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【动态资讯】

1．Rothamstedt Research to collaborate with BASF on sustainable agriculture

【 **AgroNews** 】 Rothamsted Research and BASF are working together in a long-term collaboration to shape modern sustainable agriculture. The goal is to jointly address current agricultural challenges by identifying areas of R&D where novel approaches to science can accelerate innovation. The first initiative, designed as a hands-on training program, is a Sustainability Challenge that enables early career scientists to discuss their ideas on the future of farming in a corporate environment. In addition, BASF and Rothamsted are launching PhD studentships focusing on soil management. The Sustainability Challenge is framed as a competition to develop skills in collaborative research projects. Teams of Rothamsted researchers from all over the world are challenged to develop proposals on topics such as the future of farming, sustainable agriculture or innovation to mitigate the effects of climate change. The program includes coaching from BASF experts and a leading Design Thinking agency on how to co-design collaborations with partners. The first challenge took place this year. After successfully pitching their concepts, the winning teams visited the headquarters of BASF's Agricultural Solutions division in Limburgerhof, Germany, earlier this year, to exchange ideas on sustainable farming with industry experts.

链接:

http://news.agropages.com/News/NewsDetail---30588.htm

2．沧州明年力争1600个村生活污水得到治理

【中华人民共和国农业农村部】日前，沧州市出台《沧州市农村生活污水治理行动方案》，将农村生活污水治理作为重要的民生工程、生态工程，因地制宜，坚持污染治理与资源

利用相结合、工程措施与生态措施相结合、集中处理与分散治理相结合，采取纳入污水管网、联村集中治理、分村分户治理等方式，梯次推进农村生活污水治理。力争到2020年，农村生活污水治理达到1600个村，农村生活污水乱排乱放得到有效管控的村庄达到4028个村，全市农村人居环境和生态环境明显改善。重点治理范围为环境敏感和人口相对集中的1553个村庄：包括242个规划纳入城镇（园区）收水管网的村庄，4个集中式饮用水水源地一级保护区内村庄、252个二级保护区内村庄，350个设立省级河湖长的河湖管理范围内的村庄，以及705个青静黄排水渠、子牙河、北排河、南排河等10条重点河流沿线村庄。

链接:

http://www.moa.gov.cn/xw/qg/201905/t20190527_6315453.htm

3．Antibiotics found in some of the world's rivers exceed 'safe' levels, global study finds

【EurekAlert!】Concentrations of antibiotics found in some of the world's rivers exceed 'safe' levels by up to 300 times, the first ever global study has discovered. Researchers looked for 14 commonly used antibiotics in rivers in 72 countries across six continents and found antibiotics at 65% of the sites monitored. Metronidazole, which is used to treat bacterial infections including skin and mouth infections, exceeded safe levels by the biggest margin, with concentrations at one site in Bangladesh 300 times greater than the 'safe' level. In the River Thames and one of its tributaries in London, the researchers detected a maximum total antibiotic concentration of 233 nanograms per litre (ng/l), whereas in Bangladesh the concentration was 170 times higher. The most prevalent antibiotic was trimethoprim, which was detected at 307 of the 711 sites tested and is primarily used to treat urinary tract infections.

链接:

https://www.eurekalert.org/pub_releases/2019-05/uoy-afi052419.php

4．北京市海淀区建筑垃圾将全部就地资源化

【中华人民共和国农业农村部】海淀已经成立了年消纳能力70万吨的建筑垃圾资源化处理厂，转变建筑垃圾以填埋为主的现状。未来海淀区政府投资项目产生的建筑垃圾将不再外运或填埋，而是在区内就地再生成为建筑材料，利用率可达95%。昨天，记者来到海淀苏家坨镇南安河村，数座苫盖了绿网的渣土和建筑垃圾堆映入眼帘，数辆挖掘机正有序进出，将建筑垃圾运至生产车间，进行资源化再处理，最终制作成建筑骨料，用于河道治理、道路铺装、公厕改造等。海淀区城管委负责人介绍，拆违、棚改等项目会产

生大量建筑垃圾,过去一般都会用填埋、外运等方式处理。为了减少二次污染,提高资源化利用率，海淀区正探索搭建建筑垃圾闭环资源化管理模式，实现政府投资项目产生的建筑垃圾全部就地资源化。

