal with wet springs

【EurekaAlert!】 Allowing cover crops to grow two weeks longer in the spring and planting corn and soybean crops into them before termination is a strategy that may help no-till farmers deal with wet springs, according to Penn State researchers. The approach -- known as planting green -- could help no-till farmers counter a range of problems they must deal with during wet springs like the ones that have occurred this year and last year. These problems include soil erosion, nutrient losses, soils holding too much moisture and causing a delay in the planting of main crops, and main-crop damage from slugs. As cover crops continue to grow, they draw moisture from the soil, creating desired drier conditions in wet springs for planting corn and soybeans. With planting green, after those main crops are planted into the cover crops, the cover crops are typically terminated by farmers with an herbicide. The decomposing cover crop residues then preserve soil moisture for the corn and soybean crops through the growing season. However, because planting green results in more cover crop residues acting as mulch on the surface, it also cooled soils from 1.3 to 4.3 degrees Fahrenheit at planting.

链接:

https://www.eurekaalert.org/pub_releases/2019-07/ps-gc070119.php

6. UCI, UC Merced: California forest die-off caused by depletion of deep-soil water

【UCI News】 Irvine, Calif., July 1, 2019 A catastrophic forest die-off in California's Sierra Nevada mountain range in 2015-2016 was caused by the inability of trees to reach diminishing supplies of subsurface water following years of severe drought and abnormally warm temperatures. That's the conclusion by researchers from the University of California, Irvine and UC Merced outlined in a study published today in Nature Geoscience. "In California's mixed-conifer mountain forests, roots extend from five to 15 meters deep, giving trees access to deep-soil water," said co-author Michael Goulden, UCI professor of Earth system science. "This is what has historically protected trees against even the worst multi-year droughts." But Goulden said the severity of California's 2012-2015 dry-spell exceeded this safety margin. Many forest stands exhausted accessible subsurface moisture,

leading to widespread tree death.

链接:

<https://news.uci.edu/2019/07/01/uci-uc-merced-california-forest-die-off-caused-by-depletion-of-deep-soil-water/>

7. 定西市循环农业产业取得明显成效

【中华人民共和国农业农村部】定西市循环农业产业取得明显成效。主要表现在四个方面。一是农业生产绿色高效集成。建立了马铃薯商品薯标准化种植核心区37.1万亩、一级种标准化种植核心区16.2万亩、中药材标准化种植核心区30.61万亩、蔬菜标准化种植核心区10.08万亩。全市有效使用“三品一标”标识产品166个,新申报“三品一标”认证39个,完成旱作农业面积369.92万亩,共使用农膜2.87万吨,已回收废旧农膜1.36万吨。二是草畜产业实现融合发展。全市牛、羊、猪、鸡饲养量达到1215万只(头),出栏量504.6万只(头)。三是种植各类优质牧草188.1万亩;建成饲草加工龙头企业29家、规模化养殖场597家,年鲜草精深加工能力达到150万吨、规模化养殖场和饲草料配送中心制作干草和窖池青贮能力达到260万吨、牧草青贮加工能力达到440万吨。四是林业生态建设持续推进。全市已累计完成造林34.09万亩、经济林果12.57万亩。今年,在北京世界园艺博览会参展期间,临洮花卉在博览会国际馆荣获金、银、铜等奖项14个;推进渭河源区生态保护与综合治理,围绕规划水源地保护、植被保护与建设、水土保持、防灾减灾和中小河流治理五大工程建设任务,目前共争取到项目118个,投资5.88亿元,开工项目83个,完成投资0.96亿元。

