

(1) Author:

Thomas Sauer, Ernst Abbe University of Applied Sciences, Jena, Germany (thomas.sauer@fh-jena.de)

(2) Paper title:

Cities as laboratories of socio-ecological transformation: Results of the WWWforEurope project

(3) Special session title:

Urban Sustainability Transitions: Actors, Resources, Indicators

(4) Brief description:

Great transformations are rooted in transitions of every-day activities. Otherwise they would not happen. An important link between Great Transformations and every-day transitions is based on institutional changes, entailing changes of shared strategies, norms and rules. These institutional changes emerge in an evolutionary process of institutional diversification and re-selection of these strategies, norms and rules which are governing the behaviour of groups of human individuals. If economics as social science aims to contribute to a theory of Great Transformations like the one currently under way in the economic, social and ecological spheres, it should contribute to the understanding and explanation of such institutional changes.

The Great Transformation of the 21st century is about institutional change aimed at solving global social dilemmas - like climate change, loss of biodiversity, the inequality in human living conditions, and the instability of global financial markets. Besides climate change other planetary boundaries have to be considered as social dilemmas to be solved by the Great Transformation: Ocean acidification and stratospheric ozone depletion are systemic processes at planetary scale as well. In contrast to that phosphorus and nitrogen cycles, atmospheric aerosol loading, freshwater and land use, biodiversity loss and chemical pollution could be considered as aggregated processes from local or regional level (Johan Rockström et al. 2009).

Bringing back climate change, biodiversity loss, and the nitrogen cycle into a safe operating operation space within the planetary boundaries - as well as keeping the other earth system processes below their critical thresholds - requires the consideration of the growth model underlying the interaction of the economic, social and ecological system. For example, if the low average speed of carbon intensity reduction in the last four decades (1971-2010) would be representative for all countries in the coming four decades again, there would be no more room for any GDP growth on the global scale (IPCC Intergovernmental Panel on Climate Change 2014). But how realistic is the idea that the decrease of the energy intensity of GDP could be accelerated in the future, allowing a positive GDP growth in the global average? Not much. Thus, it is more realistic to do research into new institutional arrangements, which would allow stabilizing the economic system within ecologically safe and socially just operating spaces. This appears to be the challenge for the Great Transformation of the 21st century.

The solution of the global social dilemmas is an endeavour of multi-level governance, scaling up from the micro level, where individuals are acting, to the supra-national level, where groups of humans are acting, and scaling down vice versa. Regarding climate change there are three key transformation fields, which are commonly assumed to deserve special attention: energy, urbanisation, and land use

(WBGU - German Advisory Council on Global Change 2011, 268–70). Cities appear to be particular interesting laboratories of socio-ecological transformation: On the ground of the urban action areas these transformation fields of climate protection are closely connected with other earth-system processes - like freshwater use, biodiversity loss, and chemical pollution. Thus, it makes sense to investigate the institutional setting of common-pool resources in urban areas exploring leading research questions as: What kind of new institutional arrangement could be observed here? Could they be interpreted as new forms of governance of the urban commons? Are such processes driven by self-organisation and cooperation of citizens from below – or are they initiated by government or business actors as participations process aiming to involve the civil society actors only as a matter of legitimation of their own actions? And finally, which role does such new institutional arrangements play in the context of a multi-level transition towards a socio-economic system respecting the planetary boundaries?

In field studies on 40 European cities we explore the governance of three socio-ecological systems – energy, water and green spaces (as a matter of urban land-use) - from a comparative perspective using a mix of quantitative and qualitative methods. The paper will present new insights about the best setting for processes of institutional diversification and the emergence of a third sector of self-organised and cooperative management of urban common-pool resources as precondition for a great transformation in the 21st century.

References

- IPCC Intergovernmental Panel on Climate Change.** 2014. "Climate Change 2014, Mitigation of Climate Change, Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change."
- Rockström, Johan, Will Steffen, Kevin Noone, Åsa Persson, F. S. I. Chapin, Eric Lambin, Timothy M. Lenton, Marten Scheffer, Carl Folke, Hans J. Schellnhuber, Björn Nykvist, Cynthia A. de Wit, Terry Hughes, Sander van der Leeuw, Henning Rodhe, Sverker Sörlin, Peter K. Snyder, Robert Costanza, Uno Svedin, Malin Falkenmark, Louise Karlberg, Robert W. Corell, Victoria J. Fabry, James Hansen, Brian Walker, Diana Liverman, Katherine Richardson, Paul Crutzen, and Jonathan Foley.** 2009. "Planetary Boundaries. Exploring the Safe Operating Space for Humanity." *Ecology and Society*, 14(2): online.
- WBGU - German Advisory Council on Global Change.** 2011. *World in Transition. A Social Contract for Sustainability*. Flagship Report. Berlin: WBGU.