

**Fast Track Initiatives and Cluster Activities
February 2014**

APPLICATION FORM

Applications must be submitted electronically to diana@futureearth.info

Revised version

1. GENERAL

1.1. Is this proposal for a Fast Track Initiative (FTI) or a Cluster? Combined FTI and Cluster

1.2. Title of activity: Liveable Urban Futures

1.3. Key objective(s) and expected output of the FTI or intended outcome of the Cluster, e.g. publications, new initiatives, etc.:

The objective of the combined initiative '*Liveable Urban Futures*' is to ultimately define critical pathway(s) for co-produced interdisciplinary and transdisciplinary urban research within the Future Earth framework. It will establish the scientific foundation, goals and mission of an urban initiative(s) based upon the collaboration and expertise of the Global Environmental Change (GEC) projects, outside researchers and stakeholders (see Section 2).

This will likely spawn several initiatives including initiation of one to three major projects and coordinating mechanism for urban research within Future Earth. Likelihood of more than one urban initiative is high, given the diversity of urban-related research within the GEC community and elsewhere. Anticipated publications include: an edited volume, discussion papers, high-profile journal publications, and if appropriate, a Science Plan(s) establishing the research framework for the co-developed initiative(s).

A distinctive output from this process will be an edited volume providing a representation of the different intellectual traditions of how 'urban' is conceived, and researched scientific domains focused on key interactions between urbanization, urban areas and environmental change. Chapters will not only assess what disciplinary and practical knowledge exists on urbanization in the GEC context, but will be forward looking and thus ask proactive questions and explore cutting edge science. As such, this output will form a benchmark in its own right, but also represent the first tangible product of the urban transition process into Future Earth.

1.4. Requested amount (specify currency):
We request US\$110,000 or € equivalent.

2. APPLICANTS

2.1. Lead Scientist(s)

Name: Thomas Elmqvist
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2.2. Other applicants (alphabetical by last name)

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Name: Hassan Virji
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Core project or other community represented: START and its regional networks in Africa and Asia

Name: Geoffrey West
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2.3. Please identify any stakeholders who will be directly involved in the activity.

The following have been identified as a) leaders with respect to their involvement with urban research, and/or policy and practice; b) organizations that are in the beginning stages of including urban-GEC interactions work into their portfolios, and thus advantageous to include in our activities; and/or c.) inter-/non-governmental organizations including organizations with regional foci (the list is not meant to be exhaustive; yet representative of those we foresee having direct engagement with the book writing and in broader activities):

- Asia-Pacific Network for Global Change Research (APN)
- Asian Cities Climate Change Resilience Network (ACCCRN)
- C40 Cities Climate Leadership Group (C40)
- European Initiative on Smart Cities | SETIS - European Commission
- Evidence and Learning from Latin American Cities (ELLA)
- ICLEI Local Governments for Sustainability (ICLEI)
- Inter-American Institute for Global Change Research (IAI)
- International Finance Corporation (IFC)
- Institute for Social and Environmental Transition-International (ISET)
- Global Change System for Analysis, Research, and Training (START)
- Living with Environmental Change (LWEC)
- Red Cross/Red Crescent Climate Centre
- Rockefeller Foundation 100 Resilient Cities initiative
- Slum and Shack Dwellers International (SDI)
- UN-HABITAT
- World Bank Low-Carbon Liveable Cities Initiative

3. ACTIVITY DETAILS

3.1. Scientific rationale for proposed activity:

The pace and scale of contemporary urbanization is a defining feature of the Anthropocene, which characterizes the dominance of human influence on the global environment. For the first time more people live in urban than rural areas, approximately 60% or 3.5 billion people, and this number is projected to increase to 6.3 billion by 2050 (UN, 2012). Urbanization is the most human-dominated landscape on the planet and is a key driver of environmental changes at local to regional and global scales through alteration of land cover, ecosystems and biodiversity, hydrological and biogeochemical cycles (Grimm et al., 2008). Moreover, the global environmental changes already underway are profound and in some ways irreversible.

Altogether, this has serious implications for future human and environmental health, and social wellbeing. There is an urgent need and at the same time a window of opportunity for change - to build and re-build cities on low-carbon and resilient principles, that are equitable,

just and ecologically sound before irreversibility and lock-in. The complexity of urban systems and the global sustainability challenges that we face require inter- and trans-disciplinary research approaches that adopt a contextual approach to finding solutions.

