



RESEARCH NOTES LETTER

The Baltic University Programme 2018 – No 1

Welcome to the BUP Research Notes Letter ***Research and Innovation for a Sustainable Baltic Sea Region***

A lot of interesting research on sustainable development is going on in the Baltic Sea region. This is the first issue of The Baltic University Programme Research Notes Letter, a new initiative to spread research findings. We welcome scientific publications from year 2015 and forward: peer review articles, book chapters, conference proceedings, and dissertations regarding the following Themes: Climate Change, Renewable Energy, Sustainable Food Production & Consumption, Sustainable Water Resources, Urban-Rural development, Sustainable Transport, Green Economy and Education for Sustainable Development (ESD).

The aim with the Research Notes Letter is to spread research findings and to get the knowledge on researchers and research groups in the Baltic Sea region as a service to BUP Member universities, participating universities and different stakeholders in society. We want to encourage you to contribute with your research findings to the BUP Research Notes Letter. This is an opportunity to both contribute to the development of BUP research efforts and co-operations, as well as a way for You to spread your research findings and information on you as a researcher/your research group.

You are very welcome to submit your contribution using this form:
<http://www2.balticuniv.uu.se/bup-3/index.php/51-research-notes-form>

ISSUE I – 2018

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Coping with the impacts of urban heat islands

A literature based study on understanding urban heat vulnerability and the need for resilience in cities in a global climate change context

Authors: Walter Leal Filho, Leyre Echevarria Icaza, Alice Neht, Maris Klavins, Edward A. Morgan

Type of publication: Article peer Review

Abstract

The urban heat island (UHI) is a phenomenon whereby temperature levels in urban areas are higher than in surrounding rural settings. Urban heat islands are a matter of increasing concern, since they can affect communities by exacerbating air pollution and greenhouse gas emissions (due to the greater use of air conditioning) and the occurrence of heat-related illness, and may lead to higher levels of mortality. This paper provides a description of the phenomena of (UHI) and an analysis of how cities are vulnerable to it. It highlights the need for resilience and the variety of means by which the UHI can be tackled. It describes a set of trends in two regions in Germany and Australia, which illustrate the scope of the problem in the northern and southern hemispheres, and the scale of vulnerability. Then, existing UHI vulnerability assessments are analysed to highlight common features and differences. Based on this, we propose a classification of adaptability parameters to support vulnerability assessments. The paper also discusses current mitigation approaches mentioned in the literature, and how these address some vulnerabilities. It concludes that both a better understanding of the UHI phenomena and consideration of the particular context of each city is needed to make urban areas more resilient to UHI.

Reference

Leal Filho, W., Echevarria Icaza, L., Neht, A., Klavins, M., Morgan, E.A. (2017) Coping with the impacts of urban heat islands. A literature based study on understanding urban heat vulnerability and the need for resilience in cities in a global climate change context. *Journal of Cleaner Production* (2017)

Link

<https://www.sciencedirect.com/science/article/pii/S0959652617323806?via%3Dihub>

Steps to overcome the north south divide in research relevant to climate change policy and practice

Authors: Malgorzata Blicharska, Richard J. Smithers, Magdalena Kuchler, Ganesh K. Agrawal, José M. Gutiérrez, Ahmed Hassanali, Saleemul Huq, Silvia H. Koller, Sugata Marjit, Hassan M. Mshinda, Hj Hassan Masjuki, Noel W. Solomons, Johannes Van Staden & Grzegorz Mikusiński

Type of Publication: Article peer Review

Abstract

A global North–South divide in research, and its negative consequences, has been highlighted in various scientific disciplines. Northern domination of science relevant to climate change policy and practice, and limited research led by Southern researchers in Southern countries, may hinder further development and implementation of global climate change agreements and nationally appropriate actions. Despite efforts to address the North–South divide, progress has been slow. In this Perspective, we illustrate the extent of the divide, review underlying issues and analyse their consequences for climate change policy development and implementation. We propose a set of practical steps in both Northern and Southern countries that a wide range of actors should take at global, regional and national scales to span the North–South divide, with examples of some actions already being implemented.

Reference

Nature Climate Change 7, 21–27 (2017)
doi:10.1038/nclimate3163

Link

<https://www.nature.com/articles/nclimate3163>

The approach of swedish municipalities to the preservation of agricultural land in a planning context

Authors: Madeleine Granvik, Torun Jacobsson, Lisa Blix-Germundsson, Anders Larsson

Type of Publication: Article peer Review

Abstract

Agricultural land is one of the primary natural resources for human life. Climate change, peak oil, peak soil and a growing world population are factors that are likely to increase the importance of land in relation to both food production and the cultivation of energy crops. The current legal protection for agricultural land in Sweden is considered weak. The aim of this paper is to present the 'state of art' in respect of how Swedish municipalities approach the issue of preserving agricultural land. The topic is analysed in the context of municipal spatial planning, through which policies, strategies and motives pertaining to the preservation of agricultural land are asserted. Results from three empirical studies show that a relatively high degree of the responding municipalities stated an interest in the preservation of agricultural land. However, their actual planning practice did not confirm such an approach.

