

## 《中国农业发展战略研究》专题快报

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### 【动态资讯】

#### 1. A third of urban waste ends up in open dumpsites or environment in Latin America and the Caribbean

**【UN Environment】** A third of all waste generated in cities of Latin America and the Caribbean ends up in open dumps or in the environment, polluting soil, water and air, and threatening the health of the population, according to a UN Environment report launched today. 145,000 tons are inadequately disposed every day in the region, equivalent to the waste generated by 27% of the regional population or 170 million people, according to the Waste Management Outlook for Latin America and the Caribbean, launched during the XXI Forum of Ministers of Environment of the region, taking place in Buenos Aires, 9-12 October. UN Environment urges countries to progressively close dumpsites, which expose the surrounding communities and those who work collecting materials to severe health risks. The report stresses that these dumpsites generate greenhouse gases that can inflict serious damage to tourism, agriculture and biodiversity.

链接:

<https://www.unenvironment.org/news-and-stories/press-release/third-urban-waste-ends-open-dumpsites-or-environment-latin-america>

#### 2. High-tech observations for food security

**【EurekAlert!】** Satellites and other remote technology are able to gather information as varied as soil moisture, crop yields, and growing conditions. How will this improve food security world-wide? Details covered during the symposium include: Recent improvements to agricultural remote sensing that now provide satellite data at more

frequent intervals and with more detail, regardless of cloud cover; Advances in computing to make data processing and crop mapping widely available; Cutting-edge technology from NASA, the University of Maryland, and other sources to support a more efficient use of water and land resources. "Improved Earth observations and crop models can help farmers in management decisions. At the broad scale, this has the potential to increase food security and stabilize markets," Bandaru says.

链接:

[https://www.eurekalert.org/pub\\_releases/2018-10/asoa-ho100218.php](https://www.eurekalert.org/pub_releases/2018-10/asoa-ho100218.php)

### 3. First study on climate change impact in Mediterranean

**【EurekaAlert!】** As the Mediterranean Basin is experiencing the impact of climate change more than ever, an international network of scientists has worked together to synthesize the effects of climate change and environmental problems, as well as the incurred risks, in the region, to facilitate decision-making in addressing the issues. This first-ever synthesis of multiple environmental changes and risks affecting the livelihoods of people in the entire region has just been published in the latest issue of Nature Climate Change. The rates of climate change observed in the Mediterranean Basin exceed the global trends for most variables. The impact has further exacerbated the existing environmental problems caused by land use changes such as urbanization and agricultural intensification, increasing pollution and declining biodiversity.

链接:

[https://www.eurekalert.org/pub\\_releases/2018-10/cuoh-fso102618.php](https://www.eurekalert.org/pub_releases/2018-10/cuoh-fso102618.php)

### 4. Fertilizers' impact on soil health compared

**【EurekaAlert!】** In a newly published study, researchers dug into how fertilizing with manure affects soil quality, compared with inorganic fertilizer. Ekrem Ozlu of the University of Wisconsin-Madison and his team studied two fields in South Dakota. From 2003 to 2015, the research team applied either manure or inorganic fertilizer to field plots growing corn and soybeans. They used low, medium, and high manure levels, and medium and high inorganic fertilizer levels. They also had a control treatment of no soil additives to provide a comparison. In the summer of 2015, they collected soil samples at a variety of depths using a push probe auger. Then they analyzed the samples. The team also measured the effects of larger and smaller doses of each treatment at different soil depths. This will provide useful

guidance to growers. So, what could a backyard gardener learn from this study? Ozlu said, "I recommend gardeners use composted manure, especially in solid form, because manure is the fertilizer that supports better soil quality by improving almost all soil properties. Inorganic fertilizer is better in terms of electrical conductivity, but it does not improve other soil properties and crop yields better than manure."

