

《农业水土资源监控研究》专题快报

2020年第6期（总第19期）

中国工程科技知识中心农业分中心

中国农业科学院农业信息研究所

2020年3月20日

【动态资讯】

1. Farming With Drones Beyond Visual Line of Sight

【AgroNews】 Unmanned aerial vehicles (UAVs) have found use in agriculture for decades, with unmanned helicopters spraying pesticides on rice fields in Japan back in the 1980s. Now, to have drones reach their full potential in farming, research is increasingly pushing toward beyond visual line of sight (BVLOS) operations. Agriculture is a market second only to infrastructure in the global market for drone-powered solutions, according to a report from Price Water House Coopers in London. And, as the world population grows from 7 billion to an estimated 9 billion by 2050, agricultural consumption is predicted to increase by 69 percent.

链接:

<http://agri.ckcest.cn/file1/M00/0F/B0/Csgk0F50X4yAGbtiAAFEnsjudiWg684.pdf>

2. European Food Safety Authority launches its latest thematic grant call for proposals in the areas of microbiomes and plant pests

【AgroNews】 EFSA has launched its latest thematic grant call for proposals in the following areas:- Evaluating the impact on/by gastrointestinal tract microbiomes (human and domestic animals) in assessments.- Capacity building for evaluating the impact on/by environmental microbiomes (plants, wildlife, soil) in assessments.- Hotspots for introduction of plant pests: an integrated analysis to better prepare for pest invasions. EFSA is looking for innovative projects that facilitate sharing of knowledge and expertise. Applicants are strongly encouraged to build consortia. Eligible applicants from the list of competent organisations designated by Member States are welcome to submit their proposals by 30

June 2020.

链接:

<http://agri.ckcest.cn/file1/M00/0F/B0/Csgk0F50XI-ACfIJAAC7BBNRUEw532.pdf>

3. 农业科技园区主打“绿色耕作”牌

【新疆日报】人勤春来早，春耕备耕忙。入春以来，各地大大小小的农业科技园区里绿意盎然，一片忙碌的景象。“绿色”成为农业科技园区里春耕的主旋律，它不仅仅是园区里各类种植的主色调，更是一种全新的生产方式和耕作观念。

链接:

<http://agri.ckcest.cn/file1/M00/00/DF/Csgk0V50WhOACg7CAAhppZ8250A837.pdf>

4. 土地新政将永久改变中国的未来面貌

【新浪财经】3月12日下午,国务院印发了「关于授权和委托用地审批权的决定」。这个「土地新政」,将显著影响中国未来城镇化进程,对于中心城市来说,是一项重大利好!这次「土地新政」的核心是:改革土地管理制度,赋予省级人民政府更大用地自主权。「土地新政」主要体现在两个方面。第一,将国务院可以授权的永久基本农田以外的农用地转为建设用地审批事项授权各省、自治区、直辖市人民政府批准。第二,试点将永久基本农田转为建设用地和国务院批准土地征收审批事项委托部分省、自治区、直辖市人民政府批准。

链接:

<http://agri.ckcest.cn/file1/M00/00/DE/Csgk0V50VxGATnKZAAam8t82JqM037.pdf>

5. 全国早稻生产推进落实视频会议强调 提高政治站位 抓紧抓实抓细 确保今年全国早稻面积恢复增加

【农业农村部新闻办公室】农业农村部召开全国早稻生产推进落实视频会议,贯彻落实习近平总书记重要指示精神和党中央、国务院决策部署,按照国务院常务会议和全国春季农业生产工作电视电话会议要求,分析当前早稻生产形势,对恢复早稻生产进行再动员、再部署、再落实。农业农村部部长韩长赋在会上强调,各级农业农村部门要树牢大局意识,提高政治站位,充分认识抓好今年早稻生产的重要意义,抓紧抓实抓细早稻生产各项措施,勇于担当,攻坚克难,努力夺取小康之年粮食和农业丰收。

链接:

