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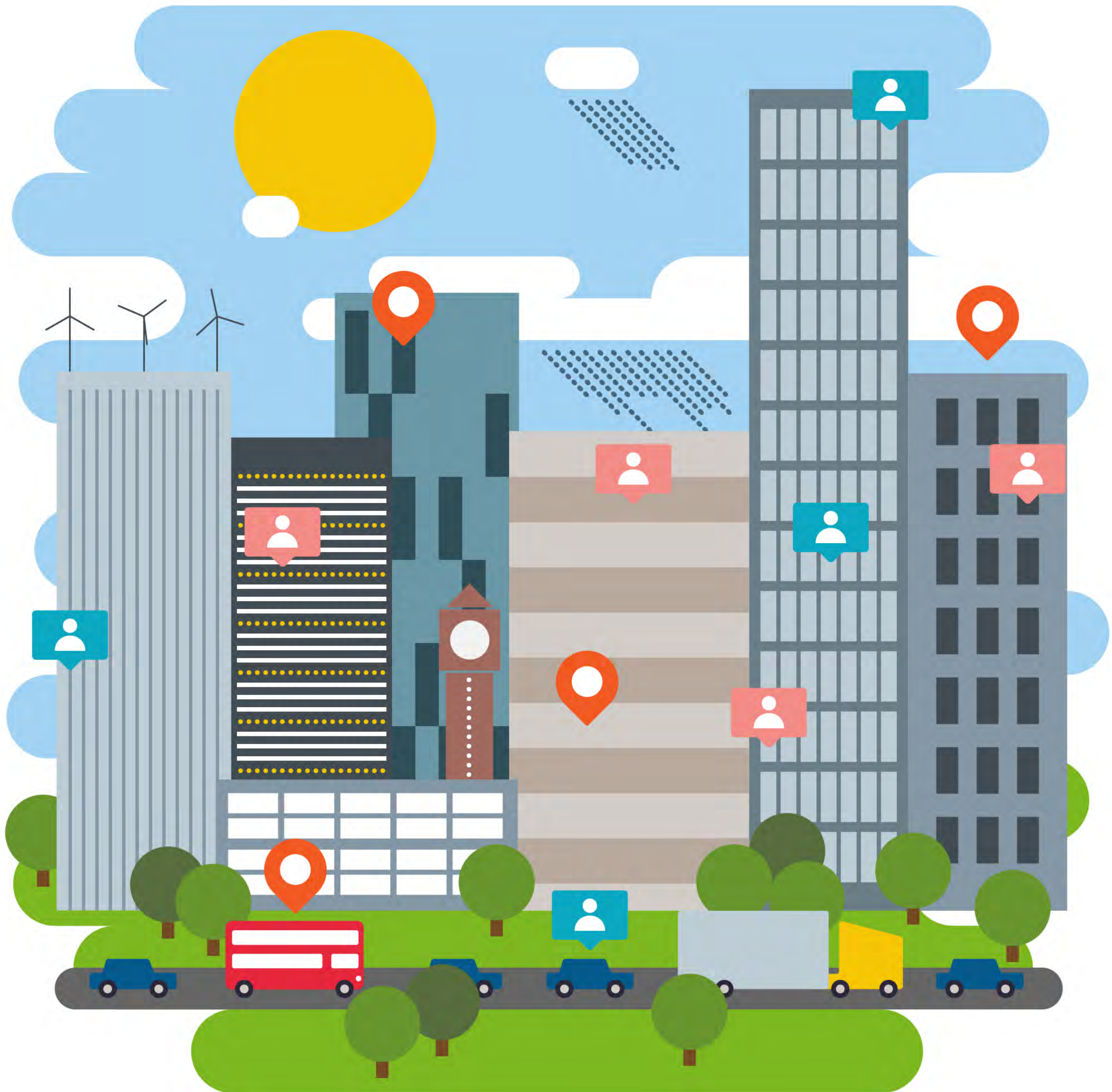
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# Dialogues of Sustainable Urbanisation

Social Science Research and Transitions to Urban Contexts

Edited by  
Jenna Condie and Anna Mary Cooper



DIALOGUES OF SUSTAINABLE URBANISATION:  
SOCIAL SCIENCE RESEARCH AND  
TRANSITIONS TO URBAN CONTEXTS

EDITED BY JENNA CONDIE AND ANNA MARY COOPER

Dialogues of sustainable urbanisation: Social science research and transitions to urban contexts

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## WELCOME TO THE BOOK OF BLOGS

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JENNA CONDIE, UNIVERSITY OF WESTERN SYDNEY, AUSTRALIA, AND ANNA MARY COOPER,  
UNIVERSITY OF SALFORD, UK

Welcome to the book of blogs, a collection of diverse works from researchers across the globe who all have something important to say about the way in which our world is changing and how we can strive towards a more sustainable future. This book emerged from an International Social Science Council (ISSC) meeting in November 2014 of early career researchers, who gathered in Taiwan to discuss transitions to urban contexts from a social science perspective. The seminar involved weeklong discussions about sustainable urbanisation and the contribution of social science research to sustainable urban futures. Yet a week was not long enough to hear the diverse perspectives within the room, let alone incorporate the plethora of viewpoints beyond it. Within the ISSC discussions we concluded that one definition of sustainable urbanisation is not possible and that sustainable urbanisations are in play. The transitions to urban contexts taking place, and those that are anticipated within our futures, were characterised in terms of their plurality, diversity, fluidity, and change. This book embraces such uncertainty by welcoming dialogues, rather than a monologue, on the urbanisation processes taking place across the world and what to do about the places we build, and the impacts of human activity on the environment, health and climate.

This book is also about being heard. The call for contributions was therefore open to people at any career level, based within any organisation and not restricted to academics. We took a crowdsourced approach to generate a book of blogs with the aim of breaking through some of the boundaries set by traditional publishing formats. Therefore posts have not been peer-reviewed in the traditional way and only 'light touch' editing has taken place to ensure that individual voices remain as unfiltered as possible. Despite this lighter touch approach there were still some posts that have not been included in the final version, as there was a need to guarantee that clarity and a standard of writing was present to help ensure the book is well used and referenced by all. Relatedly, we also recognise that publishing this book in English excludes many voices and frames sustainable urbanisation in that meaning system; but perhaps this could be a future project for someone to take on and produce a multiple language format. We hope that the blogs within the book can be used and referenced accordingly to support work, lead to collaborations, or spark ideas for future initiatives. Within the e-version of this book, many authors have included hyperlinks; we recognise these will not work in printed copies but would encourage you to also engage with the e-version to access additional material in blogs of interest.

The strength of this book and the interest in this area is highlighted by the overwhelming



response received in relation to the call for contributors. This book includes the work of over 80 researchers. To help facilitate readers going through the book it has been organised into sections: definitions of sustainability, urban governance, engaged citizens, urban divides, movement and mobilities, China, making places, environment, low carbon futures, alternative economies, and digital futures.

As the editors we would like to thank all those who have taken the time to contribute and responded so well to emails. It has led to an eclectic mix of articles that cover aspects of sustainable urbanisation globally and in relation to a huge variety of topics. We would also like to thank Kandy Woodfield, who edited the NSMNSS Book of Blogs for guidance and reassuring words through this process and the ISSC for their support in making this project happen.

Finally, on behalf of all those who have included their work here, we really hope that you enjoy the read; dip in and out, and use it to encourage others to blog their work. We hope it inspires other collections on urban and environmental issues in the future. Each post is accompanied with the author's contact details so that you can get in touch with them – long may our dialogues continue.

## FOREWORD

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LAURA VAN VEENENDAAL, INTERNATIONAL SOCIAL SCIENCE COUNCIL

In November 2014, 20 early career social scientists from all over the world and from a wide range of academic disciplines met in Taipei, Taiwan, for a seminar on sustainable urbanization. They were there as part of the World Social Science Fellows Programme of the International Social Science Council (ISSC), to push forward the limits of knowledge on sustainable urbanization and make plans to keep doing so after the seminar. This seminar was the third of a series on sustainable urbanization, each bringing together 20 early career social scientists from around the world.

This book of blogs is inspired by discussions in Taipei. It curates over 80 contributions, from Fellows that took part in the seminar, and from others. The contributions showcase comments, research results, and thoughts on sustainable urbanization. They are often innovative, provocative, thought-provoking, exciting. We believe that this book shows the richness of the research currently undertaken by an emerging generation of social scientists tackling one of the most pressing challenges of our times, sustainable cities.

The ISSC is proud that this volume started at one of its World Social Science Fellows seminars, and thanks Fellow Jenna Condie for having initiated the project.

Working closely with us on the organization of this series of seminars were the former International Human Dimensions of Global Environmental Change Programme (IHDP, now part of Future Earth) and the Comparative Research Programme on Poverty (CROP). We also wish to thank our generous hosts, the National Taipei University and the Integrated Research on Disaster Risk Programme's International Center of Excellence, with the support of Academia Sinica. The Swedish International Development Cooperation Agency (Sida) is the generous supporter of the World Social Science Fellows Programme as a whole.

This book is now out in the world and we hope that it is only the start of something bigger. Please enjoy, reflect, nod your head in agreement or violently disagree with any or all of the contributions it contains and then share. Share (twitter hashtag #ISSCBookofBlogs) and keep this dialogue on sustainable urbanization from a social science perspective moving forward.

## **Laura van Veenendaal**

*World Social Science Fellows Programme manager*



Laura manages the ISSC's World Social Science Fellows programme which aims to help build the next generation of social science leaders. Before joining the ISSC in January 2012, Laura worked as a policy officer and manager at the University of Utrecht and as a policy officer for the Royal Netherlands Academy of Arts and Sciences. She lives in Amsterdam and divides her working life between there and Paris.

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## FOREWORD

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ETIENNE NEL, COMPARATIVE RESEARCH ON URBAN POVERTY PROGRAMME (CROP)

Coping with the rapidity of both change and growth is and will increasingly prove to be a significant challenge for cities, their residents and for national governments in the future. Within this context citizen participation, sound local governance and accountability, the pursuit of environmental and resource sustainability and inclusive economic development and employment creation are critical if we are to ensure a just and sustainable future. At a broader level 2015 is a crucial year in terms of development policy as it will witness the transformation of the Millennium Development Goals into the Sustainable Development Goals, which, as the High Level Panel on the Post-2015 Development Agenda argues must go beyond the MDGs to reach the poorest and most excluded.

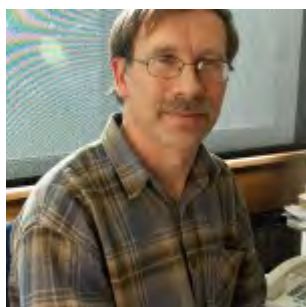
As part of the on-going debate about our collective urban future, continual dialogue and debate is essential to help ensure the sound evaluation of evidence, the interrogation of new interventions and the derivation of the most appropriate policy support. In this regard, *Dialogues of Sustainable Urbanisation* contributes to the broader processes of urban debate. Drawing on the skills and insight of young researchers and policy makers globally this work allows for cross-national comparison and for a deeper understanding of how best humanity can pursue options which facilitate the pursuit of sustainable urbanisation.

Achieving an endogenous growth trajectory which is environmentally sustainable, socially just and economically inclusive will require active commitment on the part of governments and other institutional role-players which parallel and support local citizens to engage more effectively in a process of jointly finding solutions to the challenges of growth and development. Sustainable urban development will require a conceptual framework which simultaneously considers the:

- – Macro development framework
- – The urban context
- – Urban service delivery and investment
- – Social needs and opportunities
- – Economic opportunities and challenges
- – Institutional architecture and urban policy, decentralization and legislative reform.

The promotion of debate and providing channels for the dissemination of the creativity and

insight of young researchers and policy makers, as this volume helps to achieve, is an important step in our joint negotiation of our collective urban future.



**Etienne Nel**

*Steering Committee Member, CROP (Comparative Research on Urban Poverty Programme)*

*Professor, Department of Geography, University of Otago, New Zealand.*

PART I.

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**DEFINITIONS OF SUSTAINABILITY**

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## CHAPTER 1.

### SOCIAL SUSTAINABILITY: TOWARDS SOME EXPLANATION

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TAIMAZ LARIMIAN, UNIVERSITY OF OTAGO, NEW ZEALAND

Over past few decades, social sustainability has been increasingly influencing urban policy, housing, and the planning of cities all over the world. Specifically, in recent years, social sustainability has gained increased attention as a fundamental component of sustainable development. However, despite the passage of almost one and a half decades since its first introduction as the third pillar of sustainable development in a European Council (EC) meeting in 2000, social sustainability is still struggling to find its position in the sustainable development agenda. Since 2000, relatively less consideration has been given to the social dimension of sustainable development in comparison to environmental and economic dimensions (Burton, 2000; Colantonio & Lane, 2007; Drakakis-Smith, 1995), which means that there is still limited understanding of what constitutes social sustainability and how it might be achieved.

There is no broadly accepted approach for defining, measuring and analyzing social sustainability as a multi-dimensional concept and surprisingly, there is still no agreement on which criteria should be considered when assessing this concept (Bramley, Dempsey, Power, & Brown, 2006; Dempsey, Bramley, Power, & Brown, 2011; Littig & Griessler, 2005). Indeed, as long as the social dimension of sustainable development lacks its distinct definition from economic or environmental sustainability, it cannot present its own models of practice. Despite these difficulties, some researchers have attempted to define social sustainability.

One of the most common definitions of social sustainability is to provide sensible and equitable distribution of both physical and social resources for people; physical resources like shelter, food, clean water etc. and social resources such as participation in decision making processes, information, transparency of actions, freedom of speech, etc. For this group of researchers, social sustainability is associated with decision-making processes and can only be attained if development practice and participatory planning is introduced in the society (e.g. Burton, Jenks, & Williams, 2003; Choguill, 2008; Haapio, 2012).

Within the urban literature, social sustainability debates have largely been separated from the environmental discussions. A good example is in the definition presented by Yiftachel and Hedgcock (1993, p. 140) as “*the continuing ability of a city to function as a long-term viable setting for human interaction, communication and cultural development*”. They introduce the socially sustainable city as the one marked by a common sense of belonging, solidarity and vitality among its residents. This definition discusses social sustainability both in terms of individual quality-of-life issues

as well as in terms of the collective functioning of society. Affected by the earlier definition of Yiftachel and Hedgcock, Polèse and Stren (2000, p. 15\_16) provide a definition of social sustainability with a special focus on urban environments as “*development (and/or growth) that is compatible with harmonious evolution of civil society, fostering an environment conducive to the compatible cohabitation of culturally and socially diverse groups while at the same time encouraging social integration, with improvements in the quality of life for all segments of the population*”. Their definition emphasises the physical environment (e.g. public spaces, urban design and housing) within the sustainability. They also highlight the importance of the economic (development) and social (social integration, cultural diversity and civil society) dimensions of urban sustainability.

In this line, Chiu (2003) refers to social sustainability as improvement and maintenance of the well-being of current and future generations. She identifies three different interpretations of what theorists view social sustainability to encompass. The first of these interpretations is one in which social sustainability is equated with ecological sustainability. This means that in order for an activity to be socially sustainable, it must maintain the current social structure, value and the like, as these constitute social limitations just as the environment contains ecological limitations. The second interpretation is an environment-oriented approach whereby social sustainability refers to “*the social conditions necessary to support ecological sustainability*” (2003, p.224). The third and final one is a people-oriented approach which emphasises social cohesion and inclusion, requiring inequalities in access to resources to be righted.

In 2011, Vallance, Perkins and Dixon continue Chiu’s work by making a clearer distinction between what Chiu calls ‘ecological sustainable development’, ‘social norms’ and ‘equitable distribution of opportunities and resources’. In their study, Vallance et al. (2011) present a tripartite definition of social sustainability as ‘development social sustainability’ with its concerns about inequity and poverty, ‘maintenance social sustainability’ which addresses the preservation of socio-cultural practices and patterns in the context of economic and social change, and ‘bridge social sustainability’ which refers to the behavioural changes in order to achieve bio-physical environmental goals. They argue that these distinctions between the different types of social sustainability are often underestimated, overlooked or ignored in the literature (Vallance et al., 2011).

More recently, Chiu’s points are reflected by Dempsey, Brown, and Bramley (2012) studies, which have further defined urban social sustainability as “*the continuous ability of a city to function as a viable, long-term setting for cultural development, human interaction and communication*” (2006, p.16). Their analysis of urban social sustainability emphasises two overarching dimensions at the core of the notion of social sustainability as: ‘social equity’ with particular reference to access to opportunities and services; and ‘sustainability of community’. The former dimension is concerned with the notion of social justice, urging the equitable distribution of resources in society in order to provide fair access to local services, housing and jobs. The second concept is linked to the continuing functioning and viability of society as a collective entity.

As is clear from the above, there is no specific definition for social sustainability and each researcher defines the concept with some specific dimensions. There have been very few researchers who have defined social sustainability as an autonomous dimension of sustainable development. As a result, the concept of social sustainability has often been oversimplified or under-theorised in existing theoretical and empirical constructs. Back in 2003, Burton et al. note that the main reason that the social dimension of sustainability has received such limited attention is because it is hard to define, let alone to quantify. Also, a study by Colantonio and Lane (2007)



shows that there is limited literature specifically focusing on social sustainability, while there is much broader literature focusing on the overlapping concepts of social cohesion, social capital, social equity and social inclusion (Haapio, 2012). Yet one decade later, Axelsson et al. (2013) argue that what social sustainability means still remains unclear and needs more investigation.

Overall, while a social dimension of sustainability is extensively accepted, the exact meaning of it has not been very clearly defined or agreed (Vallance et al., 2011). As a multi-dimensional concept, social sustainability is facing an underlying question of 'what does it mean by social dimension of sustainable development?', which has variety of possible answers, with no consensus over the exact definition of the concept (Ancell & Thompson-Fawcett, 2008). For these reasons, it can be concluded that research is urgently required to clarifying the social sustainability concept through identifying its constitutive indicators.

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Taimaz Larimian is a PhD candidate in the Department of Geography at the University of Otago. Taimaz completed her master's studies in Urban Planning at University of Science and Research in Iran. Her research interests lie in the area of urban security, social sustainability and the relationship between urban form and social sustainability. For her PhD studies she works on Modelling the Relationship between Urban Form and Social Sustainability in New Zealand cities. Taimaz has attended several international conferences and published some papers in journals. She has won the IRDR Young Scientist Bursary from University College London (UCL) for her research on urban security in 2012. One of her recent papers is 'Developing a fuzzy AHP model to evaluate environmental sustainability from the perspective of Secured by Design scheme' which was published in the journal of sustainable cities and society.

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## CHAPTER 2.

# PRINCIPLES FOR SUSTAINABLE URBAN PLACES: THE WHY, WHAT AND HOW

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CHRISTOPHER LUEDERITZ AND BEATRICE JOHN, LEUPHANA UNIVERSITY LÜNEBURG, GERMANY

### *The “WHY” – Sustainable transformations of urban environments*

“*Cities are the abyss of the human species*” wrote Jean-Jacques Rousseau in 1762 (1972, p. 59). His description of human life in urban environments is widely echoed in today’s view. Cities are held accountable for producing human ill-health, contributing to climate change, and threatening the diversity and viability of life on Earth (i.e. Grimm et al., 2008). Yet, cities are also considered to have advantages compared to rural environments. They function as innovation hubs and enable material and energy efficiency (Weisz & Steinberger, 2010; Glaeser, 2011). Moreover, well-designed cities promote green and blue spaces, i.e. urban parks or rivers, benefiting the well-being of humans and nature. This is why cities have to play a pro-active role in addressing sustainability: the integrated challenge of economic development, ecological integrity, and social justice.

Current development trends provide evidence as to **why** sustainability transitions of urban environments are urgently needed. Further, substantial knowledge exists on **what** should be achieved to move towards sustainable cities. Today, around the world solution-oriented initiatives are shaping such places, which indicate **how** transformations can be initiated, nurtured, and reinforced. In this chapter we present guiding principles for sustainable urban development and revisit how urban neighborhoods can transform cities and navigate societies towards sustainability.

### *The “WHAT” – Guiding principles for sustainable urban development*

Sustainability principles guide actions that work towards the vision of an ecological integrated and socially viable future (see box 1): They (i) provide a universally functioning compass for practitioners, (ii) demarcate core objectives, and (iii) describe key actions to move towards sustainability (Gibson, 2006; Luederitz, Lang, & Von Wehrden, 2013). However, instead of offering blue prints for well-functioning urban environments, they depict the essential dynamics and features that a sustainable city comprises. Principles break down the complexity of sustainability into small, manageable chunks elaborating on the city’s way of being and functioning, its physical features, and its soul and spirit. Thus, implementing guiding principles

requires contextualization to the local specifics that drive the development path of a particular urban environment (Luederitz et al., 2013).

**Box 1:** Guiding principles for sustainable urban development. The six principles are based on the seminal work of Gibson (2006; et al., 2005) and research on their contextualization for urban environments conducted by Luederitz et al. (2013) and John et al., (2015). An additional principle developed by Gibson (2006, p. 174), refers to “immediate and long-term integration” emphasizing the need to apply the six principles simultaneously.

#### **Human-environment integrity**

*Create integrated urban ecological systems that support and protect the life support functions of existing ecosystems. Develop the city with regards to local settings and conditions, harmonize development with the given landscape, historical background, social significance, economic situation and political factors. Reduce the negative impacts and enhance the positive effects of urban environments on their surroundings.*

#### **Human well-being**

*Ensure that all inhabitants have enough for a decent life and have adequate access to resources and opportunities for improvement. Develop self-sufficient and walkable mix-use neighborhoods, reanimate the center, upgrade public places, reinvigorate the local economy, and promote sustainable business opportunities. Tackle social exclusion and ensure that the integration of marginalized stakeholders promotes positive social relationships.*

#### **Intra- and intergenerational equity**

*Design for mixed-income, affordable housing and consider the design needs of the elderly and disabled to ensure social inclusion. Avoid gentrification, consider demographic change and the needs of future residents. Provide access to good public transport for all social strata and reduce motorized individual transportation. Develop contiguous, well-connected compact neighborhoods around nodes of varying sizes and avoid urban sprawl.*

#### **Resource maintenance and efficiency**

*Better understand energy, material and nutrient flows of cities, reducing the overall consumption and ensuring efficient use. Cater for ecological responsible and resilient energy systems and comprehensive water management systems. Avoid pollution, eliminate toxic materials, and reduce waste. Improve resident's consumption patterns and living standards but also the construction and disposal of the built environment in order to prevent leakage effects.*

#### **Democratic governance**

*Empower all social strata to participate in neighborhood and city relevant issues. Integrate administration, market and customary efforts, and personal decision-making practices. Enable stakeholders to understand environmental characteristics, enhance transparency and enable better-informed deliberations. Provide for places for interaction and education and offer sustainability related teaching programs for different age groups.*

#### **Precaution and adaptation**

*Develop resilient urban environments and ensure iterative and adaptive processes. Acknowledge constant change to maintain functionality, adjust responses to internal and external processes. Welcome diversity in nature, design and inhabitants. Encourage neighborhoods as incubators of change and convey sustainability to the wider city environment reinforcing the ongoing development.*

## *The “HOW” – Creating sustainable places in unsustainable cities*

A city is more than the sum of its parts. Attaining the ‘sustainable city’ requires that its individual components on different levels already foster sustainability. Particularly important is the neighborhood as the nucleus of a city, which is considered key in creating sustainable urban form and governance arrangements that encourage and enable sustainable lifestyles of urban inhabitants (Luederitz et al., 2013). Over the last two decades, the development of sustainable urban neighborhoods has gained increasing attention in research and practice. Sustainable-oriented neighborhoods are mushrooming around the world. While prominent frontrunners have set the stage, i.e. BedZED in London (Chance, 2009), best-practice examples are found in many places and contexts around the world (i.e. Fraker, 2013; Joss, 2010; Rauland & Newman, 2015). For example, the well-known ‘Vauban’ neighborhood (Freiburg, Germany) was founded in 1994 through a bottom-up planning process and is characterized by plenty of parks and public spaces, overall increased living density, as well as low car ownership (Field, 2011). In contrast, the ‘Bo01’ neighborhood in Malmö, Sweden was developed through strong leadership of the municipality (from 1994 onwards), which continues to transform the former industrial harbor into a green and vibrant community. It is one of the first neighborhoods to be fully powered by renewable energy on site (Foletta, 2011) (see images below).



*Improved intergenerational equity in a traffic-calmed zone in Vauban, Germany*



*Enhanced human well-being through the biweekly farmers market in Vauban, Germany, Images: <http://www.vauban.de>*

Cases such as Vauban and Bo01 provide substantial lessons about the implementation of



sustainability principles. They indicate how principles can be meaningfully contextualized and elucidate the shortcomings and advantages of transforming unsustainable places. Structures (objectives) and processes (actions) are at the core of this change. First, the architectural paradigm of “*form follows function*” can be reinterpreted as the need for structures that shape sustainability behaviors and practices. Second, alongside the administration’s tasks, citizens themselves can be seen as active, individual forces with capacities as well as responsibilities of self-organization (John & Kagan, 2014). For example, community driven innovations of urban gardening without the necessary administrative and structural freedom are unlikely to spread. Generally, evidence derived from best practices can and should be used for informing and advancing principles for other transformational sustainability projects.



*Urban design of integrated human-environment places, Bo01, Malmö, Sweden. Images: [malmo.se/sustainability](http://malmo.se/sustainability)*



*Renewable energy generation on site for improving resource maintenance and efficiency, Bo01, Malmö, Sweden*

### ***Guiding principles as navigational tools for urban sustainability transitions***

Sustainability principles can navigate societies towards ecologically integrated, socially just and economically viable futures. As navigational tools, they require sustainability enthusiasts to know and engage with the story of their own city and local specificities. Thus, sustainability principles help to guide the vision that neighborhoods want to develop and how to prepare for

their journeys. However, as a working list they require continuous advancements closely connected to best-practice cities in order to learn about shortcomings and advantages of solutions. Cities might be the abyss of today's societies, yet they also offer effective levers for change, which can enable societies to build the urgently needed bridges to sustainable futures of urban environments.

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PART II.

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**URBAN GOVERNANCE**

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## CHAPTER 3.

### A TALE OF TWO CITIES: DENSITY REGULATIONS VS REALITY

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ARIF HASAN, INTERNATIONAL INSTITUTE OF ENVIRONMENT AND DEVELOPMENT, PAKISTAN

Poor residents in South Asian cities live together in high numbers that easily surpass the limits set in planning regulations. What can be done to create more housing for the poor?



*Paposh Nagar, Karachi. 'Living room' on the street - © Fareena Chanda 2010*

Urban planners in South Asia are always advised by Northern experts to make their settlements more densely populated if urban sustainability is to be achieved. But their task is formidable given that the world's three most densely populated megacities, Dhaka, Mumbai and Karachi, are all in South Asia. The poor live together in high numbers surpassing all building byelaws and zoning regulations for these cities. The rules are often flouted, particularly in both informal and formal settlements where residents earn low incomes.

Results from density-related studies, supported by the International Institute for Environment and Development (IIED) on Karachi, Bangkok and Kathmandu, plus research material on Mumbai by Alain Bertaud, tell us a lot about the challenges the cities' inhabitants face. Karachi, Pakistan's largest city, has 2,280 people living on each hectare of the city. But this average figure masks the disparities in living conditions experienced by the city's wealthiest and poorest inhabitants. Parts of Karachi's inner city have more than 4,000 persons living on each hectare of land. This is in violation of byelaws which permit a maximum of 1,625 persons per hectare. Meanwhile, Karachi's

elite settlements have densities as low as 200 persons per hectare. Individual residential plots of more than 0.2 hectares can be found in elite settlements. To put this in perspective, one family is living on enough land to house 800 people if it was occupied as densely as it is in the city's poorer areas.

Nepal's capital city, Kathmandu, is also growing. The city has an average density of 1,322 persons per hectare [PDF], but its inner city has 2,221 people per hectare. If Kathmandu's byelaws were enforced, a sizeable portion of the inner city population would have to be removed, according to IIED-supported research, which will soon be published.

Another measure that urban planners look at when analysing urban density is called the floor to ratio (FAR), the ratio of the footprint of an entire plot of land against the actual constructed area (which may be a building with many floors). According to Mumbai's byelaws, the maximum residential FAR is 1:1.33. Mumbai has 3,230 people living per hectare. These density levels could never have been achieved if this floor-to-area ratio had been seriously enforced. Like other cities in Southern Asia, Mumbai's informal settlements outstrip the permitted urban planning densities. Dharavi, a large slum, for instance, has densities as high as 44,460 people per hectare in its Chamra Bazar neighbourhood, according to a study by the Kamla Rajaja Vidyanidhi Institute of Architecture.

Bangkok, Thailand is different because the permissible floor to area ratio in residential areas is between a range of 1:06 to 1:12 [PDF]. This means that the rules allow for the buildings to take up more of the land, allowing for higher population densities. Formal sector low income housing has over 3,550 people living per hectare and even its informal settlements have densities that are in keeping with Bangkok's building byelaws, because the regulations are less stringent than those set in the Asian cities mentioned above. Yet Bangkok, as a whole, has a much lower density at 610 persons per hectare [PDF] than Mumbai, Karachi or Kathmandu. This means that the higher income areas in Bangkok have very low densities. Figures from Karachi and Mumbai indicate the same.

Slums and informal settlements, where the poor live, accommodate more than 50 percent of the population of these cities. As the poor are drawn to the cities, their numbers are set to dramatically increase over time. Clearly, there is an urgent need to provide these families with more low-income housing. But houses need to be built on land, and land is in short supply because of speculation. Land lies vacant for years while owners wait for it to increase in value. Or the land is used for high-end commercial and residential housing. Given all the challenges and constraints, what can be done?

1. Increase the number of people living in high-income urban areas by increasing urban density standards in wealthier neighbourhoods.
2. Heavily fine landowners who leave their land vacant and undeveloped.
3. Refuse formal sector loans to people who already own a house, to avoid concentrations of land ownership.
4. Charge heavy taxes on the sale of large individual plots in order to discourage it.

These recommendations go against the market mantra, and so haven't been applied to urban planning policies and regulations in South Asia. Unless they're adopted, the possibility of providing land and credit to the poor will remain a distant dream.

For more information, visit the website [www.urbandensity.org](http://www.urbandensity.org), which has recently been updated

with new case studies, videos and publications exploring how tightly contained, heavily populated, shared spaces can be made to work best, for residents and for the natural systems that cities depend on.

### **Authors note**

This post originally featured on the International Institute of Environment and Development (IIED) and is available here.

The *Alternative routes to Urban Density* website funded by the International Institute for Environment and Development, designed to address the challenges of urban density – <http://www.urbandensity.org/>

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Arif Hasan is a Pakistani architect and planner, activist, teacher, social researcher, writer and former Fellow with the International Institute of Environment and Development. He studied architecture at the Oxford Polytechnic, worked in Europe in architect's offices, and on his return to Karachi in 1968, established an independent practice which slowly evolved into dealing with national and international urban planning and development issues. He has taught at Pakistani and European universities and lectured widely both in the North and the South.

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## CHAPTER 4.

### USING URBAN PLANNING TO CREATE A CULTURE OF SUSTAINABILITY

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NATALIE ROSALES PÉREZ, EL COLEGIO MEXIQUENSE, MEXICO

Often when we start reading an article about urbanization in the 21st century, we are confronted by statistics and statements along the lines of:

*“...More than one half of the world population lives now in urban areas, and by 2050, 66 per cent of the world’s population is projected to be urban....”*

*“Richer countries and those in Latin America and the Caribbean have already a large proportion of their population residing in urban areas, whereas Africa and Asia, still mostly rural, will urbanize faster than other regions over the coming decades.”*

*“Cities are important drivers of development and poverty reduction in both urban and rural areas, as they concentrate much of the national economic activity, government, commerce and transportation, and also provide crucial links with rural areas, between cities, and across international borders”*

*“As the world continues to urbanize, sustainable development challenges will be increasingly concentrated in cities”*

As such, there is a renewed interest in urban settings/environments, and the disciplines concerned with the socio-spatial construction of urban space, as well as the ways in which they deal with the entangled processes of environmental deterioration, natural resources unsustainable consumption, multi-cultural and divided societies, socio-spatial segregation inequalities, ecological overshoots, poverty urbanization and informality. Urbanization is now seen as a powerful engine to drive growth and remake the economy within the media and within international and local policy documents. Cities are seen as green and political leaders talk about the importance of urban planning. The importance of urban development is a part of our popular culture. To give a recent example, I attended a musical in Broadway where the storyline was based on the life and misfortunes of an Urban Planner in New York City.

But, does that means that the city has in fact ‘triumphed’ to promote equity, welfare, environmental protection and shared prosperity in an urbanizing world? In my opinion, if the urban environment, with all its opportunities for fulfillment, is to become the habitat of nearly all humanity, it must take a radically different form. Tackling sustainability in an urbanizing era requires rethinking and rebuilding urbanism, because the quality of life in urban regions could, at one end of the spectrum condemn people to deprivation, exclusion and environmental depletion or, on the other end, foster fulfillment of human potential and reestablish our relations with nature



– depending on how these regions are planned, managed and governed. But, how urban planning can break boundaries and frame sustainability transitions and transformations?

Over the last few decades, the practice of urban planning has tried to shift from being technocratic, top-down and ‘objective’, to more participatory and collaborative, with room for diversity of opinion. Planning theory perspectives have incorporated the notions of diversity, inclusion, equity, democracy, consensus building, justice, and environmental ethics. One might say that planning has gone from modernism to postmodernism. Whilst this has been successful in terms of some refreshing practices to make general citizens feel more engaged in shaping their cities, and sustainability narratives incorporated into urban perspectives just greening planning, there are a number of challenges that remain to be addressed.

If urbanism takes place at two levels: theory (the way we envision urban life in the future and the different ways of framing categories and methods to respond and solve urban questions) and practice (the art of place-making and the way in which urban practitioners work and shape the interaction of inhabitants of urban areas with the built and natural environment); and sustainability issues are indeed so deeply entrenched in our beliefs, worldviews, values, attitudes and ways of life, it follows that successful sustainable cities in general can only be achieved by promoting an alternative to mainstream urbanism. This alternative should embrace the ecological dimension of urban development, environmental protection, the satisfaction of human needs and aspirations, changes in the distribution of costs and benefits, and the notions of equity and diversity.

Despite the increasing attention that is currently given to sustainable development, and the fact that culture is regarded as either the fourth pillar, an underpinning concept, or the means of integrating the economic, social, and environmental pillars, existing research and policies do not adequately consider the importance of a culture of sustainability in planning perspectives and its potential to facilitate a culturally embedded transition to possible sustainable urban futures.

A transition towards a sustainable city may be found in alternative forms of managing cities that from reorganise living conditions (e.g. rural Eco villages, eco-municipalities sustainable cities, small-scale urban towns). Alternative forms can reduce environmental impacts by altering the built environment to create and preserve ecosystems and reinforce human wellbeing; change current patterns of land use, livelihoods, everyday life practices from housing to consumption, food systems, mobility; enable participation and empowerment; and most of all restore our relationships with nature in the city.

So, this is the challenge we have to take on: we must build a culture of sustainability through urban planning.

Changing attitudes and behaviours and encouraging sustainable values can be done through education that promote biophilia (a love of living systems) in urban patterns that recognise the connections and interdependence of human and non human life, and make visible the processes that sustain life. Planning then, in its role of managing urbanization processes, regional and inter-regional economic development, cultural changes of building the city, the transformation of nature, as well as politics and the empowerment of citizens (Friedman, 1992), can enable incremental changes that will set the ground for complex transformations.

The more we incorporate cultural aspects and ethics on sustainability into planning theories, research and practice, such strategies can influence individual and social behavior and enable

citizens to 'experience' nature in a productive, meaningful, and personal way. At the same time, a culture of sustainability could foster social justice and equity at the community level. The more effort we put into building socially and ecologically equitable cities, the more successful our cities will be to create a sustainability citizenship: 'pro-sustainability behavior (Dobson, 2011). Because as Derrick Jensen said: *"We cannot hope to create a sustainable culture with any but sustainable souls."*

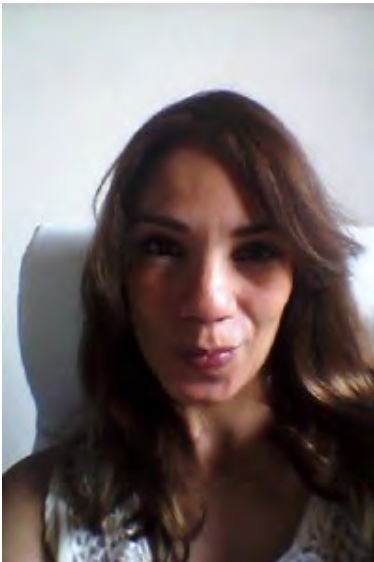
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## CHAPTER 5.

### NEGOTIATING SUSTAINABILITY WITH SUSTAINABILITY ASSESSMENT

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This blog post come book chapter presents reflections from my research on the prospect of negotiating sustainability within formal assessment processes which form part of strategic development planning in the UK. My starting point is an observation from my empirical data that issues like climate change are identified as problematic or difficult to take action on in strategic planning. My aim in writing this post is to consider, *in brief*, how this observation might act as an example of how action to tackle complex sustainability problems might, or might not, be negotiated.

The research which forms the basis of my thinking on this subject was concerned with two somewhat different assessment processes conducted in the UK, referred to as Sustainability Appraisal in England and Strategic Environmental Assessment in Scotland. An understanding of the detail of these processes and their specific similarities and differences is not of vital importance for this discussion. It is, however, important to understand that when Local Authorities in the UK prepare strategic planning documents they must also conduct these assessments with the aim of ensuring that their plans contribute to sustainable development. These assessments therefore open up potential space to negotiate what sustainability might look like.

Looking first to the broader climate change literature, Anderson and Bows (2012) provide a useful starting point by describing the disconnection between the issue of climate change and our economic system or economic development. They write:

*“Acknowledging the immediacy and rate of emission reductions necessary to meet international commitments of 2°C illustrates the scale of discontinuity between the science (physical and social) underpinning climate change and the economic hegemony.”*

*“Put bluntly, climate change commitments are incompatible with short- to medium-term economic growth.”* (Anderson & Bows, 2012, p.640).

More central to development planning and the associated assessment processes, the following authors summarise what I argue are the most relevant and pertinent points. Gibson (2013) posits that sustainability assessments seeking to contribute to sustainable development need to be concerned with significant change and transition rather than minor adjustments. At this point, it is crucial to note the central and influential position held by the definition of sustainable development that a planning system might be aligned with and is therefore notionally aiming at.

In addition, Owens and Cowell (2002, p.44) describe development planning in the UK as providing a “*somewhat cramped opportunity for dialogue about what constitutes sustainable development*”. More recent changes, particularly in England, have created the mantra “*presumption in favour of sustainable development*” (DCLG, 2012, p.3) and have perhaps hardened this cramped environment. Central to my argument, therefore, is the suggestion that sustainability assessment could enable dialogue around the meaning of sustainable development and possible actions. Indeed, this has been argued by others, including Sheate and Partidário (2010) and Morgan *et al.* (2012).

This discussion also requires acknowledgement of the difficulty in negotiating change in an established system such as planning. Meadows *et al.* (2004, p.270) illustrate the difficulty of bringing new information to a system structured to favour existing information with the following preposition:

*“Just try, sometime, to question in public the value of more growth, or even make a distinction between growth and development, and you will see what we mean. It takes courage and clarity to challenge an established system. But it can be done.”* (Meadows *et al.*, 2004, p.270).

These arguments are, of course, had more fully in the academic and policy literature. However, I argue that the overview rapidly provided here captures some key ideas. These are;

- that significant change to our economic growth trajectory is required in order to avoid the most serious impacts of climate change;
- that assessment processes aiming to contribute to sustainable development need to be concerned with transition rather than minor adjustment;
- that the planning system of the UK itself provides little opportunity for debate of what form sustainable development might take; and, related to the previous point,
- it is acknowledged that presenting new information to an established system like planning (which in some form has existed in the UK for over a century) is extremely difficult and it cannot be assumed that new information can simply be assimilated and acted on within established systems.

By way of connection between the argument outlined above and my own research, I conclude with discussion of two possible issues for negotiating sustainability – scale and dialogue – and a final reflection from my research.

Firstly, scale. Here scale is considered in two ways; in terms of large scale problems such as climate change and also finding the ‘right’ scale or using the available planning scales to negotiate change. I argue that one potential barrier to negotiating change may be a mismatch of scales between issues and actions. Taking climate change as an example, we can see considerable complexity in how we understand climate change as both global in scale and yet local and individual (discussed in greater detail by Lindseth, 2006). Therefore, building action on climate change into planning requires careful negotiation and brokering of the various imperatives present at different scales.

Secondly, and building on this point, I argue that sustainability assessment could, or should, enable dialogue in planning. In so doing it could contribute to this complex negotiation, present new information and act as a means to question existing practice.

In my own research I looked for examples of planning policy which may be in conflict, such as that described by Anderson and Bows (2012) between climate change imperatives and short- to

medium-term economic growth, to understand if sustainability assessment was able to identify, analyse, debate and/or resolve such conflicts. However, I found little evidence to suggest that sustainability assessment enables dialogue which might provide such functions. It is suggested here that the difficulty of presenting new information to established systems, as described by Meadows *et al.* (2004), is a considerable barrier to realising the potential of sustainability assessment as a way to enable dialogue and aid the process of negotiating sustainability.

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## CHAPTER 6.

# PROMOTING URBAN SUSTAINABILITY THROUGH MANAGING ECOLOGICAL SYSTEMS

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Planning for the needs of both society and the environment is becoming more and more prevalent as the impacts of urbanisation, development and resource extraction influence the health of citizens and vulnerability of cities. From as early as the 1990s, knowledge on the benefits of ecosystem services (the services provided naturally by ecological systems and natural features such as trees, parks and open space) has encouraged the uptake of natural features in urban planning initiatives as a way to build urban centres that develop sustainably and are more resilient to the effects of natural disasters (Hansen et al., 2015). These studies have contributed to informing a growing discourse on ecosystem based management and how the impacts of rapid urbanisation and development can be curbed through using an ecosystem services based approach to infrastructure and service provision. As the scales (spatial and temporal) of ecological processes are not well aligned with existing monitoring and decision-making structures used at the local level, including ecosystem services into the planning and management processes of cities is a complex and challenging task (Haase et al., 2014).

Alluded to by Haase et al., (2014), referencing Knapp et al., (2008) and Nevens et al., (2013), the city is a laboratory – a place that is fertile with diversity from a variety of sectors such as cultural, social, spatial, temporal, institutional and biological – where ideas can be tested and piloted. While urban centres present a prime canvas for testing the opportunities and barriers to integrating the concept of ecosystem service based management into planning processes, this opportunity is rarely used. This is because the concept of ecosystem services cannot be easily defined and disseminated amongst institutional stakeholders and thus often fails to gain recognition or financing, despite its intrinsic benefits for society and the environment. The implementation of green agendas such as *green infrastructure* and *green growth* are also tightly wrapped up in a cloak of uncertainty, complexity and governance concerns. This has created a barrier to the testing and piloting of alternative planning and management strategies in the *city laboratory*. Due to the opaque understanding of nature, ecological systems are not being incorporated into existing planning structures.

Traditional planning structures thrive on surety, something that is difficult to achieve when including naturally complex systems into infrastructure plans and mandates. Therefore, to begin a process of impacting decision-making, the concept of ecosystem service based planning must

leap from academia to practice (Hansen et al., 2015). To make this leap, shifts need to take place in existing planning paradigms towards more inter-disciplinary planning (ibid.). At this interface, the literary foundations on the use of ecosystem services in urban planning places a large focus on sparking a change through adequate planning and management, but do not necessarily provide the information required by authorities and urban stakeholders to do so. Reiterated by Haase et al. (2014), this is a common finding across ecosystem services literature, with only a few of these studies focusing on the requirements of professionals in developed countries.

The following two examples illustrate some of the challenges of traversing the gap in the governance of ecosystem services to support urban sustainability. In Berlin, Germany, for example, there has been a shift towards finding more efficient ways of providing and promoting access to infrastructure and services after the German Democratic Republic (GDR/East Germany) joined the Federal Republic of Germany (FRG/West Germany) in 1990. Supported by a formal landscape planning policy and informal environmental planning tools, which touch on the value of ecosystems, there is a large value placed on green spaces in the city for supporting healthy living spaces and increasing quality of life. In utilities for example, there has been a dramatic shift in stormwater planning to include low impact development (LID), which follows similar principles to a *green infrastructure planning approach*. LID stormwater interventions include green roofs, porous pavements, swales, rain gardens and rainwater harvesting. This shift has been supported by inventory tools such as the Green Space Information System (GRIS) and the FIS-Broker that records many, if not all, of the natural features of the city. The real question here is given the success of LID practices for curbing stormwater generation, why has this approach not been used to meet the demand for infrastructure and services in other sectors such as transport and mobility? When paired with the concept of ecosystem services, this approach can be up-scaled to meet a wide variety of urban developmental agendas in the city.

In a second example, attempts to guide the uptake of a green infrastructure approach in cities in South Africa has shown that the concept of ecosystem services has gained very little traction and has not created a long term change in infrastructure provision and maintenance. This gap is largely related to the way ecosystem services are quantified and the data available to inform evidence based decision making. In an attempt to bridge this gap, financial valuation data for the City of Cape Town and the City of Johannesburg have been generated. In Cape Town, the study by De Wit et al., (2009) was used to assign a Rand value (ZAR) to natural capital in the city. It was estimated that Cape Town's environmental assets could be valued at R43 – R82 billion (ZAR), and these assets provided a benefit of between R2 – R6 billion (ZAR) per annum based on 2009 price estimates (De Witt et al., 2009, pviii). Despite large financial figures being calculated for the natural capital in Cape Town, it was unsuccessful in outlining how this figure could be used to inform planning (Cartwright & Oeloffse, 2014). The full study on the value of the City of Cape Town's natural assets can be found here: *A Business Case for the Environment in the City of Cape Town* (De Wit et al., 2009).

The Gauteng City-Region Observatory commissioned a study to value natural capital in the City of Johannesburg using apportioned financial values calculated for green feature in the Cape Town by Turpie et al., (2001). Indicative present values were calculated at a 4% discount rate and it was found that the total value of open spaces in the City of Johannesburg ranged between R966 million and R1,9 billion based on 2013 price estimates (ZAR). A similar response to this valuation exercise (as found in the City of Cape Town) meant that there was little change in the way that planning was executed at the level of municipal government. More on this study can be found in the report: *The State of Green Infrastructure in the Gauteng City-Region* by Schaffler et al., (2013).

Undoubtedly, ecosystem services form a fundamental part of the planning and management of sustainable cities of the future. This is because they provide a variety of functions that reduce impacts on the environment, and can complement traditional approaches in providing services and infrastructure that are in limited supply. It can also assist cities to mitigate or adapt to the effects of climate change. However, serving as a binding constraint to the adequate planning and management of ecosystem services in urban centres, are governance concerns. Understanding the balance between the governance requirements and the availability and use of practical tools for informing an ecosystem services planning approach is a critical determinant for informing the shift in planning and urban design. The notion of a city laboratory is therefore critical for testing ways to harness the functioning of ecosystems to inform urban-based planning. Serving to not only test technical solutions for meeting the site-specific requirements for infrastructure and service delivery, they also provides an incubator to allow for creating an evidence base to overcome governance norms that currently restrict the uptake of alternative planning programmes such as those framed by ecosystem services.

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## CHAPTER 7.

### IN DEFENCE OF TOP-DOWN SUSTAINABILITY PLANNING: THE CASE OF SEJONG CITY

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My title is, of course, a provocation. I don't seriously advocate a wholesale return to 'top-down' modernist planning. But I want here to outline a series of tensions between the idea of planning and the goal of urban sustainability. I propose that, in the absence of their resolution, a less extravagant set of ambitions may enable more productive approaches to our global future, and that top-down planning may – in certain circumstances – play a useful role. The discussion considers the case of Sejong City, currently under construction in South Korea.

It would seem eccentric to refute the attractiveness of the goal of sustainability more generally, even if its concrete meaning and implications have remained elusive. While, though, sustainability explicitly asserts our responsibility towards the future, its global rise as an agenda has coincided with a loss of faith in our ability to 'plan' anything in a traditional sense. Planning has come to appear hubristic (Van Assche & Verschraegen, 2008); our contemporary sensibility renders the world as complex, uncertain, and non-linear (Chandler, 2014a). The 'city', meanwhile, has become an increasingly powerful imaginary, concentrating our hopes for the future (Caprotti, 2015), with urban sustainability initiatives being increasingly 'mainstreamed' globally in recent years (Joss, 2011; Joss *et al.*, 2013). But the often eulogistic rhetoric of contemporary city-level policy may obscure the fuzziness of its imagined target. If cities are quintessentially complex entities, the real, emergent city will always exceed the horizon of the planned one; no city will ever be sustainable in the ways envisioned.

Fundamentally, urban planning continues to provide “*a simple and highly structured view of the world and how to act in the face of inherent complexity*” (Allmendinger, 2002:42). Especially in the developing world, traditional technocratic 'masterplanning' approaches prevail (Watson, 2009). And yet it has also gradually shifted over time to embrace more communicative, inclusive practices, and from technocratic positivism towards a valorisation of contextually embedded discursive truths, reflecting the broader displacement of top-down 'government' by multi-actor practices of 'governance'. But if it has thereby become “*underpinned by an anti-realist ontology*” (Harrison, 2014:65), its “*capacity to engage meaningfully with the materiality of space*” (*ibid*) may be diminished. As a 'wicked' problem, climate change may invite non-linear, pragmatic modes of problem-solving; but as a very real and material one, it also demands urgent and substantial actions.

Perhaps we should reject the idea of planning altogether. The rise of ‘DIY’ urbanism (see eg: Iveson, 2013; Finn, 2014), for example, seems well aligned with the “*growing shift in policy-thinking, away from finite and deterministic ‘outcomes’ and towards autonomous open-ended processes*” (Chandler, 2014b). But the unguided collective agency of civil society and the market seems unlikely to avert catastrophic climate change. Worshipping ‘smartness’ and efficiency as the inevitable fruits of emergent intelligence may mean ignoring the structural causes of unsustainability. And civil society is reactionary as often as it is progressive. If climate change does indeed pose a significant threat, might there be a role for stronger governmental involvement in facing up to it? Giddens, for example, argues that “[u]nregulated markets” will fail to tackle such problems because they have “*no long-term perspective*” (Giddens, 2009:128). Let us, then, entertain the possibility that some form of strong state-centric planning is capable of yielding short-term results which, even if potentially inelegant or circumscribed in their aspirations, would at least be substantial.

A return to top-down planning seems unfeasible in most countries. But the case of Sejong City, in South Korea, suggests its validity as an approach in certain contexts. Sejong has been enabled by a turbulent history of political ambitions, a tradition of state-led mega projects, and colossal state expenditure – projected to be around ₩22.5 trillion (£15 billion). Environmental friendliness is only one of its aspirations but, unlike many other envisioned ‘eco-cities’, it is rapidly taking shape. Meticulously planned to cover 73 km<sup>2</sup> of previously agricultural land in the country’s center, it should house up to 500,000 residents when completed in 2030, and already has a population of 30,000.



