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Research Agenda for Biocities of the future

The overall objective is to contribute towards **transforming existing cities to Biocities** and provide a framework for new urban developments. There are five critical variables that impact future pathways towards Biocities and point towards areas for further action and research:

i. Degrees of political stability; compatibility of political systems to the set of functional traits of Biocities; political commitment to traits; flexibility and adaptability of regulatory and legislative systems; degree of inclusion and participation of communities;

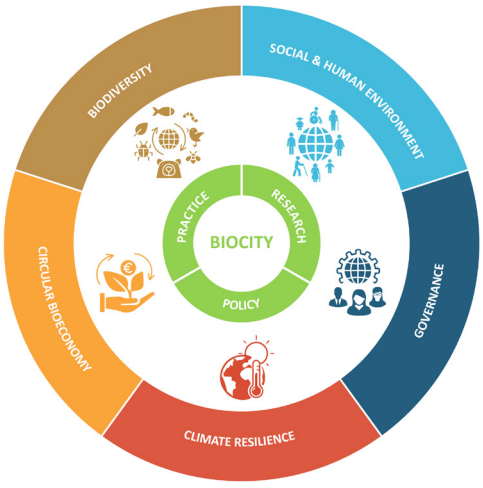
ii. Volatility of economic conditions internationally, nationally and locally; predisposition of communities and governments to expand value concepts beyond the monetary;

iii. Willingness and capacity of urban communities to adapt to systemic changes required by certain traits; awareness of motivations behind transitions to various traits; migration patterns, the future of work, demographic trends;

iv. Development of necessary technological innovations; uptake of technology;

v. Availability of natural resources; speed of anthropogenic impacts on planetary boundaries.

On the basis of these, scenarios reveal to what extent the Biocity goals may be reconciling different perceptions by getting and keeping interest groups involved; interoperability between green space management and urban development; funding and implementation; impacting culture and behaviour towards transformation.



Five key topic areas to facilitate the transition to Biocities.

Different scientific disciplines are needed: social sciences and humanities, ecology, civil engineering, architecture and spatial planning and design.

The implementation of the Research Agenda will require five pathways:

(i) International coordinated research effort, (ii) Interdisciplinary networks, (iii) Integration of other initiatives, (iv) Conceptual capacity building and (v) Support for emerging disciplines.

Priorities and cross-cutting research needs

	Governance	Circular bioeconomy	Climate Resilience	Social and Human environment	Biodiversity
Governance		Identifying sustainable practices, policies and SDG-action plans that effectively support the emergence of Biocities			
Circular Bioeconomy	Developing social innovations that support technical innovation and the transition to circularity		Understanding climate mitigation potential of circularity and technical innovation in engineering and building technology.	Identifying ways to make the urban circular bioeconomy truly inclusive and equitable in terms of social, economic and spatial aspects	Assessing the effects of circular strategies on biodiversity.
Climate Resilience	Identifying types of policies that are crucial to avoid catastrophic impacts of climate change.	Understanding the effect of climate change on bioeconomy resources.		Assessing the interlinkages between resilience, human health and biodiversity and identifying the levers to provoke sustaining loops.	Identifying strategies to mitigate the impact of urban climate on urban ecosystem.
Social and Human Environment	Identifying adaptive and co-creating governance models that promote inclusivity and social equity.	Developing social innovations and identifying drivers of cultural change to foster circular and sufficient practices.	Identifying soft infrastructures changing habits and practices in areas of mobility, consumption and circularity.		Identifying approaches to better assess services and disservices offered by biodiversity in urban ecosystems.
Biodiversity	Determining levers to raise the awareness of long-term benefits of biodiversity conservation among citizens and policymakers.	Balancing the impacts of circularity on biodiversity and other ecosystem services such as resource productivity.	Monitoring and assessing the impacts of climate change on the urban ecosystem.	Mapping and investigating the linkages between biodiversity and human wellbeing.	

The Research Agenda has been developed as part of the European Forest Institute (EFI) Network Fund call.

Wilkes-Allemann, J., van der Velde, R., Kopp, M., Bernasconi, A., Karaca, E., Coleman Brantschen, E., Cepic, S., Tomicevic-Dubljevic, J., Bauer, N., Petit-Boix, A., Cueva, J., Živojinović, I., Leipold, S. and Saha, S. 2022. Research Agenda – Biocities of the future. European Forest Institute. https://doi.org/10.36333/rs4