链接:

[https://www.eurekalert.org/pub\\_releases/2018-10/asoa-fio103018.php](https://www.eurekalert.org/pub_releases/2018-10/asoa-fio103018.php)

## 5. Brazil's next President could have big impact on agricultural policy

**【AgroNews】** Brazilians will be going to the polls next Sunday to choose their new president. The front-runner is the far right-wing candidate Jair Bolsonaro, a congressman who has said that Brazil's environmental policies are "suffocating the country." He has not laid out a detailed plan for agriculture, but he has repeatedly expressed his disdain for environmental regulations. If elected, he could have a very significant impact on environmental rules which then could directly impact agriculture. Here are a few of his proposals: Fold the Environmental Ministry into the Agricultural Ministry. Reduce penalties for farmers/ranchers who violate environmental laws. Reduce funding for environmental projects. No more forest land demarcated as indigenous reserves. Threatening to pull out of the Paris Climate Accord. Under a Bolsonaro administration, there would certainly be reduced efforts for conservation and sustainable agriculture and more emphasis placed on land clearing for increased grain and livestock production.

链接:

<http://news.agropages.com/News/NewsDetail---28154.htm>

## 6. 天津出台三年计划加强土地污染源治理

**【中国农业新闻网】** 相比大气污染和水污染,土壤污染的隐蔽性更强,影响面却很大。为加强土地污染源监管,天津近日出台《天津市打好净土保卫战三年作战计划(2018~2020年)》,提出实施重点企业环境监管等一揽子举措。按照该计划,在减少生活污染,控制农业污染的同时,天津市将加强重点企业环境监管。区级环保部门每三年开展一次对重点监管企业和工业园区周边的环境监测,数据及时上传至全国土壤环境信息化管理平台,结果作为环境执法和风险预警的重要依据。严格土壤污染重点行业企业搬迁改造过程中拆除活动的环境监管。为加强重金属污染防治,天津市提出,实施重金属污染物总量控制,严格涉重金属新建项目审批,坚持新增产能与淘汰产能重金属排放量减量置换的原则,控制新

建项目重金属排放量。对涉镉等重金属行业企业开展排查整治,严厉打击涉重金属非法排污企业。为加强危险废物监管,2020年前启动天津市危险废物安全填埋场建设,鼓励各区结合自身危险废物处置需求,配套建设危险废物处理处置设施,推动北辰区、静海区建设废酸集中处置设施。天津市提出,到2020年,全市受污染耕地安全利用率达到91%左右,全市污染地块安全利用率不低于92%。

链接:

[http://www.farmer.com.cn/jjpd/nz/nzdt/201809/t20180928\\_1407347.htm](http://www.farmer.com.cn/jjpd/nz/nzdt/201809/t20180928_1407347.htm)

## 7. 临泽县：这儿的农田 残膜不再漫天飞

**【中华人民共和国农业农村部】**农业农村农民问题是关系国计民生的根本性问题。党的十九大报告提出,实施乡村振兴战略。乡村振兴,生态宜居是关键。为应对农业面源污染、生态退化、产业转型升级、环境修复治理等挑战,国家实施了退耕还林工程、草原生态补助奖励政策等,开展了防治农膜污染的尝试,各地也探索着适合自身情况的绿色发展道路,在营造生态宜居乡村环境的同时,向着产业兴旺、乡风文明、治理有效、生活富裕的方向迈进。甘肃张掖市临泽县位于河西走廊中部、巴丹吉林沙漠南缘,2/3是沙漠、戈壁,生态环境极其脆弱。著名的张掖丹霞国家地质公园,便有一部分在临泽县境内。亿万年前,地质运动、流水与风力侵蚀作用共同造就了这里的彩色丘陵和红色砂岩地貌。如今,为了减少人类活动对自然环境的威胁,也为了乡村更好的未来,临泽展开了一场对抗白色污染的实践。具体措施包括:村里建了回收站,废旧地膜能换钱;把控产销源头,推广使用新国标地膜。甘肃的目标是,力争到2020年,45个示范县地膜回收网络基本健全,地膜回收利用率稳定在80%以上,白色污染得到有效防控,有效防治农业面源污染,确保农业安全、农村清洁。

链接:

[http://www.moa.gov.cn/xw/qg/201810/t20181024\\_6161409.htm](http://www.moa.gov.cn/xw/qg/201810/t20181024_6161409.htm)