链接:

http://www.moa.gov.cn/xw/qg/201907/t20190701_6319962.htm

8. 余欣荣在全国政协“委员讲堂”作报告时强调 搞好农村人居环境整治 建设美丽乡村

【中华人民共和国农业农村部】余欣荣重点介绍了农村“厕所革命”有关情况。据介绍,2018年全国完成农村改厕1000多万户,农村改厕率超过56%。余欣荣指出,“小康不小康,厕所算一桩”,厕所问题看来事情小、工作简单,但实际上是大民生、大学问、大工程,必须树立“让每一户农民都满意”的工作理念,坚持好字当头、质量优先,因地制宜、分类指导,稳步推进、注重实效,特别是要做好发动群众、改厕技术研发、使用维护等重点难点工作,有力有序推进农村改厕,把好事办好。余欣荣还对农村生活垃圾和污水治理进行了解读。他指出,对农村生活垃圾治理,要重点推进垃圾源头分类,降低处理成本,提高资源回收利用水平;推进垃圾无害化处理,切实防止二次污染;构建村庄保洁长效机制,确保垃圾有人收、有人管。对农村生活污水治理,要坚持因地制宜,

积极探索适应不同地区的处理模式；坚持分类减量，按照主要污染物指标分成“黑水”和“灰水”再进行必要处理；坚持绿色治理，经过处理后就近资源化利用；坚持实用高效，积极研发投资省、能耗低、运行维护简便的污水治理设施和产品，实现稳定运行、老百姓长期受益。

链接:

http://www.moa.gov.cn/xw/zwdt/201907/t20190701_6319996.htm

9. The Water Future of Earth's 'Third Pole'

【NASA】Himalaya. Karakoram. Hindu Kush. The names of Asia's high mountain ranges conjure up adventure to those living far away, but for more than a billion people, these are the names of their most reliable water source. Snow and glaciers in these mountains contain the largest volume of freshwater outside of Earth's polar ice sheets, leading hydrologists to nickname this region the Third Pole. One-seventh of the world's population depends on rivers flowing from these mountains for water to drink and to irrigate crops. Rapid changes in the region's climate, however, are affecting glacier melt and snowmelt. People in the region are already modifying their land-use practices in response to the changing water supply, and the region's ecology is transforming. Future changes are likely to influence food and water security in India, Pakistan, China and other nations. NASA is keeping a space-based eye on changes like these worldwide to better understand the future of our planet's water cycle. In this region where there are extreme challenges in collecting observations on the ground, NASA's satellite and other resources can produce substantial benefits to climate science and local decision makers tasked with managing an already-scarce resource. One of the more alarming conclusions is that the glaciers will be 35 to 75% smaller in volume by 2100 due to rapid melting.

链接:

<https://www.nasa.gov/feature/goddard/2019/the-water-future-of-earths-third-pole>

10. 农业农村部加力推进农药减量增效工作

【中华人民共和国农业农村部】农业农村部在上海召开全国农药减量增效推进工作会，深入贯彻中央对农业绿色发展和高质量发展提出的新要求，交流各地农药减量增效工作经验，安排部署当前重点工作。会议强调，要提高认识，理清思路，研讨对策，大力推进农药减量增效，促进农业绿色发展，做到粮食及重要农产品病虫害统防统治率达到40%以上，绿色防控覆盖率达到30%以上，确保实现农药利用率持续提高和农药使用量

负增长的目标。一要抓好农作物病虫害绿色防控工作；二要抓好统防统治“百县”创建工作；三要抓好科学安全用药工作；四要大力推进农药废弃物回收工作。

链接:

http://www.moa.gov.cn/xw/zwdt/201906/t20190619_6318130.htm

【文献速递】

1. 2019 畜禽粪污资源化利用高峰论坛之一：院士论道

文献源：中国畜牧业,2019

摘要：2019 畜禽粪污资源化利用高峰论坛主办方邀请中国工程院院士、中国农业大学国家农业绿色发展研究院院长张福锁，中国工程院院士、中国科学院广州能源研究所首席科学家陈勇，中国工程院院士、中国科学院亚热带农业生态研究所研究员印遇龙等三位院士，从不同角度讲解了畜禽粪污资源化利用、农牧结合、生态养等热点问题和前沿技术。

链接:

<http://agri.ckcest.cn/file1/M00/06/87/Csgk0F0cQuyATk-hABGeVPyaCMY332.pdf>

2. Regional water footprints and interregional virtual water transfers in China

文献源：Journal of Cleaner Production,2019

摘要：China faces increasingly severe water stress from its limited, unevenly distributed water resources and rapid economic growth. Interregional trade of goods and services within China further leads to a redistribution of water resources through virtual water transfers. Such virtual transfers are subject to constant changes due to the temporal variabilities in driving factors such as production efficiency, consumption patterns and population. Here we use the most recent public data to measure the water footprints of 31 provincial-level regions in China and virtual water transfers among these regions in 2012. We find that virtual water transfer plays a significant role in regional water footprints and greatly changes the allocation of water resources towards regional consumptions. Already water-scarce north China regions benefit from virtual water transfer by outsourcing water-intensive products from other regions. However, the water-scarce Northwest China suffers from virtual water transfer by exporting water-intensive products. We suggest policy makers pay attention to demand-side measures to incentivize parties to improve water efficiency in their production and reduce the consumption of water intensive goods. Policy making should consider economic policy and water conservation policy together to alleviate

regional water stress through virtual water transfers.

链接:

<http://agri.ckcest.cn/file1/M00/06/87/Csgk0F0cT6mARSFLADO6v4ODy5U964.pdf>

3. 农业绿色生产社会化服务模式探析

文献源: 中国农业资源与区划,2019

摘要: [目的]在当前全面推进农业绿色发展、以绿色发展引领乡村振兴的农业发展新阶段,绿色生产社会化服务是促进小农户与现代农业发展相衔接、全面迈入农业绿色发展轨道的重要途径。为研究提出适合我国当前农业绿色发展需求的绿色生产社会化服务模式,[方法]文章首先对农业绿色生产社会化服务内容、种类与潜在供求关系进行了初步界定,并对绿色生产社会化服务与传统生产社会化服务进行了比较分析,明确了绿色生产社会化服务的特殊性;其次基于浙江、黑龙江、湖北等地农业绿色发展社会化服务典型实践,[结果]提炼分析出四种主要的绿色生产社会化服务模式,并对每种模式的适用条件以及需要重点关注的问题进行了深入探讨,[结论]在此基础上提出当前进一步完善绿色生产社会化服务的政策建议,对于加快服务规模化引领绿色发展,带动小农户走上农业绿色发展轨道具有重要的决策参考价值。

链接:

<http://agri.ckcest.cn/file1/M00/06/87/Csgk0F0cRm2ADwp7AAmAg2dNv-c709.pdf>

4. Farmers' perceptions of agricultural land use changes in Nepal and their major drivers

文献源: Journal of Environmental Management,2019

摘要: Historical trends show that the total area of agricultural land in Nepal has changed markedly over time, but few studies have addressed the causative drivers underlying this change. Evaluating the perceptions of farmers is an effective tool for addressing this issue because it reflects the full range of drivers associated with changes in land use. This study utilizes historical agricultural area, population, and climate data for 1910-2010, combined with a series of applied household surveys and focus group discussions to assess farmers' perceptions of these changes and identify the major drivers. The paired t-test was employed to measure differences between various groups of drivers. The total area of agricultural land in Nepal has expanded rapidly since 1910, more intensively in the southern (Tarai) and central (Hill) ecological regions of the country, and has decreased slightly near large cities in recent decades. Farmers' perceptions show that socioeconomic variables were considered to be the crucial drivers of changes in agricultural land use. The three other major drivers

were grouped as: neighborhood, climate topography, and policy drivers. In particular, farmers pointed to the high level of population growth (93.96%) as the main factor underlying the changes, and the majority of drivers are associated with this variable. Access to roads (77.36%), urbanization (33.77%), government policies (23.58%), and remittance impact (16.79%) are other notable triggering variables. The paired t-test results equating variables from different groups of drivers and ecological regions indicate varied significance (p-values range from 0.004 to 0.983). Our analysis confirms that the synergy between social and natural observations can be integrated to obtain research findings that identify scientific and social issues. The interplay between the drivers should be emphasized in developing plans for sustainable agricultural land use management.