链接:

http://www.moa.gov.cn/xw/qg/201905/t20190524_6314761.htm

5．调结构的“加减乘除”算法

【中华人民共和国农业农村部】栾城区坚持把推进乡村振兴作为建设“新时代高质量现代新区、美丽栾城”的重要举措，着力做好“加、减、乘、除”四篇文章，加快农业转型升级，持续增强农业的综合效益和竞争力。“加法”就是大力发展符合市场需求，高质量、高效益、可持续、有竞争力的农业产业。壮大特色优质专用粮食、蔬菜、果品、花木等产业，打造形成“范台草莓”“锦绣无花果”“苏园樱桃”“柳林小镇蔬菜”“天亮紫麦”等一批具有文化底蕴、鲜明地域特征的农产品品牌。“减法”就是大力压减资源高消耗、管理高成本的农业产业。特别是对草皮等耗水大、破坏土壤耕种层、不可持续的“吃子孙饭”产业，旗帜鲜明限制发展。今年重点实施“压草行动”，力争全年压减面积1/3。“乘法”就是以城乡融合、一二三产融合为路径，拓展产业多功能新业态，延长产业链条，增加农产品附加值，加快多产业融合发展。围绕打造美丽乡村建设升级版，突出抓好项目建设，大力引进产业龙头项目，依托龙头项目加快培育发展新动能。“除法”就是坚决淘汰过时、低效低质种植产业。切实健全制度，持续推进，推动农业种植结构向高质高效绿色可持续方向发展。

链接:

http://www.moa.gov.cn/xw/qg/201905/t20190524_6314771.htm

6．粪污资源化，“用”出好路子

【中华人民共和国农业农村部】作为全国农业大省、畜禽养殖大省，湖南生猪年出栏量稳居全国前三，牛羊、家禽出栏（笼）量均居全国前列。而对于畜禽养殖废弃物治理这个颇为头疼的问题，湖南省在经历了成长的阵痛后，已初步探出了一条绿色发展之路：针对大中型规模养殖场，实行沼气、有机肥的工厂化生产和沼液还田（或达标排放）模式；针对适度规模养殖场，推广种养结合、农牧循环、林牧循环等生态种养模式，把养殖场建成生态小农庄；针对畜禽粪污无法自行消纳的中小养殖场，建立了第三方营运的社会化服务模式。

链接:

http://www.moa.gov.cn/xw/qg/201905/t20190524_6315376.htm

7．甘肃打出“组合拳”向农业农村污染说“不”

【中华人民共和国农业农村部】5月22日上午，甘肃省生态环境厅召开2019年5月份例行新闻发布会，省生态环境厅土壤生态环境处陈静荣处长向媒体介绍了《甘肃省农业农村污染治理实施方案》，明确提出加强农村饮用水水源保护、加快推进农村生活垃圾污水治理、着力解决养殖业污染、有效防控种植业污染、强化农用地管理和提升农业农村环境监管能力等6方面主要内容。甘肃省将大力推进农村饮用水水源保护工作，要求到2020年底前完成供水人口在10000人或日供水1000吨以上的饮用水水源地调查评估和保护区划定工作，有效保障饮水安全；制订农村生活污水处理排放标准，筛选农村生活污水治理实用技术和模式，加强改厕与农村生活污水治理的有效衔接，梯次推进农村生活污水治理，到2020年，确保完成2500个建制村的环境整治任务，农村生活污水治理率明显提高；推进养殖生产清洁化和产业模式生态化，推进畜禽粪污资源化利用，建立畜禽粪污等农业有机废弃物收集、转化、利用网络体系，探索规模化、专业化、社会化运营机制。严格畜禽规模养殖环境监管，将规模以上畜禽养殖场纳入重点污染源管理，对规模化畜禽养殖场实施排污许可制度，完善畜禽规模养殖场直联直报信息系统；有效防控种植业污染，持续推进化肥减量增效，基本实现主要农作物测土配方施肥全覆盖。在重点用膜地区，整县推进农膜回收利用，推广地膜减量增效技术，做好地膜回收利用示范县建设，完善废旧地膜残留监测网络。重点针对蔬菜生产企业、专业合作社、种植大户以及仓储、购销、加工企业，统筹推进尾菜处理利用，探索构建“政府补贴+菜库付费”的尾菜处理利用机制；在土壤污染状况详查的基础上，有序推进耕地土壤环境质量类别划定，2020年底前建立分类清单。制定实施受污染耕地安全利用方案，加强对严格管控类耕地的用途管理。以耕地重金属污染问题突出区域和铅、锌、铜等有色金属采选及冶炼集中区域为重点，开展涉镉等重金属重点行业企业排查整治；提升农业农村环境监管能力，严守生态保护红线，明确和落实生态保护红线管控要求，建立农业产业准入负面清单，强化准入管理和底线约束。强化农业农村生态环境监管执法，创新监管手段，鼓励公众监督，构建农业农村生态环境监测体系。落实乡镇生态环境保护职责，加强肥料、农药登记管理，建立健全肥料、农药使用调查和监测评价体系。