<http://agri.ckcest.cn/file1/M00/0F/B0/Csgk0F50XPyAG7VnAAqn3cgoPyU932.pdf>

6. 土地集中耕种还是均分？国家农业新规划，告诉你答案

【农村千里眼】我国农村土地经营模式在以往发生了几次转变，在农村合作社之后，我国因为农业技术不足，生产积极性较低等问题，发展也逐渐受限。之后土地承包制的出现，土地实行以户为单位，自家种地多劳多得，也极大地提高了人们生产的积极性，释放过剩的劳动力，与此同时也为工业发展提供了人力。随着我国的发展，工业反哺农业也逐渐落实，大规模现代化农业也迎来了发展。显然如今一些农村的小农经济已经有些不太合适，土地集中耕种还是均分的问题也日益突显。如今科技反哺农业的时候已经到了，显然是需要规模经营才能更加合适。不过高效规模的农业模式显然是需要土地合适的，目前我国一些农村土地完全没有这样的条件。

链接:

<http://agri.ckcest.cn/file1/M00/0F/B0/Csgk0F50XEKAV5-pAA258wMhLPs988.pdf>

7. 《2019年全球气候状况声明》发布：全球变暖趋势加剧 未来五年可能再破纪录

【经济日报】声明显示，气候变化和极端天气气候事件不断影响人类社会经济发展、健康、人口迁徙、粮食安全及陆地和海洋生态系统等方面。随着全球持续变暖，目前的高温纪录再被打破“只是时间问题”。声明表示，2019年是有仪器记录以来温度第二高的年份。2015年至2019年是有记录以来最热的五年，2010年至2019年是有记录以来最热的十年。自20世纪80年代，每个连续十年的气温都比1850年以来的前一个十年更热。2019年结束时，全球平均气温比工业化前高出了1.1°C，仅次于2016年创下的纪录。而2016年，由于受强厄尔尼诺事件影响，全球平均气温升高。

链接:

<http://agri.ckcest.cn/file1/M00/00/DE/Csgk0V50UPSANQy5AAOK7Git-LA506.pdf>

8. 世界气象组织:预计蝗灾6月扩散 威胁全球粮食安全

【中国新闻网】【世界气象组织：#预计蝗灾今年6月进一步扩散# 严重威胁全球粮食安全】当地时间3月10日，世界气象组织《2019年全球气候状况声明》发布。该声明表示，严重蝗灾威胁粮食安全。2019年末的异常强降水是非洲之角地区暴发大规模沙漠蝗灾的重要因素之一，这是当地25年来最严重、以及肯尼亚70年来最严重的蝗灾。预计蝗灾在今年6月仍将进一步扩散，严重威胁全球粮食安全。

链接:

<http://agri.ckcest.cn/file1/M00/00/DE/Csgk0V50UG2AH13XAAHzkWFSZhE059.pdf>

9. 手机也能观察大田情况？遥感地图监测，作物长势一目了然

【央视财经】如今，物联网和大数据等新兴技术不仅应用在了都市农业当中，在今年春耕期间，这些新技术也广泛用在了大田作物的种植中，不仅省心省力，而且也为增产增收打下了好基础。手里一部智能手机，眼前一幅田管图，只要在自家地头打开App，就能看到整个大田的情况，地块颜色反映小麦的不同长势，浇地、打药、管理都一目了然。据介绍，智慧农业App是通过卫星遥感来观测地面作物的长势，大数据平台进行数据收集分析后，第一时间就会给出指导意见。

链接:

<http://agri.ckcest.cn/file1/M00/00/DF/Csgk0V50V-uAcRuiAA3I48vNIEE808.pdf>

10. 2020年中国粮食行业市场现状、生产展望及发展趋势分析

【财经新闻早知道】中国粮食安全成就：粮食产量稳步增长。2014年达到6.39亿吨，2015年达到6.61亿吨，连续4年稳定在6.5亿吨以上水平。2018年产量近6.58亿吨，比1996年的5.00亿吨增产30%以上，比1978年的3.00亿吨增产116%，是1949年1.10亿吨的近6倍。中国粮食安全成就：谷物供应基本自给。2018年，谷物产量6.1亿吨，占粮食总产量的90%以上，比1996年的4.5亿吨增加1.6亿吨。中国粮食安全成就：粮食储备能力显著增强。中国仓容规模进一步增加，设施功能不断完善，安全储粮能力持续增强，总体达到了世界较先进水平;粮物流通骨干通道全部打通，公路、铁路、水路多式联运格局基本形成，原粮散粮运输、成品粮集装化运输比重大幅提高，粮物流通效率稳步提升。2018年中国共有标准粮食仓房仓容6.7亿吨，简易仓容2.4亿吨，有效仓容总量比1996年增长31.9%。