## 8. 新疆启动塔河流域十万亩冬小麦休耕试点

**【中华人民共和国农业农村部】**10月23日,记者刘毅从自治区农业厅获悉:近期,新疆塔里木河流域10万亩冬小麦耕地启动休耕试点,休耕期3年,这是全区首次开展大范围耕地休耕。自治区农业厅种植业和农药管理处副处长汤义武介绍,开展耕地轮作休耕制度试点,是巩固提升耕地地力,减少地下水过度开采的重要举措,此次休耕的10万亩耕地,全部集中在冬小麦种植区域,喀什、和田地区各占5万亩,目的是有效缓解塔河流域内农业生产水资源压力过大的现状,提高耕地地力,保护塔河流域生态环境。为了确保休耕区域内农民的基本收益,休耕期间,休耕区域内农民将享受国家专项补助,用于

补贴农业生产和耕地修复治理工作。休耕期间，农业部门将积极开展土壤改良、修复治理等工作，提升耕地地力水平，一些地区还可以根据情况适当种植豆类、牧草等绿肥，发挥农作物养地培肥的作用，实现种地养地结合和农业的可持续发展。目前，新疆农业部门已经对休耕区域土壤进行了采样和肥力监测，休耕期间，农业部门每年会对土壤进行监测，确保耕地质量不降低，确保急用之时耕地用得上、粮食产得出。

链接:

[http://www.moa.gov.cn/xw/qg/201810/t20181024\\_6161442.htm](http://www.moa.gov.cn/xw/qg/201810/t20181024_6161442.htm)

## 9. 让农村环境好起来美起来 长春市召开农村人居环境整治工作现场会

【中华人民共和国农业农村部】10月25日，长春市委、市政府在双阳区组织召开长春市2018年农村人居环境整治工作现场会，要求各地各部门强化担当，集中精力，加大资金、人员投入力度，全力打赢这场攻坚战。长春市2017年7月成立了全市改善农村人居环境领导小组，今年参照省里组织模式，组建领导小组办公室，下设综合协调、垃圾治理、农厕改造、督查考核等7个工作组，通过加强日常协调、实施现场综合指导、开展集中暗访督查等方式，压紧压实整治责任，推进整治工作开展，使农村人居环境整治工作稳步推进。截至目前，在积极推进农村生活垃圾治理、加快建设乡镇集中污水处理设施、切实抓好自然屯硬化建设、大力实施农村户用厕所改造、指导规范村庄规划编制等五方面取得阶段性成效。

链接:

[http://www.moa.gov.cn/xw/qg/201810/t20181029\\_6161679.htm](http://www.moa.gov.cn/xw/qg/201810/t20181029_6161679.htm)

## 10. 《土壤污染防治法》贯彻落实工作座谈会召开

【中华人民共和国农业农村部】近日，农业农村部组织召开《土壤污染防治法》贯彻落实工作座谈会，研究部署《土壤污染防治法》宣传贯彻工作。会议指出，土壤污染防治关系农产品质量安全、人民群众身体健康和经济社会可持续发展。《土壤污染防治法》的出台，对于将净土保卫战纳入法治轨道，推动用最严格制度、最严密法治保护土壤具有重要意义，要按照《土壤污染防治法》的要求，强化土壤污染管控和修复。会议指出，土壤污染管控和修复要做好三方面工作：一是开展农用地环境调查监测与类别划分。加快完善农产品产地土壤环境监测网络，推进土壤污染详查和农产品协同监测，进一步摸清底数。做好农用地土壤环境质量类别划分试点，划定重度污染农用地农产品禁止生产区。二是推进农用地分类管理。安全利用轻中度污染农用地，分区域、分作物品种建立受污染农用地安全利用试点，继续开展湖南重金属污染修复试点。严格管控重度污染农用地，实施种植结构调整或退耕还林还草。三是加强宣传教育。通过互联网、数字化放

映平台等手段，普及土壤污染防治相关知识，加强法律法规政策宣传解读，营造保护土壤环境的良好社会氛围，推动形成绿色发展方式和生活方式。

链接:

[http://www.moa.gov.cn/xw/zwdt/201810/t20181030\\_6161944.htm](http://www.moa.gov.cn/xw/zwdt/201810/t20181030_6161944.htm)

### 【文献速递】

#### 1. Study on sustainability of land resources in Dengkou County based on emergy analysis

作者: Qibin Zhang; Depeng Yue; Minzhe Fang, et al.