*Panorama of inhabited district of Sejong City, June 2014 (author’s own photograph)*

In sustainability terms, eyebrows might be raised about the resources required to build Sejong, its provision for car use, and active embrace of global circuits of commerce. And yet it will still be a more eco-friendly development than most. One particularly innovative feature is its ‘ring-shaped’ layout: the large forested park at its centre is encircled by dense buildings and rapid, regular buses. The residential quarters are engulfed in greenery and leisure facilities. Among Korean commentators, some metropolitan snobbery is evident, akin to that directed towards Milton Keynes in the UK, with Sejong likened to a ‘ghost town’ (e.g.: Korea Times, 2011; Mundy, 2013). But its design deliberately aims to avoid the congestion of capital city Seoul. It may become a wonderful place to work and bring up children, even though it lacks a city-like ‘buzz’.



*Metal sheep in Sejong City (author's own photograph)*



*'Concrete Cows, Milton Keynes' by Stuart and Fiona Jackson  
(source: Wikimedia Commons)*

There is a case to criticise Sejong for its 'non-cityness'. I am concerned that the 'city' in visions of urban sustainability is often a rhetorical construct obscuring more specific (and not necessarily sustainable) underlying agendas. And Sejong's promotion as "*the utopian city for everyone*" (MACCA, 2012) might reasonably be criticised for its vacuity. But perhaps cityness is more a descriptive than an aspirational quality. Sejong may not have universal appeal – its current demographic profile is skewed towards younger married couples – but not all places can be all things to all people. In practice, if not by intention, different types of inclusion and exclusion seem inevitable everywhere.

Sejong is not a groundbreaking new paradigm for life on a sustainable planet; nor does it resolve the dilemma of the impossibility of planning for urban sustainability. A fair evaluation would instead treat it as more of an experimental stepping stone – as a particular, contextually embedded human settlement. In this context, top-down planning has delivered something which may at least offer some useful specific lessons for our collective future, either in its concrete socio-technical innovations, or following ongoing critical reflection. And, on these more modest criteria, I think there's every chance of it succeeding.

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## CHAPTER 8.

# HUMAN SECURITY, RISK MANAGEMENT AND URBAN SUSTAINABILITY IN LAGOS MEGA-CITY, NIGERIA

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Even though Lagos only has a small land mass, it is the most densely populated area in Nigeria, with more than 5 percent of the national estimates. Until 1991, Lagos was the capital of the Federal Republic of Nigeria and is a destination for all ethnic groups, many foreign nationals and Economic Community of West African States (ECOWAS) and people in search of opportunities for better quality of life (Federal Government of Nigeria, 2004, Ogunkoya, 2008, Olokesusi, 2011, Akanle, 2013, Akanle 2012). Lagos has an official population of 9.013534 million according to 2006 Population and Housing Census (Federal Government of Nigeria, 2007) and The United Nations estimates that at its present growth rate, Lagos state will be third largest mega city in the world by 2015 after Tokyo and Bombay. Metropolitan Lagos makes up 37 percent of the land area, and is occupied by 85 percent of the total population, which has implications for security and risk exposures (Lagos state Ministry of Physical Planning and Urban Development, 2010). Like most other mega cities in developing countries, Lagos confronts a myriad of challenges that are daunting and the city was originally unprepared for. Attempts by the government have also led to new problems, especially relative to security as infrastructural solutions and economic opportunities continue to attract more migrants thereby further elongating the challenges list. Common problems faced by the city are: insecurity; conflict and crimes; growing slums; destitution; traffic congestion and resulting environmental pollution; power shortages; impacts of climate change and clean water problems (see also Makinde, 2012).

This chapter will focus of three major problems Lagos faces: security threat, violence and crime. These problems remain formidable to the extent that the state government has instituted a trust fund now popularly known as Lagos Security Trust Fund. This is against the realization of the huge enormity and dynamic nature of Lagos crime, violence and security challenge against meagre resources available. Increasing the challenge for the State Government to provide security, in the face of the increasing population of threatened in-migrants and the city's existing residents. Currently, it is pragmatic to describe Lagos as security insecure. A National Crime and Safety Survey in 2012 empirically demonstrated the security threat, pattern and trends of crime in Lagos state (CLEEN Foundation, 2013). According to the survey, as many as 67% of Lagos residents said they fear becoming a victim of crime, as many as 23% experienced crime the previous year. Many of those surveyed were of the opinion that crime has increased from 12% to 21% in the state, while robbery and property theft top the list of common crimes with 28% and 17% respectively. Almost

half (47%) of the Lagos residents who completed the survey reported feeling that violent crimes in the state are more likely to be committed by people born and living in Lagos, while 33% were of the opinion that such crimes are committed by people born outside but living in the state (CLEEN Foundation, 2013). Compared to other states in the same region, Lagos state had the highest rate of (38%) assault, that increased to 37% in 2012 from 11% in 2011. Against this background of increasing high insecurity in the mega city, it is important to conduct research to better appreciate the ramifications, contours, dynamics and trajectories of insecurity and risks in the Megacity. This is important to understand the (in)security domains, to then build more resilient Megacity(ies) in Lagos, and Africa, that can rank favourably with other megacities in the world and put Africa on the sustained path of growth, industrialization and development.

This chapter is situated within Cultural theory of Mary Douglas (1966, 1978, and 1988) and Douglas and Wildavsky (1982) which has been important and influential in explaining risk and security perception and interpretations. This chapter explains and analyses the security risk, security and management windows of governments, policy makers, individuals and generalized stakeholders in the state within cultural theory. According to the cultural theory of risk, perceived risk is linked to cultural adherence and social learning within cultural domains. Depending on whether an actor is socially participating and within which group and which cultural and socio-economic context and depending on which risk. Cultural theory is both explanatory and predictive. It is also recommendatory and policy driven just as it is very contextual and group focused which makes it useful for this study.

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## CHAPTER 9.

### FOOD SUSTAINABILITY IN URBAN AFRICA

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How can African cities meet their food needs in a rapidly urbanizing era? In a gradual and steady trend, the past few decades have witnessed a whole swath of urban life as many African countries beginning to move to a different rhythm, an urban one. In part, urbanization in Africa is driven by the increase in population growth and rural-urban migration. It is estimated that one third of Africa's population lives in 36 large cities of more than 1 million inhabitants, while the remaining population is spread across 230 intermediate cities in the region in peri-urban areas (World Bank, 2010). Contrary to economic geography, which posits that population density attracts high economic activities and prosperity (which requires agglomeration of economies), many urban dwellers in Africa have not benefitted from recent economic growth in the region. Hence, in contrast to urbanization in more advanced economies, urbanization in Africa is characterized by food insecurity, high concentrations of poverty, lack of basic infrastructure and the expansion of urban slums and informal settlements. African cities are growing in the midst of poverty, fragile institutions, and increasing rates of inequality.

There are four dimensions of food sustainability framework, namely: good governance environmental integrity, economic resilience, and social well-being (FAO, 2013). The framework includes a set of principles that provides and protects the policy space for local people to participate in the formulation of food and agricultural policies in their countries. Food sustainability is an umbrella term, which is comprised of different approaches used to address the challenges of hunger, food production, and sustainable livelihoods. Food sustainability goes beyond food security. A food supply is considered secure when food is available, accessible, and of good nutritional quality for the population; it is insecure when any or all of these are absent (FAO, 2013). On the other hand, the food sustainability framework allows for a comprehensive analysis of self-sufficiency in food production by putting the responsibility of food production in the hands of local producers. The concept is grounded in the premise that small-scale farmers grow, collect, and distribute most food in the world. The framework of food sustainability has been explained at four different levels: access to culturally accepted nutritious food; access to productive resources; development of local market; and ecologically friendly production (Quaye et al., 2009). These four levels are essential for the analysis of food security and food systems within the context of urban-rural connections in Africa.

It is against this backdrop that we examined food sustainability in urban Africa through the

lens of food insecurity. Urban dwellers in the region face the challenge of food insecurity due to a number of factors: the absence of food policy in city planning, poverty and unemployment among most urban dwellers, poor and uncoordinated food distribution systems, and a lack of basic physical infrastructure in African cities such as electricity, good roads and pipe-borne water. Other notable constraints to food security in urban Africa include the lack of sustainable food storage systems, post-harvest food losses and food waste, a lack of incentives for urban farms, the dwindling number of active, professional farmers in most African countries, and the unfolding impacts of climate change. It is noteworthy that the increases in urban populations in Africa has reduced the number of farmers, especially the young farmers working in rural areas. Thus fewer hands are left to meet increased demand for food. In addition, there has been a significant shift in the diet pattern of African urban dwellers away from a predominance of grain-based diets towards substantial consumption of animal products. This cultural shift in food preferences compounds food insecurity in urban Africa.

A closer examination of the food situation in urban Africa reveals that a large majority of the urban population within the region is food insecure. Often, urbanization brings major changes in the pattern of agriculture, product demands, dietary needs, and the contraction of agricultural markets (Parfitt, et al, 2010). While urban population is on the rise in Africa, population growth is not unilaterally accountable for urban food insecurity in the region. Within the context of food security, four dimensions can be highlighted: physical availability of food, economic and physical access to food, food utilization and safety, and stability and cohesiveness of the first dimension.

Small-scale and rural-based farmers dominate food supply in urban Africa with little or no training in post-harvest food handling, processing, and preservation. These rural producers are facing many logistical challenges to transport their produce from farms to the urban markets. In effect, African farmers and food wholesalers incur substantial losses during the process of transporting their produce to urban centers. Food storage facilities in African cities are almost non-existent. Thus, urban food loss, which contributes to urban food insecurity in Africa, is characterized by a general lack of storage and processing technology and infrastructure. It is difficult to estimate the size of food loss and waste in sub-Saharan African countries due to a lack of empirical data. In comparative terms, per capita food waste is between 6-11 kg a year in sub-Saharan Africa, South and South-Eastern Asia (Gustavsson, *et al.*, 2011).

Addressing the food sustainability of rapidly urbanizing communities in Africa requires the participation of public and private sector actors, and a change in the attitude of consumers. New institutional arrangements are needed to support and coordinate policies for the reduction of post-harvest food loss. Post-harvest loss can be addressed through governance and sustainable collaboration of different sectors. Furthermore, the provision of basic physical infrastructures is essential for food storage and transportation. These actions will go a long way to ensure food security in urban Africa.

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## CHAPTER 10.

# DILEMMAS OF URBAN GOVERNANCE AND INFRASTRUCTURE DEFICIT IN AFRICA

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### **Introduction**

There is a serious dilemma in African cities where urban governance is hardly able to meet the demand for infrastructure. The failure of urban governance to provide adequate infrastructure both in quantity and quality is creating infrastructure deficit which falls below the expectations of urban sustainability. According to UN-HABITAT (2000), urban governance:

*“must enable women and men to access the benefits of urban citizenship. Good urban governance, based on the principle of urban citizenship, affirms that no man, woman or child can be denied access to the necessities of urban life, including adequate shelter, security of tenure, safe water, sanitation, a clean environment, health, education and nutrition, employment and public safety and mobility. Through good urban governance, citizens are provided with the platform which will allow them to use their talents to the full to improve their social and economic conditions.”*

Citizens of African cities are unable to aspire to improved productivity, poverty reduction and well-being due to inadequate physical and social infrastructures. This situation is even more worrisome considering the pattern of urbanisation in Africa. These are the issues that form the thrust of this paper which is organised in two parts. The first examines Africa’s urbanisation and dilemmas of urban governance and the second takes a look at the nature of infrastructure deficit and demand in Africa. The conclusion suggests what should be done to remedy the situation.

### **Part 1 – Africa’s Urbanisation and Dilemmas of Urban Governance**

The world’s population and economic opportunities are increasingly shifting to the cities. Over 70 per cent of the people in North America, Latin America and Europe already live in cities. Africa’s 2014 population with an average growth rate of two per cent is estimated at 1.069 billion, about 15% of world population, extends over 30 million square kilometres (WPR, 2014). It is also estimated that by 2030, more than half of this number will be living in urban centers. Therefore, global attention has been drawn to the pace, process and pattern of urbanization in Africa. In a bid to explain the rapid urbanization in Africa, recent urban studies have attempted to distinguish between urbanization and urban growth which are driven by different factors with different characteristics and implications in the context of urban governance and infrastructure deficit (Potts, 2012; Muggah, 2012; Fox, 2011). Some fundamental and proximate factors explain the

emerging pace, process and pattern of urbanization and urban growth in Africa which includes population dynamics, economic growth, government policies, increasing densities as well as the advancing large urban agglomerations such as Lagos, Cairo and Kinshasa that are spreading to form urban corridors (Lwasa, 2014).

While several factors have been identified to explain the phenomenon of urbanization, there seems to be no consensus about which one is the most dominant but it is however generally agreed that the trend is indeed frightening. There are two perspectives to the concern for an urbanizing Africa; the first is the pace of urbanization and urban growth which is high compared to other regions (Table 1) and, the second is the challenge of infrastructure deficit which is creating a vicious cycle of poverty and inequality.

**Table 1: Demographic and economic trends in selected Regions**

Regions	Level of Urbanisation(1960)	Population Growth Rate (1975-2005)	Urban growth rate(1975-2005)	Urbanisation rate(1975-2005)	GDP Growth Rate(1975-2005)
Sub-Sahara Africa	14.75	2.69	4.59	1.66	0.59
East Asia & Pacific	16.75	1.64	3.66	2.10	5.03
South Asia	16.56	2.14	3.35	1.20	3.65
Middle East & North Africa	33.97	2.56	3.69	0.92	1.20
Latin America& Caribbean	49.02	2.08	3.10	0.84	1.58

**Source:** Sean Fox (2011) & (2012)

Presently, there are both high level optimism and pessimism about urbanization scales, trends, features and drivers in the region (Potts, 2012). According to the optimist, urbanization could benefit from economies of scale, accelerate provision of infrastructure and growth of industries, industries could benefit from concentration of suppliers and consumers with big and diverse labour market which ultimately create centers of innovation, commerce, and administration. The pessimism associated with urbanization relates largely to the deficit of urban infrastructure which is critical to the liveability, employability, manageability and serviceability of these cities. According to Abbot (1996), the four facets of infrastructure delivery (i.e. legitimacy, affordability, institutional capacity and use convenience) either as a technical or social service are under serious pressure in Africa. It is disturbing how many governments in Africa possess the political will, fiscal resources and professional capacity to provide the rapidly growing urban populations with adequate urban infrastructures and services.

## **Part 2 – The Nature of Infrastructure Deficit and Demand**

It is argued that Africa lacks adequate social and physical infrastructures and services which constitute the key constraints to short- and medium-term poverty reduction in Africa (TMSA, 2012). Available facts (ADB, 2009) indicates that access to electricity is 30% of the population compared to rates ranging from 70 to 90% for other developing regions including Asia, Central America and the Caribbean, Middle-East and Latin America. Likewise, the same statistics shows that trans-boundary water resources constitute approximately 80% of Africa’s freshwater resources, yet current levels of water withdrawal are low with 3.8% of water resources developed for water supply, irrigation and hydropower use, and with only about 18% of the irrigation potential being exploited. Similarly, access to water and sanitation are for 65% and 38%

respectively of the population compared to water access rates of 80% to 90% for the other developing regions (ADB, 2009).

In addition, Africa records a telecommunication's penetration rate of about 6% compared to an average of 40% for the other developing regions, and a very low penetration rate for broadband services. Also, the same report observed that Africa has a road access rate of 34% compared to 50% for the other developing regions. Freight cost in Africa is equivalent to 10–25% of total value of imports in 2007 compared to a global average of 5.5% in 2007 (ADB, 2009).

The challenge of urban governance for infrastructure in Africa therefore is increasing urban poverty and inequality. This wide gap between urbanization and urban infrastructure delivery is because the population is growing faster than the available infrastructures. The surplus population, deficit infrastructures and the growing poverty in urban centers are in turn compounding urban dilemmas. Urbanization is pushing the demand for infrastructure beyond the resources of city administrators. First, there is pressure on the few available infrastructure leading to their deterioration as a result of overuse or abuse. Second, there is dearth of resources to carry out systematic stock up, routine maintenance or strategic replacement of damaged infrastructure or their accessories as it is the practice in more developed regions which account for infrastructure deficit. Third, consequently, the infrastructure deficit limits the productivity at the level of individuals, households, nations and regions. This low productivity therefore becomes the underlying factor for the high incidence of poverty and inequality in Africa which is intricately linked to unsatisfactory indices of well-being as reported in UN and World Bank statistics (WDI, 2014).

Indeed, infrastructure deficit has been found to contribute to Africa's stunted growth and even a reduction of economic growth by 2% a year (ADB, 2009). The demand for infrastructure, both by consumers and by companies is much higher than the amount invested. In Africa, to reach the 7% annual growth calculated to be the requirement to meet the MDGs by 2015 for instance would require infrastructure investments of about fifteen percent of GDP, or around US\$93 billion a year (ADB, 2009). In weaker regions, over thirty-seven percent of GDP would be required. According to African Development Bank (2009), in sub-Saharan Africa, the government spends around US\$9.4 billion out of a total of US\$24.9 billion. These efforts of government aside being inadequate in the context of the expanding populations are taking place within weak policies and institutions and paltry budgetary provisions for infrastructure. Recent global crisis including fluctuating global prices and unstable incomes for African nations are further exacerbating the situations which calls for proactive approach for sustainability.

## **Conclusion**

Considering the critical role of infrastructure to the functioning of cities, productivity and poverty reduction in Africa, there is increasing need for new insights, deeper perspectives, and analytical discourse of the relationships between cities, infrastructure, productivity and poverty. This will lead to new ideas, local solutions and proactive measures for managing urbanization in Africa especially with insights into best practices of sustainability around the world. The aspiration to eradicate poverty and inequality from Africa should be clearly understood and articulated using radical, fundamental, structural and sustainable approaches of analysing urban dilemmas, urban governance and urban infrastructure. This should entail properly showing the linkages between cities, infrastructures and poverty/inequality especially as the world transit from MDGs to SDGs.

In this way African cities and citizens can be transformed to fulfil the expectations of both those who live in them and those who have to depend on them for services and livelihoods.

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## CHAPTER 11.

### THE PARADOX OF URBAN POLICY

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Urban policy is a complex terrain. Consequently, the term itself is disputed. Atkinson and Moon (1994, xi), for example, note that '[f]or some commentators it is inadequate, for others it constitutes unwarranted interference by government. Local government has not always wanted the same from urban policy as central government. We can even question whether or not there is actually such a thing as urban policy; whether it is 'urban'; and whether it is a 'policy'" (Atkinson and Moon, 1994, xi). For some, urban policy is spatially focussed on particular territorial parcels, such as metropolitan areas, whereas for others, urban policy relates to 'urban' forms of society. Whereas the former refers to particular spatial formations, such as metropolitan areas, the latter refers to particular sociospatial relationships and processes. *If we recognise that 'policy' is a social construct, there still remains the question of what is specifically 'urban' about urban policy.*

*Many societies around the world and increasingly in the Global South are urban societies, which poses a serious challenge to the utility of devising policy for discrete urban areas or territorial parcels, such as 'inner cities', 'housing estates' and 'industrial enclaves'. Antiquated approaches to urban policy sought to identify territorial parcels as they allow for empirical enclosure. Yet, there persists (in theory as well as practice) a predilection to parcelise urban space (e.g. urban-rural) rather than engage in a more penetrating engagement with the process of urbanisation.*

Often governments, policymakers and academics refer to a variety of spatial policies including 'regional development policy', 'urban regeneration policy', 'city policy' and 'growth policy'. Each of these overlap in terms of scope, scales and remit. In the UK, for example, 'growth policy' (used interchangeably with the prefix 'local', although not necessarily spatial), has been favoured by national government over the past five years. In many respects it has been used to dislodge 'urban regeneration policy', especially the more socially-conscious area-based programmes favoured by a succession of previous government administrations.

Despite its contentiousness I opt here to continue to apply the term 'urban policy' due to its historical significance in Britain, as well as other parts of the world (e.g. Kantor, 2013). But in doing so, I conceive urban policy through an expansive lens of inhabiting an urban society (cf. Lefebvre, 2003 [1970]). Thus, the parcelisation of urban space is of secondary concern, albeit important – a potentially pragmatic compromise in practice. I contend that a more nuanced appreciation of sociospatial transformations, facilitated by a fuller comprehension of the dynamic currents of urbanisation processes, could help engender a form of urban-targeting less



constrained by territorial parcelisation and, perhaps, less prone to capture by city elites. I start to outline some of the principles for a renewed multiscalar articulation of urban policy.

### **The process of urbanisation: Moving beyond the ‘parcelisation’ of urban space**

With a basis in urban population thresholds, proclamations that more than half of the world’s population now reside in cities (e.g. UN-Habitat (United Nations Human Settlement Programme), 2007) is little more than a statistical artefact derived from a chaotic conception in the words of Brenner and Schmid (2014). This prompts them to conclude that the urban age thesis is empirically untenable and theoretically incoherent. An alternative way of thinking through the urban question and, thus, urban policy is to recognise the limitations of territorial parcels, such as those used by the United Nations to measure the population ratios of those inhabiting ‘urban areas’. This was documented by Manuel Castells during the 1970s who challenged ‘statistical empiricism’ which fabricated ‘criteria of administrative practice’; failing to capture ‘the rhythm of urbanization’ (cited in Brenner and Schmid, 2014). Thus, urban targeting does not need to be restricted by, or limited to, territorial parcels which are little more than a convenient, fabricated statistical artefact. A fuller comprehension of the dynamic currents of urbanisation processes is required to unshackle extant urban policy debates.

Notions such as ‘natural economic areas’ or ‘functional economic areas’, share a concern with the *optimal* scales at which policy decisions should be analysed, designed and implemented. Yet, these fuzzy concepts are beset by some serious constraining politico-bureaucratic factors, which coalesce to substantially limit the theoretical potential exuded in each concept’s broad principles (such as openness, porosity and dynamic fluidity) by containerising manifold flows, connections and disconnections. In effect, areas that are perceived to display relatively high degrees of functional cohesion are dissected from other places as they are demarcated by definitive territorial parcels. Ultimately, these ‘functional’ demarcations attempt to separate distinct urban cleavages from those fluid sociospatial independencies, which provided the original policy rationale for crafting a perceived optimum sociospatial scale. There is a paradox that the defining theoretical features underpinning functional area discourse are obliterated by the operational tendencies to construct hard boundaries (based on the same methodological flaws as the overly simplistic urban-rural dichotomous distinction). Perhaps more damagingly, these territorial parcels – particularly city region constructs – are claimed to provide an ultimate sociospatial fix through a process of spatial fetishism. It is in this sense that some policy discourse almost equates city region governance constellations with almost magical qualities – a universal fix for ailing economies, social distress and environmental degradation, to name but a few strands of urban policy.

### **Some tentative principles to re-energise urban policy debates**

As places respond to new challenges and opportunities in novel ways, new urban policies are constructed, whether implicitly or explicitly. Nevertheless, urban policy in many countries is saturated by an economic growth discourse. There is an opportunity to re-energise urban policy debates, which warrants a reconsideration of the hegemonic, yet unsustainable, ‘growth is good’ mantra. Furthermore, drawing in particular on the recent work of Brenner and Schmid (2014), I suggest that simple territorial definitions of ‘urban’ are unhelpful. A more nuanced discussion of urban policy than hitherto is warranted; one that would benefit from going well beyond the territorial parcels of ‘city regions’, ‘core cities’, ‘mid-sized cities’, ‘towns’, ‘villages’ and other such constructs. Indeed, blunt territorial parcels lack regard to the structure, form, nature and history

of sociospatial formations. This requires the qualitative nature of urbanity to come to the fore in urban policy deliberations.

Urban policy is contentious and long may it continue to be so. It is this aspect that needs to be confronted, perhaps even celebrated. Therefore, a rudimentary, albeit crucial, step is to reinvigorate multiscalar urban policy debates, whilst not to neglect that a key arena where the urban policy battle must take place is in the 'abstract spaces' of higher levels of government (i.e. regional, state or national).

Simplifying urban policy goals may be counterproductive given the complex nature of political-economic relations that one must engage with. There is a need to start to decipher the co-dependent relationships of state and non-state actors. It may, for example, help to address the structural impediments that constrain subnational efforts or might assist in unravelling myriad bureaucratic knots across multiple scales of governance. Such urban policy repertoires may help to reaffirm the vital role of the central state as 'arbiter of equality' (Southern, 2013), without which there are few mechanisms for assuaging, let alone reducing, spatial disparities as the 'safety net' is no more (Pugalis and McGuinness, 2013). To conclude, a more penetrating engagement with the process of urbanisation that moves beyond the dominant practice of the parcelisation of urban space could help to re-energise urban policy debates.

#### **Authors note**

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PART III.

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**ENGAGED CITIZENS**

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## CHAPTER 12.

### COORDINATION VS ORGANISATION: A COMMUNITARIAN BOTTOM-UP APPROACH IN URBAN PLANNING

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As Michael Batty wrote – cities grow and develop upwards from the bottom – especially modern cities. All the attempts to plan a city in its complexity are destined to change heavily under the requests of all the people who pass through its streets every day (Batty, 2006). Actually, the bottom-up enterprises are some of the most interesting phenomena of our times. In many cases to define them as “*processes of self-organisation*” is reductionist because they are actual generative activities.

As the LEADER Approach, defined by the EU, has recognised, a bottom-up approach proceeds, on the contrary, exactly from reversing the perspective, by producing solutions that fit with the context, along a direction apparently similar to the one that was defined by Patsy Healey as a “*communicative approach*” (Healey, 1997).

Bottom-up initiatives generate urban space too, along directions that Chih-Hung Chen has recognised in the indicators of heterogeneity and flexibility (Chen, 2013). Batty, when suggesting a new approach in urban planning, underlines that we have to recognise the evidence of an overturned genesis of hierarchies, which proceeds organically from the bottom upwards (Batty, 2006). Of course, this means there is a requirement to face the important matter of how to manage complexity, which is maximal at the urban scale (Raban presents the city as a series of nearly individual stages of self-representation), but intense at the scale of architectural planning at the same time (Yagod, 2013).

The choices, elaborated at a central level, must be applied to heterogeneous contexts subsequently, with two likely outcomes:

- A weakening of the measures, diluted in order to become more neutral and flexible.
- A conflict, in the form of a contrast between the requests that come from the context as well as the ones that are supported by the intervention.

The limits we attribute traditionally to this method are linked to the matter of scale: spontaneous and self-managed initiatives are better conceived the more that the community that generates them is restrained, and they work well in a small spatial setting, because they are generated in connection with a specific context (Pissourios, 2014). Actually, the matter of scale being small



is only one – and not the most significant – of the problems related to the application of this principle, and we have to consider two issues in addition:

- Often, the communities that use some solutions lack specific expertise, and the fulfilment of the ideas may be affected by this deficiency, bringing inadequate outcomes.
- Sometimes the bottom-up solutions are chosen by closed communities where they must be harmonised with the initiatives on an urban or regional scale. Otherwise, they might contribute to isolating and separating the context that generated them.

ICT – provided that we understand their evolution – play a focal role in reducing the effects of these critical aspects, since they are clearly a strong instrument to coordinate spontaneous initiatives and requests. Global Village as a global model of modernity, as theorised by McLuhan or Brzezinski, foundered, being enrolled among the great utopias of XX century. On the contrary, the model defined by ICT foresees the projection, in the virtual space, of a truly existent physical space, a place: hence, the product can be assumed as a “metaplace”, a piece of virtual space which is shaped by the contents generated in a physical space.

The most interesting knot of this process is that the action – the “actio”- continually bounces from place to metaplace, modifying both and generating connections on several levels. Metaplace is a basic concept in order to understand how the ICT can rebuild the communities in metropolitan districts and allow a bottom-up reorganisation of the cities. In particular, these instruments help to create networks and sharing, working especially well when integrating the skills, and directing a specific project towards the interests and the contribution made by several subjects. Furthermore, they can transform the bottom-up approach in a real model of administration, in which the bottom-up initiatives are pinpointed and coordinated. This facilitates the initiatives to follow an organic general project, helping to fill the shortfall related to the extension of the scale of action. The ICT element strongly reshapes those inclinations to segregation that exist in some community phenomena, opening them to cooperation and integration (cfr. the European Digital Agenda).

Since the modern city is a “*platelet reticular network*”, as defined by Lyotard, local Authorities have to tackle a none homogeneous and uneven tissue: because of that, urban policies (even in urban planning) should take into account the urban complexity.

This paper aims to propose a new approach in urban planning and in public policies, moving from the concept of “organisation” to the one of “coordination”.

The “organization” approach is a top-down process: in sociology ‘organization’ is understood as a planned and purposeful action of human beings in order to construct or compile a common tangible or intangible product or service: as marked above, this approach suffers for the heterogeneity of modern cities (Walloth, 2012).

The other side of the coin is the considerable number of voluntary bottom up activities, often based on the sense of community. If community is, basically, the product of the relationship between a human group and a physical place, some human groups may face the problems of their place with innovative and smart solutions. These ideas are suitable to the original context and to any alike context but, if we remove the “contextual features”, we can adapt them to other places. Coordination is the “*management of dependencies among independent activities*” (Malone, 1994). This definition is used in particular in business and economic contexts, although it comes

from computer science. A “coordination approach” foresees that, instead of delivering top-down decisions, local Authorities:

- identify the most interesting bottom-up good practices;
- enhance them by adding expertise;
- build a network among them;  
verify the results;
- analyse them, in order to disseminate and extend them to other contexts.

This approach presents various substantial benefits, starting from the reduction of conflicting issues in the application of urban policies (Bergman, 2012). Furthermore, it draws fully from one of the most meaningful resources of modern city, the abundance of voluntary phenomena, connecting them – also by using the ICT – to a virtuous communitarian logic (Caprioli, 2014).

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## CHAPTER 13.

# MAKING MOST OF THE EUROPEAN CAPITAL OF CULTURE BRAND THROUGH INCLUSIVE URBAN GOVERNANCE

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ÁGNES NÉMETH, UNIVERSITY OF EASTERN FINLAND, FINLAND

The European Capital of Culture (ECOC) initiative is one of the most flexible programmes funded and co-ordinated by the European Union. The Programme provides guidelines for applicant cities rather than outlines strict criteria for participation, and the EU contributes only with a little (an average of 4-5%) to the total budget of an ECOC event (Garcia-Cox, 2013). In terms of the general role of EU funding, the ex-post evaluation of the three ECOC projects implemented in 2010 claims that the relatively small proportion of EU funding makes the programme “*very cost-effective compared to other EU policy instruments*” (ECORYS, 2011: ix).

ECOC nominees in general need to fulfil two explicit criteria of the Programme: ‘the European Dimension’ and ‘City and Citizens’ defined in article 4 of Decision 1622/2006/CE. While the former criterion is most often translated into a European level of cultural cooperation and cultural diversity of the event, the latter mainly highlights the importance of the engagement of local (and regional) citizens and the long-term cultural and social development of the urban place and its surroundings. It is a real challenge for the cities to meet this dual expectation by creating an event of European dimension while supporting local social and cultural sustainability (Németh, 2010).

At the same time, one should not forget about the very strong brand of the ECOC programme, which often urges participant cities to make the most of the cultural year, and stake all their resources on one card. Motivation for and implementation of ECOC events are more generally driven by the mere opportunity of funding in the case of new EU member countries, where local municipalities have serious financial problems. As a result, when a one-off opportunity arises, such as this mega-event, these cities suddenly get into a somewhat more privileged situation than the others in terms of national support, too.

As a consequence of the above-mentioned characteristics and criteria, ECOC is a type of event which has a great potential and necessity to generate public interest, to reach and mobilise various segments of the society and to bring to surface diverse constellations of open and invisible power relations. How do these processes of public engagement operate and between what actors on which spatial levels, and how do they create or limit space for inclusion in the governance of ECOC? In order to explain the different governing powers of the European Capital of Culture,

two case studies are selected (Pécs 2010 in Hungary and Turku 2011 in Finland) for the analysis of the general and distinctive patterns of governance of the projects.

On the one hand, there is an evident influential force that effects the implementation of ECOC events: the institutional frameworks on different scales and spatial levels. The deployment of the Programme is managed by the European Commission, while national governments also have an important role in the evolution of individual ECOC projects in terms of both co-financing and development strategies. The way of using the ECOC label as well as the real budget of a project mostly depend on the hosting country and the city or city-region. Because the funding largely comes from (or at least through) the national and local levels, the primary factors effecting the individual projects are often to be found in the regional development strategies. However, not only European or national priorities shape the projects; the different local power-relations and interests also influence them in various ways. The availability of financial resources, the priorities of the local management as well as the lobbying of local interest groups can develop the projects in different ways from the planning phase to the actual cultural events. (Németh, 2013)

On the other hand, the governance of the ECOC is not merely a subject that occurs between the EU, the 'branded' cities, and their relevant national authorities but it is characterised by new patterns of networking and increased social involvement. Social mobilisation is not merely due to the necessity of pulling in resources, but just as importantly it emerges from the bottom-up initiatives of cultural and other actors (e.g. from the social sector, tourism, etc.) to be part of the ECOC project and 'trademark'. This can be certainly attributed to the strong brand-status of the event, but also to the actual or anticipated possibilities and financial resources the event entails. As a result, the ECOC can build on a substantial drive to participate from below, and not only from the part of cultural production.

Aiming at real long-term effects, participation in both cultural life and decision making is a key focus of ECOC projects. In relation to the above-mentioned 'City and Citizens' criterion, the projects should "*foster the participation of the citizens living in the city and its surroundings and raise their interest as well as the interest of citizens from abroad*" (OJ, 2006: 304/2). Therefore locals do not only serve as an audience, but they are also perceived as an organic part of the ECOC product. As such, their inclusion is a complex task which needs to be considered at a very early stage of preparations.

Examples from the selected Hungarian and Finnish cases indicate that the significance of conscious, well-planned efforts to include willing participants cannot be overestimated. Various, and intensely context-specific constellations of open and invisible power relations at diverse levels create or limit space for inclusion and participation. Besides, active and wide participation in ECOC depends mainly on the different concepts and ways of inclusion. Inclusion can be by promoting volunteering, welcoming representatives of different actors, fields, age-groups, etc. in the cultural boards (deciding on project applications), by providing real incentives and support to local and regional civil organisations, or simply by acknowledging and respecting their suggestions and contribution as equal parties. Neglecting these may cause conflicts and disgruntlement, which can sometimes hinder decision-making and implementation and hamper constructive co-operation. (Németh, 2015) In short and simple, while there was an obvious creative bottom-up potential in both of the case study cities, the Pécs 2010 project was trapped in a dominant top-down governance practice throughout the preparation years. In this sense, the Turku 2011 project showed a more balanced combination of governance processes. This however, is not only due to an inherently stronger civil society in the Finnish case, but rather a clear commitment to inclusion of grassroots from top-down.

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## CHAPTER 14.

### PARTICIPATORY BUDGETING IN PUNE CITY: A MIRAGE!

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POOJA SHETTY, TATA INSTITUTE OF SOCIAL SCIENCES, INDIA

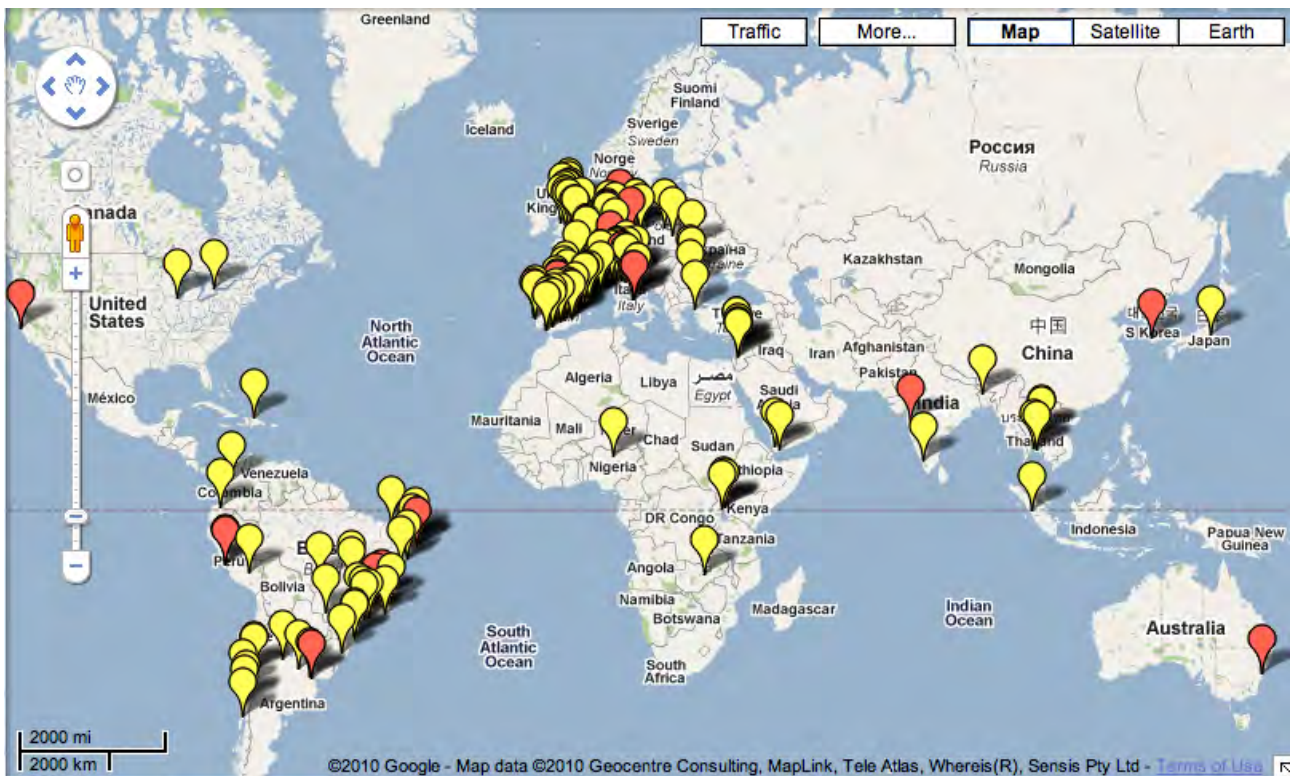
‘Participatory’ has become a loosely used terminology in today’s world. From practitioners to academics, everyone is lobbying for and supporting ‘participation by people’ through various methods. Pune, a city in the State of Maharashtra in India, also took a similar initiative to make its budget making process partially participatory under the tag – ‘Participatory Budgeting (PB)’. Through this blog, I shall be sharing my experiences of PB in Pune as a practitioner.

‘Participatory Budgeting’ largely means

*a democratic process in which the city residents decide how to allocate part of the municipal or public budget.*

The process first started in 1989, in Porte Alegre, Brazil. Throughout the 1990s, it spread to other municipalities in Brazil and to other countries in South America. From the late 1990s, PB in different formats began to take root in Central and Eastern Europe, Asia, Sub-Saharan Africa, the Middle East and North Africa. PB has been tried in a few Indian cities as well, especially in Karnataka and Kerala. In Pune, the municipal corporation initiated participatory budgeting in 2005. Since then the process has been repeated every year. **Cities practicing PB across the globe till 2012.**





Source: Tiago Peixoto (2012). 'Participatory Budgeting & Technology: Innovation in Open Government'. Blog posted on 24th August 2012.

### PB for Namesake

The Municipal Corporation of Pune sends a notification about the timeline during which citizens can make suggestions in the Budget through media. This timeline usually lasts for a month (August-September). During this time span, citizens can download the form from the corporation's website or pick it up from the local ward office and submit their suggestions to the local ward office. On submission, a receipt is given to the citizen. There is a restriction on the kind of suggestions that can be made by the citizens based on the cost to the corporation for completing the work (should be below or equal to 5 lakhs (approx £7,000)) and the nature of the work suggested (only works that are undertaken by the local ward office can be suggested). After the time span, the ward engineers from the ward office accept or reject the work on basis of the technical feasibility of the work and the cost of undertaking the work (all works that cost above 5 lakhs are rejected). After the initial screening of the suggestions, the list of works is scrutinized by the *Prabhag Samiti*, which comprises of elected representatives and it is the final authority which decides the fate of every suggestion. Thereafter, the list of accepted suggestions is included in the Municipal Commissioner's Budget (over the years, approximately 25-30% of the suggested works get accepted in the budget). The entire process has many loopholes which does not make participation effective. As a practitioner, there are some essentials for the recipe of participation to taste its best:

1. Information dissemination
2. People's interest in the process
3. An informed citizenry having knowledge on city level budgets
4. Suitable user friendly platform for participation.
5. Continuous consultation and deliberation between the communities.



## The Check list for Pune

Let us look at the ingredients that exist in the case of PB in Pune.

- Information dissemination: The corporation sends a notification through media. Local NGOs facilitate the process by conducting workshops, emails and through social media
- People's interest in the process: It is a function of information dissemination, the ease of participation and the output of participation. Currently, though year on year the number of suggestions are increasing, the number of people participating is 0.1 percent of the population
- An informed citizenry: A simplified version of the budget is published every year by an NGO called Janwani. However, the dissemination of the knowledge is limited.
- Suitable user friendly platform: As a result of the efforts of a local NGO – Janwani, the process was launched online for two consecutive years after its inception. However, due to lack of interest and support from the Corporation there was no online platform last year i.e. 2014.
- Consultation and deliberation between the community: There is no interaction between the ward level engineers and the citizens to prioritize on the works and comment on the technical feasibility. This leads to many suggestions getting rejected as citizens do not have the technical skills to determine whether a particular work can be completed within 5 lakhs or not, or whether the work suggested is a ward level work or city level work.
- System that is easy to track and accountable: Once the suggestion is submitted, there is no platform to track the status of the suggestion. Only after the final budget is prepared, the citizens can check whether their suggested work has been included or not. There is no method to track the accepted suggestions and keep a check on the quality of the work undertaken. Hence, there is complete absence of a feedback loop.

## What needs to be done?

In my view, Pune's PB is not even an inch close to the definition of PB accepted worldwide. In its present form, it looks like a mirage; the closer I look, the faster it diminishes. There is an urgent need to address some key issues in the process (e.g. short timeline of the process, no feedback to citizens on their suggestions and lack of citizen representation in the selection process). If left un-addressed, citizens shall lose interest in the process and Pune which boasts about being the only city with a functional PB in the state will lose a feather from its cap. So, what should be done is as follows:

1. The window of participation should be kept open throughout the year.
2. There are a number of suggestions that are related to the main headquarter departments which get rejected. These should be forwarded to the respective departments for approval, instead of outright rejection (the neighbourhood level alone is not enough).
3. An area meeting should be organized between the engineers and the citizens of the ward to deliberate over the suggestions. This should be done on a regular basis.
4. A re-distributive logic should be embedded in the design of the process (e.g. poorest districts/ areas get more money and vice-versa).
5. As the *Prabhag Samiti* is the final authority which decides the fate of every suggestions, its meetings should be attended by NGO representatives.

6. The process should be launched online and data base should be maintained centrally. Citizens should be able to check the status of their suggestion through the online platform.
7. Budget data should be open to the public and it should be possible for the citizens to track every work done through PB for its completion status, quality, location and other details.

### **Additional resources**

A local NGO has prepared a 'menu card' which provides the approximate cost for different types of work to help citizens make suggestions. This is not extensive but provides a guide for making suggestions. A copy can be accessed from the following link.

In addition, readers may be interested in a website created by two of the NGOs from a neighboring municipal corporation, namely the Pimpri Chinchwad Municipal Corporation for online participation. However, please note that this website is in operation only during the window of participation (next open November 2015).

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## CHAPTER 15.

### SUSTAINABLE DEVELOPMENT IN THE CANADIAN POLAR REGION

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The Canadian Arctic and Sub-Arctic region (the Polar region) is facing a new set of challenges related to sustainable development because of natural resource development and rapid population growth. Here, the role of bureaucratic responsiveness in developing and implementing sustainability planning policy which can address these challenges will be explored.

Since 2007, the Canadian government has significantly increased its investment within the Polar region *“to ensure that the [Canadian] North achieves its full promise as a vibrant region”* (Ministry of Aboriginal Affairs and Northern Development, 2011) through the continued development of natural resources that exist within the region. As such, due to the increased development of mines and oil and gas reserves, the Polar region has experienced *“considerable international migration of people seeking work in resource extraction and service sectors”* (Heleniak & Bogoyavlenskiy, 2013, p. 1). This has caused the population of the Polar region to grow by approximately 13% between 2000 and 2010, which is *“at a faster rate than Canada as a whole”* (Heleniak & Bogoyavlenskiy, 2013, p. 1). This level of growth is expected to continue in the Polar region, which is presenting a new set of challenges to sustainable development. This has led the federal government to mandate that all municipalities in Canada develop an Integrated Community Sustainability Plans (ICSPs) in order to provide a policy framework that would guide sustainable development.

The Integrated Community Sustainability Plan (ICSP), which has been promoted in Canada since 2005, is based on the premise that global sustainability challenges need a response through actions that are *“local and shaped by a strong sense of place”* (EACCC, 2006, p. 10). An ICSP is defined in the Municipal Funding Agreement as *“a long-term plan, developed in consultation with community members that provides direction for the community to realize sustainability objectives including environmental, culture, social and economic objectives”* (Planning for Sustainable Canadian Communities Roundtable, 2005, p. 4). The ICSPs are based on a four-pillar model of sustainability— social, cultural, economic, and environmental—and *“seek to integrate and to share knowledge and solutions, [so that] communities can better understand their future and work collectively towards achieving their goals”* (p. 6). In addition, ICSPs will help municipalities in Canada *“to translate knowledge, concerns and hopes into action,”* and *“enable communities to plan and manage their assets, services and resources in order to achieve identifiable outcomes, deliver services and address their priorities”* (p. 9). Throughout the development and implementation process of ICSPs, there is a significant emphasis on engaging and consulting various stakeholders, particularly citizens. As such, the Planning for Sustainable

Canadian Communities Roundtable (2005) encourages a collaborative mindset through various participatory techniques. This collaborative and participatory model of developing and implementing ICSPs allows for new forms of participatory planning, which ensures “*that the plan is grounded in the pluralistic socio-economic and bio-physical contexts of the community*” (Ling, Hanna & Dale, 2009, p. 231).

When there is collaboration and inclusion of citizens and other stakeholders in the decision-making process, it helps promote and instill a sense of shared responsibility and greater public consensus by having all stakeholders participate in the creation of future goals of their community (Bohunovsky, Jager & Omann, 2010). While engaging citizens in the planning process is an important aspect of stakeholder consultation, often public participation initiatives are not well-supported by citizens. This is highlighted by a lack of interest and low turnout (O’Toole et al., 2003; Lowndes, Pratchett and Stoker, 2004; Pilet et al., 2007). However, bureaucrats who are influenced by both the institutional constraints in which they work and their own personal beliefs and actions play an important role in citizen-government interactions. In particular, the manner in which bureaucrats respond to the needs of citizens and their preferences for participation and engagement can facilitate and nurture citizen participation (Potoski, 2002; Vigoda, 2002; West, 2004; Meier & O’Toole, 2006; Byer, 2007; Yang and Callahan, 2007; Handley & Howell-Moroney, 2010). It is imperative that engagement approaches focus on providing the required accommodation for divergent groups within communities as the cultural and social diversity of local populations grow (Qadeer, 1997). This would ensure a diversity of participants including immigrant populations, as they are often marginalized within the decision-making process due to various factors including socioeconomic and cultural differences (Andrulis, Siddiqui & Gantner, 2007) and language barriers (Schachter & Liu, 2005). Furthermore, this would lead to a stronger sense of satisfaction amongst citizens with local government (Box and Musso, 2004), improved service delivery (Alford, 2002), and enhanced acceptance of policy and decisions among stakeholders (Woolcock and Narayan, 2000).

The development of ICSPs were “*designed to accelerate the shift in local planning and decision-making toward more long-term, coherent and participatory approaches to achieve sustainable communities*” (Planning for Sustainable Canadian Communities Roundtable, 2005, p. 4). As part of a larger global movement to become sustainable, the ICSP is a product of the current era where there exists the concern and awareness of the impacts of human activities on the environment within policy and politics. As such, there has been advocacy for sustainable land use practices and sustainable development has been considered a new planning agenda at all levels of government (Vitousek et al., 1997; Beatley and Manning, 1998, Raco, 2005). This is evident through the creation and implementation of environmental policies, from local municipalities developing sustainability related planning policies to international environmental agreements. Rather than rename a standard strategic plan or have administration “*fill in the blanks*”, ICSPs are intended to be an opportunity to “*broaden the scope of factors considered, lengthen the timeframe, and encourage participation and collaboration through participatory techniques*” (Planning for Sustainable Canadian Communities Roundtable, 2005, p. 4). In this regard, as the Canadian Polar region’s population continues to grow, largely due to international migration, bureaucratic responsiveness to the needs and preferences of the changing social composition of their communities in developing engagement and consultation approaches will be pivotal to ensure that sustainability planning processes are inclusive and democratic.

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Nabil Malik has an interest in sustainability, stakeholder engagement and consultation, research, policy development and implementation. Through his undergraduate studies he ascertained a BA Spec. Hons. in Geography & Urban Studies and a Certificate in Migration & Refugee Studies. He pursued a Master's degree in Environmental Studies in the Planning Program and a Graduate Diploma in Democratic Administration at York University (Toronto); receiving multiple scholarships and awards including a Joseph-Armand Bombardier Canada Graduate Master's Scholarship from the Social Science and Humanities Research Council of Canada and funding from the Canadian Polar

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## CHAPTER 16.

# IMPROVING HOUSING IN ASIA AND TURNING TRADITIONAL TOP-DOWN FUNDING ON ITS HEAD

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DIANA MITLIN, INTERNATIONAL INSTITUTE OF ENVIRONMENT AND DEVELOPMENT, UK

Community involvement in improving housing for low income families in Asian cities is changing approaches to funding – and delivering impressive results as well.



*A community planning workshop in Cambodia (Photo: Diana Mitlin/IIED)*

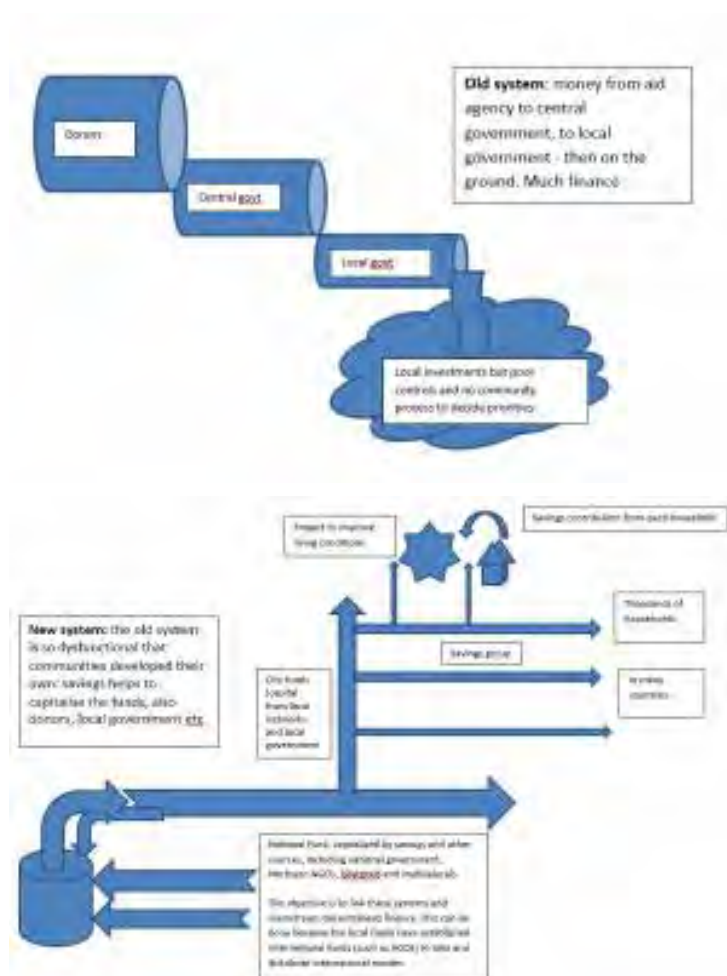
I was recently in Bangkok with the Asian Coalition for Housing Rights (ACHR) to hear about the latest outcomes from the Asian Coalition for Community Action (ACCA) programme. The results were impressive: there are now projects in 215 cities across Asia and more than 49,000 low income families have been able to secure land and housing.