Reference

Granvik, M., Jacobsson, T., Blix-Germundsson, L. and Larsson, A. (2015), 'The approach of Swedish municipalities to the preservation of agricultural land in a planning context', *Int. J. Agricultural Resources, Governance and Ecology*, Vol. 11, No. 2

Link

http://balticuniv.beta.uu.se/digitalAssets/669/c_669634-l_1-k_granvik-et-al-2015-1.pdf

Collaborating on green logistics in chemical supply chains *insights from Poland*

Authors: Marzenna Cichosz

Type of Publication: Article peer Review

Abstract

Sustainable, safe, secure and efficient logistics is of great importance for chemical supply chains to operate successfully. However, as most logistics operations in this sector are outsourced to logistics service providers (LSPs), chemical companies have to rely on LSPs and collaborate with them when working on logistics efficiency. This paper takes an LSP's perspective. It aims to investigate the vertical as well as horizontal collaboration needed in making chemical logistics greener and safer, by shifting chemical road freight to inter-modal transport, combining modes, better transport planning, and energy and emission management. The research problem is analysed on the basis of a literature review and structured, in-depth interviews conducted with nine LSPs and twelve chemical companies operating in Poland.

The research is part of the "Promotion of Multimodal Transport in Chemical Logistics" project within INTERREG Central Europe Programme. The main findings from the research show that environmental regulations and targets in the EU Transport Whitepapers have resulted in LSPs' interest to work towards establishing more ecological strategies and operations, as well as new, greener services in response to the needs of chemical companies. There are many examples of vertical cooperation, even with elements of collaboration, among LSPs and their suppliers, and chemical customers in green logistics. However, this is not the case for horizontal cooperation among LSPs operating in Poland. They consider it to be very challenging and risky, and are reluctant to share their data with other LSPs. Nevertheless, environmental regulations, technological development and efficiency goals will soon force LSPs to consider working together with other LSPs, even competitors.

The research reported in this paper is limited in its scope. Even so, it does provide a platform from which more detailed research may be conducted. The managerial implications arising from the research suggest current practices in green logistics in general and green logistics in chemical industry in particular.

Reference

Cichosz, M. (2017). Collaborating On Green Logistics In Chemical Supply Chains: Insights From Poland. *Business Logistics in Modern Management*, p. 507-22.

Link

<http://blmm-conference.com/wp-content/uploads/BLIMM1732.pdf>

Post-conventional energy futures

Rendering Europe's shale gas resources governable

Author: Magdalena Kuchler

Type of publication: Article peer Review

Abstract

Following the shale gas boom in the United States, unconventional natural gas extracted from organic-rich shale rock formations has generated increasing attention in the European Union (EU). This considerable interest has been spurred by a range of optimistic volumetric appraisals of shale gas resource potential trapped beneath the European continent. The paper critically examines rationalities and practices through which states of resource availability and recoverability are made visible, measurable, intelligible, and thus rendered governable, namely open to new fields of possibilities to act upon. By implementing the concept of socio-technical imaginaries as governmentality approach, the analysis is guided by two objectives: first, to identify visions of shale gas potential contained in a range of resource estimates; second, to scrutinize rationalities of government, that is how shale gas resources are made knowable and purposeful, as well as technologies of government that operationalize these rationalities via practices of calculation, visualization, and inscription. The paper illustrates that, these highly speculative and uncertain assessments can forge powerful volumetric imaginaries of shale gas potential that yield specific governing effects concerned with securitization of unconventional hydrocarbons availability. Consequently, these imaginaries prescribe and legitimize techno-political hopes for certain post-conventional energy futures underpinning the fossil fuel abundance narrative.

Reference: Kuchler, M. (2017). Post-conventional energy futures: Rendering Europe's shale gas resources governable. *Energy Research & Social Science*, 31, 32-40.

Link to article:

https://www.researchgate.net/publication/317402444_Post-conventional_energy_futures_Rendering_Europe%27s_shale_gas_resources_governable

Low-carbon scenarios development for modal shift in the chemical industry

Authors: Barbara Ocicka

Type of Publication: Conference proceeding

Abstract

Supply chain managers have to deal with the performance requirement to significantly reduce CO₂ emissions in searching for excellence in green business processes management. The purpose of this article is to examine the perspectives on low-carbon scenarios development for modal shift in the chemical industry. The author outlines main research findings from the Interreg Central Europe ChemMultimodal project realised by 14 partners from 7 countries, among others by Department of Logistics at Warsaw School of Economics in Poland. The project idea is focused on analysing the potential and growth opportunities for multimodal transport usage in chemical supply chain management. Firstly, the objectives, current status and methodology of the project are explained. Then, the results of the research carried out among chemical and logistics companies operating in Poland are discussed. Furthermore, there is recognised that transport modal shift decisions determine changes in supply chain configurations that might be supported by planning and management tools. Consequently, the elements of the ChemMultimodal toolbox are outlined and its potential significance for low-carbon scenarios development is highlighted. As a result, both theoretical and practical implications of the research findings are indicated.

Reference

Ocicka B., Low-carbon Scenarios Development for Modal Shift in the Chemical Industry, MATEC Web of Conferences 134, 00043 (2017).

Link

https://www.matec-conferences.org/articles/mateconf/abs/2017/48/mateconf_logi2017_00043/mateconf_logi2017_00043.html