链接:

<http://agri.ckcest.cn/file1/M00/00/DE/Csgk0V50VUqAGcNUAAseHJxnJdl147.pdf>

11. 2020年山西农业生产主推技术发布 40种农技上线

【黄河新闻网】山西省农业农村厅组织遴选了我省2020年农业生产的主推技术。五大类40种农业技术将解决农业生产中的具体困难和问题，推动我省农业转型升级和高质量发展。山西省2020年农业生产的主推技术包括粮油类、水果类、蔬菜类、药材类、养殖类五大类，具体主推旱地小麦“一优四改”绿色栽培技术、膜侧播种艺机一体化技术、果树病虫害全程绿色防控技术等40种农业技术。

链接:

<http://agri.ckcest.cn/file1/M00/00/DF/Csgk0V50WTiAL59hAA-Vx-U0CF0233.pdf>

【文献速递】

1. Estimating fractional cover of crop, crop residue, and soil in cropland using broadband remote sensing data and machine learning

文献源: International Journal of Applied Earth Observation and Geoinformation,2020

摘要: The fractional vegetation cover (FVC), crop residue cover (CRC), and bare soil (BS) are three important parameters in vegetationsoil ecosystems, and their correct and timely estimation can improve crop monitoring and environmental monitoring. The triangular space method uses one CRC index and one vegetation index to create a triangular space in which the three vertices represent pure vegetation, crop residue, and bare soil. Subsequently, the CRC, FVC, and BS of mixed remote sensing pixels can be distinguished by their spatial locations in the triangular space. However, soil moisture and crop-residue moisture (SM-CRM) significantly reduce the performance of broadband remote sensing CRC indices and can thus decrease the accuracy of the remote estimation and mapping of CRC, FVC, and BS. This study evaluated the use of broadband remote sensing, the triangular space method, and the random forest (RF) technique to estimate and map the FVC, CRC, and BS of cropland in which SM-CRM changes dramatically. A spectral dataset was obtained using: (1) from a field-based experiment with a field spectrometer; and (2) from a laboratory-based simulation that included four distinct soil types, three types of crop residue (winter-wheat, maize, and rice), one crop (winter wheat), and varying SM-CRM. We trained an RF model [designated the broadband crop-residue index from random forest (CRRF)] that can magnify spectral features of crop residue and soil by using the broadband remote sensing angle indices as input, and uses a moisture-resistant hyperspectral index as the target. The effects of moisture on crop residue and soil were minimized by using the broadband CRRF. Then, the CRRF-NDVI triangular space method was used to estimate and map CRC, FVC, and BS. Our method was validated by using both laboratory- and field-based experiments and Sentinel-2 broadband remote-sensing images. Our results indicate that the CRRF-NDVI triangular space method can reduce the effect of moisture on the broadband remote-sensing of CRC, and may also help to obtain laboratory and field CRC, FVC, and BS. Thus, the proposed method has great potential for application to croplands in which the SM-CRM content changes dramatically.

链接:

