



Livable Urban Futures Scoping Workshop, Part II **Phoenix, Arizona, USA | February 15 - 16, 2016**

Concept Note



**Urbanization and Global
Environmental Change**



Stockholm Resilience Centre
Sustainability Science for Biosphere Stewardship

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Background

In July 2014, the UGEC Project and the Stockholm Resilience Centre were awarded a grant under the title of ‘Livable Urban Futures’ by [Future Earth](#) via the National Science Foundation to continue efforts towards defining critical pathways for co-produced interdisciplinary and transdisciplinary urban research, and to explore the next phase of urban research within Future Earth. As part of this process, a workshop was held on March 12-13, 2015 at the National Center for Atmospheric Research in Boulder, Colorado, USA. The outcomes of that workshop included: A) the scoping of initial flagship urban research activities; and B) the design of an urban platform for facilitating interdisciplinary research coordination and co-design with urban stakeholders and practitioners. This platform and initial activities are detailed in the [Future Earth Urban Platform \(FEUP\) Design Draft](#).

This second workshop offers a venue to continue efforts towards conceptualizing and establishing two flagship activities outlined in the FEUP Design Draft. The first is called Urbanization, Food-Energy-Water Systems And Extreme Hazard RiSKs (UNMASK), which builds on the Adapting Cities to Climate Extremes and Variability activity outlined in the Draft. The second is the Alternative Urban Futures (AUF) activity. Thus, the workshop will be designed to have these two tracks running in parallel with the possibility of merging them into one larger initiative (see key questions at the end of this document).

Track 1: Urbanization, Food-Energy-Water Systems And Extreme Hazard RiSKs Cities (UNMASK)

Description: Cities and urbanization are increasing demands for food, water, energy and land, which can have negative impacts on both human and ecological well-being. Associated shifts in carbon and hydrological cycles, greenhouse gas (GHG) emissions, food systems and security further shape local vulnerabilities to flooding, heatwaves and other climate and environmental hazards in urban areas, creating profound risks for globally connected food, energy and water (FEW) systems.

Sustainable urbanization opens many questions on the uses of FEW systems resources, and represents a regional, national and global problem for resource and disaster risk managers, governments, developers, civil society and the general population. However, the interplay and feedbacks between urbanization, FEW systems, and extreme hazard risks have not been examined in a systematic and/or integrated way.

It is increasingly important to understand how FEW systems and extreme hazards (and their interactions) will evolve under changing climate and development conditions (urbanization), and how to enhance human capacities to mitigate the impacts to FEW systems and to adapt to extreme hazards. A better understanding of these system interactions and feedback loops has implications for urban efforts to foster human well-being and reduce risk. This knowledge can inform the development of innovative and diverse societal pathways for improving urban socio-demographic, economic, technological, environmental and governance system domains and interactions.

Goals: To examine key social and ecological domains driving FEW system changes and interdependencies. In doing so, we will be able to examine - *What interventions in socio-institutional, ecological, and built systems that drive FEW interdependencies are most likely to foster resilience to extreme hazard risks and improve human well-being?*

The workshop participants will examine the state of the science, identify research gaps and key research questions, and propose a research agenda on the interactions and feedbacks among urbanization, FEW systems and extreme hazard risk.

Track 2: Alternative Urban Futures (AUF)

Description: This activity is aimed at the identification and definition of alternative urban futures and the participatory examination of the impact of these futures on both the environmental health of the planet as well as the possibilities for achieving a more inclusive and just society.

This research is predicated on the notion that we need to re-think human well-being underpinned by a better understanding of (a) key societal values, including how quality of life is defined and measured, and (b) cities' dependence on and relationship to regional and global ecosystems. Working in close collaboration with local government officials and a range of urban stakeholders, the research team will explore alternative urban trajectories based on conventional development objectives such as enhanced productivity levels and increased per capita income, as well as alternative development goals such as poverty reduction and maintenance of ecosystem services.