文献源: Journal of Cleaner Production,2018

摘要: Land is one of the basic resources and it is significant for the survival of human beings and the development of society. In the arid desert area where the ecological environment is fragile, land resource often faces the pressure from ecological degradation and economic development. Therefore, it is of great significance to study the sustainability of land resource, which is beneficial for the rational operation of the regional ecology economic system. The sustainability of land resources of Dengkou County, Bayannaor, China was studied based on the social and economic statistics data and land use data from 1998 to 2015. The result showed that from 1998 to 2015, the impact of human exploitation activities on the land resource had been intensified and the area of cultivated land and construction land increased evidently. This change led to a slow but continuous decline of the sustainability of the land resources in Dengkou. Based on the research above, land use evolution of Dengkou in a hundred years under two different development strategies efficiency dominant strategy and ecology dominant strategy was simulated using an improved cellular automata (CA) model built in this research. Emergy analysis was also performed based on the simulation results. The results showed that under the efficiency dominant strategy the economy would grow rapidly but the sustainability of the land resources would be damaged greatly. Under the ecology dominant strategy, the development of economy would be stagnant, while the sustainability of land resources would be maintained. The results of the study indicated that the maintaining of the sustainability of land resources and the development of economy should be achieved simultaneously by industrial upgrading and technological innovation, while simple industrial expansion will lead to a decline in the sustainability of land resources.

链接:

<http://agri.ckcest.cn/file1/M00/02/9C/Csgk0Fvb1juALzjGABxmZ-zNcdo848.pdf>

## **2. Monitoring and quantification of stormwater runoff from mixed land use and land cover catchment in response to land development**

作者: Ma. Cristina A. Paule-Mercado; Imran Salim; Bum-Yeon Lee, et al.

文献源: Ecological Indicators,2018

摘要: Understanding the influence of land use and land cover (LULC) change in stormwater runoff is important for watershed management. In this study, integration of 31 storm events, monthly monitoring of LULC change, Pearson's correlation, multiple linear regression analysis (MLR) and Personalized Computer Storm Water Management Model (PCSWMM) were applied to quantify the influence of LULC change on stormwater quality from mixed LULC catchment with ongoing land development in Yongin, South Korea. Due to ongoing land development in the catchment, bare land and urban LULC were exponentially increased while agriculture, forest, grassland and water LULC decreased in spatial extent. The correlation analysis showed that stormwater quality was positively correlated to bare land (0.595; CI 0.891; TSS,  $p < 0.05$ ) and urban (0.768; TN 0.987; TSS,  $p < 0.05$ ); negatively correlated to forest (-0.593; Cu 0.532; BOD5,  $p < 0.05$ ) and grassland (-0.587; TSS 0.512; BOD5,  $p < 0.05$ ) and; either positively or no correlation to agriculture (0.064; Cu 0.871; TSS,  $p < 0.05$ ) and water (-0.131; CI 0.221; TP,  $p < 0.05$ ). Furthermore, the MLR analysis showed that combinations of different LULC were able to describe the overall stormwater quality of the catchment. Moreover, the LULC scenario analysis demonstrate that under dominant agriculture (S1), bare land (S2) and urban areas (S5), the average pollutant concentrations would increase by as much as 13.22% (Cl; S2; pre-) to 59.25% (TSS; S5; early-active); while under dominant forest (S3) and grassland (S4) the average pollutant concentration would decrease by as much as -53% (Pb; S3; late-active) to -3.22% (BOD5; S4; pre-). These findings explained that the variability of pollutant concentrations in different phase of land development was affected by expansion of bare land and urban spatial extent, increase of hydrological characteristics (total rainfall and average rainfall intensity) and massive soil activities (soil digging and soil transfer). Therefore, results of this study will provide scientific information to establish a cost-effective stormwater management, development of empirical model, and designing monitoring strategies and guidelines to minimize the negative impact of LULC change on stormwater runoff.