<http://agri.ckcest.cn/file1/M00/00/DF/Csgk0V50fvCAR8qJARnqjucAvuk663.pdf>

2. A meta-analysis of global cropland soil carbon changes due to cover cropping

文献源: Soil Biology and Biochemistry,2020

摘要: Including cover crops within agricultural rotations may increase soil organic carbon (SOC). However, contradictory findings generated by on-site experiments make it necessary to perform a comprehensive assessment of interactions between cover crops, environmental and management factors, and changes in SOC. In this study, we collected data from studies that compared agricultural production with and without cover crops, and then analyzed those data using meta-analysis and regression. Our results showed that including cover crops into rotations significantly increased SOC, with an overall mean change of 15.5% (95% confidence interval of 13.8%–17.3%). Whereas medium-textured soils had highest SOC stocks (overall means of 39 Mg ha⁻¹ with and 37 Mg ha⁻¹ without cover crops), fine-textured soils showed the greatest increase in SOC after the inclusion of cover crops (mean change of 39.5%). Coarse-textured (11.4%) and medium-textured soils (10.3%) had comparatively smaller changes in SOC, while soils in temperate climates had greater changes (18.7%) than those in tropical climates (7.2%). Cover crop mixtures resulted in greater increases in SOC compared to mono-species cover crops, and using legumes caused greater SOC increases than grass species. Cover crop biomass positively affected SOC changes while carbon: nitrogen ratio of cover crop biomass was negatively correlated with SOC changes. Cover cropping was associated with significant SOC increases in shallow soils (≤ 30 cm), but not in subsurface soils (> 30 cm). The regression analysis revealed that SOC changes from cover cropping correlated with improvements in soil quality, specifically decreased runoff and erosion and increased mineralizable carbon, mineralizable nitrogen, and soil nitrogen. Soil carbon change was also affected by annual temperature, number of years after start of cover crop usage, latitude, and initial SOC concentrations. Finally, the mean rate of carbon sequestration from cover cropping across all studies was 0.56 Mg ha⁻¹ yr⁻¹. If 15% of current global cropland were to adopt cover crops, this value would translate to 0.16 \pm 0.06 Pg of carbon sequestered per year, which is \sim 12% of current fossil fuels emissions. Altogether, these results indicated that the inclusion of cover crops into agricultural rotations can enhance soil carbon concentrations, improve many soil quality parameters, and serve as a potential sink for atmosphere CO₂.

链接:

http://agri.ckcest.cn/file1/M00/0F/B0/Csgk0F50ZYeAOn_GABvA243935Q874.pdf

3. Delineation of management zones in agricultural fields using cover–crop biomass

estimates from PlanetScope data

文献源: International Journal of Applied Earth Observation and Geoinformation,2020

摘要: Several methods have been proposed to delineate management zones in agricultural fields, which can guide interventions of the farmers to increase crop yield. In this study, we propose a new approach using remote sensing data to delineate management zones at three farm sites located in southern Brazil. The approach is based on the hypothesis that the measured aboveground biomass (AGB) of the cover crops is correlated with the measured cash-crop yield and can be estimated from surface reflectance and/or vegetation indices (VIs). Therefore, we used seven different statistical models to estimate AGB of three cover crops (forage turnip, white oats, and rye) in the season prior to cash-crop planting. Surface reflectance and VIs were used as predictors to test the performance of the models. They were obtained from high spatial and temporal resolution data of the PlanetScope (PS) constellation of satellites. From the time series of 30 images acquired in 2017, we used the PS data that matched the dates of the field campaigns to build the models. The results showed that the satellite AGB estimates of the cover crops at the date of maximum VI response at the beginning of the flowering stage were useful to delineate the management zones. The cover-crop AGB models that presented the highest coefficient of determination (R^2) and the lowest root mean square (RMSE) in the validation and test datasets were Support Vector Machine (SVM), Cubist (CUB) and Stochastic Gradient Boosting (SGB). For most models and cover crops, the Enhanced Vegetation Index (EVI) and the Normalized Difference Vegetation Index (NDVI) were the two most important AGB predictors. At the date of maximum VI at the beginning of the flowering stage, the correlation coefficients (r) between the cover-crop AGB and the cash-crop yield (soybean and maize) ranged from +0.70 for forage turnip to +0.78 for rye. The fuzzy unsupervised classification of the cover-crop AGB estimates delineated two management zones, which were spatially consistent with those obtained from cash-crop yield. The comparison between both maps produced overall accuracies that ranged from 61.20% to 68.25% with zone 2 having higher cover-crop AGB and cash-crop yield than zone 1 over the three sites. We conclude that satellite AGB estimates of cover crops can be used as a proxy for generating management zone maps in agricultural fields. These maps can be further refined in the field with any other type of method and data, whenever necessary.

链接:

<http://agri.ckcest.cn/file1/M00/0F/B0/Csgk0F50gGeAVJoSAKWgBC7Z9p4710.pdf>

4. 乡村人口变迁对我国粮食安全的影响

文献源：中国农业大学学报(社会科学版),2020

摘要：粮食安全是乡村振兴的重要保障,但城镇化的快速发展吸引大量农村劳动力离开农业,这势必会对我国粮食安全产生重要影响。文章从需求和供给两方面观察乡村人口变迁对我国粮食安全的影响,结果发现:第一,城镇居民和农村居民的粮食需求分别呈现波动性减小和基本稳定并伴随小幅波动的趋势。其中,口粮消费逐渐减小,消费动物性产品引致的饲料粮需求不断增加。第二,农民工的粮食需求既高于农村居民,也高于城镇居民;消费结构介于二者之间。第三,粮食播种面积变化不大。其中,稻谷基本稳定,小麦小幅度减少,玉米大幅度增加。第四,粮食产量总体上波动性上升。稻谷和小麦产量缓慢波动性增长,玉米产量持续稳定增长。