链接:

http://www.moa.gov.cn/xw/qg/201905/t20190523_6314461.htm

8．多途径实现秸秆综合利用

【中华人民共和国农业农村部】湖南油菜生产机械化突破“最后一公里”—— 秸秆综合利用机械化。5月21日，湖南省农业农村厅在洞庭湖区安乡县举办现场演示活动，展示油菜生产全程机械化取得的成果。活动现场设在大鲸港镇安庆村，省市县农机化服务单

位组织收割机、耕整机、秸秆打捆机等30余台机械作业，演示油菜生产机械化技术，涵盖油菜机械化耕整、收获、烘干以及秸秆粉碎还田、捡拾打捆、制肥等环节。当地的油菜种植户告诉记者，使用秸秆打捆机，油菜秸秆一次完成收集打捆，每亩回收150公斤秸秆，出售后可增收200元，村民已经舍不得烧秸秆了。湖南是全国油菜主产省。过去5年，全省大力推广油菜高密度机械化直播技术。对照移栽油菜，高密度直播油菜株高变矮，成熟期比较一致，较好地解决了机械化收获的难题。各地探索推广联合机械播种和收获技术，秋种时一次完成“灭茬、旋耕、施肥、播种、开沟、覆土”，夏收时一次完成“收割、脱粒、清选”。依靠机械化大量节省人工，全省油菜种植面积呈现稳中有增趋势。

链接:

http://www.moa.gov.cn/xw/qg/201905/t20190523_6314691.htm

9．UN Environment and Saudi Arabia sign deal to strengthen environmental protection

【 UN Environment 】 UN Environment and the Ministry of Environment, Water, and Agriculture in the Kingdom of Saudi Arabia signed a strategic cooperation agreement today to strengthen environmental protection and safeguard natural resources in the Kingdom. UN Environment will provide technical experts in the fields of environmental law, regulations and standards, air quality management, climate change and waste management, among others. The Ministry will be supported in the management of environmental data and information. All of these efforts will contribute to the environmental component of the Saudi Vision 2030.

链接:

https://www.unenvironment.org/news-and-stories/press-release/un-environment-and-saudi-arabia-sign-deal-strengthen-environmental

10．Save Our Soils: Finding ways to stop erosion

【 FAO 】 FAO hosts global symposium to catalyze efforts to reduce depletion of a non-renewable resource. Wind, rain and industrial farming techniques accelerates soil erosion and can be mitigated before the world faces calamitous losses in terms of agricultural yields and critical ecosystem functions. "The negative impacts of soil erosion are ever more evident and the need to work jointly ever more urgent," FAO Deputy Director-General, Climate and Natural Resources, Maria Helena Semedo, said today while opening a three-day symposium focusing on enhancing how the world measures and manages soil erosion as well as its economic costs. Today the equivalent of one soccer pitch

of soil is eroded every five seconds, and the planet is on a path that could lead to the degradation of more than 90 percent of all the Earth's soils by 2050, Semedo said. Erosion, triggered by intensive agriculture, tillage, mono-cropping, overgrazing, urban sprawl, deforestation and industrial and mining activities, all contribute to accelerating soil erosion, which can result in crop yield losses of up to 50 percent, she added.

链接:

http://www.fao.org/news/story/en/item/1194252/icode/

【文献速递】

1．Reap what you sow: Agricultural technology, urbanization and structural change

作者：Danny McGowan; Chrysovalantis Vasilakis

文献源：Research Policy,2019

摘 要 ： This paper studies how productivity-enhancing agricultural technology affects urbanization by provoking structural change. We investigate these issues using a natural experiment in the United States. The results show that technologies which improve crop productivity lead to a less urbanized economy as economic activity re?locates from manufacturing and services towards agriculture. The effects are highly persistent and are driven by the technology increasing agricultural labor demand. Our findings highlight the potentially unintended, dis?ruptive force of innovative technologies.