链接:

<http://agri.ckcest.cn/file1/M00/02/9C/Csgk0Fvb1aeAU5z-ADvWu9qQf-s633.pdf>

### **3. Managing the salinization and drainage problems of irrigated areas through remote sensing and GIS techniques**

作者: Ajay Singh

文献源: Ecological Indicators,2018

摘要: The development of irrigated agriculture is a requirement for feeding the rising world population but without proper drainage provisions, this development can result in irrigation-induced salinization in agricultural areas. The management of salinization and drainage problems at the regional level are considerably hindered due to lack of good quality data because the regional studies entail distributed data, while usual hydrological measurements offer only point data. With the emergence of new geospatial techniques and tools such as GIS and remote sensing, the regional salinization and drainage studies have become easier in recent times. The GIS and remote sensing techniques are vital means and provide a better alternative to the conventional techniques in monitoring and assessment of poor-drainage affected salinized areas. These geospatial techniques present apt solutions to map the degree and severity of drainage-induced land salinization, mainly in large regions. This paper provides an overview of GIS and remote sensing techniques used for the management of salinization and drainage problems of water resources in irrigated areas. The indication of the salinization and drainage problems of water resources along with the importance of the study is presented. The rationale and background of the environmental problems of irrigated areas are provided. The combined applications of geospatial techniques in managing the environmental problems are detailed. Finally, the applications of GIS and remote sensing techniques in various case studies across the globe are discussed and some conclusions are summarized.

链接:

<http://agri.ckcest.cn/file1/M00/02/9B/Csgk0Fvb1RqADx4IAAO4rPuWCQs600.pdf>

### **4. Environmental monitoring of spatiotemporal change in land use/land cover and its impact on land surface temperature in El-Fayoum governorate, Egypt**

作者: Ahmed M. El-Zeiny; Hala A. Effat

文献源: Remote Sensing Applications: Society and Environment,2018

摘要: Present study aims at monitoring and mapping spatiotemporal changes in Land Use/Land Cover (LULC) and Land Surface Temperature (LST) in El-Fayoum governorate and its districts using Landsat data and GIS. Four multi-temporal Landsat images provided the

necessary spectral data to this study. Multispectral and thermal bands were processed, using ENVI 5.1, to produce LULC and LST, respectively. Accuracy assessment was calculated for LULC maps using ground observation points and Google Earth imagery. ArcGIS 10.1 was used to assess LULC changes in nine sectors/districts in the past 26 years in three different periods; 1990—2003, 2003—2013 and 2013—2016. LST of each LULC class was mapped to assess temporal changes of LST responding to LULC changes in the whole governorate. Results showed that the annual rate of land reclamation in the governorate exceeds the annual land loss, as a result urban sprawl, which is explained by the continuous increase in the agricultural lands during the whole period of study. Urbanization and reclamation projects were carried out on expense of the desert bare lands in the desert extension, El-Fayoum El-Gedida and Yousef El-Sediq while in Snorus, El-Fayoum City and District, the urban areas expanded on expense of the agricultural lands during the whole period of study. Desert bare lands exhibited the highest mean LST ( $> 42^{\circ}\text{C}$ ) followed by urban, vegetation and finally water bodies for the four studied years. Maximum levels of LST were recorded in 2016;  $47.62^{\circ}\text{C}$  for bare land,  $41.73^{\circ}\text{C}$  for urban areas,  $39.12^{\circ}\text{C}$  for vegetation and  $33.41^{\circ}\text{C}$  for water bodies. It can be concluded that remote sensing and GIS techniques could successfully be used to assess spatio-temporal environmental impacts of planned developmental projects and uncontrolled human activities on LULC and relationship with LST.

链接:

<http://agri.ckcest.cn/file1/M00/02/9B/Csgk0Fvb1LqAb531ABhG3jnddGU215.pdf>

## **5. Agricultural remote sensing big data: Management and applications**

作者: Yanbo Huang; CHEN Zhong-xin; YU Tao, et al.

文献源: Journal of Integrative Agriculture ,2018

摘要: Big data with its vast volume and complexity is increasingly concerned, developed and used for all professions and trades. Remote sensing, as one of the sources for big data, is generating earth-observation data and analysis results daily from the platforms of satellites, manned/unmanned aircrafts, and ground-based structures. Agricultural remote sensing is one of the backbone technologies for precision agriculture, which considers within-field variability for site-specific management instead of uniform management as in traditional agriculture. The key of agricultural remote sensing is, with global positioning data and geographic information, to produce spatially-varied data for subsequent precision

agricultural operations. Agricultural remote sensing data, as general remote sensing data, have all characteristics of big data. The acquisition, processing, storage, analysis and visualization of agricultural remote sensing big data are critical to the success of precision agriculture. This paper overviews available remote sensing data resources, recent development of technologies for remote sensing big data management, and remote sensing data processing and management for precision agriculture. A five-layer-fifteen level (FLFL) satellite remote sensing data management structure is described and adapted to create a more appropriate four-layer-twelve-level (FLTL) remote sensing data management structure for management and applications of agricultural remote sensing big data for precision agriculture where the sensors are typically on high-resolution satellites, manned aircrafts, unmanned aerial vehicles and ground-based structures. The FLTL structure is the management and application framework of agricultural remote sensing big data for precision agriculture and local farm studies, which outlooks the future coordination of remote sensing big data management and applications at local regional and farm scale.