Traditions of addressing urban complexities have long existed in the social sciences (sociology, geography, anthropology, demography) as well as in engineering science (built constructions in relation to density, population size, and economic function). In recent years, the relationships between urbanization, urban areas and environmental change have generated increased interest in research and policy circles for two reasons:

- The accelerating rate of global urbanization, coupled with a growing recognition that urban areas are becoming key sources of natural resource use, emissions, and risks, has made the need for further research in this area starkly evident.
- Many cities have become key players in both the sustainability and the resilience arenas, e.g., they have declared their commitment to reducing their reliance on fossil fuels in an effort to curb greenhouse gas (GHG) emissions.

Despite decades of independent lines of research on GEC, urban areas and urbanization, we have barely scratched the surface in our efforts to understand the many processes and interconnections through which resource use and environmental burdens driven by urbanization induce environmental changes, and which city-relevant interventions are effective, where, and why. A lack of interdisciplinary and co-produced research on the influence of urbanization and urban areas on environmental change profoundly limits the potential to intentionally shift development pathways through planned governmental actions. Without an improved and co-produced understanding of the diverse linkages between natural, socio-institutional and built-environment components of urban change and environmental impacts, it will be difficult to evaluate the potential and efficacy of GHG mitigation and adaptation actions.

Thus, efforts are needed towards creating more holistic frameworks (Elmqvist et al., 2013) and integration that builds upon the existing research foundation and facilitates intensive interactions among multiple disciplines in developing new perspectives, theory and methods for understanding urban systems, and to further explore the key research and policy questions for a better understanding of how to achieve global sustainability in an urbanizing world.

The activities described herein outline a process, which will result in a clear and well-defined urban research initiative(s) within the Future Earth framework [i.e., the content for a Science Plan(s)]. The key point is that there are a number of projects and initiatives within and outside of the GEC Programmes engaged to varying extents in urban research and practice, but coming from very different disciplinary backgrounds. The proposed workshops are designed to find the synergies and to develop a new integrative and interdisciplinary urban project within Future Earth. This will take dialogue and time, but is a very important process for developing a true co-designed and bottom-up driven initiative.

UGEC is currently in its synthesis phase and much of its 8+ years of work will be informing the process and ways forward for the next phase of ‘urban’. Additionally, a Scoping Meeting (February 2014) has already started the process of engaging urban researchers and other stakeholders around the same table, and progress has been made in thinking about key urban research and practice/policy questions moving forward; gaps in knowledge; major challenges and opportunities for developing conceptual and methodological frameworks that support the global transformation to sustainability in the context of an urbanizing planet; and operational

mechanisms that must be in place for a successful interdisciplinary project that fits within Future Earth.

As part of this process we will develop a more interdisciplinary view on ‘What is urban?’ within the framework of Future Earth. This question is an entry point whereby leading scholars from relevant disciplines and urban practitioner communities can address many of these same key questions and develop their own views through exploring gaps in knowledge, conceptual and methodological needs for doing urbanization and GEC research as well as challenges and opportunities for developing more interdisciplinary understandings of the urban system. This activity will allow for synthesis, offer messages and suggestions for ways forward in the field, and develop the foundation for a fresh interdisciplinary approach within Future Earth which is the long-term goal of our combined activities.

References

- Elmqvist, T., Fragkias, M., Goodness, J., Güneralp, B., Marcotullio, P. J., McDonald, R. I., Parnell, S., Schewenius, M., Sendstad, M., Seto, K. C., & Wilkinson, C. (Eds). (2013). *Urbanization, biodiversity and ecosystem services: Challenges and opportunities. A global assessment*. Springer. doi: 10.1007/978-94-007-7088-1_1
- Grimm, N. B., Faeth, S. H., Golubiewski, N. E., Redman, C. L., Wu, J. G., Bai, X. M., & Briggs, J. M. (2008). Global change and the ecology of cities. *Science*, 319(5864), 756–760.
- UN (2012). *World urbanization prospects: The 2011 revision*. New York: United Nations.

