University Alliance for Sustainability

Final Report: Senior Research Stay at Freie Universität Berlin

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Institutional aspects of urban physical infrastructure adaptation to climate change

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The concept of sustainable development has been challenged by the concept of resilience; the latter is strongly related to a need to consider the climate change in urban and regional development. Indeed, goals of sustainable and resilient development can be conflicting; a challenge of adapting urban infrastructure to climate change can be a good example. While there is a strong need to upgrade existing urban structures and infrastructure to more extreme weather conditions, making urban areas more resilient and safe, there is also a need to do it in a sustainable way. Climate change issue exemplifies the conflict: to mitigate climate change urban communities need to be sustainable and to adapt to it they need to be resilient. However, in spite of obvious differences in concepts, there can be potential synergies in sustainability and resilience actions, which this research is aiming to explore.

During the research stay at Freie Universität Berlin I have met with a number of researchers with multi- and interdisciplinary backgrounds to review and discuss the most recent findings on the environmental governance subject, putting forward challenging questions and blending urban governance theme with non technical issues of urban infrastructure management. Urban infrastructure management has been relatively unexplored in relation to urban sustainability, resilience, and climate change adaptation. The initial idea was to highlight the importance of physical infrastructure to the sustainability agenda in urban development, but this brief research project has opened up new ideas on alternative to physical infrastructure solutions in transport and waste management, widening the research field on one hand and focusing on a sustainable living and non technical solutions on the other.

I gave a lecture in a series of the Berlin Sustainability Talk on November 23. The title of my lecture was ‘A Compact City: Perspectives for High Density Use of the Urban Underground Space’. http://www.polsoz.fu-berlin.de/polwiss/forschung/systeme/ffu/veranstaltungen/termine/16_BST_November-23.html

During my research stay I was privileged indeed to meet old and new colleagues, expanding my research network and sharing most recent trends. Multidisciplinary partnerships for the future research have been discussed with:

Prof. Achim Schulte - Geographical Sciences;

Prof. Dr. Brigitta Schütt - Physical Geography;

Prof. Dr. Miranda Schreurs - Environmental Policy;

Prof. Dr. Susan Thieme – Anthropogeography;

Prof. Theocharis Grigoriadis - Economics & East European Studies;

Dr. Andrea Kölbel - Geographical Sciences;

Dr. Klaus Jacob - Environmental Policy.

New projects:

I am very pleased to tell that the research and educational discussions during my stay have resulted in a new project proposal on Sustainable Urbanization & Comparative Development, which has been submitted for funding in the framework of the Freie Universität Berlin – Saint Petersburg State University Joint Seed Money Funding Scheme (Call for Proposals 2017). Partners on this truly multidisciplinary proposal include four research departments: Earth Sciences & Environmental Safety, Economics & East European Studies, International Relations, and Geographical Sciences. Partners include two senior researches from Freie Universität Berlin and two from Saint Petersburg State University. Half of the applicants have not been taking part in a University Alliance for Sustainability co-operation yet, and this expansion can be considered as an added value for the future project.

Related publications:

1. Bobylev N (2016) Transitions to a High Density Urban Underground Space, Procedia Engineering, Volume 165, 2016, Pages 184-192, ISSN 1877-7058, http://dx.doi.org/10.1016/j.proeng.2016.11.750.

2. Zargarian R, Hunt DVL, Braithwaite P, Bobylev N, Rogers CDF (2016) A new sustainability framework for urban underground space. Proceedings of the Institution of Civil Engineers - Engineering Sustainability. ISSN 1478-4629 | E-ISSN 1751-7680 DOI: http://dx.doi.org/10.1680/jensu.15.00013

3. Bobylev, N (2016) Underground Space as an Urban Indicator: Measuring Use of Subsurface. Tunnelling and Underground Space Technology, Elsevier. Volume 55, Special Issue: Urban Underground Space: A Growing Imperative. Perspectives and Current Research in Planning and Design for Underground Space Use. ISSN: 0886-7798. Pages 40 – 52. http://dx.doi.org/10.1016/j.tust.2016.02.022