The project will employ a scenario approach to explore alternative urban development pathways for a diverse set of four to five partner cities spanning the Global North and South, each reflecting local socio-cultural and historical considerations. Scenario planning, using both quantitative (scenario-based methodologies, data analytics) and qualitative (narratives, voices and visions) methods, would be co-developed by the researchers and a team of local practitioners, planners, policymakers, civil society and other stakeholders from study cities. The scenarios will reflect an understanding of urban regions as complex systems with connections to rural and other regions, drivers and feedback loops.

For each city, consideration of the alternative future scenarios will include an examination of the required policies and governance models, values and lifestyles likely to advance a shift in dominant societal values and social practices toward an emphasis on quality-of-life, social solidarity, and an ecological ethos.

Goals: This research is driven by a set of user-driven research questions, to be answered in a co-produced manner involving academics, government officials, civil society organizations and members of the public. The project's purpose will be to embrace the different imaginings of various groups or positionalities that makes up the 'we' in the context of the following questions: *How do we imagine our urban future and how can we envision alternatives that are more sustainable and socially just? What do we have to transform in order to achieve this future? What are the planetary (environmental) implications of this imagined future? What are its social, equity, justice, cultural, biophysical and political implications? What are the values that underpin the production of alternative urban futures? Is this approach scalable and how can the exploration of alternative urban future scenarios be used to advance sustainable urbanization?*

Participants: Approximately 15 researchers and experts from fields such as engineering, sociology, hydrology, economics, ecology, geography, sustainability science, humanities and planning will attend. They will cover the following areas of expertise: participatory scenarios and modeling, lifestyles and

culture, footprint and metabolic analyses, risk, vulnerability and resilience, landscape and hydro-climatologic models (e.g., Weather Research and Forecasting Hydrological model - WRF-hydro), food security, urban ecology, economics, governance and urban planning.

Outputs: The workshop will offer the opportunity for participants to produce a) foundational peer-reviewed papers on research needs, data gaps, integrated methods and harmonized tools for UNMASK and AUF relevant research; and, b) outlines for research proposals to be submitted to identified funding sources. Some of these funding opportunities include [NSF INFEWS](#), the anticipated Belmont Forum call on Urbanization and FEW Systems expected to be announced in February or March 2016 as well other appropriate identifiable funding sources. As the workshop progresses we may conclude either that AUF and UNMASK will be funded separately through distinct funding sources or if logical, merge into one larger initiative. This decision will be made by participants during the workshop.

Pre-Workshop Questions: Each participant will be asked to draft a 1-2 page background paper presenting an overview of the current state of research as well as indicating research gaps in their area of expertise as it relates to the workshop theme. **Responses to the following questions are due by Friday, February 5.** They will then be shared via a private meeting website. Participants are encouraged to read all responses before the workshop begins. Note that questions 1-3 relate to the UNMASK research track while questions 4-6 relate to the AUF track.

Background questions:

UNMASK Track

1. Given the current state of knowledge in your field, what are the greatest gaps in understanding the interactions between urbanization and Food-Energy-Water Systems?
 - a. How do increasing extreme hazard risks add another layer to understanding these interactions or widen the research gaps?
2. What interdisciplinary and trans-disciplinary approaches require new or improved research (data/methods/frameworks) to close those gaps?
3. How can we be more innovative in our responses to mitigate impacts on FEW systems and adapt to extreme hazards in urban areas?

AUF Track

4. Given the current state of knowledge in your field, what are the greatest gaps in understanding the use of alternative urban future visioning/scenarios to critically examine conventional assumptions and advance sustainable urbanization?
5. What interdisciplinary and trans-disciplinary approaches require new or improved research (data/methods/frameworks) to close those gaps?
6. What are the prerequisites and elements of diversity required to capture a representative cross-

sectional sample of perspectives from different positionalities for obtaining a credible and fairly robust grasp of alternative urban futures?

- a. How can alternative urban future scenario projects be structured to enhance the likelihood of city-level implementation action towards sustainable urbanization?

Both Tracks

7. Are these two agendas best pursued separately as parallel tracks or integrated into complementary strands of a joint undertaking, and if so, how?