3.2. Project plan: Specify proposed activities, timeline, major events, techniques used etc. (*funding available July 2014*)

Experts are currently being identified to serve on a 12-15 member Urban Transition Team (UTT) that will be tasked with overseeing the process and providing the overall intellectual direction for this endeavour. Dr. Thomas Elmqvist (Stockholm Resilience Center), Dr. Patricia Romero Lankao (NCAR) and Dr. David Simon (RHUL) will share the responsibilities of chairing the UTT. Additional UTT members will largely include the applicants listed in Section 2.2 and/or those nominated by the applicants representing natural, social, engineering science, health and humanities disciplines as well as practitioners and younger scholars to provide a diversity of knowledge and insight to the process. The ideas and ultimately the publication of ‘What is urban?’ will inform the visioning process through stocktaking and assessment of conceptualizations and characterizations of urban areas, supporting development of interdisciplinary research, and policy, practice and further identification of relevant stakeholders to become involved in this process. The authors of the chapters in the ‘What is Urban?’ publication will include members of the Urban Transition Team so that cross-fertilization of information will easily flow, and the activities outlined in both of the proposals are strategically planned to optimize this knowledge exchange.

		Activity	Goals / Outputs
2014	August		Establish the UTT; Teleconferences to define work goals and scope for September in-person UTT meeting, and to establish the editorial team, chapter authors and finalized outline for the edited volume; Consultation and engagement with stakeholders will continue to inform the UTT process
	September	<i>1st UTT Meeting</i>	First Order Draft White Paper outlining the objectives and process for moving forward with defining the urban research agenda(s); Monthly teleconference with book author team
	October		Revisions to the Draft and preparation for sessions at the UGEC Synthesis Conference and Book Workshop; Monthly teleconference with book author team
	November	<i>2014 UGEC Synthesis Conference / Book Workshop</i>	Stakeholder engagement and input to UTT process and Draft; Develop the content and structure of the book, as well as the timeline for publication
	December		Preparation of a Second Order Draft White Paper, continued stakeholder engagement, public comment period and preparation of February Scoping Meeting; Writing of book chapters
2015	January – March		Preparation of a Second Order Draft White Paper, continued stakeholder engagement, public comment period and preparation of February Scoping Meeting; Writing of book chapters
	April	<i>Scoping Meeting / Editors' meeting</i>	20-25 Participants include UTT and stakeholders listed in Section 2.3; Establishment of Final Draft White Paper and concrete ways forward regarding research, process and related outputs listed in Section 1.3; Editors' meeting will assess progress of the manuscript and make any needed revisions to content
	May – July		Completion of Final Draft White Paper, focus on writing and collaboration of publications including Science Plan(s), and UTT member teleconferences; Writing and editing of book chapters continues
	August	<i>2nd UTT Meeting (via Adobe Connect or similar tele-connect platform)</i>	Assessment of progress, define and fine tune appropriate outputs, and ensure the mechanisms are in place to spring board the new urban initiative(s)
	July - December		Ongoing work as is needed for finalization of all determined publications and initiative(s)

4. FUTURE EARTH PRINCIPLES

4.1. How does this proposal fit within the Future Earth research themes and what societal needs does this proposal address?

There is a great societal need to address global sustainability challenges in the context of urbanization. Current and projected urbanization trends and how these processes interact with others within the Earth system will have far-reaching effects on socio-economic and environmental functioning at multiple scales. The capacity and preparedness to manage increasing urbanization, uncertainty and risk, and changing environmental conditions will certainly affect human and environmental health and livelihood, equity, fair stewardship of resources, urban climate justice concerns and overall societal wellbeing.

Understanding and disaggregating multi-scale complex interactions associated with the future urban world is an essential step in assessing the impact of cities on the biosphere and in making explicit the science relevant for policy and governance. This knowledge can aid in policy development such as urban design principles that are ecologically informed through better management of ecosystem services and biodiversity and hence contribute to greater urban 'liveability', human and environmental health and well-being.

The envisaged urban initiative(s), which is the end goal of the activities will crosscut and integrate all three Future Earth research themes. The goal is to have a broad, more interdisciplinary, cutting-edge and societally relevant set of research questions addressing the following:

Dynamic Planet

- How does urbanization drive planetary environmental changes? How does urbanization vary at different scales (space, place, time, culture)? What are the risks and tipping points in key environmental components such as biodiversity, climate, air quality and hydrology?