链接:

<http://agri.ckcest.cn/file1/M00/0F/B0/Csgk0F50eguAcUuMACKO-p9VvxY643.pdf>

5. 基于遥感和GIS的贵州省涟江流域土地利用时空变化研究

文献源：农业与技术,2020

摘要：在遥感和GIS技术的支撑下,基于1995年、2005年和2017年遥感影像目视解译获得3期土地利用数据,结合土地利用动态变化和土地利用转移矩阵的方法,对贵州省涟江流域1995—2017年土地利用时空变化特征进行分析。结果表明:近20a来,涟江流域的土地利用以灌木林地、耕地、林地和草地为主,灌木林地和耕地的面积呈下降趋势,林地呈略微增加趋势,草地先增加后下降,其他用地和水域面积呈下降后又保持平稳趋势,建设用地的面积则持续增加;各土地利用类型在2005—2017年的变化程度比1995—2005年更剧烈,从1995—2017年整个研究时段来看,建设用地的增加趋势最明显,主要分布在流域中部的惠水县和北部的花溪区党武镇、青岩等地;在1995—2005年,土地利用转移主要表现为耕地转为草地和林地灌木林地转为林地,说明退耕还林还草、石漠化治理等生态建设效果比较明显;而在2005—2017年,耕地、草地和水域转为建设用地较为明显,流域近年的城镇化进程在逐步加快;建设用地和耕地主要在研究区中部偏东呈纵列分布,林地主要在研究区中部呈块状分布,草地和灌木林地遍布全区,且两者差别不大,除此之外部分耕地在研究区零星分布。研究结果为涟江流域的生态文明建设、城镇化发展和土地资源利用规划等提供重要的数据基础与理论依据。

链接:

<http://agri.ckcest.cn/file1/M00/0F/B0/Csgk0F50fHWALINdAA8OH4iU-Z8518.pdf>

6. Land suitability evaluation for agricultural use using GIS and remote sensing techniques: The case study of Ma'an Governorate, Jordan

文献源: The Egyptian Journal of Remote Sensing and Space Science,2020

摘要: The present study illustrates the Spatial-temporal dynamics of Land use/Land cover (LULC), and locate land suitability for agricultural use. Landsat satellite images of three different years 1990, 2000 and 2018 over 28 years were acquired from Global Land Cover Facility Site (GLCF) and earth explorer. Land suitability for agriculture use was assessed on five criteria; rainfall, temperature, slope percentage, soil types and water Wells distribution. The different geospatial layers were transferred using suitability coding system to produce the suitability maps for rainfed and irrigated areas using weighted overlay method. Ma'an Governorate covers approximately 37% of the total area of Jordan, and consists mostly of uncultivated land 33304.66 km² (99.49%). Three main LULC classes were identified of the three years; 1990, 2000 and 2018; forest and irrigated areas have been fluctuated between 86.00 km² (0.26%), 108.06 km² (0.32) and 102.68 km² (0.31%), built-up area increased by 24.00 km², (0.07%), 41.88 km² (0.13%) and 68.66 km² (0.21%), while the bare land has been decreased from 33366 km² (99.67%),33476 km² (99.55%) and 33304.66 km² (99.49%) during 1990, 2000 and 2018 respectively. land suitability for the agricultural use (rainfed areas and irrigated crops); Data from the five parameters (mentioned above) are used for spatial analysis applying weighted overlay method. The results showed that only about (0.2%) from the total area of Ma'an is highly suitable for agriculture dependent on rainfall. While about (1.4%) is high suitable for the irrigation crops. The main reason of the low levels of land suitability for agriculture is very low soil fertility, and the water scarcity.

