

Springer Book Series:

RESILIENT CITIES: Re-thinking Urban Transformation **BOOK 5[BK5]**

TITLE

CIRCULAR URBAN METABOLISM: GENERATING CO-BENEFITS THROUGH URBAN RESILIENCE TRANSITION

KEY WORDS

Urban Resilience, Circular Economy, Urban Metabolism, Co-Benefits, Innovation Dividend, Transition, Sustainable Development, Climate Mitigation and Adaptation

SCOPE

Over half of the world population lives in cities. Cities consume 75% of the world's natural resources, 80% of the global energy supply and produce approximately 75% of the global carbon emissions. Climate change and global warming is unequivocal; this is triggered by anthropogenic activities, particularly related to the emissions of greenhouse gases, which are driven by the human system of consumption and production, and generated particularly in urban areas.

Cities, due to the concentration of human life and activities, are responsible for the current climate change trends and dynamics; and at the same time, they are extremely vulnerable to the increasing negative effects of climate change and to direct effects of pollution.

Urbanization processes and dynamics are leading to the exponential rise of world urban population for the next decades, coupled with increasing consumption levels particularly in developing and transition countries. These development trends are leading to increase emissions of greenhouse gases which will further contribute to climate changes. The very climate change fostered by human activities concentrated in cities is having various negative impacts on urban systems themselves, and also multiplying effects on already existing negative urban issues such as: poverty, sprawl, inequality and health.

Urban systems are because of their evils, thereby a radical re-thinking of the way in which cities are planned, managed and inhabited is indispensable; specifically coupling approaches to address simultaneously mitigation, adaptation (both in terms of slow and rapid on setting disasters and impact) and sustainable development actions can be achieved through **an integrated urban resilience transition.**

The redefinition of urban planning and management forms for systemic urban transition and transformation, able to address the call for absolute decoupling of natural resource use and socio-economic development, shall be based in **re-developing an urban metabolic approach in a circular manner;** this taking also in account social metabolism, and **calling for new frameworks and approaches to design, planning and evaluation, as key enabling factors.**

TOPICS

ID	TOPICS	DESCRIPTION
T1	Definitions, approaches and frameworks for Circular Urban Metabolism	This topics aims at discussing the definitions and approaches for Circular Urban Metabolism, which can include reference to different bodies of knowledge such as: transition and innovation, circular economy, urban metabolism, low-carbon development, de-growth, decoupling, etc. This topic aims also at discussing theoretical and practical approaches on how a circular metabolic system can support urban resilience transition.
T2	Co-Benefit of Circular Urban Metabolism:	The topic aims at exploring, both from theory and practice perspectives, the potential of circular urban metabolism, as a driver for innovation, for the generation of co-benefits. The generation of co-benefit can include: coupling adaptation and mitigation, contribution to development and Sustainable Development Goals (SDGs), job creation and growth, poverty reduction and increased quality of life, social and environmental justice.
T3	Sectorial and cross-sectorial approaches for circular urban metabolism	The topic aims at collecting case studies and good practices related to sectorial and cross-sectorial use of a circular urban metabolic approach, fostering more systemic and integrated policies, strategies and actions. The contributions can refer to one or multiple flows/sectors, as: water/blue infrastructures, information/smart cities, material/waste, mobility, energy, etc.
T4	Planning theory and practice embracing circular urban metabolic approach	The topic aims at discussing, in theory and practice, how urban planning can embed and support urban resilience transition through a circular metabolic approach. The contributions refer to specific issues as: planning as a process, integration of regional perspective in urban planning, cross-sectorial planning, etc.
T5	Design theory and practice based on circular urban metabolic approach	The topic aims at exploring the role of design, as a key enabler, for a circular urban metabolic transition, on the assumption that the current systems of consumption and production, including cities, need to be changed by design. It includes novel approaches to the design of: infrastructure, physical structure, urban form, services, products, asset and asset management etc.
T6	Evaluation and impact assessment for circular urban metabolism	The topic aims at developing novel evaluation systems and approaches to support urban resilience transition specifically by adopting a circular metabolic approach, which should be systemic, cross-scale and across-temporal reaches. This includes sub-topics as: integrated ex ante evaluation, system thinking evaluation, the use of evaluation to support informed policy/decision making, integrated impact assessment, ex-post evaluation, and standardized evaluation approaches.

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