链接:

http://agri.ckcest.cn/file1/M00/06/6F/Csgk0FzrbbGAGh-QACVxNW8zA1s542.pdf

2．基于膳食营养需求的西藏县域土地资源承载力评价

作者：王玮; 闫慧敏; 杨艳昭; 杜文鹏

文献源：自然资源学报,2019

摘要：“食物营养安全”是“食物安全”的重要组成，而当前单纯以“粮食”作为土地资源承载力的评价指标只能反映部分承载能力，从膳食营养角度评估更切合其实际土地资源承载状况。以供给与需求的动态平衡为基本思路，选取热量和蛋白质为关键参量构建土地资源承载力（LCC）测算与土地资源承载指数（LCCI）评价模型，对2015年西藏自治区县域土地资源承载力与土地资源承载状况进行定量评价，以期为实现西藏地区居民热量与蛋白质供需平衡对策提供科学依据，同时也为该区域居民营养需求的变化、机理及对策研究奠定基础。结果表明：（1）西藏县域尺度下土地资源承载力总体呈盈余状态，位于西藏东南部的“一江两河”流域县域土地资源承载力高，而位于西北部的那曲和阿里等

地区县域土地资源承载力相对较低。（2）根据以当前热量和蛋白质实际消耗量为依据对土地承载力的评价结果，农区县、半农半牧区县和牧区县基于蛋白质需求的土地承载力比基于热量需求的承载力分别多8.83%、22.51%和67.78%，其中有13个牧区县和半农半牧区县以热量指标判断为超载状态，但以蛋白质指标判断却未超载，其原因在于牧区县和农牧区县动物性食物供给比例高，食物蛋白质供给能力相较热量供给能力更强。（3）若按照居民膳食宝塔推荐的人均热量和蛋白质摄入量标准，农区县、半农半牧区县和牧区县基于热量和蛋白质需求的土地资源承载力较实际营养摄入量下的承载力可分别多承载35.22%和12.5%的人口。评估结果体现了实际消耗和膳食标准情景下以及不同营养指标之间各县域承载力及承载状态的差异，可为通过调整人口结构、膳食结构等措施寻求提升区域人粮平衡水平和居民膳食营养水平对策提供依据。

链接:

http://agri.ckcest.cn/file1/M00/06/6E/Csgk0FzrTJiAUTGAABjSr8ChlBw561.pdf

3．What drives the fluctuations of “green” productivity in China’s agricultural sector A weighted Russell directional distance approach

作者：Ying Liu; Chao Feng

文献源：Resources, Conservation and Recycling,2019

摘要：China is the most populous country in the world, and agriculture has played a large role in the country’s remarkable economic achievements. However, the high levels of pollution and emissions from agriculture pose a threat to the nation’s food and ecological security. Using a global weighted Russell distance function model, this paper attempts to provide strategies for the green development of China’s agriculture by investigating the historical green total factor productivity. The results show that (1) during the sample period, China’s agricultural green total factor productivity (AGTFP) showed a u-shaped trend, and the turning point was 2010. Technological progress in terms of agricultural output, energy use and pollutant treatment was the most powerful factor of growth after 2010, while the technological retrogression in terms of capital use was the main obstacle to growth. (2) Eastern China has the highest AGTFP, while western China has the highest AGTFP growth rate. This result indicates that eastern China is a leader in green agricultural development, while green agricultural development in western China is the most promising. The “mid-China collapse” occurred in the central China agricultural area. The collapse of the central region was mainly caused by a decline in pure technical efficiency; more specifically, the pure technical efficiency of fertilizer severely restricted the sustainable agricultural

development of this area. (3) The provinces that have great spatial differences in terms of agricultural development and the driving factors of AGTFP can develop suitable green agricultural development strategies based on the results presented in this study.