链接:

<http://agri.ckcest.cn/file1/M00/0F/B0/Csgk0F50gVOABwgCACJRLwsHEvQ968.pdf>

7. 无人机遥感技术在精量灌溉中应用的研究进展

文献源: 农业机械学报,2020

摘要: 以提高农业用水效率为目标的精量灌溉是未来农业灌溉的主要模式,精量灌溉的前提条件是对作物缺水的精准诊断和科学的灌溉决策。用于作物缺水诊断和灌溉决策定量指标的信息获取技术主要基于田间定点监测、地面车载移动监测及卫星遥感。无人机从根本上解决了卫星遥感由于时空分辨率低而导致的瞬时拓延、空间尺度转换、遥感参数与模型参数定量对应等技术难题,也克服了地面监测效率低、成本高、影响田间作业等问题。近几年的研究表明,无人机遥感系统可以高通量地获取多个地块的高时空

分辨率图像,使精准分析农业气象条件、土壤条件、作物表型等参数的空间变异性及其相互关系成为可能,为大面积农田范围内快速感知作物缺水空间变异性提供了新手段,在精量灌溉技术应用中具有明显的优势和广阔的前景。无人机遥感系统已经应用在作物覆盖度、株高、倒伏面积、生物量、叶面积指数、冠层温度等农情信息的监测方面,但在作物缺水诊断和灌溉决策定量指标监测方面的研究才刚刚起步,目前主要集中在作物水分胁迫指数(CWSI)、作物系数、冠层结构相关指数、土壤含水率、叶黄素相关指数(PRI)等参数估算的研究,有些指标已经成功应用于监测多种作物的水分胁迫状况,但对于大多数作物和指标,模型的普适性还有待进一步研究。给出了无人机遥感在精准灌溉技术中应用的技术体系,并指出,为满足不同尺度的高效率监测和实现农业用水精准动态管理的需求,今后无人机遥感需要结合卫星遥感和地面监测系统,其中天空地一体化农业水信息监测网络优化布局方法与智能组网技术、多源信息时空融合与同化技术、作物缺水多指标综合诊断模型、农业灌溉大数据等将是未来重点研究内容。

链接:

<http://agri.ckcest.cn/file1/M00/00/DF/Csgk0V50ezKAZSG7ABQwvJce7j0175.pdf>

8. 中国近10年耕地资源变化情况统计分析

文献源: 国土与自然资源研究,2020

摘要: 耕地红线包括数量,也包括质量,通过对第二次全国土地调查以来公布的相关数据进行汇总分析,揭示我国近10年耕地数量、地类、质量等别等面积变化及空间布局变化情况。运用数理统计的分析方法,整理汇总2009~2018年公布的耕地数量、质量等相关数据,分别对其变化情况进行分析。数据显示我国耕地快速减少的势头得到有效遏制,水田、水浇地的面积呈现增加趋势,耕地面积、耕地产能增加的重心向标准种植制度一年一熟区、粮食非主产区倾斜。从光、温、水、土等资源匹配程度,综合生态评价体系,强化新增耕地的适宜性评价,合理控制新增耕地的规模;从灌溉水源、排水条件、水资源平衡等方面,加强对新增加水田、水浇地的适宜性评价,严格把控旱地改为水田、水浇地的准入门槛;保持现有耕地面积、耕地质量、空间布局基本稳定,合理控制一年三熟、一年两熟区的耕地在空间位置上向一年一熟区、生态脆弱区转移的规模,避免现有粮食主产区向非主产区转移的倾向。

链接:

<http://agri.ckcest.cn/file1/M00/00/DF/Csgk0V50d9CAQzrHABnLHWZHptk767.pdf>

9. 近30年西藏地区耕地面积及主要农作物时空变化特征

文献源: 高原农业,2020

摘要：以西藏地区耕地面积为研究对象,结合主要农作物播种面积、产量等时空变化,从经济、人口、农业发展水平等13个驱动因子,分析了西藏地区耕地面积变化。采用1985~2016年的统计资料,采用统计方法,分析了西藏地区30多年来耕地、粮食生产的动态变化,并从经济、人口、农业发展水平等方面选取影响耕地面积变化的13个驱动因子进行分析。西藏地区耕地面积总体呈增加态势,但增长趋势缓慢;粮食作物单产、总产量在进一步增加,人均耕地面积在逐年减少;粮食主产区粮食总产不稳定,且所占比例有逐年减少趋势;小麦、油菜播种面积正在逐年增加,青稞播种面积变化最小,但有逐年减少趋势;全区土地利用程度相对较高;经济发展、人口增长、农业发展水平是影响西藏耕地面积变化的主要驱动因子。西藏地区土地利用程度相对较高,基础建设用地占补平衡,农牧民生活结构正在逐渐发生改变。