链接:

<http://agri.ckcest.cn/file1/M00/02/9B/Csgk0Fvb00mAIP-3ACB8CAAqNbA677.pdf>

## **6. Nutrient-derived environmental impacts in Chinese agriculture during 1978—2015**

作者: Huijun Wu; Shun Wang; Liangmin Gao, et al.

文献源: Journal of Environmental Management,2018

摘要: Nitrogen (N) and phosphorus (P) play a critical role in agricultural production and cause many environmental disturbances. By combing life cycle assessment (LCA) method with the mass balance principle of substance flow analysis (SFA), this study establishes a nutrient-derived environmental impact assessment (NEIA) model to analyze the environmental impacts caused by nutrient-containing substances of agricultural production in China during 1978e2015. The agricultural production system is composed of crop farming and livestock breeding, and the environmental impacts include energy consumption, global warming, acidification, and eutrophication. The results show all these environmental impacts had increased to  $8.22 \times 10^9$  GJ,  $5.01 \times 10^8$  t CO<sub>2</sub>-eq,  $2.41 \times 10^7$  t SO<sub>2</sub>-eq, and  $7.18 \times 10^7$  t PO<sub>4</sub><sup>3-</sup>-eq, respectively. It is noted the energy consumption and the climate change caused by the crop farming were always higher than those from livestock breeding, which were average 60 and two times, respectively. While the acidification and the eutrophication were opposite after 1995 and 2000, even they were similar. This was mainly due to the high N

application including synthetic N fertilizer (from  $1.33 \times 10^9$  GJ to  $2.08 \times 10^9$  GJ), applied manure (from  $4.94 \times 10^8$  GJ to  $5.65 \times 10^8$  GJ) and applied crop residue (from  $2.94 \times 10^8$  GJ to  $5.30 \times 10^9$  GJ), while the synthetic N fertilizer was controlled and the livestock expanded rapidly after 1995. Among the sub-categories, the three staple crops (rice, wheat, and maize) contributed greater environmental impacts, which were about two to 10 times as other crops and livestock, due to their high fertilizer uses, sown areas and harvests. While the oil crops and fruit consumed the least energies because of their much lower fertilizer-use intensities. Pig and poultry especially pig also caused obvious effects on environment (even 20 times as other livestock) because of their large quantities and excretions, which emitted much higher  $N_2O$  and P loss resulting in much higher climate change, acidification and eutrophication than other livestock. Then the study proposes the nutrient management in agricultural production by considering crop production, livestock breeding and dietary adjustment, so that some valuable experiences can be shared by the stakeholders in other Chinese regions.

链接:

<http://agri.ckcest.cn/file1/M00/02/9B/Csgk0Fvb0qaAJE-8ABUbcphiPpl470.pdf>

## **7. Invisible water: the importance of good groundwater governance and management**

作者: Sharon B. Megdal

文献源: Clean Water,2018

摘要: This paper summarizes the results of efforts to bring attention to the importance of understanding and improving groundwater governance and management. Discussion of survey work in the United States and global case studies highlights the importance of focusing attention on this invisible water resource before pollution or depletion of it causes severe economic, environmental, and social dislocations. Better governance and management of groundwater are required to move toward sustainable groundwater use.

链接:

<http://agri.ckcest.cn/file1/M00/02/9B/Csgk0Fvb0a2AL1mbAA8KqIL7rwY293.pdf>

## **8. Options for keeping the food system within environmental limits**

作者: Marco Springmann; Michael Clark; Daniel Mason-D'Croz, et al.