链接:

http://agri.ckcest.cn/file1/M00/06/6E/Csgk0FzrT4uAPmCIACi0dMkdOcc983.pdf

4．基于乡村绿色发展理念的农业产业结构优化驱动力分析

作者：张永华

文献源：中国农业资源与区划,2019

摘要：[目的]分析农业产业结构优化的驱动因素,研究影响农业产业结构优化升级的最重要因素,以期为农业产业和农村经济的可持续发展提供支持。[方法]文章基于乡村绿色发展理念,采用层次分析法(AHP),构建农业产业结构优化驱动因素指标体系,确定指标权重,根据权重值和农民评分值的乘积对各指标因素进行重要性排序,最终确定影响农业产业结构优化升级的最重要因素。[结果]在系统层中,权重值最高的是经济因素,权重值最低的是社会因素,自然因素介于两者之间。在经济因素所包含的指标中,市场供求状况的权重值最大,居民收入水平的权重值最小;在自然因素所包含的指标中,水资源匮乏和生态环境退化的权重值较高,植被覆盖度下降的权重值最低;在社会因素所包含的指标中,政府调控粮食流通的权重值最大,权重值最小的是城市化水平。对农业产业结构优化升级驱动力较大的前5个因子依次是:市场供求状况、农产品市场价格、农产品品质、农民经济收入和水资源匮乏。[结论]在该文涉及到的驱动因子中,推动农业产业结构优化升级的最重要因素是关乎农民切身利益的经济因素,市场对农产品的供求严重影响农业产业结构的配置比例。保持乡村绿色可持续发展是农业产业结构调整优化的重要原则,改善农业和农村环境是进行农业产业结构优化的先决条件。

链接:

http://agri.ckcest.cn/file1/M00/06/6E/Csgk0FzrRWaAYc2jAAOj8hFydzw714.pdf

5．中国农业农村环境保护政策四十年回顾与展望

作者：韩冬梅; 刘静; 金书秦

文献源：环境与可持续发展,2019

摘要：随着中国农业农村环境问题不断演变,人们的认知层次以及政府采取的农业农村环境保护政策行动也不断发展完善。尤其是改革开放至今,中国农村地区逐渐由城市和工业污染的受纳场,转变为绿色发展的主战场。本文基于不同时期农业农村主要环境问题特征和相关政策方向的变化,将中国农业农村环境保护政策的演变分成四个阶段;通过

对不同阶段中国农业农村环境问题演变和相关政策调整变化的回顾和分析,从历史中探寻规律、分析原因;明确新时代背景下农业农村环境保护的目标和定位,并提出新时代农业农村环境保护的政策手段建议和政策行动方向。

链接:

http://agri.ckcest.cn/file1/M00/06/6E/Csgk0FzrRmuAdvbTABVPkOLGtSA708.pdf

6．A framework for the management of agricultural resources with automated aerial imagery detection

作者：Karla Saldana Ochoa; Zifeng Guo

文献源：Computers and Electronics in Agriculture,2019

摘要：The acquisition of data through remote sensing represents a significant advantage in agriculture, as it allows researchers to perform faster and cheaper inspections over large areas. Currently, extensive researches have been done on technical solutions that can benefit simultaneously from both: vast amounts of raw data (big data) extracted from satellite images and Unmanned Aerial Vehicle (UAV) and novel algorithms in Machine Learning for image processing. In this experiment, we provide an approach that fulfills the necessities of rapid food security, assessment, planning, exploitation, and management of agricultural resources by introducing a pipeline for the automatic localization and classification of four types of fruit trees (coconut, banana, mango, and papaya) and the segmentation of roads in the Kingdom of Tonga, using high-resolution aerial imagery (0.04 m).We used two supervised deep convolutional neural network (CNN): the first, to localize and classify trees (localization) and the second, to mask the streets from the aerial imagery for transportation purposes (semantic segmentation). Additionally, we propose auxiliary methods to determine the density of groupings of each of these trees species, based on the detection results from the localization task and render it in Density Maps that allow comprehending the condition of the agriculture site quickly. Ultimately, we introduce a method to optimize the harvesting of fruits, based on specific sceneries, such as maximum time, path length, and location of warehouses and security points.

链接:

http://agri.ckcest.cn/file1/M00/06/6F/Csgk0Fzrn32AdKhfAiXrvhEK2zg972.pdf

7．Integrated farm management for sustainable agriculture: Lessons for knowledge exchange and policy

作者：David C. Rose; William J. Sutherland; Andrew P. Barnes, et al.