链接:

<http://agri.ckcest.cn/file1/M00/0F/B0/Csgk0F50ZWYAAaPL6ABAHIIMMf-Lc488.pdf>

10. 近30年来长株潭地区农作物种植结构演变及优化对策

文献源：经济地理,2020

摘要：综合运用空间集聚分析、时序变化分析等方法,结合GIS技术从种植结构类型以及种植比例变化两个方面对近30年来长株潭地区农作物种植结构的时空变化过程、格局与调控路径进行了研究。结果表明:①共出现12种农作物种植结构类型,且有22个县市区转变了农作物种植结构类型,区域种植结构类型丰富度呈波动上升趋势,由单一的双水稻型向多元化的作物种植结构转变。②种植比例变化较大,双季水稻种植比例降幅最大,而蔬菜的种植比例增幅最大。1987年共有3种作物存在显著的HH集聚特征,其中双季水稻、油料出现了高值聚集区的连片分布;而2016年共有4种作物存在HH集聚特征,其中双季水稻、油料、蔬菜出现了高值聚集区的连片分布。文章认为,长株潭地区未来可通过减少单一型增加组合类型,实现组合型内部元素多样化,在保证水稻种植面积的前提下提升带有地方特色的作物种植比例等方面进行调整与优化。

链接:

http://agri.ckcest.cn/file1/M00/00/DF/Csgk0V50emCAS1o-ACixr8L4q_Y009.pdf

11. 基于遥感影像的甘达基流域博卡拉和巴拉普尔的土地利用变化及其驱动力研究

文献源：Journal of Resources and Ecology 资源与生态学报(英文版),2020

摘要：城市扩张是反映经济增长的重要指标,但随意的城市扩张也带来了严重的社会经济问题、环境问题以及城市土地管理问题。在这个背景下,理解城市扩张的过程对于指导城市的可持续增长具有重要意义。本研究采用基于遥感影像的监督分类方法,分析了

甘达基流域内的两个大城市—博卡拉和巴拉普尔1990-2018年的城市用地变化。结果表明:在过去的28年,博卡拉和巴拉普尔的城市面积分别显著扩张了300%和近500%。人口增长、城市基础设施和便利的生活方式引起周边地区向城市的人口迁移,是造成本研究区城市扩张的主要原因。除此之外,不断变化的城市定义和城市边界的扩张是造成城市快速扩张的关键因素。由于上述两个城市拥有高水平的商业活动以及现代化的设施,未来城市规模可能继续扩大。应当通过城市规划和政策减少随意的城市扩张,从而实现城市的可持续发展

链接:

<http://agri.ckcest.cn/file1/M00/00/DF/Csgk0V50fLOALuXHABSRtLAb8Tw982.pdf>

12. 1988—2016年婺源县土地利用变化及其影响因素分析

文献源: 江西师范大学学报(自然科学版),2020

摘要: 利用婺源县1988、2002和2016年3期遥感影像数据,分别从土地利用空间分布、变化速度、区域差异、类型变化等方面分析了婺源县土地利用的动态变化,并在此基础上进一步对土地利用变化的影响因素进行探究.结果表明:(i)在这28年期间,婺源县土地利用总体规模并未发生较大变化,林草用地比例均在80%以上,但有下降趋势;(ii)从变化幅度上看,林草用地和建设用地的变化面积最大。从速度上看,婺源县土地利用整体变化速度极缓慢,其中建设用地相对较快.从相对变化率上看,中心城区紫阳镇的土地利用变化最活跃.从类型转换来看,主要为林草用地、农用地之间的相互转化以及它们向建设用地和水域用地的转化;(iii)婺源县土地利用变化主要与城镇化发展和经济发展相关,政策和人口变化影响较小.研究结果将有助于婺源县土地利用的科学规划管理及土地资源可持续利用。

链接:

<http://agri.ckcest.cn/file1/M00/0F/B0/Csgk0F50fnWAMR7UACpp5MV4FoY297.pdf>

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