链接:

http://agri.ckcest.cn/file1/M00/06/87/Csgk0F0cR_2AUIvNABa3ojNYCec991.pdf

5. 四川省绿色农业发展区域特征及评价

文献源: 中国农业资源与区划,2019

摘要: [目的]绿色农业是现代农业发展的一种新模式,绿色农业的发展水平反映了该地区农业经济发展的综合水平。因此,通过测度四川省绿色农业发展水平,可以为四川省实现农业现代化提供理论参考。[方法]文章通过构建四川省绿色农业发展水平评价指标体系,采用熵值法和层次分析法计算得到绿色农业发展水平综合指数。基于农业发展水平等级划分标准,对四川省各市(州)的绿色农业发展水平进行综合评价。[结果]四川省绿色农业发展水平评价指标权重分析结果表明,生产过程的绿色化水平较高,其权重值为0.4934,产品品牌的绿色化水平权重值较低,为0.1958。二级指标的权重分析结果表明四川省农药化肥使用量偏高,森林覆盖率较低。通过对四川省绿色农业发展水平的区域特征分析,结果表明不同地区的发展水平差异较大,成都市发展水平指数最高为0.6104,巴中市指数最低为0.1972,四川省整体发展水平指数为0.4542,与成都市发展水平指数相差两个级别。此外,区域发展的集聚效应较明显,以成都市为中心向四周递减。[结论]四川省绿色农业发展水平的区域差异性较大,各地区存在发展不平衡的现状,从整体上来看,中部和东部的发展水平相对较高,西部发展水平相对较低。

链接:

<http://agri.ckcest.cn/file1/M00/06/87/Csgk0F0cRzCAB5zdABX3UAWC94E969.pdf>

6. 青海农业绿色发展战略思考

文献源: 农业工程技术,2019

摘要: 农业农村优先发展,实施乡村振兴战略,必须坚持质量兴农、绿色兴农,确保农业可持续发展。文章介绍了青海农业绿色发展的现状与成效,结合现状提出目前还存在农业资源紧缺、绿色农产品总量低、农产品质量安全存在隐患与绿色防控技术推广缓慢等问题,提出要做好政策扶持与结构调整、推进绿色发展理念与科技创新,为青海实施"一优两高"战略提供参考。

链接:

http://agri.ckcest.cn/file1/M00/06/87/Csgk0F0cRs6AcW_KAB9lg5YFbfE671.pdf

7. Prediction of water resource carrying capacity by the analytic hierarchy process-fuzzy discrimination method in a mining area

文献源: Ecological Indicators,2019

摘要: The problem of water damage caused by coal mining has been a widespread concern in all sectors of society. Research into carrying ability relations of coal mining and water resources in mining areas is the foundation to solve this problem. It is also important to evaluate the sustainable development of mining areas as well as explore aquifer-protective mining. Based on the analysis of the characteristics and connotations of mining area water resource carrying capacity (MAWRCC), the fuzzy synthetic discriminant method is used as the evaluation method, and water resource carrying capacity (WRCC) as the evaluation standard. The evaluation system of MAWRCC under a mining action is constructed, and the main influencing factors and subordinate functions of MAWRCC are analyzed. Also, the membership degree of the influence factor is calculated. Methods for the rationality and influence factors of reliability are proven in the Shendong and Yili mining areas. They predicted the state of WRCC of the Yili mine for the next three years, under the conditions of carrying out or not carrying out aquifer-protective mining. According to the calculation results, the parameters of coal mining are the initiating factor caused by MAWRCC. Aquifer-protective mining is an effective measure to control the WRCC. The research results have important reference value and academic significance for the evaluation of MAWRCC.

链接:

http://agri.ckcest.cn/file1/M00/06/87/Csgk0F0cTvKAKY_2AAfA7UMCkGg514.pdf

8. Evaluation of external virtual water export and dependency through crop trade: an Asian case study

文献源: Paddy and Water Environment,2019

摘要: The aim of this study was to evaluate virtual water export through five crops (barley, rice, maize, soybeans, and wheat) in terms of the external virtual water rate, within and outside of Asia from 2000 to 2012, and in comparison with that within and outside the European Union (EU). The external virtual water rate indicates the proportion of virtual water export outside of a boundary. Approximately 46.9% of the green water exports and 40.9% of the blue water exports were discharged from Asia to non-Asian countries. For example, Thailand, which is the main exporter in Asia, exported 55.5% of the total virtual water exported to non-Asian countries, and Kazakhstan exported 63.8% of the total virtual water exported to European countries. In comparison, the external virtual water rate for the EU was 30.2% (green water) and 25.2% (blue water). The virtual water trade is also important to the main importers in Asia. We evaluated the virtual water dependency on exporters in East Asia of Japan, Korea, and Taiwan. These three countries have a high dependency on virtual water imported from only a few exporters; thus, they should extend their virtual water trade boundary to include additional exporters. These results provide information necessary for the development of an integrated water strategy in Asia, and could convince the main Asian importers of the risks of serious dependency on foreign water resources.