ACCA was established in 2011 to support community-driven improvements to informal settlements in ways that are relevant at the city scale. It enables the organised urban poor to be the primary doers in planning and implementing projects to secure land tenure, improve infrastructure and construct housing.

The design of the programme encourages local communities to work in partnership with their local governments and other local stakeholders. As such, it turns on its head the ways in which donors have traditionally distributed finance.



The two diagrams below show the old model of financing and the new model.



### Spreading the network

ACCA has supported activities in 215 cities in 19 countries. This rapid and extensive reach has only been possible because there are many organisations involved. While the programme is designed to encourage particular approaches and strategies, it has proved to be flexible enough to allow members of the coalition to adapt it to the diverse and complex contexts in which they are working.

Activities build on the work that groups have previously completed in towns and cities across the region, nurtured by community organisations and their support groups. And implementation has drawn on the combined experiences, mistakes and learning of previous years.

### What are the results?

The coalition’s members have made a bold attempt to introduce visionary change in urban Asia, crafting more inclusive strategies to challenge poverty and inequality. The programme has just completed its fifth year, with investment of almost US\$14.5 million. What are the results?

- 146 “big housing projects” (capitalised with \$40,000 per project) have helped 49,356 low-income families to get secure land and housing. These projects have been realised in 127 cities – and in 70 of these, the communities were able to negotiate with the government and secure land free, or at minimal cost

- These “big housing projects” have also catalysed the creation of city development funds, which are now operating as new joint financial mechanisms in 136 cities with funds of \$21.65 million. These bring together savings, and development assistance
- (with ACCA money being repaid by those benefiting from the housing projects). In 41 cities, local government has contributed cash to these funds, demonstrating their willingness to invest in innovative financial mechanisms to address the needs of some of the most vulnerable low-income citizens. But the biggest source of capital for the city development funds has been community savings as local residents have invested \$15.26 million to help to provide a loan fund for their collective investments
- Small improvement projects (such as walkways, drains, toilets, water supply, community centres and solid waste systems) have been implemented in 2,021 low-income communities. These have benefited 342,399 low-income families. Working together, residents have been able to secure more than 53 per cent of the budget for these small projects from their local governments. These leveraged funds add to the scale and quality of improvements

### **Setting their own development agenda**

As important as these immediate improvements is the demonstration of an alternative way of securing development. These small projects have demonstrated the collective power of organised residents to develop practical solutions to immediate problems they face – and as a result they can see that they no longer have to wait for government to take the initiative.

Through coming together and realising their own projects, the organised urban poor can draw in government finance – and set the development agenda.

Even simple analysis demonstrates the power of this approach. For a total of \$14.5 million of donor finance, \$90 million of project finance from government has been secured (including both cash and assets) and a further \$2.1 million for contributions to community development funds.

On top of this, local residents have contributed \$14.4 million in project finance, and \$15.3 million in contributions to community development funds. Putting the benefits of the small projects to one side, project investment of \$293 has been sufficient to contribute to each family and secure them a house for life (in most cases) or for a considerable period (with a few leases).

If the full costs of the project are spread across the households benefiting from the small projects then an average investment of \$42.3 per household has been sufficient to secure improvements in their local infrastructure and services.

But these simple figures ARE misleading. The evidence of the community contribution to their own city funds shows that for local groups, this is an investment project, not grant finance. The project has demonstrated an alternative way of doing development, with an alternative finance system. And these outcomes demonstrate just how effective it has been.

### **More resources**

- Full details of the ACCA programme and its concepts and strategies are provided in the April and October 2012 issues of Environment and Urbanization
- ACHR reports can be downloaded from the ACHR website.
- Urban Matters – Blogs integrating research and action for more inclusive and sustainable cities

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## CHAPTER 17.

# CO-CREATING A STRATEGIC RESEARCH AND INNOVATION AGENDA (SRIA) FOR SUSTAINABLE AND LIVEABLE URBAN FUTURES

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JONAS BYLUND, JPI URBAN EUROPE

Well, how do we go about setting up an ambitious programme with thematic priorities in the field of urban development? It could be a mess. It could be superficial and just full of buzzwords. It could also be fabulously collaborative adventure! The latter, we hope. This piece is focused on why and how JPI Urban Europe composes its *Strategic Research and Innovation Agenda (SRIA): Transition towards sustainable and liveable urban futures*. The SRIA is to present a plan for the next five years (until 2020) on what and how we will orient the JPI Urban Europe calls for research and innovation as well as related activities that we do concerning urban development in Europe. Although this chapter is nicely located in the section on engaging citizens, these are but one group we actually needed to engage among many other kinds of publics or actors (Marres 2010). However, the SRIA is also set to engage more and varied forms of publics into urban transition over the coming years!

### **Why do we need a SRIA?**

Why do we need an agenda? Couldn't we just keep in doing it call by call? Simply because we need a reference, a plan. Of course. No project can work without one. But we also need to allow other actors in policy and research and innovation to know what we plan to do, so to align our activities. This is important since it concerns the many 'wicked issues' in the current landscape of urban sustainable development activities, where creative work is required to balance holism with silos, to find 'bite-size chunks'.

The working title of the SRIA is '*Transition towards sustainable and liveable urban futures*'. An agenda in this field has one main predicament. The 'urban' is more than one, but less than many (Mol 2002). Or with another metaphor: from a research and innovation point of view, it is an archipelago of disciplinary islands and clusters of epistemic communities.

Urban research, urban studies, or urbanism – however we may call the field of inquiries concerned with urban phenomena – can be seen as an archipelago. The analogy is borrowed from Michel Serres (1980), who used it to think of science as a whole: there are islands of order or systematized knowledges which differ in terms of topics, issues, and method; and much water in between, which stands for the unordered and unknown.

JPI Urban Europe is not concerned with discrete topics such as Alzheimer's disease or climate change, however terribly complex and costly they are to address in their own right. Hence, we can rarely talk of a state of the art or the research frontier. This is not always clear to people outside the field, including academics (perhaps it is not always clear for academics within the field either). Time and again the urge seems to irrupt to single out one island and have it define the whole field to clear out the mess. Of course, this is also why the ranking of specific topics are frustratingly difficult and controversial within the field, and also why holism is so much easier said than done. Because we seem to have a hard time understanding differences in dialect over the archipelago, there is simply no one shared language. So, the field will remain rather messy as long as we call it 'urban'.

Nowadays the call for more substantial interdisciplinary efforts to bridge the waters is ubiquitous. To connect two or more islands not yet connected is an urgent matter, as is knowledge transfer between them and beyond to policy, planning, politics, and society at large. However, and perhaps because of the varying success and failures of these endeavours, the archipelagic landscape remains unevenly infrastructured. Hence, the field of urban research in itself raises similar problems to those concerning interdisciplinarity in environmentalism and the sciences in general. This is many ways reflected in the policy and decision-making setting: this arena could be seen as an archipelago as well. So, bottom line, the field of urban development – particularly sustainable urban development – is strongly characterized by what is now commonly called silos or silo practices.

However, and here is the gist of why the SRIA is pertinent: it is obviously no use to merely lump all knowledge together into one holistic urban porridge. I fear *assemblage* thinking may sometimes end up here – similar to a simple call for *holism* in general. This is of course why *integrated* is a better notion, if not optimal – an 'integrated urban development'? Law, in his reflection on how to deal with 'wicked issues' in connection with the Anthropocene, proposed that we should try to find the 'bite-size chunks'. That is, not to break down silos completely, but not to acknowledge them fully either (Law 2014).

### **How does it work in practice?**

Given the 'participatory turn' and the 'new engagement agenda' across policy discourses and research bodies such as Future Earth, there are ample times when issues and points warrant co-creation but also sincere reflexive work as part of this (cf. e.g. Beck 2012; Bijker 2010; Gibbons 1999; Jasanoff 2007). Granted, this notion requires a more substantial reflexivity in responsible research and innovation (RRI) so that it does not 'sink in the hype' and become a 'magic buzzword' (cf. Swart et al. 2014). Although this is not a substantial discussion on variants and models of co-creation, it at least signals an element of reflexivity is due when we throw around this notion.



Figure 1: the range of actors invited to co-create the SRIA, by Margit Noll, JPI Urban Europe Management Board.

The SRIA co-creation was not modeled after a systematic ‘scientific’ method, but rather from a general principle to allow and enable as many kinds of groups and communities (actors) to have a say on urban developments.

The main warrant, in our case, was simply that it would not be right to have only one kind of stakeholder, one kind of actor to draw up the document. Because of what the agenda sets out to achieve, a substantial support to urban sustainable transition, mainly in Europe but not exclusively, it was important to keep in mind that there are no single and omniscient sources to inform the content – to achieve a true break away from the technocratic rationalism that still lingers in the field.

The agenda is intended to be multi-level in its nature: individual research and innovation groups, civil servants in urban management, civil society organisations, national policy makers, and European policy and urban development actions as well as ‘international’ or global organisations should be found it perusable. So, this is also important when considered from both ethical and design point of views, since the SRIA had to align a plethora of city strategies, as well as national, European, and global policy priorities and research programmes (see Figure 1). The SRIA had to consider the needs of urban civil society and those actors who work with urban issues on a daily basis. At the same time, it had to comprise a visionary programme of research and innovation to enable urban sustainable development.

Designing the SRIA was set out as an iterative approach, which starts with the academic scientists – in the form of our Scientific Advisory Board (SAB) – to build a skeleton of the latest scientific findings. Of course, there were early starts or, to compare with what many writers do as a rule, ‘false-starts’ to get the process going. For each time we realised the SRIA wouldn’t hold after dialogues with stakeholders, it was back to the drawing table to redesign the outline. These regular reflections and discussions on ideas, topics, and implementation measures have been the main feature of the co-creative approach.

Not all actors are comfortable in a workshop environment or participatory approach. To engage 'hard to reach' actors in the crafting of the SRIA, alternative interfaces were required. We took advantage of a high profile event. At the event, European Union representatives and urban policy makers' discussions provided input for the SRIA. Another interface was to set up national consultations by the JPI Urban Europe member states: the national contact points were asked to deliberate the SAB Megatrends paper with national stakeholders. At this point, the urban social innovation project SEiSMiC (<http://www.seismicproject.eu/>) and the Urban Europe Research Alliance (UERA; <http://jpi-urbaneurope.eu/activities/uera/>) also provided very helpful input.

The SAB drafted a note, an outline, to serve as the next skeleton in the following iteration. This phase, cities' representatives and projects already funded within JPI Urban Europe were invited to discuss and state priorities. The note was subsequently molded into a more policy-oriented text. Representatives from the Governing Board, European Commission, and scientific expertise engaged in a transdisciplinary workshop. As well as an open survey format online to invite as broad participation as possible.

### **Polyrhythmic patterns and multi-modality**

Time. It takes time because different kinds of actors work with different rhythms. Time differs nationally in terms of 'policy cycles', and also between academia and policy, and amongst urban practitioners. SRIAs are ruled by the 'polyrhythmic' setting and deadlines can be quite plastic (no news there, really). Additionally, some actors are quite unused to this level of input in urban agendas. Finally, there is also the challenge of composing and articulating the SRIA in at least two kinds of registers at once: frontstage (policy oriented) and backstage (technical issues) (Bijker 2010; cf. Boltanski & Thévenot 1999). And still to do this without the sense of a sharp contrast between the modes, so as enable movement between the them. Now, with all this in place, let's get on the task of co-creating what the SRIA tells us to do!

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## CHAPTER 18.

# ASSESSING AND COMMUNICATING URBAN SUSTAINABILITY: COMPARING THE ECOLOGICAL FOOTPRINT AND THE CERCLE MULTI-CRITERIA INDICATOR SET

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### **Towards an integrative sustainability assessment approach**

Sustainability assessment (SA) in urban areas requires the measurement of economic, ecological and social parameters in order to engage stakeholders and to develop policy implementations. A number of approaches have been developed and implemented to assess sustainability. These are measuring either a larger number of independent multi-criteria indicators, attempting to assess detailed economic, social and ecological data; or they calculate composite indicators, attempting to measure the systemic effects in the interplay of economic, social and ecological data aggregated into one figure. However, any urban sustainability assessment tool needs to provide both detailed and relevant information for policy makers, and understandable and motivating information for inhabitants, businesses, visitors and other stakeholders, who are needed to support sustainable development with their taxes, votes and actions. A joint 'currency' is missing that is capable of reducing the complexity of SA and that allows for better stakeholder communication, though still provides sufficiently detailed information for policy makers.

*How to measure something that is complex, dynamic, uncertain, and highly subjective?*

The integration of an individual 'understanding' or 'mental model' of sustainability (Luthe and Wyss, 2015) is of high importance for an integrative assessment approach, because the transition towards a sustainable society is based on behavioural change of the relevant stakeholders. Although authors in sustainability assessment increasingly recognize the importance of stakeholder values and perspectives for the success of integrated sustainability assessment processes, the unravelling of how an individual understanding or mental model can inform the selection and development of appropriate sustainability assessment tools remains a research challenge (Gasparatos and Scolobig, 2012).

*At the end, it is a human decision what balance between ecological, social and economic aspects is supported. We thus need to engage stakeholders and provide them with the necessary baseline of quantification for their opinion building process.*

## The CERCLE multicriteria assessment tool

The CERCLE sustainability indicators have been developed for Swiss cantons and communities in the years 2003-2005. Currently there are twenty cantons and eighteen municipalities participating in their assessment. The CERCLE consist of 30 indicators measuring economic, social and ecological aspects. The results are visualized and communicated online, but not targeting the public (figure 1); it rather is a tool to inform policy. Single (multi-criteria) indicator approaches have been most commonly applied in assessing sustainability in urban areas, and a major lack of such tools is that the resulting list of rather independent parameters cannot reflect their interaction in a systems understanding (figure 1).



Figure 1. The CERCLE indicator set for Chur (BFS 2009).

## The Ecological Footprint for cities

The Ecological Footprint (EF) as another quantitative approach is a composite indicator that sets the needed and locally available, biocapacity-based resources into relation to the ecosystem capacity to assimilate the residuals of human consumption and re-introduce them into the biosphere. The EF calculation is partly based on economic consumption data and results in one single parameter of global hectares (Gha), an internationally used and comparable single unit in SA. The footprint may have advantages in accessibility and applicability, as well as in reducing complexity of SA, but may lose on accuracy because of many implied simplifications – social aspects are e.g. completely ignored. Data needed for calculation of the EF is based on country and regional data in the areas of household expenditure, price differentials, energy mix and its production, CO2 emission of industry and household, land use, and yields out of land use.

## The experiment – applying both measurement approaches to the City of Chur

Chur is an Alpine town in Switzerland of about 40'000 inhabitants. We calculated the EF for its status quo (2012) as well as for two development scenarios (this is the first time that the EF has

been measured for such a small city) and present the results together with the CERCLE multi-criteria indicator set for 2009 as well as for the calculated scenarios in participative stakeholder workshops. Both approaches are compared given their technical applicability and feasibility, their accuracy, and their capability to communicate and translate results into policy strategies in an underlying reflexive process. As part of this comparison, both quantitative results were visualized and presented via flipchart and video beamer in order to test individual and collective understandings of the different approaches.



*Figure 2. The city of Chur in the canton of Grison, Switzerland.*

## **Results**

### **Technical feasibility and applicability**

In calculating the indicators we experienced some barriers for measuring sustainability in communities. It was difficult to find a city as a partner in developing sustainability assessment tools. Officials found it delicate to engage in public discussions on sustainability. Municipalities were internally not willing to dedicate resources to assessing such data, and often were neither ready to integrate sustainability assessment tools in the administration, nor to involve the public and communicate sustainability at all. Most municipalities we spoke to were not satisfied with internal (costs/efforts) and external applicability (complexity), which is the main reason why Chur did not participate anymore in the CERCLE indicators after their last assessment in 2009. Astonishing enough, there was no evaluation process from the Swiss authorities nor the cities in place to monitor the success and the application of the CERCLE in practice.

The EF of Chur is with 4.31 gha/person lower than the one for Switzerland with 5.01 gha/person (figures 3 and 4). The main differences origin from the carbon intensity of the energy production (about 50% nuclear, 50% hydro in Chur in comparison to roughly 25% petroleum based, 25% nuclear, 10% gas, 10% hydro, and 30% other in Switzerland). The energy consumption data is mostly expressed in the household sector. The results translate in the number of 2.82 planets needed if everyone on earth lived like the Swiss average, while 2.4 planets were needed if everyone lived like Chur's inhabitants.

Overall, the EF proved to be tricky to calculate. For Switzerland, the Swiss Federal Statistical Office (FSO) is a source where most of the required data for the whole country is available. Required EF data for a smaller entity (such as a small town) needs significant detail and is therefore not available at FSO (so that the amount of working hours needed by one person were about 100 h, including internet research, telephone calls and mail shots). Many assumptions needed to be done due to a lack of regional or local data. However, the difference to the national EF of Switzerland is relevant and explainable (figure 3).



Figure 3. The EF for Chur (2012), compared to the EF for Switzerland, and the respective Consumption Land Use Matrices (CLUM).

### Findings from the workshops

Statements like “if you want to look at economic or social aspects”, “we have to consider a variety of aspects” and “sustainability is a rather multifaceted concept, which we should not reduce to consumption of resources” indicate that the focus group debaters see the EF as a SA system, which equals sustainability with consumption of resources and therefore as not sufficient to address the concept of sustainability as a whole. In this respect debaters often use CERCLE indicators to contrast and to clarify the one-dimensional character of ecological footprint.

Furthermore, comments such as “compares apples and oranges”, “weighting these indicators, that’s highly subjective”, “displaying all those indicators in the same way is simply wrong” and “CERCLE doesn’t show any interconnections” point to the fact that focus group debaters view CERCLE indicators as suitable to stimulate discussion about sustainability but as insufficient when it comes to mapping sustainability. This insufficiency, according to focus group debaters, arises from the fact that CERCLE treats all its indicators as isolated, independent components not considering whether a certain component has no relations to other components or whether it is closely related to others.





Figure 4. Workshop setup.

As for communicability of results, focus group debaters point out that the EF visualisations using the globe (see figure 5) are rather “appealing”, “work perfectly from an advertising point of view” or can be considered “an ideal way of communicating to people of all educational classes”. This does not surprise as the founders of the EF highlight that their system captivates with its “intuitive comprehensibility”. However, other comments “black box” and “conceal things” and in particular “potential danger in using these globe-visualizations” and “they might make us share a very incomplete perspective on sustainability” indicate that this “advertising appeal” is deemed critical among certain focus group participants. Some statements point to the perception that while CERCLE indicators may raise awareness that sustainability “should not be reduced to consumption of resources”, the ecological footprint visualisation may do the opposite. Similar to advertisements that usually provide a rather narrow perspective on the respective product, the ecological footprint visualisations are said to be creating a perspective on sustainability, which neglects all aspects we usually address as “social” (e.g., “health”, “equal opportunities”, “working conditions”).



Figure 5. The EF results as planets as communicated in the workshops.

Interestingly, one workshop participant argued that the visualisations we used as stimulus material are to be considered mere illustrations, that is, visual representations of terminated considerations and not findings of a query run by means of the SA systems and – consequently – asked for an instrument, which may show and assess consequences regarding different urban design scenarios. Another comment addressed one of the main problems of urban planning tools: where to set the system boundaries? Some debaters argued that using the EF (as well as CERCLE indicators) in urban planning may lead to inadequate solutions. Several participants underlined the importance of being aware of the specifics of certain places and taking these into consideration. As an example one participant put forward that the factors used by the ecological footprint, i.e. the consumption of drinking water, should be adapted to the location, which is assessed – as for instance Chur ‘drowns in drinking water’.

### Summary

Results indicate that the composite indicator EF is better equipped to interest, motivate and engage stakeholders, while the multi-criteria set CERCLE is needed for planning detailed action. Results suggest the combination of both tools for sustainability assessment and for participative scenario planning in urban areas.

Both types of quantitative approaches do not integrate the individual and collective ‘understandings’ of (urban) sustainability, however. This needs to be seen as mandatory for an integrative assessment tool, because the population of a town or a region needs to participate and support innovation and policy changes for more sustainable development, and be willing to change its (consumption) behaviour. The combination of a quantitative measure with a qualitative participatory feedback loop maybe needed in order to enable integrative SA. Also, a quantifiable benchmark of what is sustainable, at least in an ecosystem services context, is lacking in most tools. The EF may provide a good basis here but it possibly needs to be combined with a social composite indicator, like the Happy Planet Index (HPI).

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PART IV.

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**URBAN DIVIDES**

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## CHAPTER 19.

### **GATED COMMUNITIES OF ISTANBUL: SPACES OF UPPER CLASS EXCLUSIVITY, ESCAPISM AND STIGMA**

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In the last couple of decades, cities all over the world have become segregated into an endless patchwork of shopping malls and multi-purpose complexes leading to a neo-medieval age. Gated communities are an important part of this urban process, founded against the general norm of open urban space and mixed urban culture. They receive significant attention in academic circles especially in the fields of human geography, planning, and housing. The growing attention to the analysis of gated communities has created a literature consisting of different research perspectives and different contexts of investigation and consequently, diverse definitions. A definition, stripped from any socio-cultural and historical context comes from Roitman: gated communities usually refer to various types of residential and/or office complexes closed to outsiders by different mechanisms such as walls, gates, and fences and protected against potential dangers by security guards and CCTV cameras. Gated communities are composed of spatial (walls and gates), social (population characteristics) and legal mechanisms (rules of conduct managing life inside these spaces) (Roitman, 2010).

#### **A Common Urban Form**

Gated communities are not the first developments characterised by walls, fences and an exclusive lifestyle closed to the rest of society. Rather, there were similar forms of gating seen in different parts of the world reflecting a common trend especially among the upper classes wishing to retreat from the masses (Blakely & Snyder, 1997; Low, 2003; Sassen, 2012). Similarly, contemporary gated communities are usually interpreted as an upper class desire for status, community life, belonging, and security within a neoliberal urban context, which have become more popular since the late 1970s and early 1980s.

However, as discussed in the book edited by Bagaeen and Uduku (2012), gated communities do not have the same meaning for all. Rather, the authors demonstrate differences in terms of the factors underpinning their development, their impacts on wider urban realms and meanings across societies. For example, in developed countries such as New Zealand, gated communities mostly reflect a search for a lifestyle, and/or way to share and reduce the costs of common amenities leading to more sustainable lifestyles (Dupuis & Dixon, 2012). Instead, particularly in developing countries, gated communities reflect larger socio-economic issues and concerns about increasing

crime levels. For example, in the Latin American context, gated communities are seen to increase socio-spatial fragmentation, inequality, urban sprawl, and environmental degradation (Roitman & Giglio, 2012). In China (Tomba, 2012) and the Middle East (Bagaeen, 2012), gated communities reflect a wish to return to a more traditional way of life. The literature also demonstrates that in the developing world, gated communities also reflect the wish to imitate Western way of life and are regarded as status symbols within those contexts (Suarez Carrasquillo, 2011; Webster, Glasze, & Frantz, 2002; Wu, 2010).

### **Turkey and Neoliberal Urbanisation**

Turkey has experienced significant economic and socio-political change since the 1980s, which contributed to the emergence of gated communities. The implementation of neoliberal economic policies transformed urban land into a source of profit and a new housing market emerged dominated by large developer companies (Oncu, 1988). The emergence of new forms of capital accumulation also led to a new and more polarised class structure characterised by the new middle and/or upper-middle classes in search of new lifestyles of status, belonging, and community (Genis, 2007). However, gated communities are not caused by economic factors alone, but also by the symbolic ones such as people's perception of the cities they live in and/or the people who share their urban spaces. As discussed by Oncu (1997), large cities, especially Istanbul acquired a negative meaning for the new middle and upper classes due to the mixed urban culture characterised by tensions in public spaces between established inhabitants and migrants, the erosion of a common culture as well as increasing crime rates. Relatedly, cities became associated with environmental degradation due to increased pollution, higher densities, declining green space, decaying urban infrastructure, and lower levels of general living quality. The changing meanings of cities created a wish to live in a detached house, often a house far from city centres, which became a status symbol for upper classes (Oncu, 1997).



Istanbul: A city of more than 8,500 years. The spectacular Hagia Sophia in the historic peninsula mixes with high-rise business and residential towers being erected all over the city. [1]

### **Istanbul: The Global City of Turkey**

Istanbul is the first city experiencing this process stronger than any other Turkish city, as the result of its particular features: Istanbul has a history of approximately 8,500 years spanning over pre-Christian, Christian and Islamic cultures. It was the capital city of Byzantium and Ottoman Empires. It is the most populated city of Turkey with a population of more than 14 million and it has the highest density among other cities in the country [2]. As a result, Istanbul attracts most of the foreign investment and visitors, hosting various international festivals, and is the most important centre of secondary and higher education of Turkey. Istanbul also contains two financial centres on each side of the city, comprising an important white-collar population

working in the finance, insurance and real estate sectors. Starting from the 1980s, local political actors projected Istanbul as a global city (Keyder, 2000). For political actors, together with its rich heritage, diverse population, various cultural events and touristic attractions Istanbul was the perfect global city of Turkey which would generate profit through various real estate investments. Broadly speaking, currently, Istanbul is under massive transformation through two ways: first, mega-development projects in outer zones which also involve alteration of the landscape and second, urban regeneration and gentrification projects which are about demolish and/or renovate old inner city neighbourhoods (Tanulku, 2013b).

### **A Counter-Urban Phenomenon**

In Istanbul the primary developments which can be regarded as the first gated communities are to be found close to the city centre. However, gated communities in this piece are associated with a counter-urban process accelerated after the 1980s, when Istanbul's natural beauties, such as the world-known Bosphorus, and the outer zones relatively intact from construction started to be sold to developer companies. The opening of these lands to construction was related to the transformation of housing market through the introduction of large developer companies into domestic market, as well as gradual removal of urban planning, once the guarantee of the protection of urban heritage and resources. In addition, Istanbul's proximity to the North Anatolian Fault Line and low quality housing make it vulnerable to strong earthquakes, seen in the 1999 Marmara Earthquake. This was a turning point for many changes, including the acceptance of new construction regulations to provide better housing quality and the rise of a desire to live far from the city centre (Tanulku, 2012a). These intact areas became full of gated communities and related facilities, including shopping malls, café and restaurant chains and private schools and universities.



Istanbul from Google Earth: the north of the city covered with native forests faces with the threat of destruction due to the construction of new developments, such as gated communities, private universities and business and shopping facilities. Gated communities are located in all parts of the city, especially the outer zones.

Gated communities are regarded to provide community and belonging due to culturally-similar neighbours, good-quality homes built by prominent developer companies and designed by well-

known architects and various amenities reducing the need of using public services. While the primary examples of gated communities in Istanbul reflect an elitist secession from city centres, since the beginning of the 2000s, they started to target different groups of buyers and built in different sizes, styles and in all parts of the city. This reflects the effect of the emergence of new forms of capital accumulation which led to a more diversified and segregated class structure. This diversity is of economic, social and cultural origin, which is reflected on the identity of each gated community having particular names, architectural styles, and amenities, size of the land and housing units, and advertising campaigns (Tanulku, 2013a).

### **Gated Communities: Environmental Degradation and Upper-Class Stigma**

Gated communities in Istanbul create two main problems: the first is associated with environmental sustainability, i.e. their damaging effect on environment and natural resources such as forests and arable lands, once owned by the locals. In this respect, they also lead to the dispossession of the locals who sell their lands off to developer companies expecting high rent value. The locals either became impoverished and started working in those communities in low-skilled jobs or left their homes because of losing their lands (Tanulku, 2012a). This creates the irony that the residents in gated communities who abandoned city centres due to concerns of urban pollution, degradation and density, complain about the same problems in the once-beautiful areas now facing dramatic growth because of them. More particularly, Istanbul's northern suburbs experience this process stronger due to the area's relatively higher status for the residents of gated communities who altered the topography of the area, covered with native forests. Once a symbol of escape, the north of Istanbul faces tremendous change due to the construction of gated communities as well as the infamous Third Bosphorus Bridge and Airport.

The second is the stigma associated with gated communities, which are regarded as upper-class sites reflecting their wish of exclusion and retreat from urban life and problems. The irony is that while people move into gated communities in order to eliminate the stigma of large cities, symbolizing mixed immigrant culture as well as environmental degradation, once by closing themselves off from the rest into "hated communities", they take the stigma on their shoulders due to their individualised lifestyles excluding the rest of the society. They try to eliminate this stigma either by helping the local populations, found poorer, through aid campaigns and free courses given through volunteer work, and finding jobs for them (Tanulku, 2012a) and/or accusing their richer neighbours to rely on illegal sources of income and have non-friendly attitude to outsiders (Tanulku, 2012b). In addition, despite being regarded as ideal and problem free-zones, gated communities lead to disputes between residents emerging from common resource sharing, as well as visitors coming from the outside (Tanulku, 2013a). These indicate that gated communities in Istanbul can be regarded as an urban dilemma which is found to be against the ideal of an open and democratic urban space shared and accessed by all.

### **Author's note**

A different version of this piece was published in <http://sustainablecitiescollective.com/basaktanulku/179331/rise-gated-communities-turkey-spaces-upper-class-exclusivity-escapism-and-stigma> (posted on October 1 2013)

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[1][http://en.wikipedia.org/wiki/File:Istanbul\\_panorama\\_and\\_skyline.jpg](http://en.wikipedia.org/wiki/File:Istanbul_panorama_and_skyline.jpg), 2 July 2012, 11:13,<http://www.flickr.com/photos/bmorlok/7653851478/>)

[2] <http://tuik.gov.tr/UstMenu.do?metod=temelist#>

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Basak Tanulku obtained PhD degree in Sociology from Lancaster University, the UK for the research "An Exploration of Two Gated Communities in Istanbul, Turkey" (2010). She works on cities, particularly socio-spatial fragmentation, gated communities and similar developments in Turkey; space and identity; urban vacant lands and buildings; urban social movements and protest camps; urban transformation and its effects on urban communities, life and heritage. She is also interested in the human-animal interaction, the protection of cultural heritage and gender issues. She also has a strong background on the socio-political context of Turkey and the Middle-East. She wrote blogs for different web sites and published articles in peer-reviews journals, such as *Geoforum* and *Housing Studies*.

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## CHAPTER 20.

### **GATED NEIGHBOURHOODS IN VILNIUS REGION: SOCIO-SPATIAL RESIDENTIAL DIFFERENTIATION**

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In this blog we present our research results on gated neighborhoods in Lithuania (with particular emphasis placed on the Vilnius region) which has been previously published as a journal article in *Hungarian Geographical Bulletin* 63(3) 2014 and can be found [here](#).

Development of a socially sustainable city is not an easy task especially in the context of socio-spatial residential differentiation. One of the examples of such differentiation is the desire of residents to flock into the “social ghettos” – gated and guarded neighborhoods (GGNs). This research is focused on gated communities that are located in Lithuanian capital Vilnius and its surroundings.

The analysis of the literature highlighted that gated and guarded neighborhoods have been increasing in most European countries, including those where this form of housing had been rare until the 1990s. However, the appearance of GGNs in Lithuania, compared to other post-socialist countries (for example the Czech Republic, Hungary, Poland, or Russia) was late. The idea for such development of neighborhoods in Lithuania came from abroad. The first GGN in Lithuania appeared at the beginning of the 21st century and became popular in the middle of the first decade. This period coincided with the country’s robust economic growth and a real-estate boom.



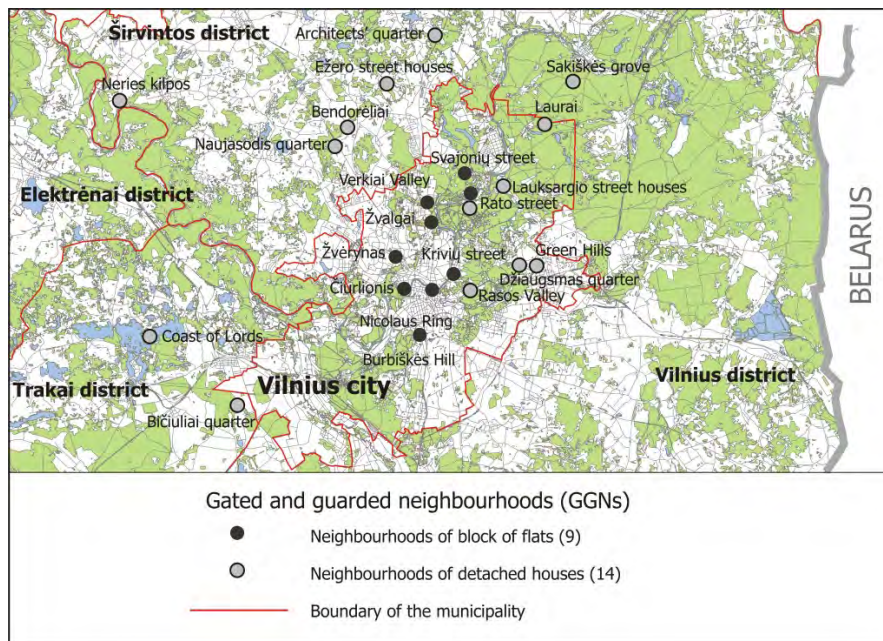


Figure 1. The location of gated communities in Vilnius region. Source: own survey

Our survey in 2010 showed that around 25% of newly built neighborhoods with detached or semi-detached houses in Vilnius region were gated and guarded. **Figure 1** shows the locations of GGNs in Vilnius region.

In our research we chose “Neries kilpos” gated neighborhood for a detailed case study, because its characteristics (size, security installations, socio-economic status) are very typical of other Lithuanian GGNs. “Neries kilpos” is well secured by fences (**Photo 1**). There are also automatic gates and video cameras. Furthermore, the whole territory is supervised by the territory manager on workdays.



Photo 1. “Neries kilpos” gated and guarded neighborhood. Photo: Krupickaitė D.

During our research we analysed different actors’ motivations regarding the development of gated neighborhoods in the Vilnius region: the motivations of developers and the motivations of residents. Additionally, in order to understand the market demand, we analysed the advertisements that presented such type of neighborhoods in Lithuania.

Therefore, the detailed analysis of *advertisements* of gated neighborhoods revealed that comfort, quality and “fascinating” exclusive landscape were unanimously emphasized. The geographical location in the urban region was another important factor, which was followed by the prestige of the settlement. Regarding the security aspect, the real estate advertisements underlined not only property protection but also the granting of more privacy.

Our research and discussions with “Neries kilpos” GGN *residents* revealed that exclusive landscapes and attractive places for recreation were the most important motives that inspired the respondents to choose the settlement. The most important aspects for the residents living in such neighborhoods are the community, assurance of safe social environment, economic profit, the lack of control compensation and maintenance of the settlement.

The *conclusions* that we made were as follows: the fences around GGNs are a symbol of the border which determines a safe and united space. It also provides physical security for children. As a result, the investors tend to create an image of GGNs as safe, and more comfortable residential areas. As the maintenance of security is quite expensive, only a small part of GGN residents want to invest in them.

However, some differences between Lithuanian and foreign gated communities can also be pointed out. Firstly, the development of GGNs in Lithuania started later than in other post-socialist countries, and they did not receive such popularity as in Russia, Poland, Hungary, and the Czech Republic. Also, there are almost no manifestations of luxury. These settlements are not exclusively prestigious as they are inhabited by upper middle social layer residents. The residents usually chose these settlements not because to be surrounded by rich neighbors, but because in such settlement “everything is done for sake of people, not for money (male resident from “Neries kilpos”). The development of GGNs in Lithuania differs from the tendencies in other post-socialist countries, and it is more similar to the trends of countries where such forms of living are not very popular (e.g. Spain, France).

Yet, the idea to live in a small closed community with people of similar status and to enjoy the beauty of the environment is becoming more and more attractive as well. As our case-study showed, residents of such neighborhoods wanted to realize some of these ideals. Moreover, children also play an important role; their safety regularly comes to the fore. As people lack social safety and control in the chaotic outside world, such neighborhoods are providing an alternative with their safe and ordered landscapes.

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## CHAPTER 21.

### #BLACKLIVESMATTER: ENVISIONING URBAN FUTURES

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RACHAEL BAKER, YORK UNIVERSITY, CANADA

Since the 2012 death of 17-year old Treyvon Martin and the tributary #BlackLivesMatter campaign and social movement that followed, the deaths of black men, women and trans people at the hands of police continues to arouse mass street-level direct action and dialogue throughout the United States. On April 12th, 2015 25-year old Freddie Grey of Baltimore suffered a spinal cord injury and died while in police custody. His death was preceded by several weeks of marches in the streets of West Baltimore protesting police brutality; like the marches in Ferguson, and Staten Island; and the fires and protests in Los Angeles, Detroit, and Chicago decades ago that continue to inform the social and racial climates of those cities today. During the week of Grey's murder, Harvard University's African American Student Union and the Graduate School of Design hosted an urban planning conference with racism as the topic of discussion (El Nessar, 2015). The student-led conference addressed what young scholars see as lacking in their discipline, and called attention to the need for planners to be conscious of how urban planning intersects with common social maladies; racism in particular.

Early contemplations of urban planning envisioned a society free from the constraints of capitalism and bureaucracy that depended, as Hall describes, on the voluntary cooperation of citizens to work and live side by side (Hall, 2014). As the world's population becomes increasingly urbanized, cities ever more become sites for addressing global concerns about sustainability, a myriad of issues planners often approach through strategies such as growth management, the implementation of green infrastructure and ecological governance, and greater efficiency in urban transportation systems. The genealogy of urban planning indicates that environmental health and safety have always influenced the design of neighbourhoods and public spaces, which suggests that sustainability in urban design is as much a matter of functionality as it is prevention. However, the recent (and systemic) deaths of people of colour in public and private urban spaces is indicative of, as Harvard's planning students and #BlackLivesMatter point out, a gap in how policy makers and urban planners consider the social outcomes of urban design and conceptualize sustainability. Given the widespread climate of racial inequality concentrated in cities throughout the United States, is the pursuit of the sustainability model, design strategies that uphold environmental outcomes as the foremost concern of urban redevelopment, truly the most pressing path forward for shaping our future cities? The antonymous contradiction of sustaining, which means to both suffer as well as strengthen, suggests that a 'sustainable' urban future will ensure more of the same;

an uneven urban geography that affirms the lives of some while others scrape by. To sustain is either to thrive, or just barely survive.

The need to address racial inequality within North American cities is not new. During the American civil rights movement, the 'urban crisis' uprisings were a spatial and often material expression of the movement's fight to challenge racial segregation and discrimination against black communities (Soja, 1989, 160). In the fight to end the ghettoization of African Americans, the urban crisis was grounded in struggle that sought to reveal racial inequality in cities, and call out the policies and practices that concentrated urban poverty in communities primarily inhabited by people of colour. In effect, the urban crisis serves as an example of the type of socially-driven planning described by Hall, of citizens working with one another cooperatively to shape their surroundings. It was a moment in which the civil rights movement spatially manifested its struggle, and officially claimed urban neighbourhoods as grounds for fighting segregation and systemic racism. By acting against racially motivated police brutality, discriminatory real-estate practices, and the uneven distribution of public services to communities of colour, the urban crisis revealed the injustice of uneven and often racially and economically determined conditions of urban living (Castells, 1983; Sugrue, 1996). In the wake of the 2014 and 2015 police killings of Michael Brown, Eric Garner, and Freddie Grey, the #BlackLivesMatter social media campaign and corresponding ground-level community actions disrupt the idea that the urban crisis ever ended. #BlackLivesMatter and recent corresponding rallies and marches of people of colour and anti-racist allies expose the crisis of urban racism as alive and kicking, and to be sure, the crisis is the very reason the #BlackLivesMatters campaign exists today.

In a 2005 interview, Dr. Angela Davis, a prominent leader in the American civil rights movement was asked to reflect on racial integration law since the civil rights movement and the fifty years plus that has followed *Brown vs. Board of Education*. Davis replied that "*the challenge of the twenty-first century is not to demand equal opportunity to participate in the machinery of oppression. Rather, it is to identify and dismantle those structures in which racism continues to be embedded*" (Davis, 2005, 26). If the civil rights movement won no guarantees, the failure of liberal democracy to ensure racial equality today is indicative of the need for what Davis refers to as 'abolition democracy'. Abolition democracy is a call to disassemble structures that uphold racism and racial inequality, which "*is the only way the promise of freedom can be extended to masses of people*" (Davis, 2005, 26). To live in a city where, as Davis imagines, the promise of freedom is experienced by all, is to build a society in which people no longer sustain systemic racism. If the city is a site of co-production between citizens and political systems, as Neil Smith (2008) suggested, #BlackLivesMatters is demanding political action that dares to imagine the realization of cities where white privilege and racial inequality have been dismantled, and these 'machineries of oppression' no longer serve as foundations for urban living. This movement of redemption and hope, two prefigurative frameworks for envisioning a different way of living, dares to imagine cities free of racial oppression; an abolition urban future in which the promise of freedom is lived by the masses.

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## CHAPTER 22.

# UNSUSTAINABLE STATUS QUO: A NEW APPROACH TO UNDERSTANDING INACTION IN EMPTY HOME OWNERSHIP IN THE NORTH WEST OF ENGLAND

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The UK is in the midst of a national housing crisis. Estimates show that by 2022 there will be a shortage of 1.1 million homes (JRF, 2011). Meanwhile, figures report that in 2014 there were over 600,000 empty homes in England (Empty Homes Network, 2014). In the North West, there are currently 25,000 long term empty homes. If returned back to use, these properties could house one quarter of the families currently on the social housing waiting list (McCourt, 2013).

This chapter will explore the context of empty home ownership in the UK, while presenting some of the key findings from research completed by the Sustainable Housing & Urban a Studies Unit in partnership with Tameside Metropolitan Borough Council. Fieldwork was undertaken across two research projects: in the first project eleven in-depth interviews with empty homeowners were carried out; the second project analysed data collected from two focus groups conducted with a total of twelve participants who attended an empty homes event. **The latter project was selected as the 2014 winner of the Jonathan Sime Award; a national award that recognises a significant contribution to the field of people-environment research.**

### **Empty homes and empty homeowners**

What we know about empty homes is largely drawn from existing Government policy information and practitioner led good practice. In the past research has principally focused on the geographical location and physical condition of the empty property. Commentators have contested that the issue has been wrongly interpreted as indicating a lack of demand or over-supply (Wood & Bryan, 1997), and by adopting a somewhat simplistic view of the phenomenon of empty homes, the often deeply personal and individualistic challenges faced by empty homeowners (EHOs) have been overlooked.

Over the last two decades legislation has been increasingly driven by enforcement; increasing the pressure on EHOs to act, and punishing inaction. A critical representation of this has seen many local authorities selecting to charge an 'empty homes premium'. Despite suffering greater financial loss as a result of such strategies, EHOs are still 'choosing' to leave their properties empty. A lack of success has demanded a new approach in dealing with the stock of empty homes and, drawing



from the field of behavioural economics, the focus has shifted towards better understanding the attitudes, behaviours and experiences of those who own an empty property.

To date, very little is known about EHOs who represent a complex and hard-to-reach demographic. Despite the commonality of owning an empty property, individual characteristics, current circumstances and the historical context of ownership are unique for each individual:

*“...the reasons for being the owner of an empty home are extremely diverse and even more difficult to address. Homeowners can be located almost anywhere, be of any ethnic or age profile and may be unwilling or unable to do anything with the house due to finance, emotional attachment or family breakdown”* (Salford Business School, 2012)

Key findings from research in Tameside, Greater Manchester, highlighted that the experience is consumed by a range of motives for inaction, operating simultaneously with an acceptance that the ‘status quo’ – the failure to return the property back to use – is unsustainable.

### **The empty home as a burden**

In general owning an empty home is portrayed as a negative experience; ownership is persistently problematic and the property itself is defined as a relentless burden. The financial strain of the property is a dominant issue, and one that is not only situated in present times. Costs associated with letting the property consumed narratives of past experience where properties were frequently left damaged by ‘bad tenants’ and consequently in need of repeated restoration. In the present, ongoing mortgage repayments, insurance costs and other charges such as council tax, served as motivation to return the property back to use. For many EHOs, looking to the future involved the application of strategic, uncertain and often stressful economic planning in weighing up the value of a property against the current housing market. The affliction of the empty home extended beyond only a financial burden and was presented by EHOs as similarly deleterious to their psychological and temporal resources.

### **Attachment to the property**

An array of life events or decisions can result in the ownership of an empty home, including: inheritance, failed buy-to-let investments, an inability (perceived or otherwise) to sell, and even diminished motivation as an experienced landlord. As a result, the level and nature of attachment EHOs hold to their properties is varied and complex.

The presence of a strong emotional attachment, such as following a bereavement, appears to determine a greater fondness towards the property itself. Such affection was characterised as emblematic of attachment that extends beyond that of the property to its former resident. In this context, inertia is driven by a reluctance to return the property back to use operating in parallel with grief. EHOs called for local authorities to demonstrate greater compassion towards those who have inherited properties, suggesting a case by case approach where emotional considerations are at the forefront of engagement. Evidence has suggested that attachment to possessions lead to objects becoming an extension of the self, particularly where *“basis for attachment is emotional rather than simply functional”* (Belk, 1982, p38). Supporting this view, a contrast was observed in those who had purchased a property as a buy-to-let venture where aspects of attachment to the empty home were not presented. This interpretation strengthens the view that a pragmatic or commercial relationship with the property is likely to be a significant driver in expediting its return to use.



## **Empty Homeowners as powerless**

The presence of a trichotomous power dynamic – between the local authority, tenants and EHOs – was outlined as a key contributory factor sustaining inaction. Many expressed a need for help in returning their property back to use, and saw the local authority as a key figure in achieving this, however support provision was perceived as focused only on the protection of tenancy rights, and not equally between the rights of tenants and landlords alike.

Negative experiences with tenants represented one of the most significant challenges. No evidence of positive landlord-tenant relationships was presented. Where a hopeful example was presented it was grounded in the experience of others and perceived as a result of good luck. Multiple failed attempts at letting the property successfully – often defined as the opportunity to let on a long term basis – had resulted in diminished motivation. Such challenges had created a sense of defeat, triggering disconnect from the home. Tenant management was portrayed as chaotic and tenant behaviours, at times, presented as anarchic. Interestingly, tenants were occasionally referred to as disposable, yet difficult to get rid of; representative of an ideological dilemma for EHOs as landlords.

## **'Empty Homeowner' as an undesirable status**

Attempts to construct the EHO identity were made through narratives of alternative existing identities such as that of a parent or a surviving relative. Interestingly, the term 'empty homeowner' was not used by the EHOs themselves, which may be suggestive of an identity that is not yet established, or one that is unaccepted or unwanted. Literature describes the construction of identity as something which involves both the self, from internal self-conceptions, and others, through social interactions (Taylor, 2007; Littleton & Taylor, 2006; Petriglieri & Stein, 2012). It was suggested that as a somewhat underlying and concealable identity, EHOs may rarely be given the opportunity to construct aspects of this identity through social interactions with others, therefore providing a possible justification for why EHOs did not directly identify as such.

## **Moving forward from enforcement to engagement**

In brief, these findings highlight ongoing challenges for EHOs, policy practitioners, local authorities and academics in tackling the issue of empty homes across the UK. In shifting the focus towards the development of effective engagement strategies, rather than harsher enforcement tactics, we have gained a new perspective on the attitudes, behaviours, decision making processes and motivations of those ultimately responsible for action. EHOs are recognised as an extremely diverse and hard to reach group within society and maybe it is through the recognition of this diversity and individual experience that will open up a greater potential for success in the future. The more we can understand about individual experience of empty home ownership and how EHOs construct their role, responsibilities, capabilities, and consequently their motives for action, the better informed future policy design will be. Perhaps, the key to future success lies in providing a platform where the voices of all those involved in returning the properties back to use can be heard.

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## CHAPTER 23.

# COMPACT HOUSING FOR DEMOGRAPHIC CHANGE IN AUCKLAND, NEW ZEALAND

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Urban authorities in many developed, as well as new world cities are making urban limits as mandates to deal with the negative outcomes of sprawl, such as loss of natural land, unplanned growth, car dependency, inefficient public services and expensive infrastructure. The growth of low density housing is a prime factor linked to this sprawl in cities such as Auckland (New Zealand), which is one of the best cities to live in according to the Mercer's Annual Survey of World Class Cities. This is evident by the fact that, low density housing dominates and characterises the housing available in Auckland, reflecting a long held aspiration that contradicts compact housing strategies. *"New Zealand was once famously described as the "quarter-acre pavlova paradise", a country where owning a home in the suburbs with a garden was a common aspiration"* (Preval, Chapman & Howden-Chapman 2010, p.34). However, emerging urbanisation trends and increasing living costs are some of the key factors leading to changes in the living environments and settlement patterns, which signal low density housing as unsustainable and unsuitable to meet future housing needs. It is important to consider that urban lifestyles are undergoing demographic changes and these changes play a vital role in the transition of housing patterns due to wider household formations occurring at different life cycle stages. The dynamics of demographics are resulting in changes to housing needs and preferences and therefore there is a growing demand for housing alternatives. Households such as couples, singles, students, single parents, and city workers prefer to dwell in compact or medium-high density housing types (apartments, town houses, units etc) close to urban amenities. The forecasted changes in population and household formation will significantly impact upon the existing low density housing stock and require the construction of more compact and attached housing typologies to meet the future demands. This paper aims to examine the relationships between compact housing and changing demographic trends as necessary aspects of the urban growth strategy of Auckland, which in turn contributes towards a more sustainable future.

### **Introduction**

The Auckland region is the most urbanised and diverse city of New Zealand (NZ) with a current population of almost 1.5 million. Like other new world cities that are undergoing rapid urbanization, Auckland is growing due to population projections and also due to factors such as employment, trade, migration, and educational opportunities. Similarly, Auckland is an 'emerging'

city and likely to continue its growth at an even faster rate in the future, and will therefore need to accommodate future housing demands more efficiently. Moreover, the city is currently facing critical housing challenges such as housing shortages, unaffordable housing, increasing rental demands and lack of housing options. Research by The Centre for Housing Research, Aotearoa NZ (CHRANZ) emphasises the value of housing for society. Access to appropriate housing is a significant part of life, which influences the wellbeing of an individual's personal and social needs and contributes to the making of healthy communities (Quality of life 2007).