文献源: Nature,2018

摘要: The food system is a major driver of climate change, changes in land use, depletion of

freshwater resources, and pollution of aquatic and terrestrial ecosystems through excessive nitrogen and phosphorus inputs. Here we show that between 2010 and 2050, as a result of expected changes in population and income levels, the environmental effects of the food system could increase by 50-90% in the absence of technological changes and dedicated mitigation measures, reaching levels that are beyond the planetary boundaries that define a safe operating space for humanity. We analyse several options for reducing the environmental effects of the food system, including dietary changes towards healthier, more plant-based diets, improvements in technologies and management, and reductions in food loss and waste. We find that no single measure is enough to keep these effects within all planetary boundaries simultaneously, and that a synergistic combination of measures will be needed to sufficiently mitigate the projected increase in environmental pressures.

链接:

<http://agri.ckcest.cn/file1/M00/02/9B/Csgk0Fvb0TuAFXOpAIH5aKRCCow044.pdf>

## **9. China's response to a national land-system sustainability emergency**

作者: Brett A. Bryan; Lei Gao; Yanqiong Ye, et al.

文献源: Nature,2018

摘要: China has responded to a national land-system sustainability emergency via an integrated portfolio of large-scale programmes. Here we review 16 sustainability programmes, which invested US\$378.5 billion (in 2015 US\$), covered 623.9 million hectares of land and involved over 500 million people, mostly since 1998. We find overwhelmingly that the interventions improved the sustainability of China's rural land systems, but the impacts are nuanced and adverse outcomes have occurred. We identify some key characteristics of programme success, potential risks to their durability, and future research needs. We suggest directions for China and other nations as they progress towards the Sustainable Development Goals of the United Nations' Agenda 2030.

链接:

<http://agri.ckcest.cn/file1/M00/02/9B/Csgk0Fvb0G2AawpzABtC1leGI7Q533.pdf>

## **10. Nexus approaches to global sustainable development**

作者: Jianguo Liu; Vanessa Hull; H. Charles J. Godfray, et al.

文献源: Nature Sustainability,2018

摘要: Many global challenges, though interconnected, have been addressed singly, at times

reducing one problem while exacerbating others. Nexus approaches simultaneously examine interactions among multiple sectors. Recent quantitative studies have revealed that nexus approaches can uncover synergies and detect trade-offs among sectors. If well implemented, nexus approaches have the potential to reduce negative surprises and promote integrated planning, management and governance. However, application and implementation of nexus approaches are in their infancy. No studies have explicitly quantified the contributions of nexus approaches to progress toward meeting the Sustainable Development Goals. To further implement nexus approaches and realize their potential, we propose a systematic procedure and provide perspectives on future directions. These include expanding nexus frameworks that consider interactions among more sectors, across scales, between adjacent and distant places, and linkages with Sustainable Development Goals; incorporating overlooked drivers and regions; diversifying nexus toolboxes; and making these strategies central in policy-making and governance for integrated Sustainable Development Goal implementation.

链接:

<http://agri.ckcest.cn/file1/M00/02/9B/Csgk0Fvbz5KAJrGABgdRCAehV1947.pdf>

## 【科技图书】

### 1. Land Surfaces Remote Sensing in Agriculture and Forest

发布源: ScienceDirect

发布时间: 2016-06-25

摘要: The first chapter of this volume concerns the use of optical remote sensing for mapping the primary soil properties, essential to understanding agricultural environments function. The second chapter provides different methods and pointers on how to estimate the biophysical parameters of the vegetation cover, and the third chapter examines methods for land cover mapping. The following chapter discusses the use of remote sensing in the development of indicators and models of crop management. It discusses the use of remote sensing in monitoring agricultural uses (biomass production, yield, precision agriculture, irrigation, etc.). The assimilation of remote sensing products and data in operating crop models is also presented. The second part of the book covers uses related to understanding and monitoring of the dynamics of vegetation. The first chapter discusses the monitoring of crops in tropical areas by radar and optical remote sensing. A second chapter presents the monitoring of the agricultural landscape by radar remote sensing. The last three chapters analyze the properties of the forest cover (cover dynamic, height, biomass)

using three different techniques (optical, LiDAR and radar).

链接:

[http://agri.ckcest.cn/file1/M00/02/9C/Csgk0Fvb2JGAZur\\_AA HouOWHaAU924.pdf](http://agri.ckcest.cn/file1/M00/02/9C/Csgk0Fvb2JGAZur_AA HouOWHaAU924.pdf)

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