链接:

<http://agri.ckcest.cn/file1/M00/06/87/Csgk0F0cUt2AIYVRADFdXAdqNy8996.pdf>

9. Changing Structure and Organization of US Agriculture

文献源: Encyclopedia of Agriculture and Food Systems,2019

摘要: This article provides a brief description of general characteristics and changes in production agriculture over time. Key influences or drivers of change in structure and organization, as well as other significant drivers of change, are discussed. Detailed measures of farm size and structure are presented and discussed, including the evolution over time. Economics of different types and sizes of farms are explored, including the importance of off-farm income. The implications of significant trends and their challenges to the future structure and organization of agriculture conclude the article. Although this article is US specific in its measures used to reflect how the structure and organization of

agriculture/farming are changing over time, the drivers of change affecting size, structure, and organization of agriculture are largely universal. Quite similar trends are evident throughout most developed countries and are increasingly evident in the emerging commercial farming sectors across Latin America, Africa, and in some other developing countries. The scale and speed of change varies depending on policy, social systems, and cultural preferences, but the key underlying drivers of change are rapidly shared in today's global economy and interconnected world.

链接:

<http://agri.ckcest.cn/file1/M00/06/87/Csgk0F0cTkKAXSZhAAS2ORmgzSE199.pdf>

【相关专利】

1. 一种利用秸秆微生物发酵再利用的方法

发布源: 万方数据知识服务平台

发布时间: 2019-03-01

摘要: 本发明公开了秸秆发酵技术领域的一种利用秸秆微生物发酵再利用的方法, 包括以下步骤: S1晒干后, 用粉碎机粉碎; S2水调节湿度; S3微生物秸秆发酵剂和纤维素酶混合发酵; S4发酵池中装填两段发酵; S5获取液态有机肥和固态有机肥, 本发明利用微生物发酵的秸秆还田的方法, 利用秸秆发酵剂与纤维素酶发酵降解秸秆, 加大发酵降解的速率, 使其发酵成液态有机肥和固态有机肥, 直接还田施肥, 既能减少秸秆浪费造成的环境污染, 又能缩短发酵时间, 达到彻底杀死虫卵、带菌体等一些病原体, 可以修复退化土壤, 有利于发展绿色农业, 促进农业的可持续发展。

链接:

http://agri.ckcest.cn/file1/M00/06/87/Csgk0F0cPe-AZ_MzAAUiLI432s0228.pdf

2. 一种绿色农业发展用秸秆回收装置

发布源: 万方数据知识服务平台

发布时间: 2018-11-16

摘要: 本发明公开了一种绿色农业发展用秸秆回收装置, 包括第一箱体、第二箱体、第三箱体、第四箱体和第五箱体, 所述第二箱体设置在第一箱体顶端一侧, 所述第三箱体焊接在第一箱体内部一侧, 且所述第二箱体通过输料斗与第三箱体连通, 所述第四箱体设置在第三箱体一侧, 所述第五箱体焊接在第一箱体内部另一侧, 所述第二箱体顶端焊接有进料斗, 所述第二箱体一侧设有第二电机, 且所述第二电机的输出轴通过联轴器安装有第二切割辊, 本发明通过第二切割辊对秸秆进行初次切割后再进行冲洗, 便于清

除秸秆本身的泥垢，从而提高清洗的效率，通过第一切割辊对秸秆进行再次切割，从而减小秸秆的体积，便于对秸秆进行再次加工。

链接:

http://agri.ckcest.cn/file1/M00/06/87/Csgk0F0cPteANsinAAAn_5WjMYw8990.pdf

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