文献源：Land Use Policy,2019

摘要：As a response to the environmentally and socially destructive practices of post-war mechanization and intensification, the concept of sustainable agriculture has become prominent in research, policy, and practice. Sustainable agriculture aims to balance the economic, environmental, and social aspects of farming, creating a resilient farming system in the long-term. Over the last few decades, various concepts have been used in research and policy to encourage the adoption of sustainable practices. Within such a congested space, this paper assesses the value of 'integrated farm management' as a concept for the promotion of sustainable agriculture. The concept is the subject of renewed policy interest in England and Wales and it is also being promoted in Europe. Previous research, however, has suggested that integrated farm management may not be well understood or widely practised. There are also criticisms that it can be impractical and poorly differentiated from similar ideas. As such, renewed insights are required into how useful the concept might be for encouraging sustainable agriculture. Using a mixed methods approach, we gathered the views of farmers, farm advisors, and industry representatives about integrated farm management in England and Wales, and interpreted these through a theoretical framework to judge the strength of the concept. Overall, the general principles of Integrated Farm Management were found to be coherent and familiar to most of our respondents. However, the concept performed poorly in terms of its resonance, simplicity of message, differentiation from other similar terms and theoretical utility. We reflect on our findings in the context of other ways to promote sustainable agriculture, drawing out messages for policy and knowledge exchange in England and Wales, as well as elsewhere.

链接:

http://agri.ckcest.cn/file1/M00/06/6F/Csgk0Fzra66AV5FRAAfSW8jvi0w783.pdf

8．基于产业链整合视野下的我国农产品国际贸易能力提升研究

作者：徐畅

文献源：农业经济,2019

摘要：为提升我国农产品国际贸易能力和竞争力,应进一步完善我国农产品产业链,通过密切农产品生产、加工、销售等各环节的产品链条,提高农产品生产效率和附加值,增加技术投入,改变我国传统农业产业化模式。基于此,既要对现有农产品产业链条进行有机整合,又要完善政府服务体系。

链接:

http://agri.ckcest.cn/file1/M00/06/6E/Csgk0FzrSHmAfYNwABXjs9j1I7k073.pdf

9．我国农产品对外贸易现状及国际竞争力分析

作者：李有福

文献源：现代经济信息,2019

摘要：本文分析我国现阶段农产品贸易发展的现状,运用相关的传统贸易竞争力指数,系统归纳出当前我国农产品具有的国际比较优势与存在的劣势,分析当前我国农产品贸易所面临的问题和阻碍因素,为我国农产品贸易提供合理化的建议。

链接:

http://agri.ckcest.cn/file1/M00/06/6E/Csgk0FzrSWOALpERACEqoZrrK_U035.pdf

10．Structural change and transition in the agricultural sector: Experience of Serbia

作者：Natalija Bogdanov; Vesna Rodic; Matteo Vittuari

文献源：Communist and Post-Communist Studies,2019

摘要：The economic and political crisis Serbia had to face during the nineties affected the competitive advantages its agricultural sector had in comparison with the other countries of the region. Despite a number of differences related to the specific economic, political and social settings and developments, the reform path Serbia started in 2000 showed a number of similarities, but also some differences in comparison with most of the Central and Eastern European Countries. In this paper the main features of structural changes in the Serbian agricultural sector are analyzed, also in comparison with other countries in the region, the basic factors that contributed to these changes are identified and explained, and the key consequences and implications of this process are examined.

链接:

http://agri.ckcest.cn/file1/M00/06/6F/Csgk0Fzrb8WAMH8xABSudvt50xA784.pdf

【行业报告】

1．Agricultural Resources and Environmental Indicators，2019

发布源：USDA

发布时间：2019-05-05

摘 要： Agricultural Resources and Environmental Indicators, 2019, describes trends in economic, resource, and environmental indicators in the agriculture sector. Agriculture is dynamic, changing in response to economic, technological, environmental, and policy factors. The indicators covered in this report provide assessments of important changes in U.S. agriculture—the industry's development, its environmental effects, and the

implications for economic and environmental sustainability. The individual chapters track key natural, produced, and management resources that are used in or are affected by agricultural production, as well as structural changes in farm production and the economic conditions and policies that influence agricultural resource use and its environmental impacts. The chapters also direct interested readers to ERS research and data that provide more detailed description and analysis.

链接:

http://agri.ckcest.cn/file1/M00/06/6E/Csgk0FzrQtyAeN7QAAAEV-nn6kY889.png