Cities such as Melbourne, Sydney, Vancouver, and Portland have Urban Growth Management Strategies (UGMS) to manage their future growth and housing issues through Compact Developments. Compact Development is an approach to urban intensification which results in more efficient mixed land use zones. The process involves integration of amenities and suitable land uses at higher densities to facilitate accessibility and public transit that, in some cases, reflect the needs of changing demographic structures. UGMS is a planning policy that aims to ensure adequate distributions of growth along the strategic areas, principally within the urban limits to discourage low density urban sprawl. Urban growth limits are evolving as one of the most prevalent growth management tools to curb suburbanization. More than 100 cities and counties have accepted this strategy (Staley & Mildner 1999). This idea has been supported with positive outcomes, as *“more recent iterations of growth management policies have sought to ensure that the resulting intensified developments also deliver ‘high quality-of-life’ outcomes with enhanced ‘liveability’ within more ‘sustainable’ communities and regenerated neighbourhoods”* (Haarhoff et al., cited in Gallent & Wang 2009). In addressing similar issues concerned with urban sprawl, Auckland City Council published its UGMS on 29th March 2012 entitled ‘The Auckland Plan’. This strategy calls for the majority (60 – 70 percent) of the anticipated housing growth to be contained within the city's urban limits in the form of Compact Developments. These developments will take place around strategic urban centres and transit corridors. The key aspect of this strategy is to facilitate housing intensification to deal with the housing challenges and projected demands. Moreover, it emphasises the following issues that could affect the delivery of the anticipated housing growth:

- Within next 30 years the population will rise between 2.2 – 2.5 million, this will require around 400,000 additional dwellings in the Auckland region.
- Approximately a demand of 13000 dwellings is required each year. The city is already short of 10000 dwellings, and current levels of dwelling units are less than half of the volume required.
- Three bedrooms or more form two-third of the existing housing stock and nearly 50 percent of total households comprise of only one or two people (Auckland Council 2012).

The forecasted changing demographic structures of the urban population may contribute towards the realisation of this outcome, a crucial aspect that needs to be considered. Family structures will continue to change in the coming decades, leading to smaller household profiles in Auckland. There will be a greater proportion of couples without children, and a smaller proportion of couples with children (See Figure1).

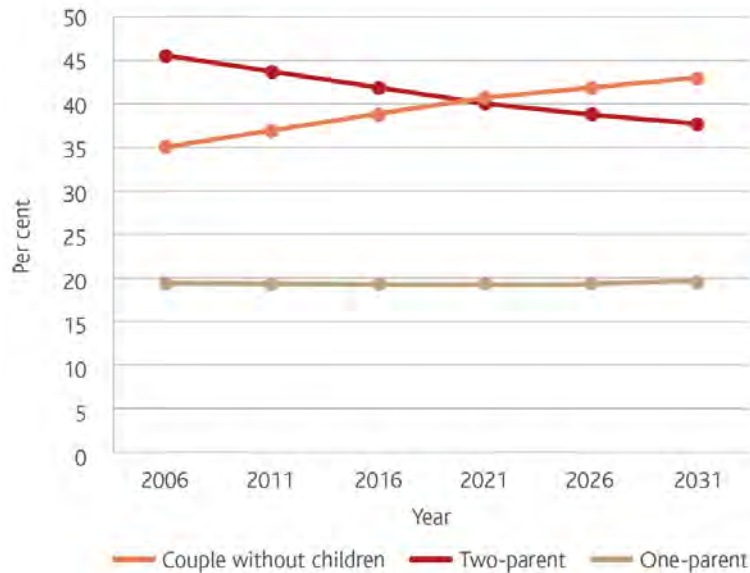


Figure 1 – Auckland Households projections – family types 2012. Statistics NZ, The Auckland Plan. Available from: [www.theaucklandplan.govt.nz](http://www.theaucklandplan.govt.nz). [30 October 2013]

These households may prefer different housing types or living environments based on their relationships, age profiles and incomes. This signals a mismatch between the major low density housing and housing needs of the key anticipated households, which reinforces to increase the supply of housing range to meet the future housing demands.

The aim of this paper is to develop the relationship between the changing future demand and compact housing typologies in Auckland. The outcome of this research will help people better understand, what type of housing forms and environment they may dwell in the future. This will also help urban authorities and policy makers in framing better housing policies, for the coming generations.

#### Authors note

The full paper can be found at: Khan, M.S. (2014) Compact housing for demographic change, *International Journal of Sustainable Human Development*, 2(2), 52-63 available at: [http://ijshd.eduservgroup.com/wp/?page\\_id=719](http://ijshd.eduservgroup.com/wp/?page_id=719)

## Author Biography



Mohammad Shadab Khan graduated with a Bachelor in Architecture from Aligarh Muslim University (India) in 2002, and later completed Masters in Architecture from The University of Auckland (New Zealand) in 2013. Published research work aims to promote design of higher density housing in Auckland, a necessary outcome to achieve city's urban growth strategy (The Auckland Plan) and contribute towards more sustainable development. A professional Architect registered with Council of Architecture, India, with more than 11 years of industry experience, with 1 1/2 yrs in New Zealand as an Architectural Designer. Currently working as an Sr. Architect with a real estate group in Delhi, India.

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## CHAPTER 24.

### THE FUTURE OF SLUMS HINGES ON SUSTAINABILITY

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MUKESH KUMAR GUPTA, CENTRAL EUROPEAN UNIVERSITY, HUNGARY

The slum target of the Millennium Development Goals (MDGs) developed by the United Nations (UN-Habitat, 2010) is to significantly improve the lives of at least 100 million slum dwellers around the world by 2020. A total of 227 million people in the world have moved out of slum conditions since 2000. However, in terms of absolute numbers, slum dwellers have actually increased from 776.7 million in 2000 to some 827.6 million in 2010 (UN-Habitat, 2010).

There is a considerable variation in slum definitions across countries and regions. The simplest and less technical definition of slum would be *“a heavily populated urban area characterized by substandard housing and squalor”* (UN Habitat 2003). Generally the term ‘slum’ is associated with a wide variety of *“low income settlements and poor human living conditions”* (UN–Habitat, 2003). According to the Cities Alliance action plan “slums are neglected parts of cities where housing and living conditions are appallingly poor”.

Based on current trends, despite some successes that could be termed as ‘slum upgrading best practices’ in formulating and implementing slum policies, slums have continued to grow in the urban regions of the developing world. An example of successful slum upgrading is the Parivartan program (which means ‘transformation,’) in five slums in Ahmedabad, India. Its rapid spread to other slum communities demonstrates the affordable and doable nature of slum upgrading at a progressive citywide scale (Cities Alliance 1999).

Slum policies and programs so far have not served the urban poor as the main beneficiaries. Instead people from higher income groups have taken residence in the improved dwellings designed for the intended populations (Jacobsen et al., 2002). The result we observe is in fact the reverse – fractional, undirected or unrealistic policies that are either impractical or benefit only to those with power due to the privileges of their social status (e.g. class, race). Therefore, failure to tackle the housing problem so far indicates that fractional slum policies and programs, which aim to address one or only a few aspects of slum proliferation, could worsen the existence and expansion of slums. For example, in 2003 the government of Kenya devised the Kenya Slum Upgrading Project (KENSUP), a large multi-storied concrete building called *The Promised Land* by local residents. However the problem was that the residents who were relocated to the building started leaving their new homes and moving back to Kibera, their old home often regarded as the largest slum in Africa. The ‘middle class’ of Nairobi moved in search of affordable housing. Informal systems of bribery also played a role for many to secure



apartments in the new building. Many Kibera residents who were allotted apartments rented their flats to middle class tenants at many times the subsidized rate. Therefore, slum upgrading practices need to be integrated with sustainability components so that the increasing numbers of slum dwellers do not put further pressure on the earth's climate system and become a part of clean and efficient system as their income grows (Higgins 2013).

There is a pressing need to focus on a more comprehensive approach that will integrate the factors of emergence and growth of slums, and at the same time, encourage cooperation amongst the different stakeholders responsible for addressing slum settlements. The most striking outcome of past and existing slum policies and strategies is the short sightedness with respect to housing needs in urban regions. For example, many urban authorities do not understand the social and spatial scope of slums and hence end up with solutions that do not address the slum problem.

No matter how depressing slums look; living in slums has made slum dwellers lives better (Eaves, 2007). Almost all slum residents live there by choice when migrating from rural hinterlands. Cities provide slum dwellers with better economic prospects. A person's income can be several times higher in cities than those working in rain fed agriculture in villages.

Migration to cities from rural areas is so profound that cities are unable to keep up with the population growth. Even though cities provide economic opportunities, life in slums can be extremely unsafe. Slum children in sub-Saharan Africa (SSA) are more prone to die from water borne and respiratory diseases than their rural counterparts (Eaves, 2007). Women living in slums in SSA have an increased chance of contracting HIV (Eaves, 2007). Slum children are also less likely to be enrolled for primary education than their urban counterparts.

The world's megacities are on the rise but planning policies and housing developments are not keeping pace with population growth. The world's population is estimated to grow at an annual rate of 1.78% until 2030. At the same time the rural population is expected to reduce in size. Irrespective of these dismal figures, the lure of cities as places for a better life persists. Slums that are not addressed by governments could become 'slums of despair' in the future. This should be avoided by all means.

Stewart Brand (2010) argues that slums are 'unexpectedly green', and suggests that we need to seize the opportunity that is offered by such urbanization processes to further 'green' grow our cities. Slums contain maximum densities – roughly a million people per square mile live in the slums of Mumbai, India, and they have minimal energy and material use in comparison to their city counterparts. Providing the same energy and material use enjoyed by the middle class and elites to all the people in cities would require vast infrastructural changes to energy and food supply. Huge numbers of people will be climbing the 'energy ladder' from the use of biomass to electricity and diesel use (Brand, 2010). According to the energy ladder approach, "households switch to more convenient energy forms as their disposable income increases" (Leach, 1992). Sustainable slum upgrading means the use of construction elements that reduce environmental impacts, minimize the maintenance burdens, and improve quality of life. The prime criteria for ensuring sustainability could be affordability, technical feasibility, and low environmental impact. It is in humanity's best interest to provide low energy affordable housing to minimise environmental impacts as the quality of life is improved for those moving out of slum settlements.

Governments could approach poor settlements not as part of the problem but as part of the solution and consider the poor as primary actors of their own housing developments and key

tenets of slum upgrading and enabling approaches. Providing adequate and decent housing for all can be achieved if a paradigm shift takes place.

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## CHAPTER 25.

### RESETTLEMENT AND ENVIRONMENTAL IMPACTS ON THE SUBALTERN SLUM: ACCUMULATION BY DISPOSSESSION IN THE PHILIPPINE SLUM

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On the morning of 23 September 2010, residents of Sitio San Roque clashed with police as their makeshift barricades succumbed to demolition teams sent by the Philippine National Housing Authority (NHA) and the Metro Manila Development Authority (MMDA), leaving more than a hundred homes demolished and more than a dozen injured in Quezon City’s North Triangle. The seven hour stand-off, not the last in a series of conflicts that have shaken the fabric of metropolitan Manila, was, in the words of NHA officer Francisco Alican (Suarez, & Abella, 2010), an “interagency effort” to protect property intended for “commercial ventures”.

Two years later, successive major flood events prompted the government agencies to declare canals or *esteros* flowing to Manila Bay as danger zones not suitable for human habitation. Some 104,000 families live in informal settlements along *esteros* in Manila, of which 60,130 live along major waterways. Under the Flood Management Master Plan for Metro Manila and Surrounding Areas (Department of Public Works and Highways, 2013), around 20,000 families are to be moved to in-city or off-city relocation sites in the urban periphery. This is deemed necessary for the protection of residents endangered by annual flooding and for the cleansing of squatter settlements blamed for clogging the waterways.

Both the urban clean-up operations and re-housing projects have involved private contractors and investors as key players. This has prompted critics to draw links between the flood management plans and major PPP infrastructure projects, including the reclamation and redevelopment of Manila Bay and Laguna Lake into commercial districts.

More than eight hundred kilometres away in Tacloban City, similar trends can be seen. Tens of thousands of people displaced by Haiyan have been prevented from rebuilding their homes 40 to 200 metres off the coast, ostensibly for their own protection, under a No Build Zone, No-Dwell Zone policy. The policy extends to communities along Laguna Lake and Manila Bay, and according to Pamalakaya, a national federation of small fisherfolk, which could potentially displace up to 10.8 million more people.

Despite these rules shanties have , been rebuilt on no-build zones in the absence of suitable resettlement sites, and recovery has been slow for tens of thousands in Tacloban city alone. Under the slogan, “Build Back Better”, the private sector has been elevated to a leading role in

rehabilitation efforts, with nine of the country's largest business conglomerates, including mining firm Nickel Asia, invited to build schools, hospitals, and other major infrastructure, with the government assigned to "fallback option" by the former head of rehabilitation efforts Panfilo Lacson.

Common to these events are partnerships between the national government and the private sector that have shaped processes which David Harvey has called accumulation by dispossession (ABD). At nearly every stage, private investors or contractors depend on state support to accumulate and protect capital. Philippine urban sociologist Chester Arcilla highlights the symbiotic nature of this relationship: Capital lends the state its liquidity while the state vests in capital its monopoly of the use of force, its powers for coercion and consent. In turn, the state's instruments of violence and legality legitimise property regimes that define with impunity spatialities of exception and exclusion in urban neoliberalisation.

This is facilitated by the fact that slums are portrayed as blockages to the flow of capital investment, with their inhabitants rendered in terms of the excluded other. The struggles of the urban poor against evictions and for decent housing tend to have even less legitimacy in the eyes of the state and the middle class, given prevailing 'common sense' that links criminality to the lack of legal documentation and private property rights. The recriminalisation of poverty and normalisation of precarious labour leaves these sites especially vulnerable to emerging and sophisticated regimes of dispossession. Social polarisation has fed into what can be argued is an emerging neoliberal caste system, pitting the middle class against a precariat surplus population, which has in turn helped fuel the violence of the capitalist state.

Over the past five years alone, evictions have turned increasingly violent, with thousands displaced by PPP and government infrastructure projects, resulting in numerous reported injuries, killings, and illegal arrests of slum-dwellers. But not all is bare violence, and while dispossession via coercion occurs through violent demolitions and forced evictions, it also takes place through the manufacturing of consent. In relocation sites, for instance, a variety of legal and discursive mechanisms surrounding the relocation process endeavour to encourage informal settlers to enter into the fold of formalised citizenship.

Government agencies have allocated billions of pesos for eviction drives (General Appropriations Act FY, 2013), while promising space at a designated resettlement area or cash handouts for affected families, who are given about a month's notice to leave their homes. Cash transfers act as a mechanism for neoliberal or civic governmentality, with those who refuse stigmatised as 'professional squatters' or associated with left-wing groups. A token fee is often given as direct substitute for permanent housing for evictees, while those who insist on staying put face the threat of demolition.

Moreover, public housing initiatives tend to be ad hoc affairs, planned out after people have already been displaced or are about to be displaced. Selection of housing beneficiaries is shaped by relations between government officials and evicted communities that take on clientilistic forms. These echo state-evictee relations under the Martial Law era, where the ability to secure housing units depended on one's relations with local patrons or power-holders.

What is new is the extent to which corporate actors have entered into the scene. PPPs are found even in the context of public housing projects, which are either managed by private contractors in deals between construction and utility companies and the NHA, or are provided for by the

state to clear land for private investment. The Quezon City Central Business District (QCCBD) is a case in point. Slum-dwellers displaced by Vertis North have been moved to relocation sites provided for by the NHA, which is in strategic alliance with Ayala, Inc. Evictions have taken place in stages, limiting dissent through a mix of coercion and consent, and with evictees scattered across disparate resettlement projects in Bulacan, Rizal, Cavite, among other far-flung locales

Government policy toward informal settlers have resulted in cycles of eviction and resettlement, while neglecting the structural poverty and landlessness that are the root causes of urban slum growth. The end result is that between 30-40% of those resettled return to their places of origin.

On either end of the cycle of urban dispossession, therefore, capital resurrects even the refuse of its operations into additional sites for capital accumulation. Such compounded dispossession can only be described as double, even triple, violence. While capital has managed to exploit subaltern marginality to its own ends, utilising new technologies of power to meet its physical infrastructural needs via state patronage, informal labour is relegated to sub-standard housing, even homelessness, alongside the stripping of public services and social infrastructure.

### **Authors Note**

This article is an extract from a longer unpublished work, *Squatters of Capital: Regimes of Dispossession and the production of subaltern sites in urban land conflicts in the Philippines*.

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PART V.

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**MOVEMENT AND MOBILITIES**

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## CHAPTER 26.

### WHITHER A SUSTAINABLE URBAN AUTOMOBILITY?

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With projected increased urban populations in the future, developing a sustainable urban mobility assumes a great importance. However, given the impact that the car has had socially and culturally, what are the prospects for a sustainable urban automobility?

At the root of this question is the notion that the private car isn't going to go away, at least not any time soon. The auto-poiesis of the system of automobility (Urry, 2004) has ingrained the car upon our landscape. For many, the car is also too convenient, too aspirational, and too desirable. Much has been written about the costs and impracticalities of low carbon vehicles, and the car; although the cultural and semiotic nature of the car means that it has always been more than just a means of transport, less is known about how socio-cultural mores regarding the car might impact upon the transition to low carbon motoring.

How we 'consume' the car as icon, avatar, cultural artefact and experience – whether as driver, passenger or pedestrian – is crucial in effecting a transition to a low carbon automobility because cars carry more than people; indeed it is precisely *because* they carry people that they can transcend their instrumental use, carrying experiences, meanings and feelings too (e.g. Sachs, 1992; Miller, 2001; Sheller, 2004; Steg, 2005) and, in doing so, cars can become more than just transport.

Yet, as Urry notes, the number of cars on the road globally is such that automobility can be regarded as “*a modern day Leviathan*” (2008: 265), at once threatening to consume us as “*urban space ... tends to be sliced up, degraded and destroyed*” (Lefebvre, 1991: 359, in Sheller & Urry, 2000: 742) yet at the same time hinting at the hold that the allure of the motor car has over society. However, there is more to Urry's Leviathan than traffic congestion, something else that 'drives' my research.





*Jam today - and tomorrow...? (Picture source Lingaraj GJ: flickr)*

Such has been the 'lock-in' of the internal combustion engine (Black, 2006; Ivory & Genus, 2010), increasing emissions and air pollution is necessarily concomitant with a rise in automobility. The private car uses more energy and emits more greenhouse gases per passenger-kilometre than any other surface transport mode (Khan Ribeiro *et al*, 2007) and, in Europe, where road transport not only accounts for almost 75% of transport emission (EC, 2011a), it is claimed that the car alone is responsible for 12% of *all* CO<sub>2</sub> emissions there (EC, 2011b).

Of course, there is more to transport emissions than CO<sub>2</sub>. We've all seen pictures of the Los Angeles haze and the Beijing smog and, from my own experience of walking down Oxford Road in Manchester, reportedly Europe's busiest bus route, the localised air pollution from the petrol and/or diesel internal combustion engine (ICE) can be almost tangible. The transition from the horse to the automobile which may have resulted in a welcome reduction in the amount of dust and flies (Zierer, 1922) ultimately replaced one form of localised airborne irritants for another. Road transport vehicles are regarded as a major source of what are known as 'criteria' pollutants, such as carbon monoxide (CO), particulate matter (PM), nitrogen dioxide (NO<sub>2</sub>) and ozone (O<sub>3</sub>), with emissions of sulphur oxides (SO<sub>x</sub>) and volatile organic compounds (VOCs) also attributed to road transport, especially diesel vehicles (Lave and Griffin, 2008; Holmén and Niemeier, 2003).



*Exhausting... (Picture source Ruben de Rijcke: Wikipedia)*

Crucial though CO<sub>2</sub> emissions reduction undoubtedly is, the recent pursuit of low carbon vehicles has seemingly been made with little regard for these criteria pollutants, with – in the UK – vehicle excise duty-based incentives having been based upon official CO<sub>2</sub> emissions EU figures collated

from the NEDC (New European Driving Cycle) test (UN, 2011: 87-89; UK Government, 2014) resulting in increasing numbers of new diesel powered cars hitting the roads; indeed, half of new cars sold in the UK in 2014 were diesels, compared to their comprising of a third of the UK new car market a decade earlier (SMMT, 2015). Many motorists who thought they were doing the right thing in buying diesel cars emitting less CO<sub>2</sub>/km than their petrol counterparts now find themselves contributing to diminishing local air quality. A roll-out of hybrid and electric cars (or EVs) can do much to ameliorate this problem, although some critics say that they will still contribute to traffic congestion.

Autonomous automobility is a possibility in an urban future, with software companies such as Apple and Google exploring the prospect of ‘driverless’ cars, as are conventional automobile manufacturers. These cars can address inequalities of automobility in providing access to those disenfranchised, such as the elderly or disabled. They are also touted as a solution to congestion, though effecting this will necessitate the installation of all manner of surveillance technology (Urry, 2008) potentially constituting an “Orwellian panopticon” (*ibid*: 261) which could have implications for privacy and the ‘freedom’ that the car traditionally affords.

Urry duly notes that an autonomous automobility and its supporting infrastructure will change our relationship with the car. Similarly, adopting a low carbon automobility in a more conventional, privatised mien may provide the opportunity for the car to be ‘consumed’ differently. EVs provide a different experience of, and meaning to, how we present and perform – or *affect* – individual automobilities, and I wonder about the degree to which we are culturally ready to change ‘how’ we go from here. Can we change? Do we even want to? As a geographer and car enthusiast with an awareness of automotive environmental impacts, this is something which interests me greatly.



*Renault Zoe EV - an electrifying experience? (Picture source: author's photograph)*

A sustainable urban automobility may be possible in the future. However, such is the autopoietic nature of the system of automobility (Urry, 2004), who's to say that the solution to the travails of urban automobility won't be achieved very much on the car's terms?

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## CHAPTER 27.

### MAKE ROOM FOR A PLANET OF TRANSIT METROPOLISES

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YOAV LERMAN, TEL AVIV UNIVERSITY, ISRAEL

This chapter proposes an integration of the work by Robert Cervero and Shlomo (Solly) Angel. Both of these scholars address a few key subjects in the current state of global urbanization. Cervero deals mainly with transit and its power to shape cities in an efficient way, while Angel discusses the coming urban expansion of rapidly urbanizing areas, mainly in the Global South. Combining their insights on urbanization processes leads to the conclusion that expanding cities should take the path of coupling transit and land-use planning while reserving the public rights-of-way needed to accomplish this.

Robert Cervero is an expert on transit and especially on Transit-Oriented-Development (TOD). He has also written the book “The Transit Metropolis” where he made observations on several metro areas and their transit innovations. In the short talk available on YouTube, Cervero goes into detail about the way transit can transform cities. He puts emphasis on integration of public transit and land-use – i.e. dense developments should follow the accessibility provided by the transit systems. Among the more prominent examples that Cervero lays out are Copenhagen’s Finger Plan of 1947, Stockholm’s post-war similar expansion and the Hong Kong’s Mass Transit Railway (MTR) which is quite profitable due to its use of extensive real estate developments above its rail stations. Towards the end of his talk, Cervero mentions that with the invention of BRT (Bus-Rapid-Transit), which the city of Curitiba is famously known for, it is possible to reap the benefits of transit and land-use integration at a much cheaper capital expense than previously thought.

Shlomo Angel has led a significant research effort on world urbanization, which he summarized in his recent book, “Planet of Cities”, and a short video can be found on YouTube. He calls for a paradigm of Making Room, i.e. accepting the fact that rapidly urbanizing metropolitan areas are bound for an explosive land growth, at a much higher rate than their population would grow, while urban densities are destined to decline. He distinguishes between western efforts to contain urban sprawl in stabilized metropolitan areas (many of which sprawled along car dependent suburbanism in the 20th century) and the up and coming metros of the Global South. However, Angel does not mean that a laissez-faire approach is appropriate. As an example he provides is Bangkok, which grew in a massive way in the last three decades while staying affordable, but did not secure any arterial rights-of-way and trunk infrastructure leading to an infrastructure disaster.

Angel calls for securing arterial roads of 25-30m width, at distances upto 1km from each other (so people can walk to future public transit on them). This provision should occur ahead of urban growth and can also be done in advance of slum creation/invasion. This has occurred many times in the city of Lima, resulting in slums capable of relatively smooth improvements over time. As an example of work relating to urban expansion in the Global South Angel points to Ahmadabad in India and a few projects he is involved with in Ethiopia and Colombia.

To conclude, Angel's realistic city expansion plans should be combined with Cervero's integrated transit-land use planning recommendations, so our still urbanizing planet follow the efficient path of transit metropolises.

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## CHAPTER 28.

### TRANSIT ORIENTED DEVELOPMENT (TOD) AND SUSTAINABLE URBAN DEVELOPMENT IN THE GLOBAL SOUTH

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The majority of the world's population live in cities (54 % according to UN data: 2014); and the global-south is the main territory of this population explosion. The largest urban growth has been located in medium-sized cities with less than 1 million inhabitants, particularly in Asia and Africa. Facing the current scenario and trend-line, it is necessary to re-think the way we plan and live in our cities. The challenge is twofold: to review the structures of current cities; and to plan how and where we will build the future ones.

From an economic, social, environmental or public health point of view the dominant typology of cities after the passage of the XIX and XX centuries, i.e., industrial city, car-centered, sprawled and unequal, is no longer viable. It has failed. From now on, it is crucial to focus and direct our efforts at planning new urban spaces that combine elements of sustainable urban planning with (among other ideas), the encouragement of non-motorized transport use, discouragement of car use, prioritization of mass transit, mixed and participatory land use, and for this to be all within a framework of resilient infrastructure.

In seeking this alternative development, a practical tool is TOD – Transit Oriented Development. In other words, re-thinking our towns and taking them through a form of urban axis restructuring, emphasizing mixed land use and covered by both public and non-motorized transport. From the point of view of global-south, cities such as Curitiba (Brasil), Bogota (Colombia) and Guangzhou (China), reference this type of planning and can be seen, in different periods and different environments, as capable of inspiring other projects worldwide.

In 2014, the Institute for Transportation and Development Policy (ITDP) launched the “TOD Standard” endorsed by UN-Habitat, GIZ and ICLEI. ITDP's report includes a packet of tools that can be used by city planners, city officials, developers, academia, NGO's and Grassroots groups to measure TOD projects. In essence, they recommend eight measures based on eight principles: Walk, Cycle, Connect, Transit, Mix, Density, Compact and Shift.

One of the concerns of the application of this tool in the global-south is that it is based on what the organization considers “*international best practices, such the Central Saint Giles in London, the Massena District in Paris, Hammarby Sjöstad in Stockholm and Liulun Xiaoqu in Guangzhou*” (ITDP, 2014).



With the exception of China, all cities are located in the global-north, with historic processes of urbanization distinct from the reality of Latin America, Africa and Asia.

Between 2013 and 2014, ITDP along with the LabCidades (USP), examined the potential of the Brazilian Federal Government's urban social housing program "Minha Casa Minha Vida" ("My House My Life") on the basis of the TOD Standard. From various analyzes and tests, the "Urban Insertion Method" used was found to be more appropriate to the specifics and realities of the application. This tool can inspire other initiatives for the development of methods for implementing and evaluating TOD, both in Brasil and in other countries of the global-south. In the Brazilian case, unfortunately, the Federal Government has lost the opportunity to innovate in relation to construction of social housing. After having built around 2 million new residential units in one of the largest programs of its kind in the world (Cardoso, 2015), the Brazilian government had reproduced an old housing standard of segregation, leading to a production of inequalities.

Sustainable Urban Development should combine TOD and Green Urbanism. According to Cervero, "*we estimate that through use of Green TOD carbon emissions and energy consumption can be nearly 30% less than that of conventional development*" (Cervero and Sullivan, 2011). In this sense, for example, the exchange of experiences between good practices in developing countries is essential. The experience of priority lanes for buses, like Bus Rapid Transit (BRTs), as well as housing population projects brought important results for countries such as Chile and South Africa (Wood, 2014). It is also possible to learn from experiences of China, as Cervero showed in its 2008 study on suburbanization of the country.

The case of China is strategic because the country's urban development of the last 20 years has been marred, in most cases, by problems created by pollution, auto-motorization and urban sprawl, among others. So, how can we proceed with the construction of participatory methodologies for Transit Oriented Development in the global-south?

The answer can be found in Cervero's words:

*"TOD and green urbanism include increased densities, which promote transit usage, conserve heating/cooling expense and enable waste reuse techniques contingent on high volumes; mixed land uses, which promote non-motorized transportation and match the differing heat and energy needs of commercial and residential uses to enable maximum reuse of waste heat; reduced impervious parking surfaces replaced by increased open space and community gardens; opportunities for generating solar power for use in buildings from photovoltaic (PVs) atop rail-stop canopies and remote parking structures; and using renewable energy/fuels produced from the built environment to power transit vehicles."*

The aim for "the right to city" in the XXI century urges to include TOD and a Sustainable Development on world's agenda. This includes the combat of unequal environment justice (Acselrad, 2010), environmental racism and all kinds of "slow violence". In Robert Nixon words "*a violence that occurs gradually and out of sight, a violence of delayed destruction that is dispersed across time and space, an attritional violence that is typically not view as violence at all*" (2011).

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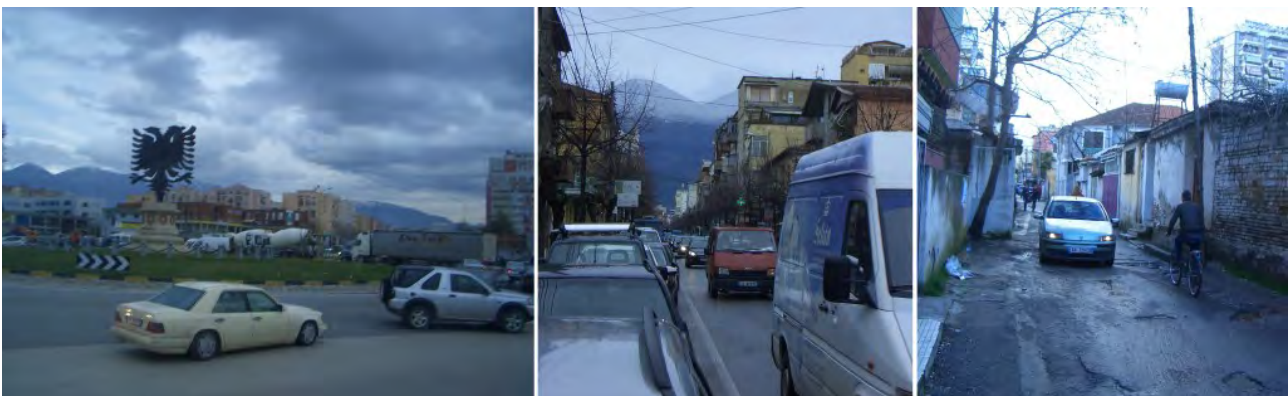
## CHAPTER 29.

### MORE MONEY, MORE CARS, MORE CITY, LESS WALKING: IS THIS THE FUTURE OF TIRANA?

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PAULO RUI ANCIAES, UNIVERSITY COLLEGE LONDON, UK

It is said that in the 1970s there was only 600 cars in Albania. After the fall of the communist regime and the chaotic 1990s, the Albanian economy started to grow very fast. Tirana's population doubled and its area expanded accordingly. There are now 300,000 cars in the city, and they can be seen everywhere, from the wide roads and roundabouts in the suburbs, to the small streets in the city centre used as "rat runs" to escape congestion.



However, Tirana must be the only European capital city with neither a train station nor a bus station. Pedestrians are increasingly exposed to air pollution, noise, and collision risk when they walk along or cross busy roads. Pedestrian pavements also tend to be in worse conditions than road carriageways, which is not surprising considering that the expenditure in road maintenance and repair (an average of \$1 million per year in the period 1996-2000) was 78 times greater than the expenditure in pavements.

So at first sight Tirana looks like another example of a "lost opportunity", a city where fast economic and urban growth has led to the dominance of the automobile. However, if we look into more detail, we can find hints that fast growth is not necessarily accompanied by the deterioration of walkability and street liveability.

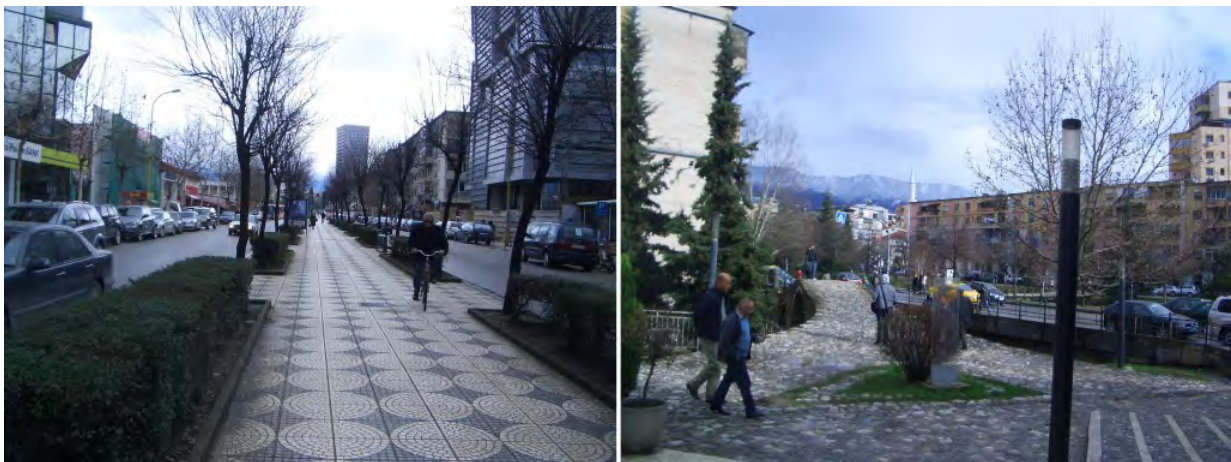
Tirana is one of those cities with all the spatial and social pre-conditions to be walkable. The city centre is densely populated and has a wide diversity of people and businesses. Social activities are also conducive to walking, as one of the most popular past times in Albania is the *xhiro*, the

evening walk around town. Recent improvements in lighting and street landscaping have made the city more inclusive, by allowing women, children, and older people to reclaim the space that once belonged mostly to “men in leather jackets smoking slim cigarettes.” Squares, small parks, and courtyards, have been renovated, and outdoor cafés have blossomed all over the city, providing opportunities to relax and socialize.

However, these spatial and social advantages are now under threat. There are signs of increased segregation. The Bllok area, once exclusive to the political elite, is becoming off-limits to some people again, but now for economic reasons, given the prices of properties. Shopping centres are also starting to dot the road linking Tirana with Durrës, in areas with no walking access. And attitudes towards walking are changing. Tirana is becoming status-conscious and a sentiment is surfacing that “walking (other than recreational walking), cycling, and public transportation are lower-image modes” (Pojani, 2011, p.101-102).

It is not easy to create pedestrian space, due to the competing demands from other road users. This was not a problem in 20th century Tirana, because “cars behaved as bicycles, swerving to avoid the pedestrians” and bicycles used “whichever side of the road they liked” (De Wall, 2005, p.38). It is certainly a problem now. Initiatives to ban car traffic in one neighbourhood in 2004-2005 were discontinued due to protests of residents and businesses. In 2010, a plan was devised to transform the main square of the city into a space “where the bustle and the chaos stops, allowing for something else to happen, whatever it might be”, but this plan was scrapped one year later. The renewed interest in cycling and the plans to implement a tram system create further needs for road space.

So the city had to resort to less radical solutions. For example, many of the boulevards that line the city now have a wide median strip for pedestrians and bicycles. There is also a nice short pedestrian route that takes in a few historical sites and is used as a shortcut to avoid two busy roads.



The improvement of conditions for walking can sometimes be achieved with minimal changes. Dropped kerbs are a simple solution with a significant impact on the mobility of wheelchair users. The continuity of pedestrian space can also be assured by improving pavement surface at entrances to garages and by monitoring pavement parking.

However, the quality of the walking experience does not depend only on what is beneath our feet, but also on what we see with our eyes. Communist-era architecture is usually synonymous with ugly concrete buildings and soulless public spaces, and Albania is no exception. The period after the end of the communist dictatorship was not a golden age of urban planning either, as

public spaces were occupied by illegal residential or business buildings, most notoriously in in the margins of the Lana stream and in Rinia Park. These areas have been cleaned up and are now pleasant places.



The old apartment blocks also look in better conditions than they really are because their frontages have bright colours, following a “painting campaign” led by Edi Rama, a painter who had held more exhibitions than political offices by the time he became mayor in 2000. However, the new towers popping up everywhere are starting to spoil the landscape, as they replace older smaller buildings. The plans for multiplying the number and the size of these towers (for example, in the main square) reveal a future Tirana that looks hostile to pedestrians.

Through this blog I have provided reflections to add to the idea that policy-makers need to engage in dialogue with the public and with each other to achieve sustainable urbanization. The redesign of the city should involve the different types of users of the streets. Transport planners also need to work together with urban planners and architects to control urban sprawl and to ensure that the city grows at a scale that is meaningful to people.

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*All images used in this blog have been taken by the author*

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## CHAPTER 30.

### INHABITING INFRASTRUCTURE: EXPLAINING CYCLING'S COMPLEXITY

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ALAN LATHAM, UNIVERSITY COLLEGE LONDON, AND PETER WOOD, THE OPEN UNIVERSITY, UK

London is not always an easy place to cycle. Take the case of Elle and Tara. They are two budding commuter cyclists travelling from Earlsfield in south London towards Richmond Park. Nearing the park, their journey takes them through a grassy heath and then along a small lane of terraced houses. They start to relax. Then without warning, they find themselves having to join a busy A-road via a non-signal controlled T-junction. A thick snake of traffic – cars, vans and lorries – is crossing their path.



Reaching the mouth of the junction, Elle and Tara glide to a stop. They look left then right. Deciding against cycling through the traffic they dismount their bikes, wheeling them across the mouth of the junction and up on to the sidewalk. Standing on the kerb Elle and Tara confer, and then walk 100 metres up the street to a pedestrian crossing. Using the crossing, they finally make it across the A-road. They then remount their bikes and continue their journey.

What are we to make of Elle and Tara's cycling? One interpretation is simply that it represents failure: of Elle and Tara as cyclists and of space for cycling in English cities. Certainly the previous vignette indicates how hard it can be to cycle competently and comfortably on roads in cities like London. But the episode can also be interpreted differently. It could be seen as a demonstration of the diverse ways that people manage to navigate the road infrastructure. It shows how people practically manage to inhabit this infrastructure, making it a part of their daily movements.

A great deal of the debate on cycling in the UK has focused on the provision and use of road infrastructure for cyclists. Campaigners have repeatedly highlighted how poor and inconsistent that provision is. Many commentators have suggested that cyclists fail to use the road infrastructure properly. Amidst all this debate it is surprising how little is known – whether by transport engineers, social scientists or cycling activists – about how cyclists 'in the wild' actually use roads. This is what our research set out to understand.

Filming a number of volunteer commuter cyclists as they travelled across the city, we studied how riders practically used the infrastructures they came across. Investigating the fine detail of everyday cycling, we discovered that people's movements were far more variable than you might expect! Even amongst experienced cyclists, their actions were adapted to the oddities and opportunities which they encountered en route. For example, whilst Elle and Tara created a break in the traffic by walking to a pedestrian crossing, another volunteer called Dick would cross through red lights because they made a break in the traffic both across and behind him. Whilst cycling's growth means that cyclists in inadvertent rush hour pelotons might seem to support each other, some slower riders (such as our volunteer Gail) seemed left behind and remained unprotected. Finally, the marginal infrastructural changes that allowed our volunteer Rachel to ride on the sidewalk were not particularly fast or easy to use. They got her off the road in a dangerous situation, but not much more.

As a contribution to the national cycling debate, our research seems to suggest three main findings:

Firstly, that cycling is not as simple as many people might imagine. What is possible for one rider may not be feasible, convenient or reassuring for another.

This leads to our second suggestion- that diagrams showing cyclists' movements from an (almost) point-of-view perspective could be a valuable, under-used means of explaining this. The image accompanying this blog is taken from an extended storyboard in our journal article. As demonstrated in the paper, such methods might be used by campaigners as an intuitive but rigorous way of explaining the problems and opportunities of infrastructure. Together these findings might address recurring misunderstandings. That could include cases of well-intentioned designers and experienced cyclists failing to understand why differently skilled users might find spaces difficult to use. It could also create new methods for explaining to mystified road users why cyclists take the routes they do, such as avoiding the cycle path or riding in the centre of the lane.

Finally, by developing new ways to describe how cyclists use the street, we might start to imagine and argue for new types of space for cycling. By looking at how so much existing infrastructure treats the cyclist as either an odd car or an odd pedestrian, we might start to design spaces for cycling that are more focused on the bike's own strengths and weaknesses.

With the new requirement to create a Cycling and Walking Investment Strategy in the next parliament, we hope that our research will support the academic study and public campaigning that suggests how future investment could best be spent.

## Dick

Start

**1**

**0:00**

AT THIS POINT THE NORTH BOUND CARRIAGE WAY IS A BUS AND CYCLE ONLY LANE. AHEAD OF DICK IS A CYCLIST, A BUS, AND A SET OF TRAFFIC LIGHTS.

**2**

AS DICK APPROACHES THE TRAFFIC LIGHTS, THE BUS AHEAD OF HIM TURNS OFF TO THE RIGHT.

DICK LOOKS AROUND CHECKING FOR TRAFFIC, AND CONTINUES FORWARDS TO THE TRAFFIC LIGHTS.

**0:02**

TRAFFIC LIGHTS AHEAD

**3**

THE TRAFFIC LIGHTS ARE PHASED RED.

STOP AT TRAFFIC LIGHTS

**0:08**

THE CYCLIST AHEAD OF DICK STOPS, WAITING PAST THE RED LIGHT BUT BEHIND THE JUNCTION LINE.

**4**

DICK STOPS AT THE RED LIGHT. HE RESTS HIS HAND ON THE KERBSIDE RAILINGS FOR BALANCE, LEAVING HIS FEET IN THE CAGES WHICH HOLD HIM FIRMLY TO THE PEDALS. HE WATCHES THE CROSSING TRAFFIC.

**0:12**

**5**

STILL WAITING, HE STRAIGHTENS HIS BACK FROM THE ARCHED POSITION WITH WHICH HE CYCLES.

**0:16**

**6**

AS DICK REMAINS STATIONARY, A PINK-SHIRTED MAN ON A BICYCLE ARRIVES AT THE JUNCTION STOPPING TO DICK'S RIGHT-HAND SIDE.

**0:19**

**7**

THE LONDON ROAD TRAFFIC LIGHT HAS NOT CHANGED, BUT CROSSING TRAFFIC FROM WESTMINSTER BRIDGE ROAD IS NOW STOPPED BEHIND ITS TRAFFIC SIGNAL. EVEN AS THE LAST OF THE TRAFFIC IS CROSSING THE JUNCTION A QUEUE BEGINS TO FORM.

**0:24**

TRAFFIC LIGHTS ARE RED

**8**

IGNORING THE JUNCTIONS RED LIGHT... ..DICK MOVES OUT INTO THE JUNCTION TAKING A SLIGHTLY DIFFERENT LINE THAN THE PINK-SHIRTED CYCLIST AHEAD OF HIM.

SEEING THE OTHER TWO CYCLISTS MOVE THE FIRST CYCLIST WHO HAD BEEN AHEAD OF DICK FROWNS AND MOVES TO FOLLOW THEM.

**0:27**

THE TRAFFIC SIGNAL REMAINS ON RED.

**9**

HITTING WATERLOO ROAD, DICK IS QUICKLY UP TO FULL SPEED AND PULLS AWAY FROM BOTH THE OTHER CYCLISTS.

**0:32**

**10**

THE PINK-SHIRTED CYCLIST MOVES INTO THE JUNCTION ALTHOUGH HIS TRAFFIC LIGHT REMAINS RED.

NOTICING THE MOVEMENT OF THE PINK-SHIRTED CYCLIST, DICK DROPS INTO HIS CYCLING CROUCH.

**0:44**

End

Storyboard taken from "Inhabiting Infrastructure" journal paper, p310 (version reproduced with permission from Sage)



## Origins of the blog and further reading

This blog post was originally written for the CTC, the United Kingdom's national cycling charity. It aimed to explain the immediate implications of recent peer-reviewed research to an audience of industry professionals, campaigners and the general public. The post can be found at – [www.ctc.org.uk/blog/samjones/inhabiting-infrastructure-explaining-cyclings-complexity](http://www.ctc.org.uk/blog/samjones/inhabiting-infrastructure-explaining-cyclings-complexity)

The journal paper referred to in this post is open access thanks to The Open University's Research Councils UK funding: Latham, A., & Wood, P.R.H. (2015). Inhabiting infrastructure: Exploring the interactional spaces of urban cycling. *Environment and Planning A*, 47(2); pp. 300-319

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**Dr Peter Wood** is a social geographer studying Sustainability policy, Changing urban lives, and Mobile embodied experience. His work on the project was funded by the UK's Economic and Social Research Council grant ES/I019790/1.

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## CHAPTER 31.

### INNOVATIONS, POLICIES AND IDEAS - AN URBAN MOBILITY PERSPECTIVE

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NIHAN AKYELKEN, UNIVERSITY OF OXFORD, UK

The reliance on innovative ideas has become even more evident in the post-crisis economy: there is a widely-held belief that we need new products and services and new ways of doing things. Innovations are all over the economy and are almost considered to be rescuers of the current adverse societal trends. Urban mobility is a policy area, where several technological and behavioural changes are currently widespread; for example driverless cars, car-less drivers, online ridesharing platforms, app-based taxi schemes, and bike sharing schemes. Bike sharing schemes (BSS) are particularly interesting due to their increasingly crucial role in public transport systems in cities. At first sight, they seem to be most compliant with the existing governance system amongst all, but a closer look into their emergence and diffusion still yields interesting insights into how “the public versus private debate” is changing.

Bike sharing refers to shared use of a bicycle fleet provided on a temporary basis. BSS have positive impacts on urban sustainability through relieving congestion, reducing air pollution in cities and providing public health benefits. While it dates back to 1960s in Amsterdam, where bicycles were placed in the city centre randomly for free use, bike sharing has attracted significant attention in the policy and academic discourse particularly since the 2000s (e.g. Fishman et al., 2013). Many current BSS entail the use of information technology (IT) (Shaheen et al., 2010). The questions of who are the (targeted) users, where bikes are placed and how the system is governed have significant implications for access and eventually for social exclusions. Social implications of sharing practices can only be understood by elucidating the emergent political economy of these innovations particularly in terms of their emergence.

The emergence of bike sharing is defined in terms of chronological stages, i.e. through four generations. These include the White Bikes in Amsterdam in 1960s, coin-operated sharing systems, IT-enabled bike sharing systems and demand-responsive and multi-modal systems (Shaheen et al., 2010). While this chronological typology of the four generations of BSS is useful for elucidating the lessons learned from different experiences, it may be misleading to understand the emergence of bike sharing across historical contexts. For example, it should be noted that the White Bikes in 1960s was initiated by an environmental activist group (Walks et al., 2015), while the coin-operated schemes and IT-based systems have been run by public and private bodies. The key actors in the emergence of the schemes may determine how the schemes develop over time. Why and how bike sharing came into existence is an important question that should not be hidden

within chronological typologies. Without looking into these drivers, it is almost impossible to assess the social implications and whether or why we need bike sharing systems while cities with strong cycling culture emerged without them.

The local businesses have an increasingly large role to play in the uptake of the services. The targeted population of bike sharing is different to other mode-shifting policies. The policy driver behind many bike sharing systems is to introduce non-cyclists to cycling without having adverse impacts on the existing cyclists (Akyelken et al., 2014). Yet, it could be argued that it has almost become an institutional product targeting businesses. Given the increase in the uptake of bike sharing for commuting purposes, the potential of businesses to become users is expected. Any assessment should therefore put equal emphasis on the potential uptake of the schemes by institutions. What kind of governance elements becomes important to support city-business relationship to promote bike sharing? Additionally, funding of bike sharing schemes include varied public and private elements such as contracts between private providers and cities and national health funds. These are in turn likely to determine the future potential users and hence distribution of the benefits of the scheme. Are the existing schemes – for example the London Cycle Hire scheme- extensive enough to cover low-income neighbourhoods in outer regions? What actions have been taken to increase the uptake of the services in the low income neighbourhoods?

It is therefore important to go beyond the conventional understanding of state-market relationships when evaluating the political economy of bike sharing for social implications. “Public vs. private” remains a vain distinction in assessing the political economy of these schemes. It could be argued that bike sharing emerged as an idea rather than a viable solution. Is it then possible to treat bike sharing as a policy to elucidate how it emerged and its impact on energy consumption and social impacts? Or should we first conceptualise it as a policy idea and then analyse how the existing institutions, geographical context and interests have altered throughout the process?

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## CHAPTER 32.

### MOVING TO THE CITY / MOVEMENT AS THE CITY

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In southern Stockholm, the old docks have been retrofitted into *Hammarby Sjöstad*. In the pursuit of sustainability, architects and engineers installed vacuum pipes for recycling and car pools for commuting. Living in this architectural role model for ecological urbanization, inhabitants of Hammarby Sjöstad identify themselves as being environmentally mindful (Bradley, Gunnarsson-Östling, & Isaksson, 2008).

Imagining sustainable cities evokes pictures of places like Hammarby Sjöstad. But moving to these cities, as I argue, requires that we discuss the city as a movement of *promises, perils, and practices* which I hope will result in more 'sustainable' urban *identities*. If you dream of sustainable cities without viewing the city in terms of power, you risk reenacting Voltaire's play *Candide* in the role of Pangloss, a philosopher thinking the present society to be "all for the best", except in your play you might hope to reduce the level of greenhouse gas emissions. Rather, as I will argue here, when we practice a new identity, such as the sustainable city, everything is and must be at stake, starting with the privileges of progressives wishing to live there. I engage with the concept of a sustainable city from the sweat and toil that keep places alive, which is its flow of *people and produce*. In ecology, 'sustainability' contains a set of assumptions of what demarcates a site. It is the social groups using a territorial ecology that define what constitutes needs, damages or support to the ecosystem and in short what makes it 'sustainable' (Warde, 2006).

Sustaining a city's condition requires identifying what are its surroundings, which consists of a flow of people and produce and, in extension, is the result of migration and markets. Identifying with these people and produce provokes the question: which are the social groups that we identify as part of the sustainable city? Assuming that most of us asking this question are architects, academics or artists, what do we believe to be the promises and perils of the city?

#### **Promises**

In the anonymity of the city's streets, shadows bring the promise of new identities and the casting off of old ones. Rebecca Solnit wrote of Virginia Woolf, her Virgil companion in search for equitable gender roles, as a pedestrian who revelled in the uncertainty that city life brought to those dwelling therein (Solnit, 2014:89)

Antony Giddens formalized the city's uncertainty as a theory on the possibilities of

cosmopolitanism, a new urban culture and identity. Its counterpart is fundamentalism, a popular response of repression and terrorism to be found in any society and with hostility against globalization as denominator (Giddens, 2002). Walking the streets together, then, is to practice the cosmopolitan virtue of tolerance. The inhabitants co-exist in its public spaces, rallying behind their mutual differences, forming a republican army whose social engagement leads to urban social sustainability.

## Perils

Cosmopolitanism as a practice tolerates people of many stripes in order to produce and identify with areas like Hammarby Sjöstad. Still, the architects, academics and artists dwelling there have more in common with their equivalents in London, half a continent from Stockholm, but with the social workers and migrant inhabitants of Husby, some metro stops away in Stockholm, there exist a world apart. Though part of the same country, inhabitants of the same city still form part of different imaginations and identities of ecosystems.

Benedict Anderson understands fundamentalism as a reaction by an imagined community to challenges posed by other entities of identity-making. Nationalism is in this sense not opposed to globalization but rising out of the proliferation of European technologies and transportation systems worldwide. These allowed Europeanized cities overseas, like the colonies, to imagine having more in common with their fellow neighbours locally than with the dynastic empires ruling them from across the Atlantic (Anderson, 1991). The nation was a plausible imagination until globalization further connected the world with fossil-driven travelling and transport, at which point the flow of people and produce also turned global. This is a fairly recent phenomenon, mostly driven from and towards city-centers. Commercial aviation arose as the urban citizens modus operandi in the 1950s and made cosmopolitanism into a more sensible imagined community for the white-collar populaces travelling between the urban centers.



