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粮食和食物安全专题

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学术文献

1. Remote sensing of soil degradation: Progress and perspective (土壤退化遥感: 进展与展望)

简介: Soils constitute one of the most critical natural resources and maintaining their health is vital for agricultural development and ecological sustainability, providing many essential ecosystem services. Driven by climatic variations and anthropogenic activities, soil degradation has become a global issue that seriously threatens the ecological environment and food security. Remote sensing (RS) technologies have been widely used to investigate soil degradation as it is highly efficient, time-saving, and broad-scope. This review encompasses recent advances and the state-of-the-art of ground, proximal, and novel RS techniques in soil degradation-related studies. We reviewed the RS-related indicators that could be used for monitoring soil degradation-related properties. The direct indicators (mineral composition, organic matter, surface roughness, and moisture content of soil) and indirect proxies (vegetation condition and land use/land cover change) for evaluating soil degradation were comprehensively summarized. The results suggest that these above indicators are effective for monitoring soil degradation, however, no indicators system has been established for soil degradation monitoring to date. We also discussed the RS's mechanisms, data, and methods for identifying specific soil degradation-related phenomena (e.g., soil erosion, salinization, desertification, and contamination). We investigated the potential relations between soil degradation and Sustainable Development Goals (SDGs) and also discussed the challenges and prospective use of RS for assessing soil degradation. To further advance and optimize technology, analysis and retrieval methods, we identify critical future research needs and directions: (1) multi-scale analysis of soil degradation; (2) availability of RS data; (3) soil degradation process modelling and prediction; (4) shared soil degradation dataset; (5) decision support systems; and (6) rehabilitation of degraded soil resource and the contribution of RS technology. Because it is difficult to monitor or measure all soil properties in the large scale, remotely sensed characterization of soil properties related to soil degradation is particularly important. Although it is not a silver bullet, RS provides unique benefits for soil degradation-related studies from regional to global scales.

来源: sciencedirect

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<http://agri.nais.net.cn/file1/M00/10/3E/Csgk0EGbpTyAG7zvAEoqK01g8pc770.pdf>

2. Food security and environmental degradation: Do institutional quality and human capital make a difference? (粮食安全和环境退化: 制度质量和人力资本会产生影响吗?)

简介: The nexus between food security (FS), institutional quality (IQ), human capital (HC), and environmental deterioration (ED) has important implications for ecological sustainability. Yet, environmental deterioration resulting from food security activities is a widely ignored topic, particularly in BRI countries. To address this gap, we examined the

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influence of food security, human capital and institutional quality on the environmental deterioration of BRI countries from 1984 to 2019. Furthermore, it investigates the moderating effect of institutional quality and human capital on ED. The empirical findings revealed that food security increases ED. The research also revealed that HC and IQ lower the ED. Furthermore, food security promotes ecological sustainability through the HC channel. Additionally, institutional quality decreases the negative environmental implications of food security. Based on these results, BRI nations should enhance ecological sustainability by investing in HC and using food resources efficiently.

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<http://agri.nais.net.cn/file1/M00/10/3E/Csgk0EGbojeAXIneABTZuuceka4778.pdf>

3. Towards the impact of economic policy uncertainty on food security: Introducing a comprehensive heterogeneous framework for assessment (探讨经济政策不确定性对粮食安全的影响: 引入一个全面的异质性评估框架)

简介: In recent years, economic policy uncertainty (EPU) has become a topic of increasing interest among policymakers in advanced economies, and food security has become an increasingly essential but contentious term since the global food price spike. Based on a heterogeneous framework, this paper empirically investigates the impact of EPU on food security by utilizing panel data of 25 countries for the period of 1995-2019. This article combines the FAO's definition of food security and improves the food security evaluation system based on the existing data, further establishing secondary indicators of food supply, food access, food utilization, and food stability. The results show that the uncertainty of economic policy has a significant negative impact on food security; the results of adjustment effect show that both the fluctuation of grain price and the dependence on foreign trade enhance the inhibition of economic policy uncertainty on food security. Heterogeneity analysis shows that the uncertainty of economic policy has a greater negative impact on the food security of developed countries and food exporting countries. To ensure the world's food security, governmental authorities must strengthen policy support for grain production, concentrate capital investment in grain production, and ensure self-sufficiency in domestic grain production. At the same time, we should also build diversified grain import channels to ensure the stability and sustainability of import sources. In the future, governments should strengthen international cooperation on food security, build a community of human food security, and promote fair and free food trade.

来源: sciencedirect

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<http://agri.nais.net.cn/file1/M00/03/6B/Csgk0WXyUwqANt68AAyHzM91cpw955.pdf>

4. What Are We Assessing When We Measure Food Security? A

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Compendium and Review of Current Metrics (当我们衡量粮食安全时，我们在评估什么？当代计量学简编与述评)

简介： The appropriate measurement of food security is critical for targeting food and economic aid; supporting early famine warning and global monitoring systems; evaluating nutrition, health, and development programs; and informing government policy across many sectors. This important work is complicated by the multiple approaches and tools for assessing food security. In response, we have prepared a compendium and review of food security assessment tools in which we review issues of terminology, measurement, and validation. We begin by describing the evolving definition of food security and use this discussion to frame a review of the current landscape of measurement tools available for assessing food security. We critically assess the purpose/s of these tools, the domains of food security assessed by each, the conceptualizations of food security that underpin each metric, as well as the approaches that have been used to validate these metrics. Specifically, we describe measurement tools that 1) provide national-level estimates of food security, 2) inform global monitoring and early warning systems, 3) assess household food access and acquisition, and 4) measure food consumption and utilization. After describing a number of outstanding measurement challenges that might be addressed in future research, we conclude by offering suggestions to guide the selection of appropriate food security metrics.

来源： sciencedirect

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<http://agri.nais.net.cn/file1/M00/03/6B/Csgk0WXyVbGAZhWAAAswvf7TNxk831.pdf>

5. Food security in Central Asia and Eastern Europe and possible solutions for hunger and malnutrition in these regions (中亚和东欧的粮食安全以及解决这些地区饥饿和营养不良问题的可能办法)

简介： Even at the beginning of the 21th century, hunger and malnutrition are still serious problems for many countries in the world. It is estimated that every three and a half seconds a person dies because of insufficient amount of food. There are as much as 925 million undernourished people on our planet. Hunger and malnutrition present in fact a great risk to the health worldwide, even greater than AIDS, malaria and tuberculosis altogether. Eastern Europe and Central Asia are both regions with specific conditions and issues related to the poorer part of the population. The goal of this paper is to point out possible solutions for eradication of extreme poverty with specific focus on these two regions and to highlight the most important factors that have had an influence on the development of the agricultural sector in these regions.

来源： ageconsearch

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