Global Development

- How does GEC affect (threaten) urban populations, livelihoods, economic activities, infrastructures and other things we value? For example, how vulnerable or adaptable are urban actors and economic activities to current temperatures and to a future 3-4°C warmer world?

Transformation towards Sustainability

- What are the limits, barriers and opportunities to transition to a different – more sustainable and resilient – world? What lifestyles, ethics and approaches to sustainable, economically successful and liveable cities in the world are compatible with a transition to global sustainability?

4.2. Describe any elements of co-design and/or co-production in this proposal

Success will hinge upon a bottom-up process from the breadth of the urban communities themselves. A critical requirement will be to identify and engage the key stakeholders for co-design and production - national and international, global to local (many are listed in Section 2). There are many organizations that we intend to include in the process as outlined in the proposal, namely the IAI, START, APN and ACCCRN, in order to draw on their solid networks and ensure adequate representation and perspectives from the developing world. This includes non- and inter-governmental perspectives from organizations such as TEEB,

Rockefeller Foundation, ICLEI and UN-HABITAT. Many of these have a long history of working with local governments, identifying both challenges and opportunities in dealing with implementing sustainability at the local scale. We will also reach out to include less prominent community-based organizations such as the Slum and Shack Dwellers International. These non-research communities in the strict sense are important to ensure inclusion of the multitude of diverse perspectives including policy-practice communities at a variety of scales (local to global) in addition to researchers.

There will be opportunities for the wider urban network to be involved in the process through surveys, future public comment periods on draft documents and through engagement in the UGEC Synthesis Conference in November 2014.

Concerted attention will be given to finding new mechanisms for meaningful and iterative dialogue with stakeholder communities throughout the development process of the new urban initiative(s), and these must have relevance to broader frameworks/ initiatives, e.g., Future Earth, IPCC Assessment Reports, and the Sustainable Development Goals.

4.3. Describe the interdisciplinary aspects of this proposal

Establishing an interdisciplinary urban-focused initiative(s) is central to this proposal and positions our community to best engage in the kind of cutting-edge research strongly needed for our society and endorsed by Future Earth. UGEC is currently the only 'urban' project, and mainly comprises social scientists, but many others have an urban component. Synergies we've identified include: natural and human drivers of air quality and climate change in urban systems, and feedbacks of decision-making (IGAC); interactions between urbanization and ecosystem services and biodiversity at local to regional scales, with links to human health and wellbeing (DIVERSITAS); and population health sciences to quantify the benefits and harms from different urban pathways (GECHH).

It is necessary to include this expertise, to include other GEC Programmes and projects, and disciplines within the natural and health sciences, in order to integrate the communities and develop the much-needed conceptual and methodological frameworks for addressing critical sustainability issues. Through our activities we intend on breaking new frontiers by confronting the conflicting rationalities across the disciplines that work on the inherently interdisciplinary topic of urban areas. The intention is to acknowledge the various perspectives from all the different fields and identify ways forward for developing new holistic perspectives and approaches for moving forward within Future Earth.

4.4. Describe any capacity building aspects to this proposal

A key capacity building component will be to involve young scholars, such as postdoctoral students and early career researchers identified by START and other partners. Inclusion in the UTT, Scoping Meeting and in the author teams of chapters will give these young scholars the opportunity to contribute fresh ideas, network with more seasoned researchers and also to function as a bridge to future urban-related projects beyond the ten year horizon of Future Earth.

We also envision a major role for academics and practitioners across regions and low-income countries so as to develop capacity in terms of networking and science/science-policy knowledge sharing. Although many of the applicants do reside in the North, they are in fact actively engaged in the developing world through their personal backgrounds, and research

and/or practice and have solid networks in these countries. As an example, the Urban Transition Team will be led by individuals with strong non-US/European networks. Thomas Elmqvist leads multiple projects in African cities. David Simon is South African and his research and networks expand beyond the UK to Southern, East and West Africa (especially, Namibia, South Africa, Kenya and Ghana), Sri Lanka, Thailand and the Philippines. Patricia Romero Lankao is Mexican and is well-networked throughout Latin America and has research expertise in the following cities: Buenos Aires, Bogotá, Mexico City, and Santiago. As most urbanization will occur in developing countries, the involvement of these scholars and practitioners is essential for giving true representation to those whose lives will be the most affected by urbanization and GEC processes, and for adding value to the traditional knowledge base and existing response strategies within these locations.