*Picture 1: Scandinavian Airlines (SAS) cosmopolitan commercial in central Stockholm, "We are mistaken for locals". Photo: Johan Gärdebo.*

## **Practice**

I enter the discussion about the sustainable city through assumptions about what are the perquisites for a city. A city consists of flows of people and produce. For people to dwell they must be able to move in relation to their labour. The common day examples of this are migration and trade between markets.

One peril to dwelling in cities is to think of them as states in themselves. Even the city-as-state depends on its surroundings, ecosystems of people, practices and produce the city ultimately depends upon.

Saskia Sassen have argued that cities, and indeed their surrounding regions, must be understood in relation to migration patterns that historically follows in the footsteps of economic practices. Areas between France, Germany and Belgium were used for transhumance husbandry, herds and herders following the ecosystems and their cycles seamlessly between what later in 19th century became increasingly territorially fixed – borders and imaginations of nation-states.

We are not to be surprised then that migrants come through the same ports as the goods that are produced in these peoples' home regions. Why these people are increasingly considered as refugees rather than laborers, i.e. the need rather than the want to migrate, is influenced by the dismantling of the nation-state's institutions, the national company, the unions, the political parties. In their wake followed deindustrialization, unemployment and loss of welfare politics (Sassen, 2000:198). While the produce moves from the external to the internal ecology of the city, the people following in their wake are treated as alien to the ecosystem.

## **Identity**

Sustainable urbanization is not about place but of movement, a flow of people and produce and whether or not the population of a city can identify with these practices. At the moment, the populace of this future sustainable city is us; the architects, the academics, the artists. Our imagined community is powered by the jet motor and commercial aviation, through which we share culture, labor and products. We are travellers – we are the cosmopolitans.

But cosmopolitan communities are currently only extended to some areas of the city, the remaining populace must do with other communities, like the nation-state. When these fail they risk transforming into fundamentalism, and while cosmopolitans welcome the produce of globalization as part of its ecology, I question if they identify the flow of migrant people that also constitutes globalization. Playing the role of Pangloss, the cosmopolitan considers the migrant's labor as superfluous, and migrant culture appear anti-ecological to the make up of the Panglossian territorial ecology where things already are as they should be.



Picture 2: Scandinavian Airlines (SAS) cosmopolitan commercial in Stockholm metro, "Travelers walk new paths". Photo: Johan Gärdebo

For this purpose we, the self-styled cosmopolitans, have the means of exploring an identity where we ourselves do not move but embrace movement. Aviation bolstered the urban groups and communities by spreading their work transnationally, setting the standard for subsequent city-builders, theoreticians and curators on how to make a living. As much as these groups vouch for the logic of 'publish or perish' and 'fly or die', they will not have to enter a city through the same cargo containers as food from their home country. If we fly because of our wants, not our needs, then we will have difficulties understanding the movements of people and produce entering our sustainable cities and risk also like Icarus to keep rising in the sky and our fall will be all the steeper for it.

I do not argue that personal flight patterns will change output of greenhouse gases, and neither is this part of the argument made here (cf. Broome, 2012). But by making shifts in our own movement, we stand a fairer chance of imagining our identity with people and produce that move by other means and that have always been the sustenance that sustain cities. Moving to the sustainable city increasingly relies on us identifying with these movements of people, practices and produce. Indeed it is the only thing at the moment that makes the dream of a city sustainable.

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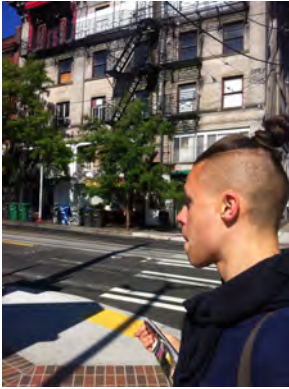
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## CHAPTER 33.

### THE BUILT ENVIRONMENT, ACTIVE DESIGN AND PUBLIC HEALTH: THE IMPACT OF OFFICE DESIGN ON ACTIVITY

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ANNA MARY COOPER AND ALEX CLARKE-CORNWELL, UNIVERSITY OF SALFORD, UK

The link between the built environment and the impact on people's health is well known, and the interest in this area is continuing to grow at pace (Jackson, Dannenberg, & Frumkin, 2013). In developed countries, we are seeing illness and disease related to lifestyle risk factors becoming the biggest risk to mortality and hospital admissions. Lopez (2012), in the book *'The Built Environment and Public Health'* writes:

*"The built environment provides the framework for how daily lives are conducted, influences health across life spans, and represents important pathways through which individuals come into contact with many health risks" (p. 4)*

To start with we want to give you an example from the University of Salford (UK) of how buildings can impact our movement. For many, the workplace has a large impact on our physical activity and sedentary behaviour, through both building design and workplace culture (Finch, Wilson, & Dugdill, 2012). The images below show examples of two buildings on the University of Salford campus. The first is a new building (2011) where the stairs are clearly visible as you enter through the main doors, and the lift (elevator) is at the back of the building (by the red carpet). The second is an older building (1966) – our building – where the lifts are visible and the stairs are through the small door on the left hand side; the stairs are not in view of those travelling around the building.



*Left: New building (2011), Right: Old building (1966) Pictures taken by the author for this chapter*

Through these two images, you can see how design can impact our public health in terms of activity. In the first one, would you (if you didn't need to) go looking for the lift? Then in the second one, would you know where to find the stairs, or would you use the lifts as they dominate the eye line?

Stair location is one example of something that influences our decisions to be active or sedentary in our everyday lives. There are an increasing number of examples of how places are trying to encourage people to change their behaviour and choose the stairs rather than the lift, including: the #pianostairs that became a functioning keyboard when walked on; displaying calories used per step; and motivational messages to keep you climbing.

### **What other ways can a building's design and setting influence us to be more active at work?**

With the development of technology, activity levels at work have declined over the last century; the introduction of desk dependent computer based jobs has seen an increase in the number of sedentary occupations. Over recent years leisure-time activity has remained relatively stable, whilst workplace activity has decreased, which in turn has led to an increase in time spent in sedentary behaviours (Bassett, Pucher, Buehler, Thompson, & Crouter, 2008). For those who are economically active, sedentary behaviour at work may represent the majority of their sedentary time; therefore, the workplace is an ideal setting to influence active behaviour and replace part of our sedentary time with light physical activity.

Sedentary behaviour is known to be independently associated with a number of health-related outcomes (e.g. cardiovascular disease, metabolic syndrome, obesity, type 2 diabetes, some cancers and premature mortality) (Dalkilinc, 2015; Wilmot et al., 2012). Musculoskeletal disease and mental ill-health are responsible for the majority of work-related ill-health and days absent from work in the UK (Health and Safety Executive, 2012); however, physical activity is known to reduce symptoms of anxiety and depression (Landers & Arent, 2012), and the use of sit-stand desks has been found to relieve some musculoskeletal complaints (Husemann, Von Mach, Borsotto, Zepf, & Scharnbacher, 2009). Sedentary behaviour is associated with reduced productivity at work through presenteeism (Brown, Ryde, Gilson, Burton, & Brown, 2013); therefore, it is conceivable that increasing activity in the workplace has the potential to increase productivity and decrease absenteeism.

The workplace environment and built environment should ideally enhance both health and productivity (Sallis & Owen, 1999). New buildings can be designed to encourage movement through: location, which impacts on transportation options; structural design, to include activity friendly features; and services, such as gym facilities and bicycle storage. The built environment in which we work should ideally support healthy, rather than unhealthy behaviours; for many though, buildings in urban spaces are in established locations and can have limited natural design features. Changes to building design are dependent on available resources – but, we can make small modifications to our office settings and our individual behaviours, which can consequently increase physical activity and productivity in the workplace (Active Design Guidelines, 2010):

- alternating between sitting and standing – sit-stand desks can create a significant increase in energy expenditure and can be easy to introduce into office buildings (Levine & Miller, 2007)
- encouraging more workplace intercommunication; for example, walking to speak to co-workers rather than sending emails or having more welcoming spaces for people to meet
- having standing meetings or walk and talk meetings (Merchant, 2013) – with buildings designed to help facilitate this (e.g. The RBS building in Scotland with internal courtyards and walkways)
- supplying painting/artwork/motivational quotes in stairwells and walking routes to make them more appealing to users and reduce the use of lifts (which also impacts upon carbon footprints)
- displaying prompts to use the stairs – informational (i.e. calorie expenditure, health benefits) and motivational signage (for example StepJockey)
- providing centralised areas that encourage people to get up from their desk and engage in brief bouts of walking.
- locating facilities (such as bathrooms, lunch areas, mail room), a walking distance from offices to promote walking and also considering the design of these to ensure they are welcoming and used
- and using computer applications to encourage short breaks from sitting every hour (Beddhu, Wei, Marcus, Chonchol, & Greene, 2015)

We want to leave you with a question – *What more can those who work in areas relating to sustainable urbanisation and public health do to encourage people to sit less and move more whilst at work in urban places?*

Finally, we want to acknowledge the late Professor Lindsey Dugdill and the influence of her work and interests in shaping the idea for this blog.

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PART VI.

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**CHINA**

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## CHAPTER 34.

### GROWING URBAN CHINA - AT WHAT COST?

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China is the world's largest urban nation with in excess of 700 million urbanites (World Bank, 2014). Its urban trajectory is unprecedented with some 250 million people expected to migrate to cities over the next two decades (World Bank, 2014). In 2011, the proportion of China's urban population overtook its rural population for the first time in history (Gong, Liang et al. 2012). This dramatic rate of urbanisation is no accident; the Chinese Government is actively pursuing the expansion of its urban areas in an effort to maintain its extraordinary rates of economic growth.

China is transforming from an export-led growth economy to a consumption-driven economy and to do this it needs consumers. According to China's National Bureau of Statistics, people in urban areas consume more than five times as much as their rural counterparts (Zheng, 2013). So China's primary producers will become its new consumers. The aim is for urbanites to find more stable and higher paid employment in cities to increase their capacity to spend. This chapter asks if rapid urbanisation is the key to stable economic growth over the coming decades, *what are the costs?*

#### **Growing urban China**

Rural to urban migration has fuelled the dramatic rates of urbanisation seen in China. Recent estimates suggest that by 2010 over 220 million rural people had migrated to cities (that is, for more than 6 months) (National Bureau of Statistics of China in (Akay, Giuliotti et al., 2014)). What's more, rural to urban migration accounted for 56% of urban population growth between 2000 and 2010 (World Bank, 2014, p.88). For the majority of such migrants, relocation is a response to perceived opportunities in urban areas relative to those in the village. In this there is freedom – an element of choice in whether to stay in their rural homes or gamble on an urban life.

There is also a lesser-known driver of urbanisation in China. Large swathes of land are being enclosed by cities. Some 35% of urban population growth between 2000 and 2010 was due to the reclassification of rural areas to urban (World Bank, 2014, p.88). Unlike rural to urban migration, the incorporation of rural residents into an urban area is not self-determined. Instead, a privileged few make key decisions that lead to the reclassification of the village as urban. The decision makers are those who stand to gain most from the transfer of land from rural to urban status – normally powerful land developers and local government. In the process, ruralites are forced to become urbanites.

## **Forced urbanisation**

Forced urbanisation is forbidden in China (Bai, Shi et al., 2014). Even so, Li (2011, p.2) claims that, over the past 20 years, urban sprawl has devoured some four million hectares of land, including the farmland of some 50 million farmers. Between 2001 and 2010, 1.23 million hectares was acquired which affected 26.5 million farmers (McDowell and Morrell, 2010).

However, there are also less obvious routes to forcibly advancing urbanisation. For example, the displacement of people to make way for the construction of development projects, such as dams, can involve reorganising what is rural into what is urban. Rural people can be concentrated together and relocated into high-rise buildings to free up land for such constructions in the name of development. In China this is becoming a common response in areas where farmland is limited and it is difficult to provide enough replacement farmland to support rural resettlement. With the next revision of the Land Administration Law it is likely that rural to urban resettlement will become general practice.

Add to this the purchase of farmland. One of the announcements made at the Third Plenary of the 18th Chinese Community Party Central Committee in 2013 was that rural people can now sell their rural construction land (see Wilmsen (forthcoming)). The gradual release of rural land into the marketplace will presumably expedite urbanisation by enabling land dispossession under the fog of a market transaction. Rural people become easy fodder for developers expanding cities – the terms of such transactions are negotiated across asymmetrical relationships of power that maximise the gains to developers.

## **Questioning sustainability**

China's plan for rapid urbanisation is a threat to its environment and the health of its people. Large parts of northern China are already suffering from acute water shortages so plans to increase people concentrated in cities will only add to the stresses on the already struggling system. The air quality in urban China and water pollution already contributes to diseases in urban and rural areas (Gong, Liang et al., 2012). Add to this China's congested motorways, inefficient energy use and the inequalities already facing rural-urban migrants (for example disparities in access to health-care, vaccination coverage and accidents and injuries (Gong, Liang et al., 2012)) and the urban project is easily problematised.

Rural lives and livelihoods are already affected by China's rapid urbanisation. Rural to urban migration encourages the creation of mono-functional agricultural systems and decreases rural food self-sufficiency and diversification amongst ruralites (Siciliano, 2012). Moreover, the exodus of the young and educated to cities leaves the older residents to do the farming. As urbanisation is expedited and in many cases forced, the long-term sustainability of the rural environment and village life is uncertain.

## **An opportunity to plan for sustainable urbanisation**

Notwithstanding the criticisms and concerns about the term "sustainable urbanisation" (itself an oxymoron), the risks outlined above can also be opportunities. Although urbanisation is rapid, the long-term view of the Chinese government allows time to plan. In growing its medium sized cities, China can prevent the kinds of problems already plaguing its mega-cities. It can support low carbon living, provide increased green space, reduce transport needs and use natural resources

more efficiently. The State Council can set about building the required regulatory and institutional frameworks so that the administration is held accountable.

China has an opportunity to work more openly and inclusively with its residents to balance their preferences, environmental costs and the needs of future generations in its forward plans. It can reduce barriers to migration (such as the household registration system) so that people can freely respond to opportunities in cities. In this way, forced urbanisation can be avoided and people can determine their own futures. To this end, there is hope. In its National New Type Urbanisation Plan released in March 2014, China mentioned that in setting government targets it would emphasise the principle of sustainability and people centred approaches (Bai, Shi et al., 2014). However, for those who dream of an urban life or to remain in the village, until the detail is released it is a case of wait and see.

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## CHAPTER 35.

# SUSTAINABLE URBANIZATION IN CHINA: COURTYARD HOUSING AND CULTURAL SUSTAINABILITY

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The United Cities and Local Governments have now endorsed a four-pillar sustainable development framework that includes environmental responsibility, economic viability, social equity, and cultural vitality. Whilst in his book *The Nature of Design*, David Orr (2002) maintained that sustainability is a modern term for “longevity” (p. 11), whose essence is “health” (p. 29). This blog is set within this context and looks at Chinese urban planning and courtyard housing development from a cultural perspective. The study defines cultural sustainability as the “adaptation and transmission of the beneficial parts in a nation’s material (tangible) and immaterial/spiritual (intangible) culture that are conducive to the development of their present and future generations” (Zhang, 2013, p. 31). The paper reflects the author’s 20 years of research on the topic and argues that sustainable urbanization in China necessitates four ingredients: planning with Chinese history and philosophy, designing for cultural health and happiness, taking the human-centered approach, and building for housing longevity.

### **Planning with Chinese History and Philosophy**

China has a rich history and philosophy on city planning that can be traced back 5,000 years (Fu *et al*, 2002). Unlike naturally evolved European capital cities such as London, Chinese capital cities such as Beijing were initially *planned* entities following the principles set in the *Record of Trades in Rituals of Zhou*. These principles emphasize harmony on four levels: harmony with heaven, harmony with earth, harmony with humans, and harmony with self (Zhang, 2013). These doctrines have generated regular grid urban patterns, with courtyard housing as the basic units embedded in most imperial Chinese cities (Fu *et al*, 2002; Knapp, 2005; Ma, 1999). This grid pattern and the courtyard form must be preserved as they satisfy our current quest for sustainable development.

Noticeably, however, China’s historic urban configuration had undergone wholesale destruction over the last 60 years (1950-2010), when the courtyard housing structure had been largely replaced with the imported Soviet-style parallel walk-up apartments in the 1950s-1970s, and the American-style tower blocks from the late 1970s onwards.

Arguably, the courtyard form should be valued as a primary approach to new housing development in China, such as the Juer Hutong (“Chrysanthemum Lane,” b. 1990-1994) and

Nanchizi ("South Pond," b. 2003) new courtyard housing prototypes in Beijing, partly because numerous research findings all suggest that the courtyard layout, or parameter block, in fact saves land more than an individual building sitting in the middle of a plot/site as exemplified in most Western planning practices (Martin and March, 1972; Shang and Yang, 1982; Wu, 1999; Zhang, 2006, 2011); and partly because courtyard housing facilitates residents' traditional cultural expressions, and is conducive to their social interaction and cultural activities (Zhang, 2013, 2015).

### **Designing for Cultural Health and Happiness**

Scholars such as Darlow (1996) and Wheelwright (2000) have observed that sustainable development is largely a cultural task that seeks a change in attitudes and lifestyles. Housing is where people's daily lives take place. The author's research findings indicate that courtyard housing is congruent with traditional Chinese philosophy to promote health and happiness at home, with the four recurring themes: health as balancing *Yin Yang*, health as gathering *qi*, happiness as attaining oneness, and happiness as knowing the Dao (Zhang, 2015).

The courtyard form is associated with all the four themes, and incorporating the courtyard feature when planning and designing Chinese cities could contribute to cultural sustainability, and foster residents' physical and psychological health and happiness (Zhang, 2013, 2015).

Conversely, if Chinese new housing developments blindly copy, rather than wisely adapt, foreign traditions, such as the European- and American-Canadian-style villa estates built in the suburbs of Beijing and Shanghai (King, 2004; Zhang, *forthcoming 2015*), the outcomes are often spatial alienation and confusion, leading to a potential breakdown in China's architectural heritage, albeit these houses may meet the demands of some of the foreign expatriates residing in China.

### **Taking the Human-Centered Approach**

Sustainable urbanization requires taking the "human-centered" approach because cities and housing are ultimately built for the people who inhabit in them; user satisfaction is the final judgment of their quality. A courtyard garden house compound hosting 4-8 nuclear families (Zhang, 2013, 2015) designed with classical Chinese garden elements (Keswick, 2003; Wang, 2005) that encourage walking and human activities without the threat of cars, would be healthy and culturally sustainable.

To further promote health and happiness, Chinese city planning and housing design should comply with *Feng Shui* because this theory has scientific basis. *Feng Shui* closely correlates with "neuroarchitecture," which is an emerging field of environment-behavior (E-B) study that combines neuroscience with architecture. This interdisciplinary inquiry takes the human-centered approach that connects architecture with physiology and psychology, rather than physics, as did traditionally in Western scholarship, and therefore it provides a more sensible method for urban planning and housing design than the old, object-oriented approach.

### **Building for Housing Longevity**

Sustainable urbanization is about creating cities and housing that are healthy for the inhabitants and long-lasting as structures. However, the construction quality in China has widely been recognized as a critical issue, and some of the renewed and new courtyard housing projects constructed in Beijing since the 2000s deteriorated only after 2-3 years of erection. Reasons for low-quality constructions can be attributed to short-term planning of a 20-30 year lifespan of



buildings set by China's Ministry of Housing, poor designs, inferior materials, weak construction management, and a zealous completion timeline, as well as developers' drive for profit, workers' skill inadequacies, and so on (Zhang, 2013). Construction quality assurance is definitely needed but was often missing in China, and good maintenance and management of the buildings will also ensure their longevity.

Since a house is a fairly permanent structure, once built, it cannot be changed easily to accommodate newer demands or higher standards. Therefore, housing designs should not be compromised for less than stable requirements in density, plot ratio, or floor-area ratio because while a population may fluctuate with time, a housing form may be less flexible. It is actually more economical and environmental to build for the long-term than to demolish and rebuild at a later time. Sustainability is thus viewed as more of a cultural task in changing our attitudes and approaches to rehabilitating old cities and planning new ones to enhance social and human development.

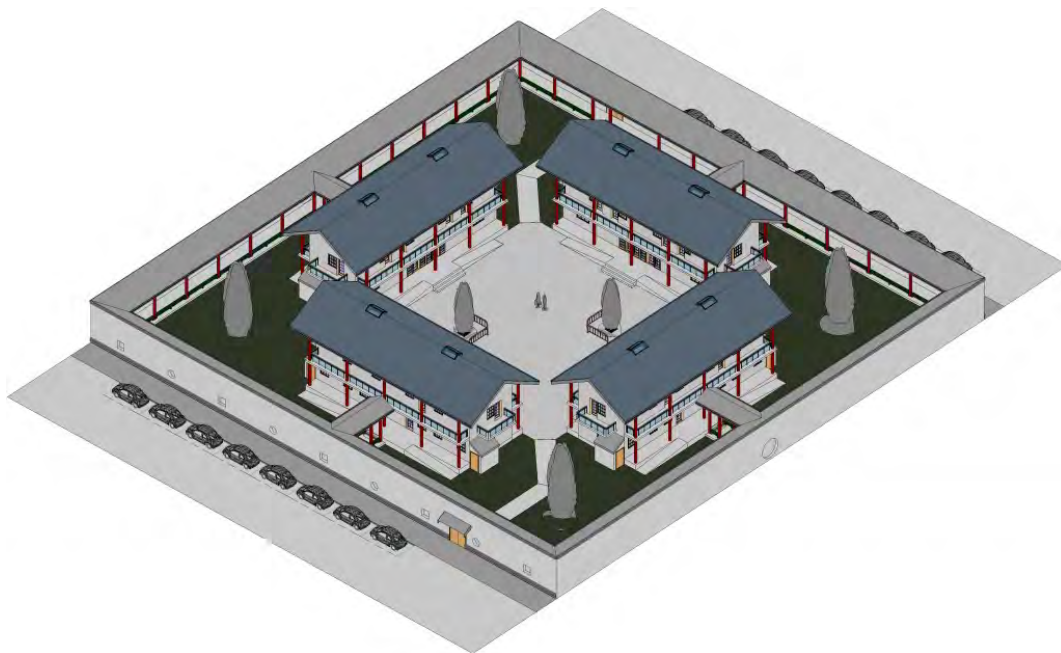


Figure 1 Proposed Beijing new courtyard garden house compound housing 8 nuclear families. Design and model by Donia Zhang 2008-2013

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## CHAPTER 36.

### URBANIZATION AND INEQUALITY IN CHINA'S MEGA-CITIES: A PERSPECTIVE FROM CHINESE INDUSTRIAL WORKERS

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Urbanization in China has been happening in a breakneck speed in the past 30 years. In 1978, less than 20% of China's population lived in the cities. Now for the first time in history, China is a more urban country than a rural one; state statistics shows 51.3% of the population lived in cities in 2012[1]. Between urban and rural China, there are worlds of difference. As of 2013, there were 44 cities in China with a GDP per capita value above the World Bank's threshold line for high-income economies – US\$12,746. Of these 44 cities, the GDP per capita in 10 big cities is above \$20,000 (World Bank Group, 2015, pp. 145-157). Considering the indicators of population, land area and GDP, there are four *megacities* in China[2]: Shanghai, Beijing, Guangzhou, and Shenzhen. These four megacities are where most of the Chinese industrial workers try to find jobs to keep their 'city dreams' alive.

How unequal is it for the industrial workers in the megacities in China? There was no clear answer for this. Although the national Gini coefficient[3] jumped from below 0.3 in the late 1970s to 0.47 in 2013 higher than most of the developed and developing countries (Figure 1), there are very few statistical indicators that would help us understand inequality levels within megacities in China. A UN study 'State of the World's Cities 2010/2011' shows Gini coefficients in some of the big Chinese cities are relatively higher than the cities in the East Asia region (United Nations, 2008), with the highest Shenzhen standing at 0.49.

Denmark (59k; 24.8)	Canada (52k; 32.1)	US (53k; 45)
Czech (19.8k; 24.9)	Korea (26k; 31) Greece (21.9k; 34.3) Taiwan (20K; 34)	Chile (16k; 52)
Montenegro (7k; 24.3)	Indonesia (3.5k; 36.8)	China (6.5K; 47) Zambia (1.8k; 57.5)

Figure 1. GDP per capita & Gini coefficient in selected countries 2013 Source: developed by the author. (Statistics from China Yearbook 2014, the World Bank website)

However, Gini coefficients do not tell us a lot about who exactly experiences what level of inequality. Before the reform started, megacities were bastions of a good life for the industrial workers. State Owned Enterprise (SOE) workers used to enjoy privileges, the so-called *iron rice bowl* (Ngai et al., 2012), which the rural population could not even dream of. The stark inequality between urban and rural areas was the direct result of the state crafted institutional division. However, social inequality between the rich elite and the working poor in megacities today emulates the old urban-rural gap.

There are two key reasons for this. First, informal jobs with no contract signed are increasingly replacing formal jobs. This is in spite of China’s central government passing legislation designed to protect the rights of industrial workers. This is best illustrated by what happened after the Labor Contract Law came into force in 2008. Under the Law, if workers get a formal job with contract signed, their employer is required to pay for extra labor costs, such as the ‘five insurances and one fund’ package, overtime pay, and severance pay. However, most of the employers in manufacturing industries know how to get around the regulations by using *dispatch workers* hired through dispatch agency. Now, more than one-fifth of the urban workers are dispatch workers (Friedman & Lee, 2010, p. 512). Employers using dispatch workers range from private and foreign companies, such as Apple and Nokia, to SOEs, such as Sinopec and China Telecom. For example, 30% of the workforce are dispatch workers in Nokia’s factory. A Ramen noodles franchise owned by a Sinopec subsidiary employs thousands of wait staff through dispatch labor agency in four megacities[4]. Dispatch workers’ temporary status without a formal contract puts them in a precarious position. They are much more likely subject to rights abuses, be lower paid, and being fired for no reason.

Employers in the construction industry use a similar strategy, subcontracting, to save labor cost. According to a report jointly produced by four universities from China and Hong Kong, 97.1% of the construction projects involved subcontracting in China. A study of 4,329 construction workers by two Chinese labor NGOs found that only 5% workers have proper labor contract by the employers[5]. Not surprisingly, perhaps, the number of construction workers protests for payment of arrears increase rapidly over the past ten years, particularly after the economic slowdown and

property market downturn in 2012. For example, there were about 243,600 cases of workers disputes caused by wages arrears in 2013[6].

Sanitation workers in the megacities are another group of workers who fare badly under an informal job structure. There are an estimated 38,840 sanitation workers in Guangzhou in 2013, who earn an average of about 1,300 yuan, or US\$209, per month (equivalent to the city's minimum wage)[7]. Most of the local governments in the megacities outsource the sanitation and cleaning work to save cost. Li Tinggui, a former head of Guangzhou Urban Management Committee, said most sanitation companies had won their government contracts with low tenders, which has in turn led to low pay for sanitation workers. Sanitation workers in the four megacities remain one of the lowest paid groups even though they are, in theory, state workers.

The second main reason for rising levels of social inequality is because industrial workers' real wages have actually declined when taking into account inflation. This has meant that their purchasing power has deteriorated in the megacities. For example, average housing price to income ratio in four megacities have overtaken traditional expensive international cities, such as Hong Kong and Sydney. In 2014, Shenzhen and Beijing's house price to income ratio were about 15 to 20 times[8], whereas comparable international cities had a ratio of about 10 times. Making urban property beyond affordable for industrial workers. If we compare the industrial workers' common wages against the average rental prices in the megacities, and consider how many hours workers have to work in order to be able to afford a one-bedroom apartment in the megacities, the results are quite startling (figure 2). In Shanghai, for instance, an industrial worker has to work 109 hours per week if he or she wants to live in a one-bedroom apartment in the urban area. With inflation waxing and waning over the reform period, the purchasing power of the frontline industrial workers' monthly wages varied. According to one measure of purchasing power, the amount of rice that can be purchased with an average industrial worker's monthly wage declined from about 295kg in 1990, to 220kg in 2000, and up a bit to 268kg in 2014[9]. That shows to an extent industrial workers struggled most badly in 2000, and they were worse off in 2014 than in 1990.

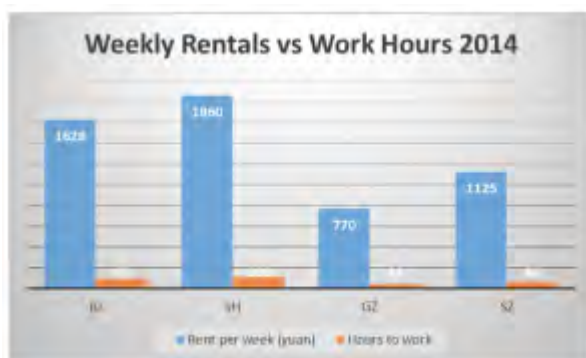


Figure 2. Weekly rentals and work hours for industrial workers in four Chinese megacities 2014 Source: developed by the author (wages statistics from National Bureau of Statistics 2014, rentals statistics from a Chinese website <http://www.fang.com>)

The stagnant even declining workers' real wages explains why new forms of urban villages (*cheng zhong cun*) are emerging in the megacities. Urban villages are the urban slums with Chinese characteristics. They are a mix of rural and urban society within a self-organized grassroots unit, which provides low-cost residential space for migrants and other low-wage earners. In 2010, there

were roughly 200 urban villages in Beijing, about 140 in Guangzhou, 104 in Shanghai, and 240 in Shenzhen, with a combined population up to 10 million[10]. This is estimated by the author based on the Chinese media report (for example see link). Cheaper housing is the key alternative offered by these slums when compared to the expensive urban living of the megacities. Now, new and extreme forms of slums have appeared as a consequence of the rising cost of urban living. A group of Beijing residents in Tangjialing are dubbed as the 'ant tribe' because of their cheap and poor-quality accommodation. Most of them are hard-working young university graduates and other migrant workers. 'Scrap villages' are another new form of slum that thrives in the suburbs of the megacities. Villagers live beside the rubbish dumps and make their living by sorting out scrap metal and other millions of tons of waste, from copper wire, to detergent bottles and anything you can think of. The most recent 'innovation' in low cost living is the 'rat tribe', who dwell in a deep and dark underground maze of cells in Beijing. Although these new forms of urban slums offer cheaper living alternatives, this comes at the cost of losing basic human facilities, such as medical care, child schooling, and even safety.

In conclusion, the rising social inequality experienced by Chinese industrial workers in the megacities is staggering and beyond the extent in which the Gini index could explain. The Chinese state's urbanization strategy should strike a careful balance between economic growth and social equality. No one should be working poor, as they say. A series of social welfare policy and programs should be developed to help the low waged industrial workers in China's megacities.

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[1] See website <http://cpc.people.com.cn/18/n/2012/1104/c351073-19488915.html> (access on 25 April 2015)

[2] According the UN report in 2015, city with population more than 10 million people is considered first-tier city. This paper calls the four first-tier cities megacities.

[3] Gini coefficient is a statistical measure designed to represent the income dispersion of residents in a country.

[4] See news report from – <http://www.bloomberg.com/bw/articles/2012-03-08/why-chinas-factories-are-turning-to-temp-workers> ( access on 25 April 2015)

[5] See a Chinese news website – <http://news.sina.com.cn/c/2014-12-13/003431279821.shtml> (access on 1 May 2015)

[6] According to statistics from National Bureau of Statistics of China 2015.

[7] See a Chinese news website – <http://gd.nandu.com/html/201301/20/17466.html> (access on 1 May 2015)

[8] See [http://www.china.org.cn/top10/2015-06/30/content\\_35933216\\_8.htm](http://www.china.org.cn/top10/2015-06/30/content_35933216_8.htm) (access on 02 July 2015)

[9] This is calculated from the average industrial workers' wages and market prices of food items in late 2014.

[10] This is compiled from a number of Chinese news reports: [http://www.southcn.com/nfdaily/news/content/2014-05/15/content\\_99763832.htm](http://www.southcn.com/nfdaily/news/content/2014-05/15/content_99763832.htm); <http://www.chinanews.com/sh/2014/09-03/6559151.shtml>; [http://news.xinhuanet.com/fortune/2013-02/19/c\\_124361393.htm](http://news.xinhuanet.com/fortune/2013-02/19/c_124361393.htm); <http://news.sohu.com/20110411/n280221249.shtml>. (access in 23 June 2015)

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## CHAPTER 37.

# THE SUSTAINABLE RENEWAL OF A HISTORICAL COMMUNITY IN BEIJING'S OLD CITY

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Nanluoguxiang (NLGX) is a community space located in the central part of old Beijing. As an important commercial space dating back to the Yuan Dynasty, it was placed at the backside of the Forbidden City according to the specific spatial patterns designed for the country's capital in *Zhou Li (Rites)*. The distinctive spatial pattern of the streets and roads in the old city of Beijing is in a chessboard-shaped layout organized in a very neat order. Hutongs (lanes) are the lowest level in the city's road system. Residents of hutongs face one another in public spaces; these are spaces where children play and neighbours chat. NLGX has many such hutongs. In the process of urbanization and as a part of the old city, NLGX needs renovation to revitalize its regional economy and living conditions, and at the same time, preserve its unique identity.

The renovation of NLGX has been going on for more than twenty years. From the late 1980s to the early 1990s, the first stage of the renovation focused on some courtyards. The poor housing conditions were the major focus of this period. The key change was altering the design from one to two storey houses which not only preserved the public space in the courtyard's centre but also enlarged the living space for the growing population. From 2005-2010 the government focused on the rebuilding of the main lane, which provided an appealing historical image for tourists. Shortly after that, a new project was initiated which aimed to rebuild the banks of the Yuhe Canal which also runs through NLGX. The main market area of the capital city in the Yuan Dynasty flourished at this time by the commodities flowing through this canal. Yuhe Canal is at the north end of the Grand Canal in China. NLGX is located at the harbor. This renewal phrase emphasized the function of the market harbor in the ancient capital. All of the three remodeling stages of NLGX sought to retain the area's historical heritage.

Comparing the three renovation stages, we found that the last one has been the most important. The courtyard rebuilding in the first stage could not be copied by other residential districts, because the government budget is unable to cover the costs for the old courtyards needing repair. It would be unfair if the city's limited financial budget went to a specific courtyard. Since 2005 the image of NLGX has been likened to a fish-bone street pattern. Whereas Beijing's inner city has a chessboard road pattern, other quarters in the inner city have a fishbone road system. It made the renovation in the second period that occurred did not get promoted. After 2007, however, scholars discovered another historic cultural icon in this area, the Yuhe Canal. The ancient Yuhe

Canal connected the main market and the old canal dock; it was, as noted above, an essential part of commercial spaces in the ancient capital. As the old saying goes that: “the more a place has its own functional meaning, the more it becomes embedded into Beijing’s cultural spatial structure,” which means that there are a number of spatial nodes unique in the whole city. Also that the more historical and cultural associations one discovers in NLGX, the more they are similar to other parts of the city. It is with some sense of justice that local government has financed NLGX’s renewal which has a shared cultural meaning for all city residents. It is better than financing the rebuilding one of many courtyards with shabby courtyards or repairing its fishbone road system.

Another objective of the city’s sustainable renovation efforts is to promote or maintain local social capital. During the second phase of renovation, many former public spaces such as grocery stores for local people were turned into souvenir shops for tourists. Before the remodeling all of the residents whom we interviewed, regardless of income, felt an attachment to the neighborhood and devoted themselves to creating a harmonious communities. However, with tourism development and the occupancy of outsiders moving in, many businessmen do not consider NLGX as their own community. They consider it only as a place to make money. The local residents themselves remain divided into two groups – one supports and is involved in the tourism business, the other opposes it. A harmonious community needs to find some new social collaboration.

The experiences and successes of the renovations of NLGX provide some encouragement. Residents need to consider two points as they continue to contemplate future renovation. The first is a sense of justice. A cultural meaning or image of an historic community would be retained if its meaning is identified by more people. The question can be asked: why was the last stage of NLGX’s renovation successful? It was because the Yuhe Canal links NLGX to the commercial network of ancient China. In this way the community is identified by more Chinese people. They like to preserve this historic community and associate it with their historical heritage. And such a historic community designation can aid in obtaining financial support from the government without debates of unfairness. The second is retaining the social capital of an historic community. The community’s public spaces are important for social networks of local residents.

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## CHAPTER 38.

### GOVERNANCE OF SUSTAINABLE DEVELOPMENT IN CHINA: A CASE STUDY OF THE BAMBOO SHOOT PRODUCTION IN LIN'AN COUNTY, CHINA

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Bamboo shoot production has presented a shift of human-nature relations under China's modernization. Current research on bamboo shoots in China mainly focuses on the economic values, model simulation, forestry management, taxonomy, and policy implications of the bamboo production in rural areas (Chan, 2012). However, there are lacunae in both literature and approaches to understand China's bamboo production industry in relation to the linkages between governance and sustainable development. This research critically examines the governance of sustainable development of the bamboo production industry by addressing how the local government and bamboo farmers make use of bamboo shoots to achieve sustainable development in Lin'an County, China.

#### **Addressing the governance of sustainable development in the bamboo production industry**

Governance is a fundamental concept and theoretical lens to understand how governing institutions govern the bamboo farmers and their economy through direct and indirect rules and internalization of rules and regulations (Pierre and Peters, 2000, p.14). Although the term "governance" is used to understand the role of state and farmers in dealing with environmental problems (Stocker, 1998; Evans, 2012), there is a weak bridging between the theoretical and empirical context of both environmental governance and sustainable development (Jordan, 2008). Particularly, how state and farmers implemented forestland responsibility policies and manage bamboo resources to struggle for sustainable development are ignored. This research would take Jordan's argument further by bridging the theoretical context of both governance and sustainable development to examine the collective actions of local government and farmers in the bamboo shoot production industry.

Current sustainable development debates in China can be summarized into three major facets: the debates on the role of state and local, the centrality of human and nature, the approaches of pro-growth and slow growth to achieve sustainable development. In particular, the debates among ecological modernization (Mol, 1995), steady state economy (Daly, 1992) and eco-Marxism (O'Connor, 1998) to achieve sustainable development are in line with my research enquiries. The ecological modernization stresses increasing production capacity to trickle-down resources to solve environmental problems (Buttel, 2001; Spaargaren & Mol, 2009). However, eco-Marxism

argues that market efficiency cannot solve environmental problems (Harvey, 1996). Steady-state economy emphasizes the strong government role to maintain a proportional growth of economy. There are two major points which should be stressed before searching for sustainable policy options. First, the mentality of “development first and rectifying the environment later” dominated the government policies. Second, local government plays a strong role in regional development. Based on these contexts, this research critically examines how local government and non-state actors manage land and bamboo resources to set priorities on bamboo cutting, and to conduct cross-regional bamboo construction material trading networks in China. To answer this question, this research examines governance at the county level, which is a key level of governance for the practice of sustainable development in China. Data has been collected through surveys, in depth interviews and longitudinal ethnographic observation.

### **Bamboo shoot production in Lin'an County**

China is the largest bamboo product producer and exporter in the world (Marsh and Yang, 2008), while Lin'an is the biggest bamboo shoots' production center, while the total areas of bamboo plantations comprise 65,833 hectares (Zhu and Yang, 2006). According to the Lin'an Forestry Bureau (2008) there are approximately 50,000 bamboo shoot farmers, 4,000 processing workers and 6,000 people participating in bamboo shoot marketing.

### **Growing bamboo shoot as a spatial fix to capitalise land resources**

In the early 1980s, the Forest Land Responsibility System was implemented. The Lin'an state distributed collective-owned lands to individual farmers. Land distribution provided the right of use and right to derive income for individual farmers. This spatial measure not only increased farmers' incentive to invest in the bamboo shoot production but also increased the forest coverage. From 1983 to 2005, the total bamboo shoot forestlands increased from 1,878 hectares to 32,000 hectares (320 km<sup>2</sup>) respectively (Zhu and Yang, 2006). The total bamboo forests increased around 17 times which was the equivalent to 1/5 the size of greater London (1580km<sup>2</sup>) in 2005. Growing bamboo shoots alleviated much of the farmers' poverty and greatly improved their living conditions (For instance, the average incomes of bamboo shoot farmers substantially increased: 317%, from 1995 (3,336 Yuan) to 2011 (13,926 Yuan) (Lin'an Forestry Bureau, 2012). The average rural poverty rate decreased from 60% in 1980 to 5% in 2000 (Lin'an Forestry Bureau, 2012). However, Bamboo shoot farmers derived a substantial income from fresh bamboo shoot selling and spent it on building “bamboo shoot houses” (???), this literally means farmers earned the money from bamboo shoot cultivations to build their modern flat-top houses. One bamboo shoot farmer Mr. Liu from the Xiao Gao village described his material accomplishments:

In the 1970s, we used the sand, mud, and some concrete to build the houses. Until 1988, most of the farmers started growing bamboo shoots and get[sic] rich, they could enjoy better livelihood by using bricks to build the modern flat top houses, we called it a bamboo shoot house (Interview with bamboo shoot farmer Xia Gao village F05, 2012).

From the above quotation, this farmer illustrated that growing bamboo shoots not only brought economic prosperity in rural Lin'an but also transformed the farmers' average incomes and improved their housing conditions, and material wellbeing (see Figure 1).

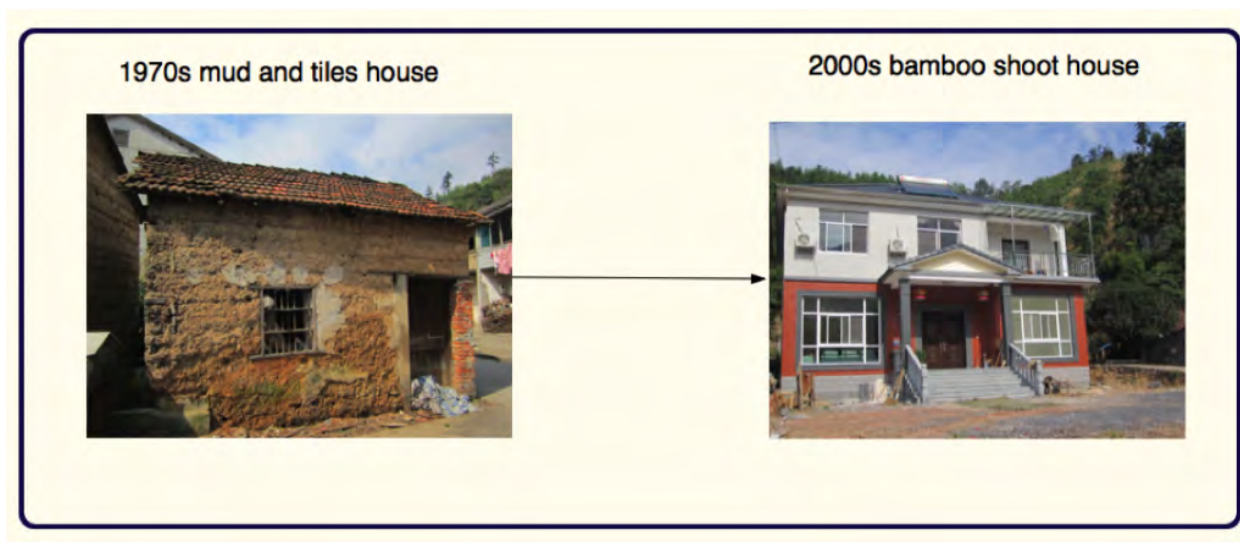


Figure 1 Improvement in Housing Conditions (Source: Author's collection)

### Promote early shooting technology to utilize bamboo shoot production capacity

In the mid-1990s, the local government further improved the bamboo shoot productivity by promoting early shooting technology (Xu et al., 2008). The Lin'an Forestry Bureau promoted this technology in three major ways: (1) offered technological trainings and workshops, (2) provided subsidies to encourage farmers to cultivate bamboo on hilly slopes, and (3) established demonstration households in different villages to bamboo cultivation demonstration units to increase bio-diversity in the bamboo plantations. The processes of the early shooting technology included applying plenty of chemical fertilizers, rice chaff, chicken deposits, and sawdust to increase the soil temperature in order to extend the growing seasons during the winter period. This blanket effect produced suitable temperatures and humidity to cultivate bamboo shoots in the winter season. According to Zhu and Yang (2006), with the applications of this early shooting technology, the total bamboo shoots' production increased from 1, 421 tons in 1983 to 107, 150 tons in 2002.

### Challenges of sustainable development for this pro-growth model

However, with plethora application of fertilizers, this created a pro-growth model of bamboo cultivation and induced monoculture and pesticides usage problems. According to Zhu and Yang, (2006, pp.28-29), the drop of bamboo shoot production in 2002 from 115, 000 tons to 105,000 tons was related to the manipulation of the growing season of bamboo shoot production which increased the vulnerability of bamboo forestry to climate changes, pests, and diseases. According to a Lin'an Forestry Bureau officer Mr. Lin (pseudonym) commented that, "with using large amounts of fertilizers has caused 70% of the *Ph. Praecox* bamboo shoot lands to be suffered from medium to high degree of degradation" (Interview with Mr. Lin, G02, 2012). The problems of monoculture increased ecological vulnerability and instability in the bamboo production industry. Zhu and Yang (2006, p.29) further argues that "76.7% of the total 20,000 hectare of the shoot type is *Ph. Praecox*" and the occurrence of the bamboo's diseases and pests became an alarming problem. The remedial measure for local farmers to manipulate the bamboo ecosystem is to use pesticides. This not only causes the bio-accumulation of toxins in the food chain but it also causes cyanobacteria bloom when pesticides run-off from the field into the nearby river in Lin'an (Ni et al., 2012).

## Conclusion

This research concludes that the local government and non-state actors perceive bamboo resources as commodities during the market reform period. Local government contracted collective forestlands to individual farmers, which implied a change from use value to exchange value of land. The land transformation caused the changes of the human-nature relationships. On the one hand, bamboo shoot farmers perceived bamboo forests as commodities in exchange for monetary and material benefits. On the other hand, the local government used bamboo cultivation as a spatial fix to increase forest coverage and solve rural poverty. Both the local government and farmers have treated the bamboo shoot resources as a growth engine for economic development which is managed and manipulated to boost the economic productivity.

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PART VII.

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**MAKING PLACES**

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## CHAPTER 39.

### SUSTAINABLE URBANIZATION IN NORTH AMERICA: COURTYARD HOUSING AND ARCHITECTURAL MULTICULTURALISM

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DONIA ZHANG, YORK UNIVERSITY, CANADA

This paper highlights the key findings from the author's 2015 book *Courtyard Housing for Health and Happiness: Architectural Multiculturalism in North America*. The study investigated the interrelations of housing-health-happiness, and examined health from a cultural perspective. It defined a courtyard as a “pedestrian, communal, outdoor space enclosed on three or four sides by buildings or walls, in which residents/tenants can sit, talk, and socialize with one another” (Zhang, 2015, p. 7). Although courtyard housing is an uncommon house type in North America, the number is rising. This article chronicles 100 years (1910s-2010s) of courtyard housing development in the USA and Canada, and argues that sustainable urbanization in North America must apply Architectural Multiculturalism. It further recommends new housing designs incorporating communal courtyards.

#### **History of Courtyard Housing in North America**

The courtyard housing development in North America evolved from two cultural roots at the turn of the 20th century. One branch emerged in Toronto, Ontario in the 1910s-1920s, designed in English Tudor style by Canadian architect Eden Smith (1858-1949), who was influenced by the “Garden City” movement initiated in the UK in 1898. The examples are the Bain Apartments Co-operative (former “Riverdale Courts,” b. 1913-1920s) (Austin, 2013), and the Spruce Court Housing Co-operative (b. 1913-1926). The State of Oregon also has a heritage of courtyard housing often built in English cottage style in Portland’s streetcar-served neighborhoods in 1900-1950 (City of Portland, 2008). Another branch appeared in California, USA, adapted from Spanish precedents, and designed and built by American architects Nina and Arthur Zwebell in the 1920s-1930s. It then spread to the city of New Orleans, and some other places in the USA (Hawthorne, 2005; Lasner, 2012; Leigh, 2004; Polyzoides, Sherwood, and Tice, 1982/1992; Reynolds, 2002).

Since the 1960s, courtyard housing revived and was constructed in American cities (Zhang, 2015). It was further resurrected as part of the New Urbanism movement in the 1990s. The outstanding examples are the Harper Court (b. 2002) in West Hollywood, California; the Meridian Court (b. 2004) in Pasadena, California, among others. Most of these projects are in Mediterranean style, designed or restored by American architects Stefanos Polyzoides and Elizabeth Moule, who

attempted to reconnect with Los Angeles history and improve the urbanism of the city (Broffman, 2008; Jarmusch, 2004; Kellogg, 2006; Leigh, 2004; McDonald, 2005; Newman, 2002).

To achieve better social integration and cultural vitality, co-operative housing and cohousing started to be built in North America in the 1980s. The author observed that in 2013, 16 of 53 (30%) co-operative housing in Toronto have identified with one or more courtyards. In 2013-2014, the Canadian Cohousing Network (formed in 1992) as part of a global cohousing initiative endorsed 28 cohousing projects across Canada, and courtyard spaces are fundamental to the cohousing design concept. In 2013, the Cohousing Association of the United States listed 213 cohousing communities on their website, and in 2014, the number increased to 234.

### **Planning for Architectural Multiculturalism**

With China's fast economic development since the 1990s, ethnic Chinese have become the second largest foreign home-buyers in the USA, behind Canadians (California Association of Realtors, 2011; National Association of Realtors, 2012, 2013). This phenomenon prompts North American real estate markets to consider offering homes to meet ethnic Chinese needs for cultural roots and connection.

Since 2012, there have been reports about a large project of "China City of America" in the State of New York, with various culturally-themed parks, a school, a medical center, and 1,000 housing units in both Chinese courtyard and Western villa styles, among other things. The plan is becoming reality in the Sullivan County, NY over multiple years (China City of America, 2014). Similar concepts have been proposed in Michigan and Idaho (Zheng, 2012). This venture has aroused heated debates (Hust, 2013; Mattern, 2013; Vickery, 2012) and pointed to the critical question of multicultural planning and design.

Canada was the first country in the world to establish a national policy of Multiculturalism in 1971, and protects it in the Canadian *Multiculturalism Act of 1988*. In his article "What is This Thing Called Multicultural Planning?," Mohammad A. Qadeer (2009) called for policies/projects for ethnic heritage preservation, guidelines for housing to suit diverse groups, and promoting ethnic community initiatives for housing and neighborhood development (p. 13). David Beynon (2009) likewise observed that the way the built environment represents and accommodates people of different cultures is an important aspect of developing a sustainable society; increased understanding and knowledge of the impact of immigration and Multiculturalism on the built environment will facilitate planners and architects to create inclusive and dynamic cities and communities to celebrate.

Ronald G. Knapp's (2010) *Chinese Houses of Southeast Asia* is a masterpiece on Architectural Multiculturalism. The book vividly demonstrates that cultural diffusion, interaction, and assimilation have resulted in these hybrid houses combining Chinese, European, as well as indigenous architectural styles and features that are stunningly beautiful.

### **Designing with Courtyard Space**

The author's previous doctoral research in China shows that a courtyard helps maintaining physical health or natural healing, and facilitates residents' social interaction and cultural activities (Zhang, 2013). Her postdoctoral study indicates that, although 21 percent (n=314) of the surveyed ethnic Chinese and 11 percent (n=37) of the interviewed ethnic Chinese in North America favored courtyard house/housing, 70 percent (n=37) of the interviewed ethnic Chinese desired a

communal courtyard in their immediate residential environment for better social interaction and neighborly communication (Zhang, 2015).

