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Call for Papers

Economic complexity and socio-ecological transitions: dedicated innovation systems and beyond

organized by

EAEPE Research Area [X] and Research Area [D]

in cooperation with

RESEARCH NETWORK ON INNOVATION

Special Sessions at the International Conference

Research and Innovation Policies in Europe: Evolution, Scope and Perspectives

Bruges, May 5-6th, 2022

Submission deadline:	Notification of acceptance:	Full paper* deadline:
February 7, 2022	March 7, 2022	March 28,2022

Abstracts must not be longer than 1000 words and should be submitted to https://www.coleurope.eu/form/forum-innovation-2022-submission

*The full papers will be distributed to the discussants who will prepare a short co-presentation. They do not need to be finished papers, but should allow discussants to prepare a constructive co-presentation.

Special session organizers:

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Main conference website: https://www.coleurope.eu/bruges/academic-offer/european-economic-studies/conferences-events/forum-innovation-2022

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Special Session at the RNI Conference 2022

The EAEPE research area [X] 'Knowledge, Networks and Regions' (Muhamed Kudic and Claudius Gräbner) and the Research Area [D] 'Technological change, governance and transition' (Andreas Pyka and Ben Vermeulen) will organize four, thematically closely related special sessions at the RNI International conference on Research and Innovation Policies in Europe.

The special sessions provide a platform for constructive, open and interdisciplinary scientific discourse. We bring together researchers from different disciplines and paradigms to discuss current advances on the role of networks in knowledge creation and utilization in a regional context in an amicable and constructive atmosphere. Contributions by young scholars are also highly welcome.

Organization of the sessions: Each session consists of three or four thematically related paper presentations. All presenters are expected to give a presentation (20 minutes) and a short co-presentation to another paper presented at the workshop (5 minutes). We also leave room for paper-specific questions as well as general discussions (5-10 minutes).

Content and motivation of the four special sessions

There will be four closely related sessions all highlighting different aspects of the overall theme: "Economic complexity and socio-ecological transitions: dedicated innovation systems and beyond". Technological progress has been a central source for increasing the living standards of many in the past, and it is likely to be an important driver for further socio-economic development in the future. At the same time, it is also a source of growing inequalities, both within and among nations, and its ecological implications are ambiguous: addressing climate change, for instance, not only requires us to come up with new technologies, but also to stop using old ones that are ecologically harmful - or even prevent ecologically harmful technologies to dissipate.

Thus, technological change requires an institutional embedding in the form of adequate innovation systems if it is meant to benefit society and the ecology in the long run. To come up with the right institutions to do so is, however, an intricate challenge. The four sessions will explore ways in which the concept of economic complexity can help us to delineate such institutions, and, thereby, to address central socio-economic and ecological challenges of our time. They invite contributions from various disciplines and paradigms, and are open to both empirical and theoretical contributions.

Session 1: Governance, mission-orientation, and co-evolution in sustainability transition

Sustainability transitions (in e.g. energy, agrifood, transport) require change in technology, infrastructure institutions, and consumer behavior, all in conjunction. One of the major challenges is the co-evolutionary lock-in of both the demand- and supply-side. On the one hand, suppliers are hesitant to invest in research and development of technology, notably in absence of a technical infrastructure or sufficiently concrete demand to direct the development. On the other hand, buyers are hesitant to purchase premature and expensive technology. The contemporary mission-oriented policy paradigm seeks to resolve this lock-in by governing protected 'niches' in which suppliers develop technology with potential buyers and other stakeholders. Subsequently, governance is to assist the production and diffusion of these technologies and thus overthrow the existing 'regime'. We invite submissions dealing with the challenges in the sustainability transition, development of such 'large technical systems', responsible innovation, etc. We are open to any type of presentation, be it a theoretical contribution, empirical case study, computer model, or econometric study.