Thus the two studies confirm that a courtyard is conducive to residents' health and happiness (Zhang, 2013, 2015). Christian Schmid (2014) also argued that common spaces in a city can be as sites of encounter and exchange that would provide social networks connections for a daily life that is open to a variety of possibilities, surprises, and innovations (pp. 73, 75). The impact of courtyard configuration on the urban design of neighborhoods and districts is that it would require zoning changes to legitimize courtyard housing designs in North American cities and towns.



*Figure 1 Proposed North American new courtyard garden house compound housing 8 nuclear families.  
Design and model by Donia Zhang 2012-2014*

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## CHAPTER 40.

# RECONFIGURING 'SUSTAINABILITY' IN MUMBAI: FROM ENVIRONMENTAL RACISM TO DIGITAL GOVERNMOBILITIES AFTER SLUMDOG MILLIONAIRE

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### **Negotiating sustainability: Mumbai's tourist slumming**

Although originally sustainability was inextricably linked to environmental degradation and the 'spoliation' of natural habitats, in more recent decades, its socio-political and cultural discourse extended to the cybersphere. The accelerated growth of urban areas is faced with a not so unexpected paradox: climate change and the destruction of environmental resources are counter-balanced by the reconstitution of utopian sociality online (Yar 2014). Indeed, the upsurge of 'smart urbanism' and its compliance with neo-liberal structuration (Giddens 1987; Lash & Urry 1987, 1994) has turned the *nature* of such socialities into a compensatory mechanism for what is slowly been eroded in real time.

My focus is the budding touristscapes (cf. Appadurai 1990) of Mumbai's slums, which, especially after the release of *Slumdog Millionaire* (2008, dirs. Danny Boyle & Loveen Tandan), colluded with mediascapes beyond the film – notably, Internet business. A quintessentially Western activity, 'slumming' is reportedly on the rise in every major city around the world (Frenzel 2012). In Mumbai's case, we may see in such combined tourist-media initiatives a multi-industry that operates on marketable 'signs' such as the nature of human communities and ecosystems, as well as their inhabitant's corresponding lifestyles – a 'sign industry' (Tzanelli 2010). Of course, associations between habitats, their corresponding habitus or character (Bourdieu 1993) and the emergence of *dispositif* (apparatuses on which the social world is structured) should not be passed in silence. As much as this convergence highlights the role of 'local style' in the production of urban and rural destinations, it might become implicated in unspoken inclinations of visitors and industries to primitivism and racism. As Blanton (2011) and Jamal *et.al.* (2003) point out from two different perspectives (urban ecology and environmentally-gearred tourism), environmental racism hides in the noblest intentions to conserve and develop. Increasingly, both industries and individuals try to dispel such confusion in their attempt to contribute to the sustainable development of disenfranchised urban areas, but regressions to racism are not altogether precluded.

### **E-tourism and reconfigurations of sustainability: Dharavi's image**

Mumbai's e-tourism or digitally-facilitated slum tourism currently focuses on the city's mega-



slum, Dharavi, which featured in *Slumdog Millionaire*. The enterprise is not state-led for historical reasons. Indian tourism functions on a disorganised capitalist model, thus following global trends: the Indian Tourism Development Corporation (ITDC) was created as part of the Ministry of Tourism in 1966 to mark a transition in government approaches towards corporatisation. The process was followed by the launch of neo-liberal reforms in 1991 that facilitated the globalisation of the Indian tourism industry. In fact, Reality Tours and Travel (see website 2015), Mumbai's foremost slum tourism operator, fits in this move towards the retrenchment of the state from social services and the liberalisation of real estate markets that opened up the public arena to the establishment of profitable partnerships with private agents (Glasze 2005). Such public-private partnerships fuel new fears based on perceived dangers of social identities residing at the margins of urban respectability, with slums and their poor populations at the top of such agendas (Bauman 2005; England & Simon 2010).

Dharavi is a special case in Mumbai's rapidly growing slumscapes: like other slums, it is the home of professionals who cannot afford to live in another part of the city due to its prohibitive estate market. At the same time, the slum is home of various migrant groups and their small business, which pride themselves for their industriousness and success. Admiration by slum and volunteer tourists for these communities' survival techniques aside, Dharavi is home of the '13th Compound', a haphazard recycling project managed by slumdweller under risky labour conditions. As Western visitors note, in the slum's recycling area 'old ink vats, cooking oil containers and paint tints were being returned to gleaming perfection, while scraps of trashed plastic were converted into pristine pellets and twisted aluminium was returned to ingots' (Richardson, 22 February 2009). Unfortunately, the slum is caught in regional and national political intrigues that threaten residents with evictions in the name of urban development *and* the removal of the controversial 13th Compound in the name of environmental sustainability. Two conflicting conceptions of risk (Beck 1999) emerge in this context: on the one hand, Dharavi's 'dirty' recycling business pollutes the rivers, the atmosphere and its inhabitants; on the other, its absence will deprive slumdweller of their most significant economic resource and the region of its few recycling initiatives (Tzanelli 2015: chapters 7 and 8).

### **Governmentality as alternate route to sustainability?**

In this context, another group of glocal (local, regional, national and foreign entrepreneurs) agents step in to do the job of overstretched NGOs, activists and governmental agents, which is connected to the very causes of world-wide neo-liberal expansionism: Reality Tours and Travel directors, Krishan Pujari and Chris Way, and their employees work towards closing the gap between fierce global tourist competition and labour recognition (of slum workers) within the city. The company, which currently offers small-group tours to global slum visitors, was originally accused of selling poverty. But when later Pujari and Way started financing Dharavi's educational projects, donating 80% of their profits to the slum, showing sensitivity by limiting tour groups to six people and forbidding photography, local reception improved. Way estimated that in late 2009 Reality Tours and Travel sales were up by 25% after SM's release and the gradual rebound of tourism after the 2008 terrorist attacks (Bly, 2 October 2009).

The work of sustainable development commences in the cybersphere as an alternative form of managing the ways visitors perceive slum life. This modification of the governing of mentality (*governmentality* – (Foucault 2007)), which used to be monopolised by the state, is achieved by controlling what moves in global cultural spheres (*governmentality* – (Bærenholdt 2013)). Profit-making aside, slumdweller exert considerable control over what sort of information is released

to tourists online. Offline, visitors are also forbidden to produce their photographic memories of the tour and are warned not to avoid touch or offensive smells while in the slum. Depriving visitors of their primary representational tools coerces them to reconstruct their experience of the tour from memory – a memory already ridden with profitable misconceptions of dark industrial spaces and practices. Though modifying the colours of the journey (darkness turns into symbolic brightness-optimism), this strategy amplifies the visitors' respect for local craft or *téchne*. It is this craft that does the unmediated work of development – now ever more sustainable thanks to the digital technologies Mumbaikars have at their disposal. Hopefully, this marketing of character will never turn into a destructive tool in the hands of authoritarian parties and in the name of fictional ethnic purity.

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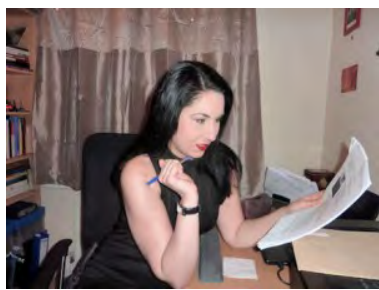
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## CHAPTER 41.

### POLITICAL CONFLICT AND FINANCIALIZED 'ECO-CHIC' URBAN RENEWAL, A CASE FROM MILAN

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GUIDO ANSELMI, UNIVERSITÀ DEGLI STUDI MILANO BICOCCA, ITALY

Since the late seventies urban studies have stressed how often large scale regeneration has conflicted with livability and ecological sustainability. Urban political economy and the growth machine hypothesis, brought forward by Harvey Molotch and John Logan have analyzed how the special influence held by landowners and local businesses, produces widespread cultural and political consensus for urban growth. Despite being focused mainly upon rent production, growth fueled by real estate capital is equated with progress, jobs and better quality of life. In other words, as Logan and Molotch (1987) have pointed out, urban growth is 'value-free', namely the importance of urban development outranks every possible objection, for example about ecological sustainability, quality of life or use value of each particular renewal scheme.

However I do think things are changing, 'ecological sustainability' has become something of a buzzword in the real estate and construction sectors: a large number of projects show that, for a given definition of sustainability, it is possible to deliver 'eco-conscious' large scale renewal. However, given that ecological sustainability has been heavily mainstreamed (cfr. Swyngedouw 2010) it is entirely possible that sustainability is entirely compatible with rent-boosting and authoritarian policymaking.

The Milan-based Garibaldi Porta Nuova project can offer relevant insights into these matters. Completed in 2013, the semi-central mixed-use area has been developed by property giant Hines and features 'eco conscious' prime office and residential space; it has also been highly contested by local citizens, as they claimed that the project endangered two of the few locally available green areas. Moreover citizens claimed that the sheer size and density of the project would have jeopardized livability. Early- dated late 80s to early 90s – attempts, led by local developers have failed, as citizens opposing the renewal won a series of lawsuits against local government, claiming that the plans did not match Italian standards for amenities and environmental protection. Also in the early 90s a masterplan for the area was drafted, given the size and importance of the project, the masterplan was a huge political issue within the local political elite; as a consequence it got widely debated. However given that citizens argued that the plan did not provide the local area with enough amenities and public goods the actual project never materialized.

Between 2003-2006 Hines acquired development land from previous landowners, and managed

to start a new project on the same area: by 2007 the project was defined as a high-value mixed use project featuring an institutional cluster, built by Regional Government to house administrative offices and Regional Parliament. The project also features prime office space let by the likes of Unicredit – Italy’s most prestigious bank – Google and Samsung; prestige retail and residential space is also present. It should be noted that one of the key ‘selling points’ of the project was its ecological sustainability, as many of the completed buildings have been awarded LEED certifications<sup>1</sup>. The overall project has now been LEED certified, moreover the ‘eco chic’ features of the project have been widely promoted on national and international press. Furthermore, the new Regional Hall will also achieve LEED certification in the foreseeable future.

However, the project also spawned relevant conflicts, as local dwellers found out that proposed development, besides being one of the most intensive developments in recent Milanese history, would have also erased two green spaces and a squatted social centre. While previous conflicts spawned a lively political debate, this time there was almost unanimous consensus over the need for an ‘ecological’ renewal, ironically no matter the costs. Local decentralized municipal administration for the Garibaldi area, controlled by a left aligned coalition had, until early 2006, supported protestors. However, as left to center opposition in municipal government begun to share right-wing majority ideas on the project, support waned and protesting citizens were easily defeated in court, as administrative judges didn’t want to challenge high-profile political decisions. In the end both green areas were destroyed, in addition the renewal led to a ‘clean-up’ of the neighbourhood leading to the eviction of several squatted social spaces, feeding an already ongoing gentrification process in the area (Semi, 2011). This consensus is explained by a local left leaning politician claiming that ‘Hines is the last opportunity this area as [...] no one else has access to this amount of capital’(pers, interview spring 2012)

This example of a ‘eco-conscious’ renewal effort (which was shaped by a neoliberal ‘There Is No Alternative’ culture), illustrate how due to the complexity and size of the project, capital required can be held only by a few global actors; hence rent production becomes more desirable than democratic process or proper sustainability, as political actors must comply with the requests formulated by financialized developers and institutional investors.

However, eco-conscious renewal is not just an exercise in green-washing because things like LEED certification contribute to the creation of a higher ground rent: namely eco-conscious buildings constitute a land improvement which is widely sought after by investors, as it allows them to charge more rent to tenants and, more importantly, to avoid capital depreciation as other projects switch towards greener construction processes.

In essence what has happened is a reconfiguration of the growth machine model to account for the hegemony of financialized capital and the emergence of what While et al., (2004) have defined as the ‘sustainability fix’. More specifically, in this case the ecological discourse acts as a catalyst for a new form of value-free development. It is quite similar to the post-political model brought forward by Swyngedouw (2010): the convergence of high rents and eco-chic renewal ensures that the project is, for all purposes, removed from the political discourse, because there is supposed to be universal acclaim for these two goals.

As the case above shows ‘sustainability’ in urban renewal is a multifaceted term, it can be an

1. LEED, shortname for Leadership in Energy and Environmental Design, is an international standard for energy saving and eco-compatible building which can be awarded to projects respecting given criteria of eco-conscious planning. Within the Real estate market LEED signals a good investment as energy saving buildings sell at a premium, because of lower depreciation when compared to energy intensive buildings

actual effort to improve quality of life or it can be just the latest buzzword, covering for the finance-led swelling of ground rent. In order to ensure that ecological sustainability is met we also have to keep in mind the political sustainability of a given project, namely how transparent and accountable to local citizens are the governance institutions leading the renewal effort.

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## CHAPTER 42.

### CONSUMING MASTER-PLANNED ESTATES IN AUSTRALIA

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KAMEL TAOUM, UNIVERSITY OF WESTERN SYDNEY, AUSTRALIA

Over the last three decades master planned estates (MPEs) have grown in popularity in developed and developing countries alike. This thesis is concerned with MPEs developed since the early 1980s in Australia, and with analysing some of the social and cultural factors underpinning their contemporary growth and popularity (Cheshire et al 2010). Among the first Australian MPEs of widespread notoriety was Sanctuary Cove, opened in the 1987, on the Gold Coast in Queensland (Kenna, 2007). Since then, MPEs have become a significant element of urban development across most of Australia's major metropolitan centres as well as rapidly-growing mid-sized cities, including Sydney, Melbourne, Perth, Adelaide, Brisbane, the Gold Coast and the Sunshine Coast. In most instances, these estates have been marketed as 'exclusive' social and physical spaces offering something different from the broader urban landscape (Johnson, 2010).

While MPEs vary in characteristics globally, they can be understood as a form of large-scale residential development that differs from 'traditional' piecemeal suburban growth, and which includes a range of specific physical and regulatory elements. Cheshire et al. (2010, p.1) identified the Australian MPE as:

*"examples of this form of development are generally accepted to share several characteristics: a comprehensive master plan accounting for all or most of the lived space within a development; a single developer or consortium responsible for delivering the plan; distinct physical boundaries; uniform design features and some sort of appeal to a communitarian ethic"*

While MPEs have some common characteristics around residential development, land use and special regulations, their material and social form can vary widely, according to land size, zoning instruments, and governance arrangements, the number of residents and available on-site services and facilities (Minnery & Bajracharya, 1999). While definitions have tended to focus on the physical or regulatory aspects of MPEs, it is important to note that in terms of social and cultural life, MPEs comprise a range of material and affective sites of belonging for homeowners/residents, including their homes, their neighbourhoods, their local facilities, and the places where residents socialise, entertain and organise community associations. These social and cultural elements need to be more fully integrated into our understanding of MPEs and how they are defined. MPEs are not just developed and governed, but lived in and consumed.

Warde (2005, p. 8) defined consumption as:

*“a process whereby agents engage in appropriation and appreciation, whether for utilitarian, expressive or contemplative purposes, of goods, services, performances, information or ambience, whether purchased or not, over which the agent has some degree of discretion”*

In other words consumption means that the agent (consumer) likes and appreciates, either to use, and display their taste for materialities, lifestyle, commodities, food, media and any other kind of needs or desire in which agent may apply his choice, preference and judgment. As Bocoock (1993) noted, consumption is not just the act of buying items; it is linked to identity formation and the construction of social divisions and groups.

Corrigan (1997) argued that the consumption process has become increasingly important in shaping social identities and explaining social behaviour, and as a consequence the consumer has become a suitable case for social analysis. In terms of the relationship between consumption, identity and place, Wynne and O'Connor (1998, p. 1) pointed out that the process of commodification, and the production of the consumer and places of consumption, has been central to the transformation of cities and urban spaces since the nineteenth century. Miles and Paddison (1998, p. 8) argued that cities have long been associated with consumption, but in the postmodern city the realisation of consumption contributes to the changing form of the urban and social life where consumption has been harnessed by the new wealthy to display ostentatious forms of consumer behaviour. Miles and Paddison observe that in the urban context, consumers not only reproduce their physical existence, but also reproduce culturally specific, meaningful ways of life. Moreover, Knights and Morgan (1993, p. 2) noted an upsurge of interest within sociological circles in the study of consumption, arguing that the concept of collective consumption is the most applied concept to housing and other aspect of urban life.

Housing, suburbanisation, consumption and lifestyle have long-standing linkages in Australian society and are embedded in the national cultural imaginary. With the emergence of neo-liberalism in the 80s and its impact on socio-political life of Australia (McGuirk and Dowling, 2009), MPEs appear as a product that responds to the modern trend of consumption and a revolutionary commodity with a new type of urban governance (Kenna and Dunn, 2009). Kenna and Dunn (p. 3) furthermore, argued that this consumption was as a result of the rise of middle class lifestyle consumers and a tendency towards consumer market. The new trend of urban governance in MPEs have produced what Cheshire et al. (2009, p. 4) called *“desirable acts of housing consumption”* and McGuirk and Dowling (2011, P. 4) highlighted as *“the self-regulating consumer citizen”*, it can be noted that neo-liberalism transformed a welfare-state policy to an individual, privately run society where social and physical infrastructures are privately governed and regulated. Rosenblatt (2005, p. 3) noted that within the context of increasing consumerism, master planned communities have the characteristics that provide competitive advantage in the market when incorporating the desire for communal conditions on one hand and the desire for individuality, privacy and security on the other hand. Rosenblatt argues that marketing MPEs as idealised communities appeals to particular sensibilities in purchasers such as people looking for new lifestyle or security. Gleeson (2005) also observed that MPEs in Australia are exclusively marketed to discerning consumers who distinguish themselves as lifestyle buyers. Gleeson noted that the principal object of discernment is ‘community’, this explains that Australians tendency towards living in master planned communities is clearly not security nor racial or class segregation. This argument supported by Goodman and Douglas (2008, p. 4) which stated *“consider that Sydney has relatively few truly gated communities and that those that do exist are probably more motivated by a sense of status aspiration than a true fear of crime”*. Finally, Walters and Rosenblatt (2008) argued that MPEs concept is an echo for an ideal community that resonates in the collective



imagination, evoking a nostalgic view of a small town or village setting and implores to a communitarian sense of sociability, happy family and environmental values.

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Kamel Taoum is a qualified town planner and licensed real estate agent. Prior to the commencement of his doctoral studies in the beginning of 2012, Kamel has completed a Master degree in urban and regional planning from Curtin University with a dissertation topic focussing on the impact of land subdivision on market gardens in Sydney. Kamel's current research focuses on the relation between master-planned estates, consumption and subculture. He is also involved in the teaching activities within the university and has taught and coordinates numbers of units. Kamel is a multilingual; he speaks fluent English, French and Arabic and moderately controls Russian and Spanish.

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## CHAPTER 43.

### A FINGER ON THE PULSE OF HAPPINESS IN AN URBANISED ISLAND CONTEXT

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MARIE BRIGUGLIO, UNIVERSITY OF MALTA, MALTA

Two questions, twenty four hours, three hundred and sixty comments, a handful of insights and one conclusion that echoes the results of several scholarly research studies: environmental quality matters to well-being in the highly urbanised context of Malta.

The exercise was intended to stimulate some ideas for a future study and not intended as scientific research in itself. I simply posted a question in social media as follows: “Think of your typical day. What instances reduce your well-being?”. I received dozens and dozens of comments, almost all from people in Malta. I coded the comments and aggregated them. The day after, I tried it a different way. I asked “Think of your typical day. What instances *improve* your well-being? Again, dozens of comments which I coded and aggregated. On both occasions I asked my followers to “think of your answer before reading others” although I cannot exclude that some social influence could have occurred.

Within the limitations of an obviously skewed sample (limited to people who are active on social media, literate, understand English), and of some plausible self-censorship by contributors who may have limited themselves to issues they felt they could talk of publicly, a handful of fairly clear insights emerged. The exact phrases that people came up with were fed into a word map generator.

Predominant words in positive frame



*In a typical day, what instances **improve** your well-being?*

*Frequent words (Tagxedo)*

Predominant words in negative frame



*In a typical day, what instances **reduce** your well-being? Frequent words (Tagxedo)*

Firstly, social interactions (other people) seem to be key factor responsible both for stimulating well-being and for suppressing it. At the very least, these seem to be very salient in people’s minds. Something like a third of the comments received were of this nature – “random acts of kindness”; “a friendly wave” as opposed to “ungrateful people”; “negative attitude, nagging and complaints”; “pure selfishness”.

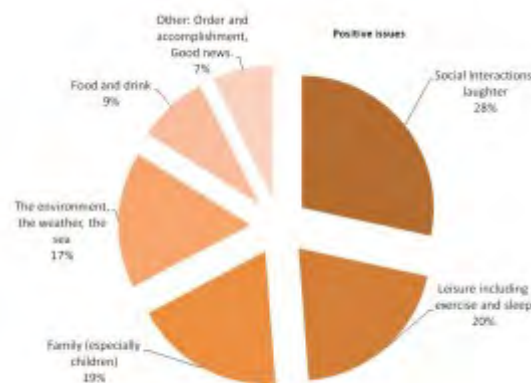
On top of this, family and children also emerge as both a cause of well-being and a source of its reduction – “seeing my husband and son at the end of the work day”; “my dog’s welcoming lick”; the smell of my children’s hair” versus “silly arguments with hubby and kids”; “kids’ homework and study stress”; “the moment you lose sight of your child in a crowded place, even if it’s only for a minute”. Intriguingly, children are frequently referred to as “kids” when mentioned in the negative frame!

Secondly, health issues, sickness, pain, and more generally bad food, lack of exercise and a sedentary lifestyle made up about a tenth of the comments – “minor ailments like headaches, sore throat, stuffy nose, period pains”; “manageable pain and a comfy bed at the end of the day”; “looking at my ever increasing waist line in despair”; “flare-ups of my chronic condition”; “junk food”.

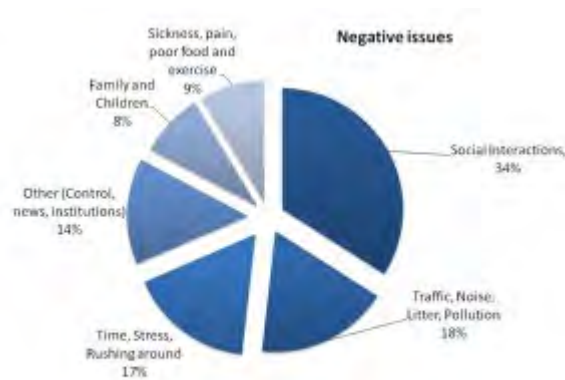
Lack of time, stress, anxiety, rush were mentioned by a considerable number of people while leisure, sleep and exercise were mentioned as positive issues – “finding time to do something creative”; “an afternoon nap”; “my glass of red wine”; “tea and a good book”; “a long walk”; versus “the rat race”; “stress” “doing things in a rush, too many things to catch up with and little time and energy”; “too much to do little time to do it”; “lack of sleep”, and “trying to cram in everything”.

Thirdly, pollution, in the shape of litter, noise and traffic is a key factor that suppresses well being while the sea, sunshine, and the beauty of the Islands’ environment in general received strong mention as positive influences – at least a fifth of the comments were of this nature. People mentioned things like “a warm sunny day”; “courteous drivers”; “swimming in our beautiful sea”; “diving in our deep blue sea and holding my breath for as long as possible”; “being in nature going to my yoga class”; or “when I get to work without the stress of traffic” in the positive frame. They also mentioned “the pointless anger of Maltese people whilst driving”; “not finding parking”; “litter bugs”; “looking at concrete jungles”; “noise pollution”; “drivers hooting”; “a barking dog” and even “dog poo” in the negative frame.

Other issues like the news, bureaucracy, accomplishment and lack of control were mentioned quite frequently as matters which may have “made people’s day” or otherwise. Statements of this kind included “ things falling exactly into place”; “this Isis thing”; “dealing with Government departments”; “a tidy house (very rare!)”.



*In a typical day, what instances improve your well-being? % mention by thematic area*



*In a typical day, what instances reduce your well-being? %  
mention by thematic area*

Although, as stated, this exercise was intended as a thought starter, the issues flagged find remarkable resonance in findings on scientific peer-reviewed research conducted on the determinants of well-being in several countries – mental and physical health, environmental and community issues.– are certainly as important, if not more important than income as determinants of well-being – at least once certain levels of income are attained.

Research on the determinants of well-being is, as yet, lacking in Malta. But, then again, the issues mentioned come as no surprise: By most definitions Malta, an Island State, the smallest European Union country, is also the most urbanised, with an extremely high population density. Levels of pollution (especially noise, waste disposal and traffic) exceed European Union averages according to the European Environmental Agency. Sedentary lifestyles and obesity have repeatedly been cited as key health priorities to be addressed in Malta – themselves very much linked to environmental health. and to well-being. Work-life balance has also emerged as an important concern with Malta reporting higher than average working hours and work-related stress.

Notwithstanding the limitations of this exercise, the findings clearly echo emphasis elsewhere on the dire need for stronger governance for sustainability, including intervention to protect the environment and to improve the physical and mental health of the Maltese people.

### **Authors Note**

A shorter version of this article was published on the Stirling Behavioural Science Blog whose kind permission has been obtained for reproduction here.

### **Further resources**

Stirling Behavioural Science Blog <http://economicspsychologypolicy.blogspot.com/>

Determinants of well-being: <http://economicspsychologypolicy.blogspot.com/2014/06/well-being-in-21st-century-role-for.html>

European Environmental Agency <http://www.eea.europa.eu/soer/countries/mt>

Malta Environment and Planning Authority: <https://www.mepa.org.mt/environmentalhealth>

European Agency for Safety and Health at Work:

[https://www.um.edu.mt/\\_\\_\\_data/assets/pdf\\_file/0003/64812/SD\\_Strategy\\_2006.pdf](https://www.um.edu.mt/___data/assets/pdf_file/0003/64812/SD_Strategy_2006.pdf);  
<https://secure2.gov.mt/tsdu/environment-nep?l=1>

Tagxedo word map generator: [www.tagxedo.com](http://www.tagxedo.com)

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Dr. Marie Briguglio is a lecturer at the University of Malta. She graduated in Commerce and later in Economics from the University of Malta and, as a Chevening Scholar at University College London, completed a Master of Science with Distinction, in Environmental and Resource Economics. For over 15 years Marie worked in planning and environmental policy, before she returned to academia to conduct research in Behavioural, Environmental and Cultural economics. She completed a Phd in Economics at the University of Stirling within the University of Stirling's

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## CHAPTER 44.

### POST-EARTHQUAKE MONUMENT STEWARDSHIP – A CASE OF THE RADHA-KRISHNA TEMPLE AT SWOTHA, LALITPUR, NEPAL

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SWATI PUJARI, ERASMUS UNIVERSITY ROTTERDAM, THE NETHERLANDS

The Ancient Monument Preservation Act of 2013 B.S. [1] (A.D. 1956) considers objects with value and/or more than hundred years old as ‘monuments’. Values can be various. The temples of Kathmandu Valley embody, besides obvious religious values, historic, communal and architectural significances. Most temples were built several centuries ago, during the rule of Malla Kings (12th to 18th century A.D.). Architecturally they reflect the pinnacle of the valley’s temple designs, the Tiered and the Shikhara styles. They are largely of brick and timber, however, use of stone is also found. Age old architectural marvels, these temples still remain an integral part of peoples’ lives.



*A young girl visits a local shrine in Lalitpur*

Shrines are found either in clusters, around the famous Durbar Squares and other significant complexes, or, independently at street junctions and courtyards, potentially, but not necessarily, close together. It is common to see locals visiting these shrines in the mornings, with more visitors during festivals and other religiously significant days. But even at an odd hour of an odd day, people pray, and motorbikes stop to bow, to these deities. A prayer at a shrine, on one’s way to



work or school, is as much of a part of local Kathmandu life as a cup of *chiya* (milk-tea) at a random hour.

These temples, significant in historic and socio-cultural perspectives, have multiple stakeholders with specific responsibilities. *Newars*, the indigenous community of Kathmandu valley, have a collective or communal system called '*Guthi*' [2] that regulates their ritual lives. However, *guthis* have other roles also. Every temple/deity has several *guthis* as custodians of their religious and cultural activities and traditions. Most such *guthis* are mono-caste, and have specific responsibilities, like a temple priests' *guthi* is responsible for ritual worships. When every *guthi* complies with its responsibilities, maintenance and rituals of the temple and the deity run smoothly.

In 2021 B.S. (1964 A.D.) a central government cooperation called *Guthi Sansthan* was established to manage and coordinate public *guthis* responsible for temples and festivals. Historically, *guthi* activities were funded by harvests from communal lands, however after their centralization in Guthi Sansthan, the basic ritual funds are provided by the government. The maintenance and renovation of temples, as heritage monuments, is officially overseen by the Department of Archaeology. Ergo, the formal responsibilities for temples are vested, collectively, in the Department of Archaeology, Guthi Sansthan and responsible communal public *guthis*. This however doesn't stop communities from claiming stewardship of monuments in their localities.



*The Three Tiered Radha-Krishna Temple at Swotha, Lalitpur, before the earthquake [Credits: Kathmandu Valley Preservation Trust]*

On 25 April 2015, a 7.8 magnitude earthquake shook central Nepal, the quake and the aftershocks, claimed more than 8,000 lives and injured more than 20,000. Many historic monuments either completely collapsed or were severely damaged. Numerous national monuments, including several listed as UNESCO World Heritage, were destroyed. Many of those left standing were also damaged. The primary concern was to rescue people possibly buried underneath. This task was carried out by national and international rescue teams, with active involvement of local communities, as informers and/or volunteers. The second largest national tragedy since is the extensive loss of cultural heritage. The last massive earthquake here was in 1990 B.S. (1934 A.D.) causing a colossal loss of life and monuments, what the county now faces is easily the biggest heritage crisis since then.

Responding to this, the Department of Archaeology, UNESCO, and Kathmandu Valley Preservation Trust etc. are taking necessary steps to ensure documentation and safety of cultural

heritage. However, with this magnitude, organizational efforts alone may not be timely enough! In such a scenario, neighbourhood monuments are finding protection in the local communities.



*The remains of the Radha-Krishna Temple at Swotha, after the earthquake of 25 April 2015 [Credits: Kathmandu Valley Preservation Trust]*

When the Radha-Krishna temple, a three-tiered, four-hundred years old, brick and timber temple, at Swotha, Lalitpur, crumbled down, the locals immediately rescued the people underneath, and then aided security personnel digging through the remains. Swotha is a popular tourist destination, with a mixture of original inhabitants as well as long and short term visitors staying at its several tourist accommodations. The days following the earthquake, one could see people from Swotha and anonymous volunteers working with army personnel, picking the pieces of the temple. Bricks were stacked, so were the clay tiles, timber elements were piled nearby while carved pieces were carefully moved to a locked community space.

Jiten Shrestha, a local inhabitant and business owner, indicates that people in Swotha feel connected to the monuments as well as the place. However, he recalls the trend of local people moving out from this area. Located in the historic part of Lalitpur, many buildings were converted into tourist accommodations, Swotha was getting gentrified. But, the owners and inhabitants of these accommodations started investing in the locality, and the locals joined in. Simple efforts such as cleaning, lighting the area, having a gathering, created a bond between both the old and the new inhabitants, as well as with the place.



*The local people and volunteers aiding the Nepal Army in salvaging and safeguarding the site [Credit: Kai Weise]*

It is perhaps this connection that prompted people to, consciously and pro-actively, help manage the pieces of the fallen temple. Aiding this was the informal instruction by Rohit Ranjitkar, of

Kathmandu Valley Preservation Trust, to safeguard the pieces. It is interesting to see that all involvement, other than that of the army, was informal. A local women's group was even providing basic first-aid as well as *chiya* (tea) the whole time.

The people in Swotha are confident that the Radha-Krishna temple will be rebuilt. But since it doesn't have the same level of religious significance as some nearby pilgrimages, they don't expect devotees from all over, looking for religious merit, will donate to rebuild the temple. Yet, this temple is a significant local heritage and connected to local sentiment. The Department of Archaeology and other organizations are currently overwhelmed. But in Swotha, the community has salvaged and safeguarded the remains, the bricks may need checking for strength and the timber for decay, new materials will also be needed, and they may have to wait a long time for the actual reconstruction. Yet, they know that the ones who have been involved up till now, will not back off!



*Bricks and Timber salvaged from the temple stacked at the site*

### **Authors Notes**

[1] **Bikram Sambat (B.S.)** is the official lunar calendar in Nepal. The current year in B.S. is 2072.

[2] **Guthis** are traditional religion based organizations. In the 1975 article 'Jāko: A Newar Family Ceremony', Gérard Toffin explains Guthis as a system that organizes festivals, feasts, funerals, worshiping and other religious functions, and as such guides the socio-religious lives of the local inhabitants of Kathmandu Valley.

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The author is an architect and urban manager from Nepal and an alumna of Institute for Housing and Urban Development Studies (IHS), Erasmus University Rotterdam. During her M.Sc. in Urban Management and Development, she specialized in Integrated Planning and Urban Strategies focusing on the theories of Self-Organization and Place-Making. Currently she is managing a network in Nepal called Nepal Rebuilds ([www.nepalrebuilds.org](http://www.nepalrebuilds.org)), which she also initiated. The primary aim of this network is to discuss, facilitate and promote processes of equitable development and rebuilding in the post-earthquake scenario of Nepal. She is also a writer/blogger.

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## CHAPTER 45.

# THE COHABITATION OF URBAN STIMULATION AND NATURAL RESTORATION

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It is all too easy for people living in urban environments (urbanites) to get caught up in the busy hectic worlds of their lives. There is so much to do and enjoy, ranging from work, to playing and watching sports, cinemas, ballets, libraries, exercise... the list is endless. Each of these experiences provides stimulation for the brain and perhaps sometimes relaxation. In the urban world we are constantly bombarded with visual, acoustic, tactile, or olfactory sensory stimulation. Each of these demands our attention, processing, and response, be that to fight or flight, inhibit or consume.

All of this stimulation can have a fatiguing effect on the brain as it is constantly inhibiting competing demands and stimulations while directing attention on a specific task. As brain cells fatigue and struggle to prevent other stimulations from receiving attention, task performance and efficiency decreases. Over time a fatigued individual is likely to suffer from stress and further health complications.

Natural environments are also stimulating, but in a different way. According to Attention Restoration Theory (Kaplan & Kaplan, 1989), natural elements within a safe environment induce involuntary attention (fascination), which doesn't demand or fatigue the brain. Instead they help fatigued cells to recover, enabling an individual to perform more efficiently, and provide a chance for reflection.

Urban environments therefore need to include natural elements to provide urbanites with opportunities to recover from the bombardment of sensory stimulations. Architecture can reflect nature by incorporating the designs of leaves and trees into buildings, such as the classic Sagrada Familia by Gaudi, in Barcelona. More literally, plants adorn city buildings to produce green roofs and walls. These provide fascinating views for neighbours and pedestrians as well as providing building insulation, reducing energy costs, reducing flash floods, reducing air pollutants, and increasing biodiversity (United



States Environment Protection Agency, 2013). Bringing nature into the city improves opportunities for restoration; urban parks are not just the lungs of the city, they can offer the cognitive, physiological, and emotional support for humans.

The greenery, wildlife, and fountains within urban parks provide a visual and acoustic experience of a natural environment. However, the sounds heard within an urban park (its soundscape) often include sounds from the surrounding urban environment, such as traffic and construction work. These 'urban' sounds can mask the natural sounds and diminish the sense of being in a natural environment, thereby potentially reducing visits to urban parks from being truly restorative experiences (Payne, 2008; 2013). Landscape and town planners therefore need to consider both the visual landscape and its extended soundscape to create restorative environments for urbanites.

Incorporating restorative environments into cities is important if they are to be sustainable for humans to live and work whilst remaining healthy. Taking a holistic sensorial approach to the design of future city buildings, transportation (e.g. the sound of electric vehicles), recreational spaces, and residential areas, will maximise the chance for natural elements to flourish. Nature is a positive part of the city, not just potential space to build on; nature enables the restoration that people need to continue enjoying those urban stimulations.

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PART VIII.

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**ENVIRONMENT**

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## CHAPTER 46.

### THE STATUS OF WATER SUPPLY AND SANITATION IN A RAPIDLY URBANIZED WORLD: A CASE STUDY OF DHAKA CITY

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MAHIN AL NAHIAN, INTERNATIONAL CENTRE FOR DIARRHOEAL DISEASE RESEARCH, BANGLADESH

Dhaka, the capital of Bangladesh, is an example of one of the most rapidly unplanned urbanizing cities in world; as could be leveled as a 'Sick City.' The history of Dhaka dated back from the 7th century CE, when it was ruled by Hindu Kingdoms, Mughals, British and Pakistan before being liberated in 1971 [Wikipedia]. With an estimated population of more than 15 million people, it is the largest city in Bangladesh and the 8th largest city in the world. It is also one of the world's most densely populated cities [Haque, Tsutsumi, & Capon, 2014].

The situation of Dhaka city is still most precisely described by UN-Habitat as:

*“take one of the most unplanned urban centers in the world, wedge it between four flood-prone rivers in the most densely packed nation in Asia, then squeeze it between the Himalaya mountain range and a body of water that not only generates violent cyclones and the occasional tsunami, but also creeps further inland every year, washing away farmland, tainting drinking water, submerging fertile deltas, and displacing villagers as it approaches – and there you have it: Dhaka.”* [United Nations Human Settlements Programme (UN-HABITAT), 2008/09]

When an added layer of climate change impacts are considered, we see a ghost city comprising of a seriously ill population. With one third of the city dwellers living in slums and squatter settlements with no to limited service provisions; the status of existing water supply and sanitation need to be critically analyzed for setting priorities in the public health domain in order to help people survive and sustain life.

This article is based on secondary literature thus it tries to assess existing scenarios, future challenges and options of development in relation to the water supply and sanitation sectors.

Dhaka Water Supply and Sewerage Authority (DWASA) is an autonomous public sector organization, entrusted with the responsibility to manage water supply, sewerage disposal (wastewater), and storm water drainage services for Dhaka city. DWASA covers 360 sq. km service area with 12.5 million people (2013) comprising slum, non-slum and other-urban/peri-urban areas of the capital city. The daily water demand in Dhaka city is 2.25 million cubic meters per day, whereas DWASA has the capacity to supply only 2.11 million cubic meters per day; however the Govt. information is questionable because, the quality of water is of primary concern

and in dry months of March to May many areas suffer from water scarcity. About 87% of the supplied water comes from ground water abstraction and the remaining 13% comes from surface water treatments. Interestingly, only around 4000 staff in DWASA provide services to the whole population of Dhaka city of which about 88% involved in water supply system and the rest in sewerage disposal. DWASA provides water at the cheapest rate in the world, 0.08 dollars per 1000 litres and is only able to collect revenue that covers only 25% of the operating costs (2010) [Khan, 2013]. Though water coverage is almost 100% of different slum, non-slum and other-urban areas of the city, about 65% of large households (comprising 10+ single units household) share a common water source. About 80% of households have access to pit/flush latrine but about 43% of large households share a common latrine in slum areas [ICDDR, B, 2013].

In a practical sense, the situation is getting worse, as many of the latrines directly dispose the waste in adjacent open water bodies, such as lakes and canals. Sewage is carried through open drains and most alarmingly, many of the water carrying pipes run along these open drains in slum areas.



*Dhaka Urban Slum Water Supply and Sanitation scenario.*

Contrary to normal population density, in a slum population density is 205,000 person per square kilometer, with the slums being more or less comprised of one storied corrugated iron sheet houses. This complex picture I am sure is shocking to some. Alarmingly, most slum dwellers not only live in substandard and unsanitary conditions but pay more for the cost of basic services like water, gas and electricity. As depicted in the picture, the existing water supply system in most of the slums is totally unhygienic and mostly dominated by local political leaders and hooligans. Slums are illegal entity, so there is no straight forward Govt. policy and process to facilitate the basic services and through these gaps, local political leaders and hooligans run the service provisioning business and collect a price several times higher than DWASA price. Same is valid for gas and electricity services as well (UNICEF, 2010 and Titumir, Hossain, 2004). All these are illegal business, and when authority stops the facilities abruptly for a few days, it is the slum dwellers who suffer most in the crisis. Pollution is pretty common in the water lines and hence incidence of water borne diseases is high in urban slums. Another recent study states that in low income urban areas of Dhaka city, only 14% of household members wash their hands with soap after defecation, identifying barriers such as lack of running water facilities and the relative high cost of soap to household income [ICDDR, B, 2014].

In slum areas some water supply and sanitation projects are run by local NGOs but the justified involvement of DWASA is still far away from accomplishment. Slum eviction is another barrier to sustainable development of such facilities. Overall the environmental situation, increased

pollution, air congestion are adding another layer of complexities to the overall water supply and sanitation system issues of low income areas. Dhaka has a poor and out-of-date drainage system and moderate rainfall creates sudden water logging in low elevation slum areas. Hence predicted future climate change scenario with high intensity rainfall in short interval and increased flood risk hazard only provide even worse situation for urban water supply and sanitation of Dhaka city. If all are compared against the population increasing trend, where 21 million are predicted to live within an area of 1,000 Sq. km in Dhaka city by 2025; we only see a city been waiting to be meet its doom by the pressure of its own population induced calamity.

Bangladesh is known as a nation always fighting against natural calamity and thus we can say all hope is yet not lost. Decentralization of city hubs, improved water supply and sanitation system establishing public-private ownership, justified participation of all level stakeholders, good governance and policy implementation are few of the possibilities to fight the existing and future challenges to bring and ensure healthy environment for the residents of Dhaka city.

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## CHAPTER 47.

### URBAN POLLUTION, HEALTH, AND SUSTAINABLE DEVELOPMENT IN DELHI

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The world and its geo-bio spheres is an integrated system – a system of interrelated components and elements of which none can be segregated. The two most profound components of this system are the environment and human beings. There exists a web of linkages between the two wherein sustainability holds a critical position. For sustaining the ‘good’ health of people, a sustainable environment is as indispensable as oxygen to the body.

Urban health is of concern for two reasons: (1) the large numbers of persons involved, and (2) the fact that the population density of an area changes the potential for both public health problems and solutions. In the 21st century, cities are so ubiquitous and their impact so pervasive that it is difficult to ignore the role of cities when considering any aspect of health. As growing numbers of people live in cities, urban population health contributes to global population health.

A current hot potato is the state of human health in the rapidly growing city of Delhi as well as its deteriorating environment. Whilst the city’s population has grown majestically from 1.74 million (1951) to 16.75 million (2011) on 1,483 sq.km of land, it counts the density of 11,297 persons per sq.km. In response to the needs of thriving urbanization and globalization, there is massive vehicularization and land use alterations. The pervious landscape is replaced with impervious concrete and asphalt that affect the albedo and run-off characteristics of the land surface, thus significantly impacting the local and regional land-atmosphere energy exchange processes.

Increases in anthropogenic heat discharge, decreases in surface evaporation, changes in thermal characteristics, and increasing air pollution have disrupted the radiation balance. Hence, urban areas generally act as islands of elevated temperature relative to the areas surrounding them, which is commonly known as the ‘urban heat island’ (UHI) effect (Singh et al., 2011; Lo & Quattrochi; Stone et al., 2014; Oke, 1982). The higher temperatures in the city brought about by UHI have adversely affected air quality and have also increased heat stroke incidences. Consequently, cities that are centers of opportunity have translated to grave risk zones. While the best health services are expected to be available and accessible in these centers of excellence, the worst environmental threats affecting human health and wellbeing are also offered by the city.

High degrees of heat and air pollution can cause stress and heat stroke especially for people with cardiovascular and respiratory disorders (Piver et al., 1999). Respiratory system diseases, minor skin and eye problems, and cancer cases and heart diseases have seen exponential rise in the

past decade as counterblast to environmental changes. Studies reveal that nearly 40,000 Indians experience early death due to air pollution every year, of which 7,500 are from the national capital of Delhi. It is alarming to note that 8.6% of mortality cases in India (2009) were due to diseases of the respiratory system where pneumonia and asthma were major killers (Ministry of Home Affairs, 2009). A temporal analysis from 1991 to 2009 suggests that nearly 3,000 deaths occur annually due to diseases of the respiratory system in Delhi alone.

The relationship between air pollution and its impacts has been highlighted by scholars as warning signals. Using mortality data, Cropper et al. (1997) established that there is positive relationship between particulate pollution and daily non-traumatic deaths from respiratory and cardiovascular problems. Jayaraman and Nidhi (2008) concluded that there is high correlation between particulates and chronic respiratory symptoms. RSPM levels were found to be strongly correlated with lower respiratory tract illness by Siddique et al. (2010). Commonly found diseases include dry and wet cough, wheezing, whistling sounds while breathing, pain in the lungs and breathlessness, sinusitis, rhinitis, sneezing, sore throat, common cold, pulmonary emphysema, cancer, eye burning, acute bronchitis, bronchitis, chronic and unspecified emphysema, asthma, headache, damage to skin, and diseases of the circulatory system. Of particular note, males are more vulnerable than females, and children and the elderly are the most affected as their immunity is much lower. There are also seasonal variations in respiratory illness. Researchers point out that winters are most severe and harsh on human health whilst the monsoon season is the mildest.

If health is a multi-dimensional concept involving physical, psychological, and social components, then how can urban environments be solely responsible for ill-health? Despite the influences of dietary habit, lifestyle, stress, occupation, and other socio-economic-cultural factors, environment remains supreme. The degree of influence that our immediate surroundings have, however, is mediated by factors of lifestyle and socio-cultural contexts. There is differential vulnerability on the basis of age, gender, immunity, and other factors that play a vital role in health. The level of contact to harmful environments and the duration of exposure determine the state of human health.

Reflections on these complex side-effects for health persuade us to choreograph city growth in an alternative manner so as to minimize unforeseen repercussions. Behavioural changes can have a butterfly effect on the urban environment. These include carpooling, abiding by laws and rules, and educating drivers on air pollution and the optimum use of fuel and urban amenities. Besides this, greening roofs, lawns, walls and terraces, and the planting of indigenous pollutant tolerant tree species like *Mangifera indica* (Mango), *Ficus religiosa* (Peepal), *Azadiracta indica* (Neem), *Acacia Arabica* (Babool), can give positive results. This must be accompanied with strict policy norms on the cutting of trees, land use changes, fuel use, and vehicle and industrial pollution control laws to be implemented by the state. The right to safe environmental surroundings is the right of all citizens of the nation and hence sustainable urban development can only be achieved collectively.

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## CHAPTER 48.

# MALTA'S EU ACCESSION, ENVIRONMENTAL SUSTAINABILITY AND ENGO ACTIVISM

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MICHAEL BRIGUGLIO, UNIVERSITY OF MALTA, MALTA

Environmental activism in Maltese civil society was already in place prior to Malta's EU accession in 2004.

During the 1960s, Din l-Art Helwa, Malta Ornithological Society (which eventually became Birdlife Malta), and Society for the Study and Conservation of Nature (which eventually became Nature Trust) were established. They mainly emphasised issues related to conservationism and development of land. During the 1980s Żgħażaġh għall-Ambjent (which eventually became Moviment għall-Ambjent – Friends of the Earth Malta) joined the fray, introducing the discourse of sustainable development in Maltese environmental politics.

In 1989, the Malta's Green Party, Alternattiva Demokratika, was born. This party, which was briefly preceded by the Democratic Party (PDM), helped ensure that the environment became a major political issue in Malta. Its presence in a small number of local councils has been another achievement.

During the 1990s, collaboration and cooperation amongst ENGOs increased. Environmental coalitions were formed among the increasingly diversified environmental movement, which, amongst other NGOs, now also included the radical and socially-oriented NGO Moviment Graffiti. Examples of such alliances included the Front against the Hilton redevelopment project in St Julians and the Front Against the Golf Course, the latter comprising a broad coalition made up of diverse environmental, social, cultural, religious and political organisations. The proposed golf course development was refused by MEPA in 2004, but this victory was not connected to Malta's EU accession.

This historic environmental victory was similar to others which were not related to EU accession. These included alliances against a proposed leisure complex in Munxar in the mid-1990s; against the proposed Siggiewi cement plant and against a proposed landfill near Mnajdra temple. Another proposed development – that of an airstrip in Gozo – has been disappearing and resurfacing from one legislature to another.

When Malta joined the EU in 2004, the country introduced legislation related to the environment, in areas which previously had no regulations. This generally led to environmental improvements

and structural upgrading, though there were some notable exceptions, such as Malta's shift to plastic soft-drink bottles.

Upon Malta's EU accession, new ENGOs, such as Flimkien għall-Ambjent Ahjar (FAA) and Ramblers' Association emerged. EU membership was discursively constructed as being beneficial to Malta's environment. New lobbying opportunities were created for ENGOs. In the first years following Malta's EU accession, ENGOs were mainly active in issues such as development of land and hunting and trapping.

They were rather successful in relation to sensitizing and procedural impacts. These relate to processes such as raising public awareness and in being consulted by State authorities, though the latter leaves much to be desired. As regards substantive impacts, ENGOs were generally not successful in environmental issues in which they were active. For example, as regards development projects, Malta's EU accession was not deemed as a sufficient source of ENGO empowerment. Indeed, in most instances – for example in the environmentalist struggle against the so called 'rationalization' process of land development – the discourse of economic growth and neo-liberal ideology prevailed. There were specific exceptions to this however – such as the environmentalist victory over the development of a carpark and shopping centre beneath a popular public garden in Sliema – but this had more to do with local and national political considerations. An area where ENGOs achieved substantive impacts was the climate change, where Malta adopted binding EU targets, which, were subsequently not adhered to.

As regards hunting and trapping, environmentalists pressed for Malta's conformity to the EU birds' directive. Many believed that EU legislation would effectively result in an end of hunting during the Spring season. What actually happened was that ENGOs like Birdlife Malta experienced institutionalisation and had considerable access to European institutions, but hunting in Spring remained largely in place. The ambivalent decision of the European Court of Justice on the Maltese case resulted in plural interpretations. This resulted in further antagonism from the environmental movement, which has collected enough signatures for an abrogative referendum on hunting. The historic referendum took place on 11 April 2015, but the 'Yes' camp, which supports hunting of Birds in Spring, emerged victorious by a razor-thin 50.4% majority.

Hence, as far as the case of Birdlife shows, institutionalisation of ENGOs does not always render an organisation docile to the State. Yet the hunting issue shows that even Europeanized issues are very much subjected to national political antagonisms. In short, though empowerment of ENGOs was generally enhanced through EU accession, this was an uneven process.

In the meantime, the environmental movement kept up its activism, and a newly-established citizens' movement, 'Front Harsien ODZ' (Front for the protection of outside development zones) organised Malta's biggest ever environmental protest in June 2015, with over 3,000 participants and widespread support from Maltese civil society. The protest was directed against a proposal for development at Zonqor (an outside development zone), and was held a few months after the historic hunting referendum.

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## THE ROLE OF LANDSCAPE IN THE SUSTAINABLE TRANSITION TOWARDS A NEW URBAN WASTE MANAGEMENT SYSTEM

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### Introduction

In this post we look at drivers for a *sustainable waste management transition* using the *multi-level perspective* (MLP, Rip and Kemp, 1998; Geels, 2002) and developing a new conceptual framework to assess landscape sources of pressure upon the socio-technical regime. In a recent paper we developed a pressure matrix – i.e. a tool for policy analysis that can be used to assess and classify the key sources of pressure to bring about the desired transition – to which we refer in this blog-post (Morone et al., 2015).