Session 2: Redesigning Innovation Systems for the Sustainability Transformation

Innovation systems in its present shape are powerful organizational settings developed to improve international competitiveness, to generate high-paid jobs and to safeguard international leadership of regions, sectors and/or technologies. When the idea of innovation systems was born in the late 1980s, sustainability considerations were widely absent and despite their systemic orientation, the system boundaries were set too narrow. The anthropogenic impact on the natural environments and climate development was not considered to be relevant. Almost four decades later the situation has profoundly changed and innovation systems need to be re-designed to avoid that - despite their merits in knowledge generation and diffusion - they are discredited to be part of the problem. In their current design innovation systems are characterized by inertia, lock-in in business models of 20th century industrialization paradigm and missing connections with the urgent sustainability topics as they are addressed for example in the Sustainable Development Goals of the United Nations. For this session we invite contributions dealing with the possibilities to implement responsibility and a dominant sustainability orientation into innovation systems. Contributions dealing with the implementation of co-evolutionary processes between the development of new life styles and exploration of new technologies, re-organization of production and consumption activities by strengthening resource efficiency (sharing economy etc.) and facilitating the adoption of green technologies (green platforms etc.) are highly appreciated.

Session 3: Socio-ecological transitions and international inequalities

A socio-ecological transformation on the global scale necessarily comes with technological change and sectorial transformation: environmentally harmful activities – such as energy production using fossil fuels or coal – must be replaced to the greatest extent possible by alternative activities and technologies – such as energy production using renewable resources. This comes with at least two challenges, which are at the center of this session.

First, the transition costs associated with socio-ecological transformations differ across countries: they are higher in countries whose development models currently depend on non-sustainable activities. The debates within the European Union, where the ecological transition might harm the catch-up development models of many Eastern European countries, and benefit over-proportionally already rich countries in Central Europe, are one example that shows how potential users might block important reforms if their worries are not taken seriously. Second, countries in the Global South might be left behind and suffer enormous temporal costs with severe implications for their populations: such countries were often not able or given the chance to accumulate the technological capabilities to improve the living standards of their population through environmentally sustainable activities. Moreover, decreasing demand of raw materials and resources from the Global North might induce considerable economic calamities, especially for the poorer population in the medium run.

This session deals both with the economic as well as the political economy aspects of these challenges and seeks to stimulate the debate about the adequate institutions and policies that might counteract unwarranted distributional implications and economic hardships of necessary ecological transformations.

Session 4: Economic implication of digital transition processes in rural vs. urbanized regions.

The fourth session turns attention to the economic implication of digital transition processes in rural vs. urbanized regions. The major social megatrends of our time – most notably digitization - confront modern societies with enormous challenges. Although the transformation of existing economic structures has always been a characteristic inherent feature of market-based economic systems, the intensity and depth with which digital technologies are currently changing existing socio-economic structures is unprecedented

in this form. However, we argue that the economic implication of digital transition processes differs significantly across regions. For instance, Germany is anything but homogeneously structured. For instance, there are clear differences in the concentration of economic activities and sectoral specialization across the country. While the classic automotive sector still dominates in Baden-Württemberg and parts of Lower Saxony, we see at the same time increasing economic momentum in the media, life sciences and IT sectors in Berlin and parts of North Rhine-Westphalia. Similarly, the geographical topology of regions differs significantly. While the major urban centers around Munich, Frankfurt a. M., Berlin and the Rhine/Ruhr region are densely concentrated in terms of firm agglomerations, show a high population density, and well-developed infrastructure systems etc., the broad majority of regions at the countryside is typically characterized by sparsely populated areas with a pronounced core-periphery structure (i.e. a small city surrounded by many small villages scattered over the geographical landscape). Against this backdrop we argue that rural and urbanized regions face qualitatively different challenges – and come also to very unique solutions – throughout the economic transition process cause by megatrends such as digitalization. To illustrate this argument, IT-supported multimodal mobility concepts for a metropolis like Berlin need to be designed in a completely different way compared to rural region where fewer people typically need to cover longer distances using a poorer and more scatter mobility infrastructure. Accordingly, we are highly interested in submissions from economics and related disciplines addressing the economic implications of digital transformation for urbanized vs. rural areas.