According to the MLP, a socio-technical transition might occur if the socio-technical landscape (i.e. the ‘macro level’) exerts sufficient pressure on the incumbent technological regime (i.e. the ‘meso level’) and if this pressure is matched by the ‘full development’ of at least one innovation niche (i.e. the ‘micro level’). This alignment might ultimately determine conditions to allow a new technology to replace the incumbent regime.

Existing literature has dedicated much effort to understand and define innovation niches [1]. However, the macro level has not been properly investigated yet, and its definition remains vague and perhaps somewhat narrow, as it refers mainly to an exogenous context (demographical trends, political ideologies, societal values, and macro-economic patterns) that actors at niche and regime levels cannot influence in the short run.

In our current research (Dellino et al., 2015) we are trying to push our understanding of the landscape level one step ahead, proposing a taxonomy of actors acting at this level. The proposed classification is functionally-driven, meaning that we identify landscape actors by focusing on the activities that produce the pressure sources.

Bearing this in mind, we start considering two sources of pressure at the macro level: external and internal. The former is exerted by completely unpredictable activities (i.e. events affecting the regime incidentally and not generated to this purpose), which act on the system as exogenous shocks – e.g. earthquakes, wars, etc. On the contrary, internal pressure activities are deliberately exerted by stakeholders in order to induce a misalignment of some landscape factors from the

socio-technical regime. Note that internal pressure activities can also be induced by external shocks, being in this sense a derived source of pressure or ‘second-level’ landscape source of pressure.

In our investigation we decide to focus on this latter source, suggesting the following classification: internal pressure may be exerted from both local (e.g. grassroots associations) and global actors (e.g. supranational organizations, world economic developments and trends); further, global and local actors might act through political and/or economic channel.

Often, a combination of different channels and sources is required for the overall pressure to be most effective. An unbalanced pressure (i.e. coming only from one channel or one source) can be ineffective since even a strong political pressure, if decoupled from a sufficient economic support, can result unable to produce the right amount of pressure upon the regime technology, and vice versa. The idea of unbalanced pressure relates to the ‘complex contagion’ concept first proposed by Centola and Macy (2007). A complex contagion requires social affirmation from multiple sources and refers to the spread of collective behaviours that involve social reinforcement from multiple contacts. Having all these elements in mind, the methodological framework of our analysis is summarised in figure 1.

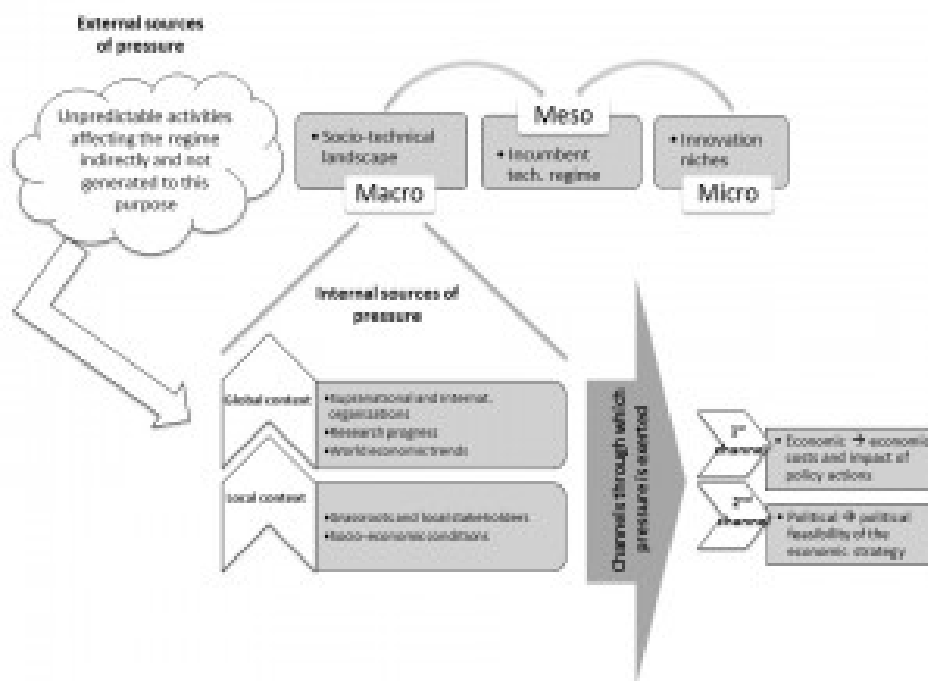


Figure 1 - Unpacking the landscape level within a multi-level framework (authors own elaborations)

### Sustainable urban waste management

In order to investigate landscape sources of pressure on the socio-technical regime, we focused upon the case of urban waste management. Efficient urban waste management systems (WMSs) should aim at reducing or avoiding waste generation by developing or changing production and consumption patterns.

Separate waste collection is a key tool in this regard, allowing both an efficient management of the disposed of materials (re-use and recycle), and a reduction in the overall amount of waste disposed of into the environment. In this management framework, once separated from other materials,

organic waste can go through a valorisation process, which involves the recovery of fine chemicals and the production of precious metabolites via chemical and biotechnological processes.

Recalling now the proposed taxonomy, we use it to identify direct sources of pressure occurring at the landscape level for a transition towards a sustainable WMS. In particular, we aim at identifying all possible actors operating at the landscape level and exercising pressure upon local municipalities involved in urban waste management. By means of six case-studies, we (i) performed a stakeholders' analysis, aimed at identifying the key landscape actors exerting pressure, and (ii) explored economic and political pressures exerted at both local and global level.



Figure 2 Geographical location of the case studies  
(authors own elaborations)

Our case studies focus on the analysis of the WMSs in the province of Foggia, (Apulia region, southeast of Italy – see figure 2), which is the second largest Italian province with an extension of approximately 7,000 km<sup>2</sup>. In particular, we chose six municipalities that were recognised as “best practices” in implementing an efficient WMS within the province of Foggia in 2013 and attempt to identify the most relevant landscape sources of pressure that induced virtuous behaviours in these local municipalities.

Based on interviews with experts and on existing literature,[2] the following actors were identified and classified (Table 1):

Table 1: Landscape actors exerting pressure

Actors	Role
Regional government	Setting environmental regulations and standards, monitoring and enforcement at regional/local level.
National government, EU Commission	Policy guidance with long term view in allocating resources.
Environmental Associations	Mobilizing community participation, voicing local concern.
Environmental certification bodies	Demonstration of compliance to environmental standards, a code of practice or regulatory requirements.
Tourism associations	Channelling tourism flows; providing a voice on issues of common interest related to tourism.
Public (e.g. Aalborg commitments)	Participation in decision-making, implementation and monitoring of policy actions.

We then framed them into a pressure matrix which allows us to classify stakeholders into four groups: (1) global actors exerting pressure through the economic channel; (2) global actors exerting pressure through the political channel; (3) local actors exerting pressure through the economic channel; (4) local actors exerting pressure through the political channel (Figure 3).

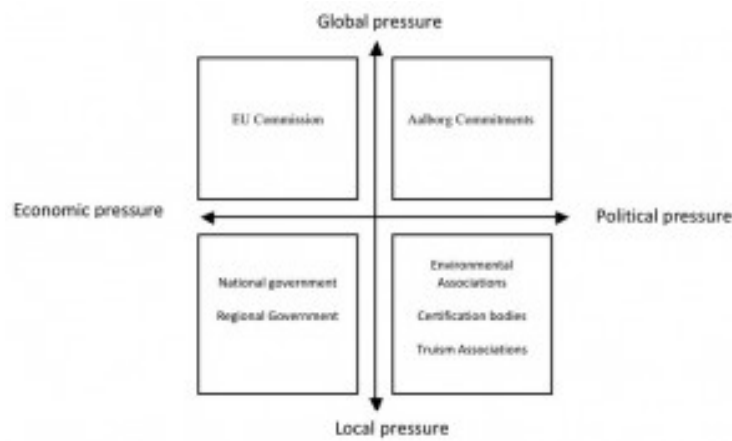


Figure 3. Framing landscape actors within the pressure matrix (authors own elaboration)

## Wrapping up

in this post drivers for a *sustainable waste management transition* are analysed through the lenses of the *multi-level perspective*. The focus is on the higher level – i.e. the socio-technical landscape – exerting pressure upon the dominant technological regime. This pressure is exerted by actors both at global and local level (i.e. sources) through economic and political channels (i.e. channels). Combining this two dimensions we develop a pressure matrix directed at assessing and classify the key sources of pressure. Proving that a balanced combination of different channels and sources is required for the overall pressure to be most effective, this matrix represent a tool for policy analysis that can be used to identify weak and strong areas of pressure, defining the consequent policy actions to be undertaken to bring about the desired transition.

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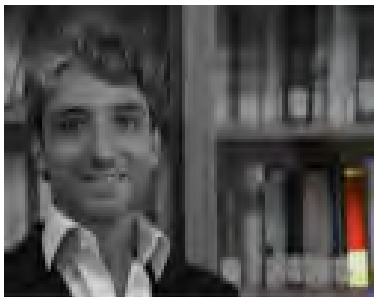
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[1] See the growing literature on strategic niche management (e.g. Kemp et al. 1998; Lopolito et al. 2010; Smith and Raven, 2012).

[2] We draw significantly on the classification proposed by Joseph (2006).

## Author Biographies



**Piergiuseppe Morone** is an economist with an interest in evolutionary theory applied especially to sustainable innovation studies. As a postgraduate student he was trained at SPRU-Sussex University where he received in 2003 his PhD in Science & Technology Policy with a thesis on innovation economics, investigating the relation between social network architectures and speed of diffusion of knowledge and innovations. He is now a

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## CHAPTER 50.

# CHALLENGES AND OPPORTUNITIES OF SUSTAINABLE URBANIZATION IN DELHI, INDIA

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Cities are regarded as 'engines of growth' being major contributors to the national economy. Urbanisation in India is happening at a rapid pace. The rate of urban land expansion in India during the next 20 years is expected to be high, in part because the country is investing heavily in large-scale infrastructures such as roads, telecommunications, water networks, and power and electricity grids. Such a development will put additional pressure on the urban ecosystem or biodiversity and threatens sustainability.

By **urban biodiversity** we mean the variety and richness of living organisms (including genetic variation) and habitat diversity found in and on the edge of human settlements.(Muller et al., 2010) Urban biodiversity is concerned primarily with environmental enhancement, control of air and noise pollution and microclimatic modification.

The works highlighting the benefits of urban green spaces are manifold (Alm,2007; Bilgili & Gokyer, 2012). High quality green spaces bring considerable benefits to the people's physical and mental health and to the environment. Urban greens with their wide collection of trees and other plants have huge educational potential. Urban parks are an important recreational facility in developing as well as developed countries. People derive quantifiable benefits from the positive experience of viewing trees. All this underlines a need for sustainable urbanization. Therefore, necessary green spaces in urban areas are required to be protected and conserved. But most egregiously this is not happening at the capital city of India- Delhi.

Predicting patterns of urbanisation in areas of high biodiversity are critical for conservation. Globally, several cities, including Brussels and Singapore are testing new frameworks to assess the urban-biodiversity linkages. For instance, the City Biodiversity Index or Singapore Index, created under the Convention on Biological Diversity (CBD), includes indicators such as birds, butterflies, mammals and plants to serve as tools for assessing stressors that deplete biodiversity (TEEBcase by S. Rodricks (2010) Singapore City Biodiversity Index available at: TEEBweb.org).

### **Challenges to Sustainable Urbanization in Delhi**

The population of Delhi has crossed the 16 million mark in 2011 making it the second largest urban agglomeration in the country. Delhi stretches along the banks of Yamuna river and is also

situated on the water divide i.e. the Aravallis Ridge dividing two mighty river systems- the Indus falling in the Arabian sea and the Ganga draining into Bay of Bengal. Therefore Delhi has not only been strategically important but also physiographically important. Delhi as the capital city of India makes a good example for a study of sustainable urbanization, as in spite of rapid urban growth it still retains a large area which is now getting highly threatened [19% of city area is under planned green and also, within the heart of its urban area lies a forest ecosystem (the ridge, 7782 ha of Arid scrub forest); a river ecosystem (the Yamuna river, 51 km length in NCT Delhi) and 9700 ha of floodplain (Meenakshi Dhote, 2013)].

The rapid urbanization has modified most of the above ecosystems – lowlands have been encroached by urban development, natural forests have been degraded, many storm water drains are transformed into dirty water drains and are covered up, lakes and ponds have been filled up or converted into garbage dumps. One such storm drain *Sunehri Nala* near Dyal Singh College on Lodi Road was covered to make a parking lot for the JLN Stadium. A newsciece in ‘The Hindu’ in 2002 revealed that the water quality of River Yamuna has been classified as ‘E’ as per Central Pollution Control Board’s nomenclature for designated water quality, which indicated that Yamuna water is unfit for any use. Furthermore, it is noteworthy that Delhi’s biodiversity wealth has been killed by international ‘Sporting’ events in post independence period. Delhi made space for the 1982 Asian Games complex by cutting the Siri Fort forest; the swimming stadium for the grand sports event was built by ‘reclaiming’ the Talkatora water reservoir. Then during the Commonwealth games in 2010, the games village was built on a flood bed of river Yamuna. “*The colonisation of the Yamuna’s Khadar tracts has been an error of urban planning in Delhi*” says the 1995 Delhi Environmental Status Report: An Information Handbook for Citizen Action, which was brought out by Delhi government’s Department of Environment.

Most interestingly, the city possessed the largest number of bird species due to the presence of the major Asian flightpath of birds along the Yamuna, but this species diversity is on the decline. Recently, the sparrow birds were on the brink of extinction in Delhi, and has been declared the ‘state bird of Delhi’.

Urban expansion in India is accompanied by complex effects on local and regional biodiversity, ecosystem services, and forest cover because of a combination of socio-demographic and lifestyle changes in urban areas.

### **Solutions & Opportunities**

Some solutions and opportunities can be explored to reduce the loss of biodiversity and meeting the goal of sustainable urbanization.

Connecting fragmented ecosystems in urban areas is likely to increase ecological functionality as a whole and therefore create opportunity for sustainable urbanization. There are diverse and innovative ways to connect natural ecosystems. Planting trees with overarching canopies can help small mammals, birds, and insects cross roads and highways. Roadside planting that mimics the multilayering of forests (for example, a composite of tall trees, medium-sized trees, shrubs, and understory vegetation) can cater to a diversity of animals. Ecolinks such as underground tunnels and vegetated overhead bridges can help connect natural areas.

Another significant solution could be that *ecosystem services can be captured in economic terms*. If we fail to incorporate both monetary and non-monetary values of ecosystems into urban planning, then the conventional market alone will dictate the allocation of resources resulting

in environmental degradation and erosion of natural capital, incurring economic costs to either recover the natural capital or provide artificial alternatives. This approach is known as “*The Economics of Ecosystems and Biodiversity*” (TEEB). By highlighting costs and benefits related to biodiversity preservation, valuation exercises also facilitate decision-making processes, for example regarding infrastructure development and planning proposals. We have to quantify just how expensive the degradation of the nature really is. Global cost of replacing natural insect pollination is around \$190 billion/year. A Chinese farmer has to spend extra money to get for artificial pollination for his fruit trees.

Urban infrastructure and housing should follow the GRIHA (Green Buildings ratings System in India) to achieve sustainability.

Cities are sites of creativity, innovation, and learning. Fostering these attributes is essential if the global challenge of sustainable urbanization in the face of unprecedented urbanization is to be met.

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## CHAPTER 51.

### CLIMATE ADAPTATION VS. URBAN POLITICS? SOME EVIDENCE FROM COLOMBIAN CITIES

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Climate change confronts cities with the necessity not only to mitigate but also to adapt to a changing climate (Revi et al., 2014). How to implement adaptation as a policy goal and how to enforce it against other policy goals is a new task for cities and not quite clear. Research on these issues is lacking: “Most of the literature on climate change adaptation and cities is focusing on what should be done, not on what is being done (because too little is being done)” (UN-Habitat, 2011: 145). Much research sees adaptation as a problem-free process, which is capable of delivering positive outcomes and neglect the complexity of adaptation as a social process (Mimura et al., 2014). The question of how adaptation action can be included in every-day politics needs further investigation, especially in cities of the Global South. These cities merely have the capacity to provide the basic infrastructure for their inhabitants, but are forced to elaborate and implement costly adaptation measures, as the consequences of climate change are foremost visible there.

This article gives a short overview on how cities in Colombia have included climate adaptation in their political agendas. Evidence of climate change in Colombia is already visible: an annual loss of glacier areas of 3 to 5%, significant changes of rainfall patterns as an increasing frequency of extreme hydrometeorological phenomena, as well as a rising sea-level is stated (IDEAM, 2013). The country expects an increase in the average temperature of two degrees Celsius up to the end of the century (IDEAM, 2013).

In order to reveal how climate adaptation is included in urban politics, the so called “Development plans – planes de Desarrollo” of the nation’s 10 biggest cities were analyzed. Development plans determine the political agenda of a city and are issued by the respective mayor at the beginning of his term. Mayors are elected for four years without the possibility of an immediate reelection, therefore development plans have only a short/middle term perspective. Development plans contain the projects the mayor wants to implement during his term and are legally binding. Still, the analyses of the development plans has to be done with caution: The plans are political documents and even if climate adaptation is included in it, the implementation is not yet guaranteed – especially in Colombia with its weak public institutions and informal political practices (see for details Robinson 2013). But if the development plan contains no adaptation measures, then it is certain that the municipality won’t realize any form of adaptation strategy in this period. Therefore these plans can help to understand the role of adaptation in comparison

to other political goals. The analyses of the current development plans (2012-2015 term) revealed some insights on the relationship between urban politics and climate adaptation:

### **Climate Adaption is included in the political agendas of cities**

8 out of 10 of the analyzed cities included climate adaptation in their political agenda and indicated respective actions (Barranquilla, Bogotá, Bucaramanga, Cali, Cartagena, Cucuta, Medellín and Soledad). The non-adapters are the cities of Soacha and Ibaqué. This high percentage demonstrates that adaptation is already perceived as an important issue in urban politics, and public authorities aim to implement adaptation actions. In contrast to a few years ago, when adaptation seemed to be only an issue for a few avant-gardist best-practice cities (Hardoy/Romero Lankao 2011), adaptation has become mainstream and is widely present in the political agendas. Still, quite big differences are visible: while some cities (Cartagena, Bucaramanga and Soledad) elaborated detailed measures, the adaptation actions included in the development plans of other cities (as for example in Medellín and in Cali) are rather vague. As map 1 and table 1 show, there is no interrelation between the size or the geographical location of a city and its disposition to adaptation.



*Map 1: Location of the ten biggest cities in Colombia (own source, based on public data from the Colombian national geographic database).*

**Table 1: The context of the analyzed cities**

City	Inhabitants 2013*	Geographical region
Barranquilla	1.207.000	Caribbean Region
Bogotá	7.674.000	Andean Region
Bucaramanga	527.000	Andean Region
Cali	2.320.000	Andean Region
Cartagena	979.000	Caribbean Region
Cucuta	637.000	Andean Region
Ibaque	543.000	Andean Region
Medellin	2.417.000	Andean Region
Soacha	489.000	Andean Region
Soledad	583.000	Caribbean Region

\*Source: DANE (Colombian Administrative Department of Statistics)

### **Climate adaption consists mainly of risk reduction measures**

The majority of the cities understand climate adaptation as the reduction of risks which appear as a result of natural disasters or extreme weather events. This is based on the prognosis that the frequency of natural hazards will increase due to a changing climate. Through adaptation the effects of floods or landslides after heavy rainfalls on the urban population should be minimized. Therefore adaptation actions consist amongst others of the relocation of people who live in high risk areas, technical measures like the construction of dykes and also capacitation activities for people who live in high-risk areas. Only a few cities (Cartagena, Soledad, Bucaramanga) have a more holistic understanding of adaptation and focus also on climate change related transformations of the agricultural sector, tourism, and cultural heritage issues. The development plans in these cities present as adaptation measures also new economic activities, actions to secure cultural heritage and new forms of agricultural production.

### **The financial resources foreseen for adaptation measures are scarce**

Even though it is difficult to define exactly what actions are to be included as adaption measures, a rough estimation shows that in most of the cities the percentage of adaptation actions on the overall municipal budget indicated in the development plans is very low, mostly below 2%. Only Cartagena dedicated more than 5% of their municipal budget for adaptation measures.

### **Outlook: How to reconcile urban realpolitik with the requirements of climate adaptation?**

Previous research (for example Pasquini et al. 2015) has demonstrated the importance of political leadership for adaptation and the analyses of the ten biggest Colombian cities shows, that most political leaders have the will to include adaptation in their political agenda. Until now, the reduction of risks induced by natural hazards plays a prominent role in the adaptation actions. Additionally, climate sensitive forms of planning, urban economics, leisure activities and mobility have to be developed and adaptation has to be understood as a more integrative challenge for urban development – something which very few Colombian cities have actually done yet. The budget planning shows, that the significance of adaptation compared to other political goals is rather low. It can be argued that this is due to the characteristics of urban politics and climate adaptation: adaptation means that the population of a city does not feel the negative consequences



of climate change. The results of successful climate adaptation action are therefore often hardly perceivable. If we assume that public funds are scarce and only a limited amount of political goals may be supported, climate adaptation may not be necessarily a mayor's first choice. While mitigation actions offer the possibility that politicians can demonstrate innovational measures and their capacity to act, adaptation actions do not lend themselves to newspaper headlines and are not the stuff of city-based competition (Bulkeley 2013).

While most of the cities feel the necessity to include adaptation in their political agenda, the justification that scarce public resources should be spent on adaptation and not on other actions is a serious obstacle. One possible solution is to increase the political capital of adaptation through the connection with other political goals. The connection between risk management and climate adaptation has been implemented already by several Colombian cities. The cities of Cartagena and Bucaramanga have linked adaptation with other political goals, as for example economic or cultural development, and argue that through climate adaptation not only the exposure to natural hazards can be reduced but also general aspects of a sustainable urban development can be achieved. Thereby it seems to be easier to justify the spending of public resources on climate adaptation and to make adaptation a topic which helps mayors to gain elections.

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## CHAPTER 52.

### THE HYDROCITIZENSHIP PROJECT CELEBRATES WORLD WATER DAY 2015

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TOM PAYNE, UNIVERSITY OF ABERYSTWYTH; KATHERINE JONES, UNIVERSITY OF THE WEST OF ENGLAND, AND OWAIN JONES, BATH SPA UNIVERSITY, UK

Sunday March 22nd 2015 was the United Nation's World Water Day. To mark this initiative the four Hydrocitizenship case study teams (Lee Valley, Bristol, Yorkshire and mid Wales) each staged, or participated in, water themed events. The following blog extracts contain short reflections upon the day's activities. Full versions can be found on [hydrocitizens.com](http://hydrocitizens.com), an online community set up by Tom Payne (and developed by the project team) to enable cross case study collaboration and wider online engagement with creative water-related research.

*"In 1993, the United Nations General Assembly designated 22 March as the first World Water Day. 22 years later, World Water Day is celebrated around the world shining the spotlight on a different issue every year. This issue is also the theme of the annual UN World Water Development Report which is launched on World Water Day. In 2015, the theme for World Water Day is 'Water and Sustainable Development'. It's about how water links to all areas we need to consider to create the future we want." (UNwater.org)*

Organised by UN-Water, and supported by major international NGOs such as Water Aid, events and social media initiatives occur around the world on World Water Day. The focus is often on key issues of basic water rights, access to safe and sufficient water, water and disease and development.

As our Arts and Humanities Research Council, Connected Communities Programme; Communities, Cultures, Environments and Sustainability Large Grant, *"Towards hydrocitizenship. Connecting communities with and through responses to interdependent, multiple water issues"* is focusing on the topic of water and sustainability (in UK contexts but with some international links), it was deemed appropriate for the project's case study areas to hold World Water Day event on Sunday March 22nd 2015. These events reflected local water opportunities and challenges and extracts from the blog reports on the events are offered below.

## World Water Day – Bristol Loves Tides



For Water City Bristol the day was an opportunity to collaborate with our partnership project Bristol Loves Tides (BLT). To coordinate with the high tides (time and tide wait for no one!) we started early. By 7:30am over eighty people had assembled at the Lockside Café to enjoy BLTs, speeches and watery conversations.

At 8:15 we were ushered out to the waterside where we noticed some strangely clad fellows dragging a heavy-looking suitcase. In their barnacle-encrusted coats, Proxi and Perri – the

tides made flesh – washed up to where we were gathered. They were greeted by the Lord Mayor of the city but wanted to talk to the ‘future!’. Out of the suitcase, Perri then pulled some intriguing objects, and in pairs the young presenters (part of BLT) went forward to say short pieces on the different themes relating to tides and water.



Next Proxi and Peri invited us all to participate in an oath. Dipping one hand into wonderful gloopy Avon mud and raising it into the air, we repeated our oath to love the water in every way. A film of the oath is on Youtube [here](#)



We were then led into song, learning this little ditty in three sections:

*We are the tides we ebb and flow*

*Tuned to the moon we come and go*

*Ebb and flow and come and go and ebb and flow...*

Our last ritual of the morning involved creating a heart shape on the wall with our muddy hand-prints. The wonderful soft sensation of the mud was a great way to connect with the surroundings and the ritual felt both light-hearted and significant.

## World Water Day in Yorkshire



Here in Shipley, Yorkshire, the team held a screening of several films reflecting on the local and global relationship we have with water...

The main feature was **Watermark** (2014). This award-winning documentary film is full of stunningly beautiful images. The film brings together diverse stories from around the globe about our relationship with water: how we are drawn to it, what we learn from it, how we use it. In it we witness how humans are drawn to water, from the U.S. Open of Surfing in Huntington Beach, to the Kumbh Mela in Allahabad, where thirty million people gather for a sacred bath in the Ganges. We see massive floating abalone farms off China's Fujian coast and the construction site of the biggest arch dam in the world. We visit the barren desert delta where the mighty Colorado River no longer reaches the ocean, and the water-intensive leather tanneries of Dhaka.

As a short "curtain-raiser", we screened a much more local film, **Wading to Shipley** (2013). It traces a journey along the hidden reaches of Bradford Beck as it flows towards the town, revealing a surprising landscape...

A local retired civil engineer come film producer also brought his own contribution for screening (untitled, 2015) ... made in his own home using his wife's plants that thankfully he did not kill in the process of trying to film a time-lapse of a plant dehydrating!

## World Water Day in the Lee Valley



The Lee Valley Hydrocitizenship team joined the cycle ride event that Lee Valley Regional Park Authority (LVRPA) organised on World Water Day. The circular 25-mile guided cycle ride in the south of the park and beyond started at WaterWorks, with a lunch break at the Thames Barrier Park. 15 cyclists joined the ride from all levels, some of them being members of Edmonton Cycle Club, some who had never cycled in the area before and some very regular cyclists.

There are miles of traffic-free cycling routes across Lee Valley Regional Park covering 10,000 acres in London, Essex and Hertfordshire and cycling is one of the most popular ways of transport as well as a leisure activity in the area. Engaging with the cyclists through this event was a great opportunity for the Lee Valley Hydrocitizenship team.

At the start of the ride, I introduced the project to the cyclists and asked them to pay more attention to water during their ride. I later met them at lunch at the Thames Barrier Park and asked them to fill in a short survey about their reflections (a significant



part of the cycle route was either by the canal or River Lee) and the importance of water to them as an urban amenity.



### **Cymerau World Water Day: what happened?**

The Cymerau team put on a day-long event at the Centre for Alternative Technology, where we met with artists connected to Borth and Tal-y-bont.

The aim of the event was to provide local artists with an insight into the Hydrocitizenship project and to give them a broad understanding of our proposed year of water-related activity, our Water Map (Sept 2015 – August 2016). We are inviting artists to submit proposals for work that might take place during the year and this event hopefully gave them an idea of some of the things that might be possible.

By the end of the day the gathered artists had generated some really interesting ideas and hopefully made connections with one another that they will follow up later. As a team, we made a lot of discoveries about the different ways that artists work with and approach 'participation'. I think it would be good to follow up this event with some one to one conversations with the artists involved in order to get a better sense of what they think about this term within the context of their work. It would be interesting to develop a shared local language.



All images are taken by the authors of this blog

Edited by Tom Payne, Katherine Jones and Owain Jones based on original Hydrocitizens.com blog texts by Lyze Dudley, Ozlem Edizel, Katherine Jones and Tom Payne

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PART IX.

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**LOW CARBON FUTURES**

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## CHAPTER 53.

# ROLES OF DESIGN IN SUSTAINABILITY AND LOW-CARBON TRANSITIONS IN CITIES

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IDIL GAZIULUSOY, UNIVERSITY OF MELBOURNE, AUSTRALIA

It shouldn't be a surprise that the term 'wicked problem' was coined within the planning discipline long before it became a buzzword for qualifying sustainability problems. Indeed, the need to create change in cities, especially at the scales and timeframes required, challenges scholars and practitioners alike by demonstrating all characteristics that make a problem 'wicked'. Wicked problems are ill-defined, have no stopping rule, no 'correct' solution, are contextual and therefore unique, and are highly political in nature (Rittel & Webber, 1973). It has been argued that a design approach is suitable for addressing wicked problems, which require the generation of breakthrough knowledge and innovation and necessitate democratic deliberation (Dorst, 2003; Goldschmidt, 1997; Rittel & Webber, 1973).

The distinguishing intellectual and functional characteristics and foundations of design activity has long been a topic of high interest in design discourse, particularly in the areas of design history and design theory (e.g. Archer, 1984; Cross, 2007; Krippendorff, 2006). Design, as an approach to defining, framing, and solving problems, has been distinguished from engineering and business approaches to problem solving (Gruber, de Leon, George, & Thompson, 2015). Similarly, generation, qualities and use of design knowledge have been differentiated from those of scientific knowledge (Archer, 1984; Cross, 2007; Krippendorff, 2006; Rittel & Webber, 1973). Design starts with a focus on observing humans and systems in their context and in relation to each other and frames the problem based on insights acquired during this phase; i.e. it is human-centred. Therefore definition of design problems can accommodate not only technical issues but also socio-cultural and behavioral issues stemming from the dynamic interactions between humans and systems, which together create system behavior. The solution delivery in design is not linear nor assumes the presence of a single-most optimum solution; it follows an iterative process of concept generation, prototyping and testing, concept synthesis and generation of contingent solution proposals which can be negotiated by stakeholders (Brown, 2008; Frauenberger, Good, Fitzpatrick, & Iversen, 2015). Design process thereby empowers stakeholders of a problem by enabling their agency to be enacted directly in the co-designing of a solution that will directly affect them.

Sustainability and low-carbon transitions are archetypal examples of wicked-problems, especially when considered in the context of cities. Transition interventions require consideration of current

and future stakeholders, long timeframes that span beyond election cycles, business strategic outlook and in some cases the life-time of the members of currently alive human population (Gaziulusoy, Boyle, & McDowall, 2013; Holling, 2001; Jansen, 2003; Loorbach, van Bakel, Whiteman, & Rotmans, 2010). The outcome of interventions cannot be precisely foreseen, and there is not a single preferable version of the future. For this reason, alternatives need to be developed attending to different political agendas that are inherent in visions of sustainable, low-carbon futures (Scoones, Leach, & Newell, 2015).

Sustainability and low-carbon transitions in cities raise a three-fold design challenge:

- The first challenge is conceiving new socio-technical systems – complete with their institutions, organisational models including new business and governance models, technologies including associated products and services and new social practices including norms, values and behaviour – that could support a vibrant, culturally satisfying, productive and resilient urban existence.
- The second challenge is designing participatory and democratic processes that are sensitive to the political nature of transition processes to deliberate and negotiate characteristics of those future systems, and the innovation and policy pathways for their realisation with relevant stakeholders.
- The third challenge is designing, developing and implementing those pre-negotiated innovations and policies that will increase environmental and social resilience in cities.

To better understand the roles played by design in responding to these challenges in a project, we made some observations in the context of a project about transitions to low-carbon and resilient futures in Australian cities: *Visions and Pathways 2040 (VP2040)*. VP2040 is a collaborative project funded by the Australian Cooperative Research Centre for Low-carbon Living (CRC LCL). The primary methodological content of VP2040 project is a series of participatory workshops bringing together members of the existing socio-technical regimes, niche-innovators, activists, designers and researchers to co-develop visions, scenarios and policy/innovation pathways through a systematic progression over four years.

During visioning workshops professional designers enabled more effective stakeholder participation by on-the-spot concept sketches of particular features of the envisioned futures. This created a space for deliberating not only formal characteristics of the future city but also mediated discussions on desirability and plausibility of envisioned futures. The visualisations they developed communicated this diversity of perspectives and later assisted the research team in developing four distinct future scenarios, each with different emphasis on the role of technological change versus socio-cultural change in achieving low-carbon resilient city futures. Akama (2008) identified a similar role played by design as initiating and facilitating a human-centred inquiry which enables surfacing and discussion of politics, agendas and assumptions of both direct and indirect stakeholders within projects and building relationships through which deliberation can take place. This is defined as the ‘dialogic role’ of design.

Design charettes were held following visioning workshops to create visualisations depicting snapshots of desirable and plausible city futures that were radically low-carbon and resilient. This required integration of insights generated during the participatory visioning workshop and findings of exploratory research on emerging disruptive technological and social innovations that could assist with low-carbon transitions. Each designer were given system levels to focus (city,

precinct, neighbourhood), particular changes to depict (technological innovations, behavioural elements, products and services) but were not briefed about output format. Although mainly a process of complex knowledge synthesis, generation of visualisations also required development of new design knowledge by the designers. They not only contemplated what might be called 'could-be' systems but also brought a lot of additional information into the process to be able to connect disparate types of knowledge but also system components displaying appropriate relations as a whole (Goldschmidt, 1997; Johnson, 2005).

Design becomes visible in public through the outputs it creates. Nevertheless, the role design plays in knowledge generation within society in general and generation of knowledge and strategies in the context of system innovations and transitions is numerous. Manzini (2015) argues that everyone has a natural capacity to design and can undertake design activity. He calls this activity "diffuse design" as distinct from "expert design" which is performed by professional designers. In projects aiming for systemic change, these two roles intermingle and interact in ways to enable co-designing of future visions and strategies to achieve these. The particular roles played by the intermingle of expert and diffuse design we explicitly observed in VP2040 include:

- *Role of Design in Inquiry*

Participatory and human-centred inquiry  
Analysis and synthesis of different knowledge forms  
Systematising solving wicked problems  
Attending to different politics and value sets  
Dealing with complexity of socio-technical systems  
Transdisciplinarity

- *Role of Design in Process*

Iteration and prototyping  
Facilitation of participatory inquiry, design and deliberation

- *Role of Design in Outputs*

Visual communication of visions  
Scenario prototypes

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## CHAPTER 54.

### THE ROLE OF WATER FOR SUSTAINABLE URBAN PLANNING

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DANIJELA MILOSEVIC AND MARTINA WINKER, ISOE - INSTITUTE FOR SOCIAL-ECOLOGICAL RESEARCH, GERMANY

#### **Why water?**

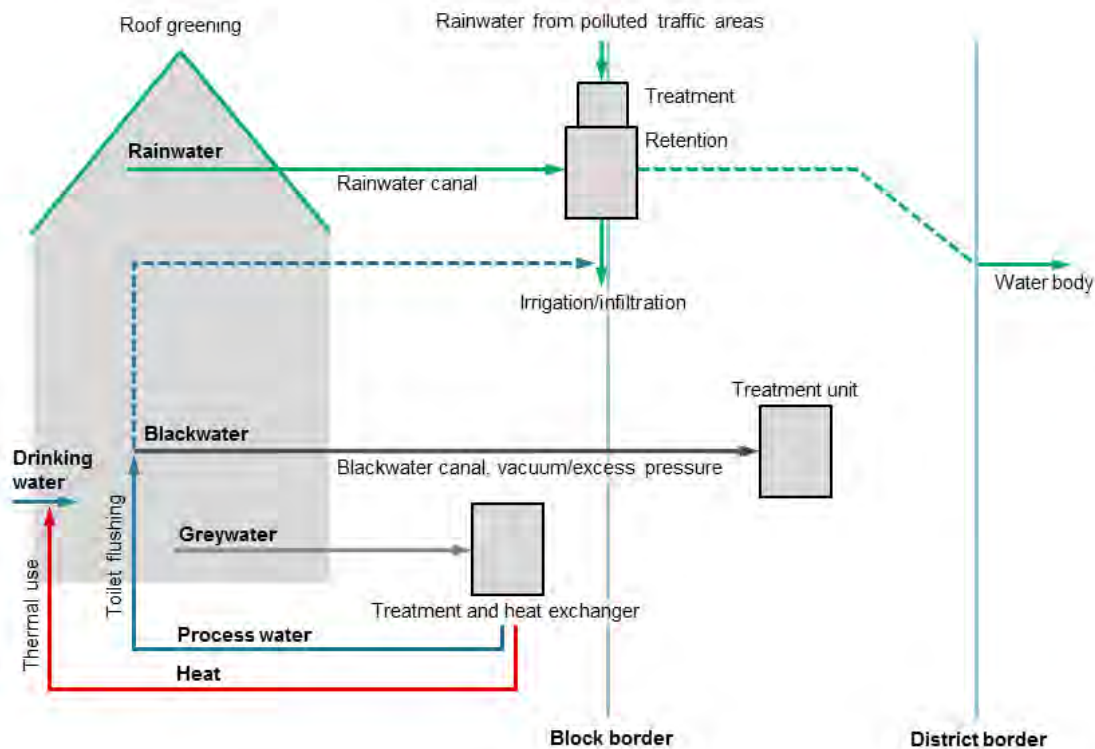
The city is dependent on water, because water plays an essential role for its development and functioning. The functions of water are diverse and cover not only domestic purposes and discharge of waste but also include ecological functions. These are linked to green space management, landscape design, crop cultivation and biodiversity. But also functions such as temperature buffering are becoming more important. Water thus forms a cross-sectional topic that integrates several areas such as climate protection, quality of life, resource and energy efficiency. These connections show the importance of water for an urban development.

Because urban planning and municipal water management have significant influence on water infrastructure, it is worth taking a closer look at the potential for sustainable development in terms of water management designs that lies here. This post mainly focusses on the discourses and the developments in the German context.

#### **Water infrastructure for a sustainable urban development – an example**

One way towards sustainable development is to close water and resource circuits at the city-level. This decreases the city's water requirement from, and its influence on, the ecosystem and makes itself more independent and resilient. Technical intelligent solutions that serve this purpose are based on the separate collection of various wastewater streams, targeted and appropriate water treatment, the recirculation of water resources, and the recovery of nutrients and organic matter contained. The New Sanitation Systems (NASS) offer solutions to these principles. Many of these technologies focus on domestic wastewater, which plays a central role in urban areas. Due to its modular design and the choice of the degree of centrality, such solutions can be combined and implemented at the level of the bathroom, the house, the block, the neighborhood or even the whole city.





*Fig. 1: Alternative wastewater infrastructure at neighborhood level: Rainwater is used to supply local waters, for irrigation or is infiltrated. Toilet wastewater (blackwater) is going to a biogas or composting plant instead of entering the mixed water disposal and domestic wastewater without toilet water (greywater) is treated and can be reused for toilet flushing or other domestic purposes while undergoing heat recovery. (modified from Winker, 2015)*

An example of an innovative system solution that enables the transformation of the existing water infrastructure is shown in Figure 1. The separate collection of greywater (low contaminated wastewater produced during showering and hand washing or from the washing machine and in some cases from the kitchen sink) allows an uncomplicated treatment and heat recovery. After all, the average water temperature leaves the building at 22°C (Berliner Netzwerke, 2011). The recovered heat is used to heat drinking water and to support heating spaces in the house. The treated greywater can then be used for toilet flushing, for the washing machine, to irrigate green spaces or to supply a nearby water body. The blackwater (wastewater from toilets) is transported with minimal water content through vacuum or excess pressure. Its organic material can generate energy by the means of a biogas plant or substrate for soil by a composting facility. As for the rainwater management, green roofs or retention basins (that are already frequently used) evaporate or seep the majority of the rainwater locally. All these possibilities show the huge design potentials: rainwater, purified greywater and blackwater can be used for green spaces and open watercourses, which in turn produce food (urban gardening, urban farming), create, maintain and expand recreational areas (parks), secure ecosystem services and protect against the effects of climate change (droughts, heat waves, floods, intense precipitation).

Innovative technologies must be accepted by the users in everyday life to be successful. Therefore, it is important to understand the users' preferences, attitudes and needs and their handling of

building services. It seems that users are open to such designs in pilot projects that implement such innovative technologies, mostly exist at building or block level. For example, residents in four apartment complexes, in each of which greywater treatment and heat recovery are implemented, drew the conclusion that the facilities were virtually not an issue in everyday life and that they were largely satisfied with their sustainable water system (Hefter et al., 2015). A major issue for them was the unobtrusive operation. The advantages reported were the resource savings while cost savings were considered as less important. However, the respondents differed noticeably in their open-mindedness and their interests towards the water techniques.

There are also some large-scale projects like the Jenfelder Au in Hamburg or the Flintenbreite in Lübeck, both in Germany, where innovative water infrastructure is implemented at district level. Other international examples are Sneek in the Netherlands or Semizentral in Qingdao, China.

### **Implementation: Significance for urban planning**

Because of the significance of water for planning processes, the term ‘water sensitive urban design’ has evolved (Eisenberg et al., 2014). It enables the closing of water and resource circuits and the emergence of urban natural water balance. This is less of a restriction, but holds in contrary, as has been shown before, a tremendous creative potential. Urban planning should therefore take into account the role of water in all its different functions. Systemic and interlaced thinking that encompasses both natural resources (water, air, soil, and landscapes) and social dynamics is necessary to ensure integrated urban planning. It is important to consider environmental, social, and economic criteria. Thinking in terms of disciplines and the implementation of individual measures often lead to unwanted external effects. To enable sustainable urban development, an inter- and transdisciplinary collaboration is as important as the participatory user involvement in terms of the balance of different interests. We believe that solutions can therefore be found that satisfy the different needs and overcome conflicts of interest.

The opportunity for water transformation depends greatly on the dynamics of urban development and the transformation effort of the individual districts (Kluge & Libbe, 2010). Sustainable development is particularly promising where a high development dynamic hits a low transformation effort. Therefore the opportunity for water infrastructure transformation which strengthen the interconnections between the urban green and water bodies very much depends on the type of settlement structure in combination with its spatial location in the city. It is necessary on the part of the city to have a “future picture” in mind to pursue a directed transformation management and go beyond ‘random’ and small-scale changes at domestic or block level. It should be the responsibility of cities to create such a vision and steer the transformative process as administrators of the public commons.

Various sectors such as climate adaptation, demographic change, energy (production), green spaces, and food production all impact urban planning processes. Water as a cross-sectional issue offers the opportunity to connect and integrate urban sustainable development.

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**Martina Winker** is research scientist at ISOE and head of the research unit Water Infrastructure and Risk Analyses. She studied agricultural sciences with the focal points agricultural engineering and ecology in Germany and Norway. In 2009 she received her doctorate by the Hamburg University of Technology for a thesis dealing with "Pharmaceutical residues in urine and the potential risks related to usage as fertiliser in agriculture". Afterwards she worked for the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH in the area of sustainable sanitation.

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## CHAPTER 55.

# COOPERATIVELY OWNED RENEWABLE ENERGY FACILITIES – UNLOCKING URBAN COMMUNITY POWER

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Urban renewable energy facilities owned by the community – what are they about, why are they important, and what are the challenges?

From the perspective of environmental engineering, renewable energy production is mainly about optimising process technology, increasing efficiency degrees, overcoming technical obstacles, and finding solutions that are economically viable. However, when it comes to the implementation of such projects, focusing on technical and economic feasibility is not enough. Aside from very simple standard solutions, each successful project means that interdisciplinary and transdisciplinary challenges were addressed in appropriate ways. When looking at sustainability not only with regard to environmental and economic criteria, but also including further social dimension, community-based projects have particularly high attractiveness. Achieving active participation of the citizen is a vital element in sustainable development.

In bringing the topic of cooperatively owned energy production facilities onto the agenda of sustainable urbanisation, this article aims at starting a dialogue between engineering and social sciences. Community-based projects, especially those with strong technical aspects, need favourable frameworks and suitable policy responses to avoid the risk of falling between disciplines and policies. Private companies and public entities still heavily dominate the energy sector. It is a key challenge to promote and establish community-based energy production as an alternative that is viable and attractive to many citizens.

### **Overcoming the barrier between awareness and pro-environmental behaviour**

Cooperatively owned facilities hold a clear potential to overcome the barriers between environmental awareness and actual pro-environmental behaviour. They introduce an element of identification and create motivating and rewarding community processes. Cooperatives operate as autonomous associations of people. Various organisational forms and financing models exist but, generally, they all adopt the principles and values elaborated by the International Co-operative Alliance: voluntary and open membership; democratic member control; economic participation by members; autonomy and independence; education, training and information; cooperation among cooperatives; and concern for the community (Viardot, 2013).

## **Cooperatives for Renewable Energy**

Renewable energy source cooperatives have reached a considerable number worldwide, which is even more remarkable when considering the often high financial requirements of such facilities. Several hundreds of cooperatively owned renewable energy facilities across Europe are listed alone in the database of REScoop.eu, an initiative launched by the Federation of Groups and Cooperatives of Citizens for Renewable Energy in Europe. Renewable energy source cooperatives propose an innovative organisation and business model that mainly focuses on active participation of the local user citizenships in the decision-making process of new renewable energy production projects, from the siting to the implementation and operation stage. Despite the fact that such initiatives exist in considerable numbers, there is a clear potential for more widespread implementation. Uptake can be fostered by making available shining examples, by providing assistance, and through exchange of knowledge and field expertise.

## **Urban Community Power**

In the area of urban communities and renewable energy, what mobilises urban citizen engagement? Can it be bioenergy? Yes, it can, as shown in the example of a cooperatively owned biogas plant at a zoo (Kusch, 2012). Researching the database of REScoop.eu (2015) indicates that community-based heating based on wood pellets is also successful as an urban application. However, researching the REScoop.eu database in more detail reveals that while there are many examples in rural settings, community-based bioenergy projects in urban environments are rather rare. The vast majority of cooperatively owned energy projects in urban environments are based on solar techniques, mainly photovoltaics.

## **David and Goliath and the City**

Community-based renewable energy projects provide evidence that central elements of the David and Goliath narrative can regularly be replicated, inspiring other communities to also become aware of their powers, to break dependency from large energy suppliers, and, instead, to create and put into practice their own systems. It is a complex challenge to frame what elements are crucial in building up successful local community initiatives (Boon and Dieperink, 2014; van der Schoor and Scholtens, 2015; Walker et al., 2010; Yildiz et al., 2015). Understanding 'community' is essential for understanding community energy (Wirth, 2014). Research in this field often addresses rural environments (e.g. bioenergy villages in Germany), while urban contexts have been less in focus. In contrast to rural settings, where such projects often involve a majority of the population, which fosters specific community dynamics, urban community projects often are minority projects, based on smaller sub-communities. Urban citizens also often have other lifestyles, including, for example, mobility patterns, which can result in faster changes of members of such communities. A detailed systematic analysis would allow a better understanding of the specific challenges and opportunities of cooperatively owned energy facilities in cities. Highly promising is the elaboration of protocols for community ownership of renewable energy systems, as has recently been made available in the UK (SCO-RES, 2015). In this context, it can be expected that a suitable institutionalisation of initiatives would foster self-organising processes in the way that implementation and coordination of projects were facilitated.

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### Author Biographies



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Giovanni Beggio earned his Bachelor in Environmental Engineering in 2013 at the University of Padua, Italy, with a thesis on the state of the art of anaerobic digesters, and is currently finishing his Master of Science on the same topic at the University of Padua. Ecotoxicology and ecological risk assessment are among his specialisations. Furthermore, he is passionate about research on sustainability and energy transition, with a focus on bioenergy projects and their concrete implementation in various environments.

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## CHAPTER 56.

# SOLAR HYDROGEN ENERGY SYSTEMS: A MAGIC BULLET FOR GLOBAL SUSTAINABLE URBANISATION

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Imagine there was a magic bullet that could guarantee a very high level of living standard, not only for the 1.4 billion people who are not yet connected to the electricity system, but to all of mankind for future generations. Now imagine that this technology is simple and has been around for over half a century. Can you guess what it is? Some clues are; it is renewable, sustainable, portable and available. If your answer is solar hydrogen energy systems, you are right. There may be debate about the degree of their portability, but both solar panels and hydrogen gas are portable. Both these forms of energy can be used to provide all the electricity needs for all mankind.[i]

Electricity is the lifeblood of all modern societies, yet its continual flow is taken for granted. It is only when there is a power cut that we start to appreciate and realise how dependent our daily living standards are on the continuity of its supply. Currently, about half the world population lives in urban areas, and it is estimated that by 2050, the global urban population is expected to approach 6.4 billion, (Gea, 2012). Therefore the robustness of the urban electricity system and the continuation of electricity supply, are critical to the future resilience of the urban environment, and to the continuation of the standard of living of the population.

In the developed world, all electricity generation systems are centralised with consumers accessing the system via a national grid. Any natural or manmade failure in the national grid system can have far reaching indirect consequences at a very long distance from the actual point of failure, i.e. a failure chain can ensue.

*“A **failure chain** is a set of linked failures spanning critical assets in multiple infrastructure systems in the city. As an example – loss of an electricity substation may stop a water treatment plant from functioning; this may stop a hospital from functioning; and this in turn may mean that much of the city’s kidney dialysis capability (say) is lost. This failure chain would therefore span energy, water and healthcare systems.” (UNISDR, IBM, & AECOM, 2014).*

As the urban population grows, an electrical failure will have increasing and more devastating secondary health (Nates, 2004), economic, security, and water impacts (DRAP, 2013) on the daily lives of more and more people.

Every year billions of US dollars are lost in economic activity due to power cuts (Balducci, 2002;



Reichl, Schmidthaler, & Schneider, 2013; Sullivan, Vardell, & Johnson, 1997). This would be much reduced if the topology for the electricity system is of a distributed nature. This means that instead of the electricity being generated in huge power stations far from where it is being consumed, it is generated on the roof of the building that uses it. All electronic devices, like those that use batteries, need direct current (dc) electricity to operate. So the all dc system will not need the average of 25 black transformers used per household (Calwell, 2002 p 7), or the inverter (cost £1000+). Therefore the carbon footprint of electrical goods will be smaller and the energy they use will be reduced (see Kinn, 2011, p. 113-114, for more advantages of dc systems). Since less energy is needed, the dc micro generation system can be smaller and therefore cheaper (Kinn, 2011 p 109). Alternatively, for the same outlay, a larger dc micro-generation system can be installed thus increasing the energy supply.

If urban sustainability implies that the level of living standards people expect today should be available in 100 years time for our descendants, then we must fundamentally change the way electricity is supplied for consumption in the built environment. This can be achieved by using distributed renewable dc systems that will offer each building energy independence with energy security. By doing this, mankind enhances and maintains its ability to consume electricity for all its daily activities, thus maintaining a high standard of living for all.

While it is appreciated that technically there needs to be more improvements in the availability and development of dc voltage appliances, this is only due to a lack of focus about the need for this. The international community has to make it a priority to provide distributed energy systems all around the world. This priority must be placed on the UN's agenda and governments all around the world must provide funding and research opportunities for dc voltage systems. This priority will draw in private investment capital to develop the much needed low power dc consumer units. The importance of using solar lighting was highlighted in the Lighting Africa Conference of 2010 (World-Bank, 2011). A few extra hours of light per day can increase economic activity and enhance education by giving everyone the ability to study at night. If just one solar light can make so much difference to a family or to a business, how much more could be gained if the cooking, food storage and heating activities can be provided via solar dc electricity.

Hydrogen has been used directly in internal combustion engines (ICE) of ordinary cars, trains, ships, and other applications prior to the 1930s. Hydrogen gas burns cleanly in an ICE with minimal Particulate Matter, NO<sub>x</sub>, and CO<sub>2</sub> emissions (Gea, 2012 p 603). So there is no reason why this more sustainable option is not used for transportation instead of the hydrogen-electric option. Hydrogen can also be used as a gas for cooking and heating purposes (McAllister, 2005). The Solar Hydrogen economy therefore could provide energy independence with energy security at a lower carbon footprint than exists today, which therefore provides a more sustainable urban environment.

The following issues are suggested for consideration by policymakers:

1. Promote and fund research into the field of fully distributed low powered dc autonomous systems.
2. Promote the use of hydrogen, for use in ordinary internal combustion engines for transportation and as a gas for cooking and heating.
3. Distributed electrical systems should be included in any city sustainability and resilience plan.
4. Interdisciplinary sustainability research must include the fields of engineering like electrical,

and mechanical engineers, in order to bridge the gap between the Social Science community (the theorist) and the Engineering community (the implementers).

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- [i] Solar radiation reaching the Earth's surface amounts to 3.9 million *exajoules of energy per year* and, as such, is almost 8000 times larger than the annual global energy needs of some 500 *exajoules* (Gea, 2012 Page 47)

## Author biography

Moshe Kinn is currently a post graduate researcher doing a PhD, and has since 2007 been interested in developing a model for a sustainable electricity system. His undergraduate degree was carried out at City University, London and was in Electrical and Electronic Engineering. Among the many goals associated with the future sustainability of this planet, his main goal for the electricity system is *energy security* and *energy independence* for all humanity, and has a long standing interest in the solar hydrogen economy. This led to a research masters degree (MPhil) at The University of Manchester that looked at the feasibility of using low powered direct current electricity systems in the home. He is very interested in the debates about centralised and

distributed electrical system, and the use of alternating current voltage and direct current voltage, especially for city resilience, disaster risk reduction, and post disaster reconstruction.

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## CHAPTER 57.

### SUSTAINABLE CONSUMPTION ACROSS 24 OECD METROPOLITAN AREAS

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Decades of research has demonstrated that everyday environmental actions, such as recycling waste and reducing energy use, are strongly influenced by personal characteristics, such as age and gender. Empirical investigations of the city-level factors associated with these actions are rare. The majority of studies about the impacts of population density on environmental sustainability have placed emphasis on a particular form of consumption choice, i.e. energy use, or multiple cities in a particular country.

#### **About this study**

My recent research addressed the structural differences between metropolitan areas across countries and adopted a broader view of sustainable consumption encompassing the use of other forms of resources (i.e. not only energy). The study examined the key factors that account for the variations in sustainable behaviours across 24 selected Organisation for Economic Co-operation and Development (OECD) cities or metropolitan areas, using data openly available from the International Social Survey Programme (ISSP Research Group, 2012). The ISSP Environment Module included a number of close-ended questions on environmental concern, attitude and behaviour. Using statistical techniques, I analysed how self-reported frequency of making efforts to adopt a sustainable lifestyle varies across the 24 OECD cities or metropolitan areas. The analysis focused on attributes of urban environments and controlled for confounding factors that might account for these variations, such as income, environmental concern, GDP, and air quality.

Results showed that everyday sustainability practices are a function of personal factors, i.e. the socio-economic traits of the individuals and their level of environmental concern. However the effects of contextual factors, i.e. urban form, remain unclear.

Contrary to what might be expected, my research findings offer little evidence for the view that residents in compact cities tend to adopt low-energy ways of living e.g. driving less or reducing fuel consumption, for environmental reasons. However, some of the spatial attributes of the cities investigated were statistically related to sustainable lifestyles.

#### **Metropolitan Population Size**

The population size of metropolitan areas had modest positive impacts on the tendency to drive

less. This is probably because a larger number of commuters can significantly reduce the marginal costs of public transport and make it cheaper to use, thus encouraging car owners to switch to the more sustainable commuting option. Higher population densities also increased the frequency of practicing other forms of sustainable consumption, such as recycling waste and buying green products. Similarly, this could be attributed to economies of scale: more options for sustainable consumption are available in densely populated areas, as the marginal costs of setting up sustainable infrastructure or business, such as recycling facilities and selling organic food in supermarkets, are likely to be lower. Such opportunities may be more limited in smaller towns with fewer people. Therefore, a possible role of the compact urban form is to give residents greater access to sustainable consumption options that would otherwise come at higher costs or require greater efforts to reach.

### **Greenspaces**

My study found a statistically significant positive association between sustainable practices and per capita area of green spaces, but causality remains unclear. Individuals and households who have already adopted a sustainable lifestyle may choose to live in a place with better environmental quality, such as having more green spaces in the city and closer proximity to natural areas. Yet, the quality of the living environment can also influence lifestyle choice; a generous supply of green spaces can potentially strengthen the motivation of people to appreciate the idea of environmental sustainability by offering a sense of nature and enhancing life satisfaction (Lo & Jim 2010). The possible causal linkage between the availability of green space and the choice of sustainable lifestyles requires further evidence to validate this interpretation.

### **Future research**

The findings give direction for future research. Whilst my study does not suggest that household consumption of energy is related to urban form (Holden and Norland, 2005), other authors have offered such evidence. Holden and Norland's (2005) research is based on actual energy consumption reported by respondents, rather than stated frequency of reducing energy use. Energy bills provide a measure of the outcome of households' consumption practices during a particular period of time, regardless of their attitude or preference toward environmental sustainability, and are therefore a passive indicator of sustainable behaviour. In contrast, the present study makes use of an active indicator that assumes a conscious attempt, i.e. a pair of survey questions that probed the frequency of saving energy *for environmental reasons*. Although the environmental outcomes of the households' consumption decision do not depend on their intention, the different observations seem to suggest that the compact urban form has a passive effect driven by physical-structural conditions, rather than an active one driven by awareness. Questions then arise as to how much consideration should be given to the public's explicit support to the intrinsic sustainability arguments for increasing the city's compactness, if all that matters is the outcomes.

Moreover, the observation that green space and sustainable consumption are inter-related reinforces the tension between increasing densities and greening within the built-up area. Within the city, high-density developments often result in fewer green spaces (Lin and Yang, 2006; Jim, 2004; Jabareen, 2006), although it depends on how density is defined (Anderson et al., 1996). Fewer green spaces, as the present study has shown, are associated with lower tendencies for adopting a sustainable lifestyle. However, this contradicts another observation that these tendencies increase with population density. This leaves open the question as to how increasing densities and greening

come into play, given that both of these two factors positively contribute to a more sustainable lifestyle. The tension may be over-stated to the extent in which high density is defined in terms of the concentration of people within the developed districts of the city (provided that ample open spaces exist between districts) (Anderson et al., 1996). Nonetheless the concentration factor did not indicate significance in the regression models presented in the last section, leaving the alternative explanation unsupported. It is then worthwhile to explore another aspect of the compact urban form, i.e. the concentration of green spaces at the peripheries of developed districts, which might help us understand how sustainable lifestyle relates to high population densities and adequate supply of green space.

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Alex Lo is Assistant Professor at University of Hong Kong. He is a political economist and human geographer specializing in public perception and political economy of climate change and sustainability. He received a PhD from Australian National University in 2011 and was Lecturer at Griffith University in Australia during 2011-15. In 2014, he was selected a World Social Science Fellow by the International Social Science Council. He is the lead author of over 40 peer-reviewed journal articles.

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PART X.

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**ALTERNATIVE ECONOMIES**

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## CHAPTER 58.

### AGAINST NEOLIBERAL CAPITALISM: POST-POLITICAL URBAN CONFIGURATIONS IN POST-HAIYAN TACLOBAN (PHILIPPINES)

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In a seaside community known to locals as the ‘reclamation area’, Pablo\* gathers a scrap metal roof which was blown away from other houses during the height of typhoon Haiyan. He told me that he would need this to repair his roof which was destroyed by the Typhoon. Rubble greeted us as we searched for other materials which would come in handy. Some of the homes have been vacated, out of fear for the treacherous sea that destroyed hundreds of makeshift homes and claimed thousands of lives in Tacloban, Leyte, Philippines, and other neighbouring towns. When he was asked what he felt about the ‘no-build zone’, Pablo replied that he didn’t want to leave the area. Living in a relocation area would mean additional costs for transportation which he could not afford to bear as he was earning below the minimum as a part-time porter in the city. “*We have survived other typhoons, there’s no reason to believe that we won’t survive this one,*” he quipped. Across the bay from where we stood, I saw the building of McDonalds. Up close, the windows and the doors have been sealed off by wooden planks, the building damaged first by the rampaging storm surge; second, by desperate survivors scavenging the building for whatever food items or materials that could help them cope in the aftermath of Haiyan. Ten months later, a newly renovated McDonald’s opened its doors to a throng of customers excited to have a taste of its products. Why are business establishments allowed to construct within this 40 meter ‘no build zone’, whereas poor residents living along these same zones are barred from renovating their homes? This is a complex question that cannot be answered in a short essay, but I argue that the ‘post-political’ way of addressing the root causes of this disaster contributes to the glossing over of fundamental inequities that contributed to the disaster in the first place.

Haiyan made landfall on a geographical landscape that has been marked by extreme poverty and political exclusion. Rural underdevelopment in Eastern Visayas, Philippines, where Tacloban is located, is marked by landlessness and high tenancy rates that have become major drivers of internal migration into the major coastal cities in the region such as Tacloban. These migrants jostle for space within the pockets of informal settlements near coastal zones due to the lack of state-sponsored mass housing projects. Demographic concentration over narrow pieces of land along the coastline is a recipe for disaster. Most of the casualties were residents of these informal settlements in coastal communities, swallowed by rampaging storm surge. The catastrophic consequences of an exclusionary political economy in the face of a natural hazard event have been

well documented within the social science literature of disasters (cf. Wisner, Blaikie, Cannon, & Davis, 2003) and this has been further validated in the case of Tacloban.

However, instead of addressing these structures that produce exclusions, the urban reconstruction policies in the face of geophysical hazards such as Haiyan are rendered in a *post-political* manner. Post-politics is a condition wherein consensus is the basis of government and adversarial and ideological struggles are marginalized (Swyngedouw, 2010). Furthermore, the post-political condition is centered on the inevitability of neoliberal capitalism as a socio-political configuration for capital accumulation (Swyngedouw, 2009). Post-political forms of intervention displace antagonisms away from the internal contradictions of the social system and externalize the *Other* as the enemy (in this case, storm surge as the enemy). Any problem that besets a social system can be addressed with the tools of the system itself. In order to address problems such as those related to environmental risks, a post-political response rejects questions of access to power and resources; instead, it promotes the application of techno-managerial planning and the mobilization of expert knowledge in order to address these problems.

In the case of Tacloban, a post-political response has been evident in tapping expert-based knowledge as the source of ideas related to the rehabilitation of urban spaces and the marginalization of the voices of community-based organizations in drafting policies related to rehabilitation. Technologies that inscribe expert knowledge are seen in the use of science-based models especially GIS systems in identifying at-risk areas prone to devastating storm surges as well as the mobilization of DRR expert knowledge in the post-disaster phase. While the merits of this technology is acknowledged, sole reliance on technological intervention raises concerns about ignoring the fundamental discrepancies of political power and economic capacities which have placed informal settlers in risk-prone areas. The homogenization of the “people” against the threat of the “storm surge” has likewise glossed over the complicity of concentrated wealth accumulation in the hands of the elite in perpetuating conditions of poverty. For example, some private sector partners in the rehabilitation projects in post-Haiyan Visayas are involved in activities that have severe environmental impacts such as mining, land reclamations and coal power plant expansion in the Philippines.

Technological interventions and expert knowledge, by themselves cannot address the gross inequalities that led to the effects of Haiyan. Yet it is precisely their technical character, devoid of the political that has enabled them to be wielded by those who have controlled the rehabilitation process. What needs to be done is to re-politicize the rehabilitation process in order to unmask the class bias of the rehabilitation process in Tacloban. A truly political act would recognize that alternative imaginaries for Tacloban need to be produced, one that is not limited to economic imperatives and techno-managerial fixes. We also need to stress that the production of these alternatives will not necessarily be grounded in conflict, difference, and struggles since they transcend what is allowable under the current parameters of neoliberalism (Swyngedouw, 2010). We can start by reclaiming the discursive and material spaces that will enable the voiceless to be heard, and for the invisible, to be seen.

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## CHAPTER 59.

# POST-SOCIALIST CITIES BETWEEN SUBURBANISATION AND REURBANISATION

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ADAM RADZIMSKI, GRAN SASSO SCIENCE INSTITUTE, ITALY, AND ADAM MICKIEWICZ UNIVERSITY, POLAND

If one had to choose just one keyword to synthetically characterise the complex reality of urban development in the 20th and early 21st century, one should probably choose the word 'suburbanisation'. Depending on historical and local conditions, cities have been extending their built-up structures at different pace and in different forms, yet the growth of suburbs appears to be a process that has been taking place in practically every place of the world. Regarding suburbanisation, the opinions from the ecological, social and economical point of view are pretty much divided. Yet particularly one form of suburbanisation has been particularly often criticised from the sustainability point of view. This form is characterised by a scattered, low-density, and often unplanned development pattern, and it is usually called urban sprawl.

It is generally agreed that sprawl was born in the USA with the advent of mass motorisation and low cost mortgage loans. Western Europe and other economically developed countries of the world soon followed suit. However, as it is sometimes argued, in some cases due to more planning restrictions the urban expansion patterns were somewhat less 'sprawling', i.e. more compact and more high-density. To some countries urban sprawl arrived with a delay. This is particularly the case of the states of the former socialist block, where the settlement structures were prevented from sprawling by rules that favoured compact and high-density prefabricated housing estates over single-family homes suburbs. And of course, the low level of economic prosperity as well as the lack of 'sprawl-friendly' things like automobiles and mortgages also played a role.

After 1989 the post-socialist countries have begun to 'mimic' the western world in many ways. Living in a suburban house, which seemingly combined all the benefits of urban and countryside life came to be seen as the ideal of the new aspiring middle classes. National planning systems, which have now switched the priorities after years of supremacy of the public interest over the private one, tended to favour this pattern. On the other hand, urban regeneration was hampered by unresolved restitution claims, complicated monument preservation requirements, and lack of financial support from the public hand (with some notable exceptions, including in particular cities in eastern Germany).

Until recently, the dominance of suburbanisation as the main process shaping urban structures in the post-socialist context seemed to be undisputed. The perceptions of this phenomenon generally

varied from affirmation that sees even the most sprawling forms of suburbs as a 'natural' city expansion, to sceptical acceptance that seems suburbanisation as not perfect but unavoidable. Voices of those who argued that actually the post-socialist cities had a high potential of developable land within the built-up structures, were relatively isolated.

Non-sprawling forms of urban growth in post-socialist context emerge with some difficulty. In some cases changes are facilitated by the reversal of demographic processes that have switched from positive growth to shrinkage. Under such circumstances qualitative developments oriented towards certain market niches takes over traditional quantitative growth oriented approach. A notable example is the city of Leipzig, where the number of people moving to the city exceeded the number of those moving to the suburbs. Some unconventional methods were employed, including the construction of new single-family housing on vacant brownfield plots – a measure that raised some controversy, but apparently succeeded in attracting certain population groups.

Notwithstanding the prevalence of suburbanisation processes, reurbanisation has recently become a new keyword to describe the reality of post-socialist urban development. This should not be understood as a massive back-to-the city movement. Rather, it is a sign of multiformity substituting uniformity. It could be said that after the transition the uniform way of socialist urbanism was substituted by a different, but also uniform way of suburban growth. Nowadays, with the advent of differentiating housing preferences, the forces of urbanism do not act only in the centrifugal direction. And apart from that, also certain policies tend to support urban regeneration and in-fill development.

Among them, one should mention particularly the policies of the European Union aimed at supporting urban sustainability. A number of former socialist countries have meanwhile become the member states of the EU. On the one hand, issues related to spatial planning are not a part of the European legislation *sensu stricto*. On the other, the EU does not only act through direct regulations, but also by recommendations, which are not legally binding, but should be taken into consideration. And, what is also important, the EU grants support funds, and sets the rules of applying for them. In that way, the fact that local authorities were required to elaborate local concepts of urban regeneration helped to move beyond the perspective of urban extension planning.

There is also a range of factors that will tend to prohibit reurbanising tendencies. One of them is the speculation of land. High value plots in central locations offer good possibilities for speculators. However, also a practice that can be called 'land freezing' might occur. A speculator buys a plot of land in a prosperity period, and then not being able to develop or sell it before the advent of the recession, he 'freezes' it for a number of years in the expectation of a good opportunity. Such a practice seems to be not so uncommon, especially that in most cases the public authorities do not dispose over mechanisms that would stimulate speculators to bring their plots to the market. One of such mechanisms that has been often discussed but rarely implemented, is a special levy on land, which has a high potential rent, but is not effectively used.

To sum up, reurbanisation processes in the post-socialist context are in their beginnings, and what form and extent they will take in the future will depend upon a number of factors. In my opinion, policies will play a significant role in this context. Wherever cities experience demographic or economic growth, they tend to expand their built-up structures. However, to what extent urban growth will result in the emergence of sprawling landscapes, and to what extent it would be

accommodated in the framework of in-fill developments and compact urban extensions, depends also upon political decisions.

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## CHAPTER 60.

### PUBLIC-PRIVATE PARTNERSHIPS AND THE NEW SQUATTERS OF CAPITAL

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CHRISTOPHER JOHN “CJ” CHANCO, UNIVERSITY OF THE PHILIPPINES-DILIMAN, PHILLIPINES

An understanding of the processes driving urban land conflicts in the Philippines requires us to look at the connections between the historical neoliberalisation of the country and new mechanisms of extracting value from the city. Regimes of dispossession as they occur across different contexts are bound together by broadly similar processes, i.e. the crises of capitalism and profit motives of the capitalist class; although it would be wrong to suggest that neoliberalisation is a monolithic affair conducted through the same institutions at the local level, with identical results. Neil Brenner speaks of the “path dependency” of the neoliberal project, which takes different forms according to the historical, socio-political, and cultural contexts of the countries where neoliberalisation takes place.

Neoliberal gentrification and revanchism in Philippine cities extend back to the Martial Law era, most notably with Imelda Marcos’ urban beautification drives attempting to turn Manila into the “City of Man”. But competing narratives of progress, the desire to attract foreign investment and tourism, and mass evictions and displacements of the poor in many ways still resonate in the developmental priorities of the state under the guise of modernisation. The only difference is that these same processes today involve an even wider, globalised web of state institutions, foreign investors and their local counterparts – a transnational capitalist class I christen the new ‘squatters of capital’ – in mutually beneficial regimes of accumulation, rooted in globalised flows of speculative and extractive capital.

Capital’s squatters reside in public-private partnerships (PPPs) that are the latest modality for ABD, as they sequester wealth via these new modes of accumulation in partnership with the state. Running the gamut from build-operate-and-transfer (BOT) to build-transfer-and-operate (BTO) schemes, PPPs grant certain rights to corporations that extend throughout the duration of a PPP contract, usually a period spanning decades, after which these projects are either to be returned to the state or are managed in perpetuity by the private sector under a set arrangement.

PPPs are just one among a number of neoliberal technologies of power enlisted to fulfil the classic functions of the capitalist state as it balances between the interests of capital and securing legitimacy for itself. Put simply, placing public before private in the language of partnerships goes down easier with the electorate than straightforward privatisation. Meanwhile financial deregulation and the deterritorialisation of capital have fed the rise of the “contract state”, which

arbitrates value in the built environment, attempts desperately to capture the interest of footloose investors, and negotiates the social terrain to ensure the least possible barriers to big business.

PPP investments in the Philippines peaked in the mid-1990s, declined in the aftermath of the Asian Financial Crisis, but have made a recent come-back with the Aquino administration championing PPPs as its flagship development initiative. Previously limited to infrastructure projects, water and the energy sectors, PPPs are now expanding into healthcare, information technology, mass transit, public housing, even the construction and operation of prisons[1].

Yet infrastructure still accounts for a significant share of PPP projects, partly to make up for years of 'woeful' public spending on the sector – in a telling illustration of capital's need for speed in the transit of labour and commodities. A battery of new airport terminals, expressway toll way systems, roads, and transit lines are assumed to raise real estate prices, entice tourists, and assure investors of the country's status as a new Asian tiger ripe for the picking, and are spurring significant transformations of the built urban environment, against which the urban poor are perceived to be literally squatting in the way of progress.

In his explorations of the post-political city, Erik Swyngedouw reflects on the entrepreneurial nature of the built environment of the city, which has increasingly come to depend on flows of fictitious or speculative capital. The living conditions of informal and precarious labour, by contrast, have been steadily undermined. Couched in the language of competitiveness and efficiency these costs are touted as the inevitable price of modernisation and *the new* in the global city. But PPPs are variations on an old theme, inasmuch as popular democratic forms of accountability in the Philippines have always been limited, and a parasitic privatised state has actively underwritten capitalist accumulation by a narrow subset of political cliques and rent-seeking capital.

In contrast to the rhetoric around promoting competition, PPP projects are concentrated in a small number of elite. Five business conglomerates shouldered 51.3% of the total cost of PPP deals in infrastructure alone between 1984 and 2012 that were collectively worth close to USD 60 billion. These have included old players like San Miguel Corporation, Aboitiz, and Ayala Corporation – owned by politically well-connected clans with landholdings inherited from the Spanish colonial era – as well as the *nouveau riche*, like Metro Pacific Investment Corporation, a joint venture between stock market tycoon Manuel V. Pangilinan and Indonesia's Salim group, and Megawide Construction, owned by mall tycoon Henry Sy.

Traditional forms of political power in the Philippines, including the landed oligarchy and corporate monopolies, are thus *reinforced* and simply adapt to emerging neoliberal trends. Local landed elites are transitioning from their traditional bastions in the sugar or tobacco industries toward more corporatized models of business and speculative real estate, responding to the state's generous incentives and open calls for the privatisation of public space.

Neoliberal forms of urban policy and redevelopment are the default developmental framework of the Philippine government, fuelled in part by the historical momentum of the fall of the Marcos regime, and the associated inefficiencies of a stigmatised government bureaucracy and public sector. The Asian financial crisis made subsequent governments even more responsive to neoliberalisation, and the private sector has since been elevated to the status of *imprimatur* of development. While historical underdevelopment of the country's manufacturing and agricultural



sectors persist, local elites have come to depend even more on state support for their speculative investments.

These 'squatters of capital' have impacted significantly on the politics and production of urban space. PPPs have ushered in fresh waves of urban dislocation and structural violence in their wake, driving evictions while overseeing housing projects for the displaced.

What results is a spiral of structural violence, limited only by the extent to which the urban poor are able to mobilise and carve space for themselves against ongoing threats of eviction and marginalisation. For not all is a one-way street. Capital is constantly made to modify its strategies toward the subaltern according to a variety of geographic and political considerations. Implicit in this is the potential for subaltern sites to turn into sites of resistance to the predations of capital, offering hope that the urban commons can be reclaimed.

I conclude that there is a need for more attention to dispossession at the urban scale, and to the dynamics between urban and rural dispossession that has provided ready fodder for capitalist dispossession. Such themes could form the basis for powerful urban ethnographies, counter-mapping and counter-histories by the urban poor. Indeed such attempts are already underway through joint efforts by academics and urban poor solidarity groups like the Urban Poor Resource Center of the Philippines (UPRC)[2]. A better grasp of urban dispossession can, in addition, aid social movements in the mobilisation of the informal sector as a terrain for political action in the city. The challenge is to empower communities on the ground –sustaining resistance and connecting varied sites of struggle across geographic borders.

By analysing and contesting the violence of dispossession, dominant discourses of fear and othering can be replaced by narratives of resistance and hope.

### **Author notes**

This article is an extract from a longer unpublished work, *Squatters of Capital: Regimes of Dispossession and the production of subaltern sites in urban land conflicts in the Philippines*.

[1]A variety of private contractors are involved in the construction and maintenance of a Php 40.29 billion (USD 895.33 million) prison facility in Fort Magsaysay, Nueva Ecija, in coordination with the Department of Justice. Information on the latest projects are available at the PPP Center website: <http://ppp.gov.ph>

[2]Two such counter-history exercises were organised by UPRC in 2014, through conferences focussing on the history of Sitio San Roque, with insights provided by generations of urban poor community leaders, activists, and recent migrants [For more information about UPRC, please see <http://uprcp.wordpress.com/>]. I owe a debt of gratitude to the organisers of these seminars, as well as to Kristian Saguin and Andre Ortega of the University of the Philippines-Diliman, and Chester Arcilla of the University of the Philippines-Manila, all three of whom have focussed intensively on issues surrounding land dispossession and the urban poor.

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## CHAPTER 61.

# SOCIAL ENTREPRENEURIAL ECOSYSTEMS AS A MEANS FOR CREATING SUSTAINABLE URBAN DEVELOPMENT

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### **Introduction**

Urbanization, one of the megatrends of the 21st century, has made it increasingly important for cities to find innovative solutions to the problems they face. The creation of a social entrepreneurial ecosystem within a growing city poses one way of strengthening and bundling all social forces, committing them to foster sustainable urban development. Nowadays, two labels exist within this context. In 2010, the possibility of declaring a city a Social Business City came into existence. Additionally, with regards to the UK, a city can also be announced a Social Enterprise City since 2013. Finally, both cases entail the creation of a supportive network of local institutions and entrepreneurs in order to mould a path for social entrepreneurs to succeed in their mission.

### **Social Entrepreneurship and Social Business**

Although much research has been done on the concept of social entrepreneurship, no consensus has been found on an official definition of the term. Nevertheless, many definitions include the aspect of applying entrepreneurial means to solve social problems in an innovative way. Whilst a social entrepreneur is, at times, permitted to retain at least a part of the profits made by a business, a social business entrepreneur is not. Social business, a term developed by Grameen Bank founder Muhammad Yunus, entails that all surpluses generated are reinvested in order to pursue the business' social mission. The professor of economics was awarded the Nobel Peace Prize in 2006 for providing micro-loans to the rural poor in Bangladesh. Yunus can be named a serial social entrepreneur since he founded about more than 50 companies around the world so far. The concept of social business differentiates from social entrepreneurship in two ways: apart from the fact that all surpluses are reinvested in the business in order to pursue their social mission, social business investors only get back the initial amount they invested, even after years:

*“In social business, a dollar is a dollar is a dollar. If you invest a thousand dollars in a social business, you'll get back a thousand dollars – not a penny more” (Yunus, 2010, p. 2)*

## Social Business City

So far, three cities have declared themselves a Social Business City. Wiesbaden in Germany was the first in 2010, followed by Fukuoka (Japan) in 2011 and Pistoia (Italy) in 2012. The idea was developed by Yunus and his partner Reitz who had founded the Grameen Creative Lab, based in Wiesbaden, Germany, in order to spread the idea of social business by for example organizing events all over the world. Wirtz and Volkmann (in press) conducted semi-structured interviews with the representatives of the abovementioned cities in order to discover the processes and dynamics involved in building a Social Business City. For this, there should be support by local institutions, entrepreneurs, and a coordinating organisation responsible for the emergence of a local network. Additionally, a resolution by the municipal council, leading to a treaty signed both by the mayor and Yunus, is required.

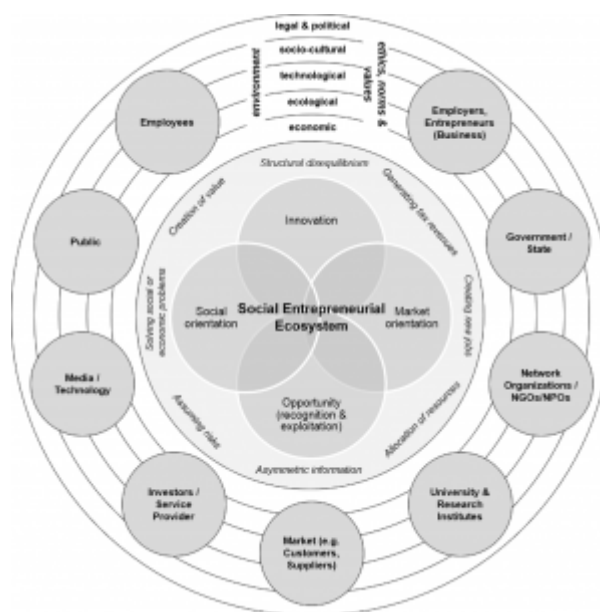
The interviewees expressed that awareness creation of the social business concept is still very important and some social businesses have been founded within these cities.

## Social Enterprise City

Since 2013, two cities, Bristol and Plymouth, have been declared a Social Enterprise City in the UK. The difference with regards to the concept of a Social Business City lies in the fact that the former is initiated by a national body, Social Enterprise UK (Social Enterprise UK, 2015). In order to be acknowledged as a Social Enterprise City, the city has to apply with a detailed time plan where the responsables state their already existing initiatives and activities that will promote the concept in the near future. Finally, Social Enterprise UK decides if a city fulfils the prerequisites.

## Social Entrepreneurial Ecosystem

In conclusion, there are two main concepts which foster sustainable urban development with the help of a social entrepreneurial ecosystem. The concept of a social entrepreneurial ecosystem is displayed with the help of the following figure:



Although, the existing Social Business Cities and Social Enterprise Cities are relatively young,

the idea to create a social entrepreneurial ecosystem seems to pose a fruitful way of tackling the problems that many cities face in the light of increasing urbanization.

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## CHAPTER 62.

### RADIOACTIVITY AND THE CITY - WHAT MIGHT IWAKI IN JAPAN TELL US ABOUT URBAN LIFE UNDER MAJOR ENVIRONMENTAL CHANGE?

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LESLIE MABON, ROBERT GORDON UNIVERSITY, UK

Iwaki is a city of 300,000 people. Two hours by high-speed train from Tokyo, it has a strong industrial heritage based around coal, car manufacture and chemicals production. It also has a reputation for quality marine and agricultural produce, and a tourist sector emerging to offset the decline of mining. This would make an interesting sustainable urbanisation study in its own right, but Iwaki's urban core also happens to be less than 50 kilometres south of the Fukushima Dai'ichi nuclear power plant.

*'You may think the experience in Fukushima is unusual. Yes, the accident itself was unusual, but the consequent social issues that torment the people in Fukushima are something common to the people suffering from disasters, wars, incidents and disputes'*

So reads the header on a poster in the Fukushima Future Center for Regional Revitalization, a concrete-and-linoleum building standing atop a hill overlooking Fukushima University. Indeed, post-disaster life in Iwaki – the largest city in Fukushima Prefecture – indicates how a large-scale, rapid and potentially irreversible environmental change can affect urban spaces.

First, though, a reminder of what happened four years ago. A magnitude 9.0 earthquake struck off the coast of north-east Japan on 11 March 2011, triggering a tsunami reaching up to forty metres in height and stretching up to ten kilometres inland. More than 15,000 people were killed and over 2,000 remain missing. Iwaki suffered notable damage from the earthquake and tsunami, particularly in coastal areas, with the immediate loss of 293 lives. The earthquake and tsunami also took out the cooling systems for the Fukushima Dai'ichi nuclear power plant, which triggered hydrogen explosions and large releases of radioactive material over land and sea that led to the evacuation of around 120,000 people from their homes in Fukushima Prefecture.



*Radioactivity meter in Iwaki City. Photograph taken by author.*

Although no compulsory evacuation orders were issued in Iwaki and decontamination has proceeded alongside post-tsunami and earthquake reconstruction, effects of the nuclear disaster continue to permeate everyday life. ‘Normal plus alpha’ is how someone explained daily living in the urban parts of Fukushima to me, which seems very apt. For ‘normal life’ in Iwaki is punctuated with reminders of the small but nonetheless present quantities of radioactive matter that remain scattered over the built environment. Digital meters at roadsides and in public spaces display current atmospheric counts. Newspapers and TV bulletins report daily radiation levels. Some supermarkets and eateries provide signs assuring customers that produce has been screened, others display boards demonstrating radiation monitoring processes, and others plant QR codes on produce to direct consumers to more detailed screening information.



*Notice in department store deli counter – ‘all produce in this store has been screened for radioactivity to ensure its safety’. Photograph taken by author.*

Radioactivity levels within Iwaki are comparatively low, but it is also true that it is hard to measure an individual’s precise level of exposure to radiation. Interviewed civil servants and academics acknowledged the limitations of monitoring efforts. For instance, fixed point monitoring posts do not take into account the exposure a human may receive as they move around the environment, and decontamination conducted in towns and cities does not so thoroughly extend to the forested and mountainous areas that urban dwellers may visit for recreation. Daily life in Fukushima – even in spaces like urban Iwaki – continues against a backdrop of uncertainty and indeterminacy (Morris-Suzuki (2014) discusses this in depth). Global climatic change or pollution from emerging

industries may likewise lead to conditions of uncertain environmental effects within urban spaces. In this regard, the situation in Iwaki – whilst clearly extreme in origins and nature – may give insight into challenges for ‘sustainable urban life’ in a context of environmental risk and uncertainty. Do we need to pay attention to factors in the environment that previously went unmarked? What to monitor, and how to monitor it? How to acknowledge – and live with – environmental uncertainty?

There are also wider socio-cultural dimensions to large-scale, sudden and long-term environmental change. Iwaki was not evacuated after the nuclear accident, but towns and villages to the north were. Many remain unable to return home due to high contamination levels, a situation likely to continue into the future. As one of the nearest adjoining settlements, Iwaki took a large proportion of evacuated people and prefabricated temporary housing sprang up around the city’s urban fringes to provide accommodation. Add to this an influx of workers employed in the cleanup efforts at the plant and its environs, and the result is a population increase of 20,000 in Iwaki post-disaster. Such demographic change affects social dynamics. In late 2014, Reuters ran a piece on perceived tensions between pre-disaster residents and resettled citizens over perceived differences in compensation payments (Saito & Slodkowski, 2014).



*Pacific saury landed in Iwaki – back on sale post-disaster.  
Photograph taken by author.*

The disaster has also touched a key source of pride for Iwaki – fisheries (Mabon & Kawabe, in press). Concerns over contamination mean coastal fishing in Iwaki is currently limited to a ‘trial’ basis, with produce released for sale if radioactivity monitoring and screening is satisfactory. Aside from economic impacts, members of Iwaki’s fishing communities spoke of a desire to get back out fishing, and lamented the reduction in opportunities for interaction with each other and with the community that fishing affords. As environmental change and energy crises take hold, it may well be that urban spaces have to accommodate displaced people, or that previously meaningful practices are no longer viable. The current situation in Iwaki may thus give an indication of the changes that urban spaces face as they come under social and environmental pressure.

It is important not to downplay or ‘normalise’ the Fukushima Dai’ichi nuclear disaster, and to remember that the heterogeneity of levels of contamination – and thus experiences of post-accident life – vary greatly. This makes drawing generalisations difficult. Yet at the same time, it may also be true that living with uncertainty, demographic change and effects on the practices that matter to us is something that will affect urban spaces as the global climate changes and energy



consumption patterns shift. Looking to the governance of urban spaces like Iwaki now may help to be better prepared for the wider issues for sustainable urban life that lie ahead.

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## Author Biography



Leslie Mabon is a Lecturer in Sociology at Robert Gordon University in Aberdeen, Scotland, United Kingdom. His research focuses on less ethically clear-cut aspects of energy and environmental governance, with a particular interest in the social dimensions of risk and uncertainty in marine and coastal environments. The material on which this post is based is part of a larger project Leslie is currently involved in on fisheries and marine radioactivity in Japan after the Fukushima disaster, and he is also currently continuing research in his native north-east Scotland on the future of the North Sea in response to energy and climate change challenges. Leslie holds a PhD in Geography.

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## CHAPTER 63.

# BUILDING CONSENSUS FOR ANOTHER POSSIBLE ECONOMY AT MUNICIPAL LEVEL

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MARK BURTON, STEADY STATE MANCHESTER, UK

### Introduction

There is widespread recognition that we (people and planet) are in a dreadful mess, economically, socially and ecologically. These interlinked crises affect us all in various ways, whether in urban or rural settings, in rich countries like the UK or at the other end of our supply chains and of our global pollution, and they are also a major risk for those yet to be born. Yet despite many good analyses of the problem, exciting local initiatives and good policy proposals, there is still a lack of a convincing narrative and strategy that links all this together in a way that can help crystallise the kind of coalition for economic, social and ecological justice we so badly need.

### Steady State Manchester

The Manchester collective, “Steady State Manchester” has been working for the last three years on the idea of a post-growth economy. This proceeds from the understanding that aggregate growth of the economy is deeply problematic, ecologically, socially and indeed, in its own terms, economically (e.g. O’Neil, Deitz and Jones, 2010). We have focussed on its implications at the municipal and regional levels, emphasising re-localisation (in the context of “globalisation gone mad”), redistribution and equality, the money-debt-credit-investment system, and how to assess the well-being of the community without reliance on the crude economic measures of GDP and GVA growth.



As well as exploring and articulating what a post-growth economy and society would mean in a municipal and regional context (our distinctive focus), our project aims to build support for its proposals. We aim to make this approach, which aligns ecological, social and economic well-being, a part of everyday understanding – a new common sense in our region.

Our context is challenging because our municipal and regional leaders subscribe to the economic growth orthodoxy, linked to a version of ‘trickle-down theory, whereby it is argued that growing the economy, largely by attracting external capital investment via prestige projects, will increase incomes and bring social benefit for all, including the disadvantaged sections of the community.

This view is linked to the model of competition in a global economy, to promotion of the city (“civic boosterism” or more recently “agglomeration boosterism”, Haughton, Deas, & Hincks, 2014). To the extent that it pays attention to ecological problems it does so via what has been termed “ecological modernisation”, where the primary argument becomes that of building a green economy in order to further create growth (Asafu-Adjaye, 2015; Deloitte, 2008): again, it is an economic rationality that dominates (Burton, 2013). Despite this there is an undercurrent of dissatisfaction, since people know that the model is flawed, that it does not deliver genuine prosperity, but instead increases inequality and has a high ecological cost.

As a small collective of five people, we have to work via other organisations, groups and people to have the maximum effect (leverage). That involves appealing to people’s values (e.g. for social justice), colonising dominant discourse (e.g. an emerging discourse about good vs. bad growth (Henderson & Capra, 2009) while taking care that the message is not diluted or co-opted (Steady State Manchester, 2013). We are building up a core of people who can articulate Steady State and Degrowth thinking, and working closely with influential groups and organisations. Through our series of reports, commentaries, blog posts, meetings, workshops and discussions we use research evidence to establish the validity of the approach, while recognising that ultimately this is not a battle that will be won by having ‘the best ideas and facts’. Drawing on community psychology (Kagan, Burton, Duckett, Lawthom & Siddiquee, 2011) and other praxis, we create temporary settings to explore ideas, maximising the ‘edge’ (Kagan, 2007) between disparate sectors to generate new thinking and cooperation. We are thereby trying to build support for a counter-hegemonic model across sectors. In so doing we have an influence beyond our small size, beginning to frame disparate understandings within a shared alternative framework (our Viable Economy).

We have had some successes, being taken seriously by local green groups, anti-poverty campaigners, as well as some academics, policy professionals and local politicians with whom we are in dialogue. Some of our proposals have been adopted despite official rejection of our core message that continued growth of the economy is neither possible nor desirable.

### **Problems we face**

Whatever our modest successes, we face an uphill struggle. Policy, politics and discourse are ‘locked in’ to the orthodox model, meaning that arguing for an alternative can still be met with incomprehension and horror. We are a small group fighting a hegemonic ideology that is broadly consistent across much of the political spectrum, fusing neoliberal economic rationalism with ecological ignorance in a highly plausible way, supported by the phantom abundance of global capitalism, the erosion of culture and the manufacture of insecure identity. So ideas get de-contextualised, distorted and then used to legitimate orthodox policy. This infects even supposedly, or once counter-hegemonic political movements. So in the the North, political parties (such as the UK Labour Party, the French Parti Socialiste, the Spanish PSOE, or Greek PASOK), whose original mission concerned economic justice, have mostly end up offering ‘austerity lite’ and the use of market mechanisms for pressing tasks like climate change mitigation (Lohmann, 2009). Meanwhile, in the South,



reforming parties are wedded to an economic and social strategy based on extractivism (Gudynas, 2011, 2012): a form of dependence within the global accumulation regime.

Nevertheless, we live in times of crisis, when, to paraphrase Gramsci, the old order is dying but the alternative is struggling to emerge. Activist scholars need to work with the opportunities and threats inherent in that context.

## Conclusion

Our work assumes that, despite globalisation, it is possible to intervene in local economies at municipal and regional levels, promoting a practical vision of economic, social and ecological viability, what we call the Viable Economy (Burton, 2014; Steady State Manchester, 2014). However, while it is possible to build alliances and influence thinking and practice, the dominant system is designed to resist these challenges in multiple ways, so it is essential that the relevant movements join together, learning from and supporting each other in the struggle for a better world, and for human survival itself.

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## CHAPTER 64.

# THE IMPACT OF THE LABOR MOVEMENT AND SOCIAL TRANSITIONS AT THE URBAN LEVEL

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The climate crisis represents a grave threat to natural systems and human livelihood, and a unique political opportunity to remake the world drawing on the principles of social justice and sustainability. As the years tick away without binding global agreements on greenhouse gas emissions, and with many of the most significant national economies continuing to increase their emissions growth, scholarly attention has shifted to the scale of urbanisation. And rightly so—various estimates put the percentage of carbon emissions generated in cities at anywhere between 50% and 80% of the world total (Fitzgerald 2010; McBride and Shields 2014).

Buildings, in their construction, operation, and demolition, use an estimated 30-40% of all energy worldwide (Renner et. al. 2008). Transportation, for its part, accounts for roughly 1/4 of total greenhouse emissions (Renner et. al. 2008, 19). McBride and Shields (2014) and Renner et. al. (2008) help us identify the urban pillars of a low-carbon economy: renewable energy, green building, and clean transportation. Abundant opportunities for reduced emissions are present at the urban level. Building retrofitting for reduced energy use, green construction, mass transit infrastructure, zoning and land use planning, and local economic development policy are among the most significant.

These are tall orders, but as Mike Davis has observed, the cities we will all need to weather the climate crisis are in many ways the cities that urban social movements have long struggled towards for reasons of social justice. As Davis (2010, 42) puts it, “*there is a consistent affinity between social and environmental justice— between the communal ethos and a greener urbanism.*” Low carbon cities will be denser, more compact and walkable, with greater public amenities and less pollution. The hidden “ecological genius” of the city, Davis insists, depends on pursuing public affluence over private wealth, on integration, on equality, on leisure over consumption.

Organized labor has increasingly placed its political strength on the side of climate justice. This shift in labor movement priorities comes in part out of recognition within the labor movement of the severity of the climate crisis and in part out of a growing recognition of the need for the labor movement to reboot. As Barry (2013, 228) puts it, “*the emergence of a green trade unionism [...] represents the opportunity for the repoliticization, re-radicalization and revitalization of the trade union movement*”.

International labor's position has coalesced, with some dissent, around ideas of a Keynesian "Green New Deal," and a "just transition" (Murillo, 2013). A just transition implies labor's participation in climate negotiations, and the provision of "high road" stable employment at a living wage, as well job re-training and income support for those workers whose livelihoods are threatened by the transition to a low-carbon economy (Felli, 2014). In the U.S., this Green Keynesianism is represented by unions centered around the Blue-Green Alliance, which includes the United Steelworkers, Service Employees International Union, the United Auto Workers, and the Amalgamated Transit Union, among others. But other sectors of the U.S. labor movement have been more ambivalent, or even outright opposed to action on climate change, with unions in mining, building trades, and utilities in particular pursuing a job-conscious political line that obstructs climate action that would threaten employment in those industries.

As labor orients itself in response to the climate challenge, there are at the same time increasingly influential voices within the movement calling for a *scalar* reorientation of the U.S. labor movement: a reorientation of theory, organizing, and resources away from the national scale and towards the scales of the city and the metropolitan region. Its proponents argue that this will enable labor to break out of sectoral silos, build local alliances with community groups, and vie for urban power from the grassroots (Fletcher and Gapasin, 2008). An influential model for this rescaling is described by former South Bay Labor Council head Amy Dean (Dean and Reynolds, 2009). In Los Angeles, for example, the LA County Federation of Labor has intervened forcefully in local political campaigns, backing progressive candidates who in turn contributed to organizing gains among home healthcare workers as well as seaport, airport, and hospitality workers. The city's Clean and Safe Ports Campaign, started 2006, is an inspiring example of green-labor-community coalitions in action. The campaign, brokered by the Los Angeles Alliance for a New Economy (LAANE) drew together 40 labor, community, immigrant, and faith based organizations in coalition with national environmental groups the Natural Resources Defense Council and the Sierra Club (Durrum 2013). The campaigners were determined to put an end to community health hazards linked with "dirty diesel" trucks serving the twin ports of Los Angeles and Long Beach and at the same time to address the exploitation of drivers as independent contractors. The campaign's success in 2008 replaced the truck fleet, reducing diesel emissions by 90%, and redefined drivers as employees, who quickly unionized.

This precedent for an expanded coalition of labor and environmental groups was built on, during the organisation of October's 2014 People's Climate march in New York City, which drew an estimated 400,000 people representing 1500 groups, including 80 unions with 11,000 members marching. The march's organizers explicitly positioned the event as marking a shift in the climate justice movement towards a mass constituency rooted in communities of color and those of working class. The order of the march reflected this emphasis: so-called "Frontline Groups" of indigenous and environmental justice groups led the way, with labor groups (marked in blue) right behind, followed by mainstream green organizations. In many ways, the march responded to the pressing need identified by Victor Wallis to "*identify, gather, and synthesize all the disparate expressions of popular response to the climate crisis*" (2013, 501). A concerted urban focus for the labor movement and the climate justice movement brings with it great opportunities for remaking cities along just and sustainable lines.



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PART XI.

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**DIGITAL FUTURES**

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## TOWARDS KNOWLEDGE CITIES: TURNING REDUNDANT SPACES INTO ESSENTIAL PLACES WITH ICT IN EAST ASIA

CHIH-HUNG CHEN AND LIN-FANG HSU, NATIONAL CHENG KUNG UNIVERSITY, TAIWAN

### What are redundant spaces?

In manufacturing, there are numerous redundant materials left over after the production process and these piecemeal leftovers are usually regarded as waste and are thus disposed. As for urban planning, land can be likened to the raw materials in a manufacturing-like process, and urban planners are acknowledged as the most powerful place designers. After an urban plan is delivered, land is divided into different units, containing various activities; in addition the plots of the plan area will be redivided (Conzen & Conzen, 2004). The organic urban pattern may be substituted by the regularly arranged urban plan. Consequently, many plot fractions are generated, being adjacent to the so-called rationally arranged places (Fig. 1.) (Chen, Hsu & Li, 2013). These fractions are commonly known as fractional lots, usually unused and literally redundant.



Fig. 1. Fractional lots on the map in Tainan City

## Rethinking the value of redundant spaces

In recent years, people have noticed the importance of environmental protection, and have thus began to pay attention to the issue of waste disposal. With a view to managing waste, the revised Waste Framework Directive (2008/98/EC) established the European Waste Hierarchy, consisting of five levels: disposal, recovery, recycle, reuse, and prevention (European Parliament & Council of the European Union, 2008). Land, an indispensable resource, should not be wasted. Nonetheless, this framework is applicable for most redundant materials but difficult for redundant spaces to follow because of their fixedness. The fractional lots, scattered on a street, cannot be gathered and merged into one complete unit for a certain function. Therefore, the management of redundant spaces is distinct from other resources.

There are two approaches to achieving waste reduction, 1) putting fractional lots to good use (Baum, 2012) and 2) eliminating fractional lots, both of which can be supported by the use of Information and Communication Technologies (ICTs).



*Fig. 2. Informal activities in redundant spaces*

## Revitalising redundant spaces with ICT

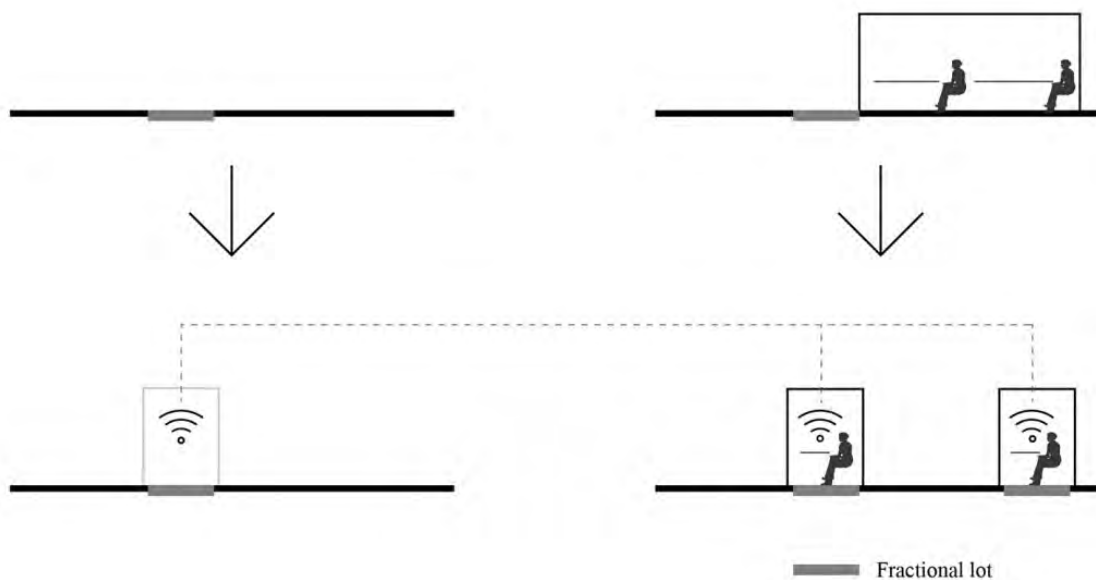
Information and Communications Technologies (ICT) can help to facilitate the reuse and the recycling of 'lost spaces' (Trancik, 1986). Abandoned spaces can be turned into energetic places simply by the installations of the ICT facilities, for example public spaces with Universal Serial Bus (USB) Dead Drops are attractive to the public. Furthermore, recycled fractional lots can be used to accommodate temporary constructions such as interactive installation art (Fig. 2.) and pop-up shops or shophouses (see Fig. 3 below). These places are transformed into Wi-Fi hotspots providing services for people with mobile devices. Such solutions, based on knowledge dynamics, can revitalise lost spaces with relatively low cost (Chen & Lin, 2014). In contrast, there is a more active way to tackle land waste in urban plans. The recombination of plots can radically recover the use of redundant spaces. Fractional lots can be merged with their adjacent lands by planning. The recovery process concerns the redivision of property and thus is time consuming and costly. On the other hand, planners must consider the urban fabric and the division of plots in the planning process for the prevention of generating further fractional lots. Such morphological analyses should be considered critical in urban planning schemes, such as when the economic value of fractional lots is included in the financial plan of a project, redundant spaces are not created so easily (Rydin, 2011).



*Fig. 3. Temporary pop up shops in redundant spaces*

### **The digital evolution of everyday lives**

The reuse and recycling of fractional lots can be delivered swiftly with the help of ICT, which is transforming the way people live and work. In comparison to the past, people in the contemporary world can put their files in the cloud, which can help to save physical spaces for storage, and besides people in different locations can communicate with each other through telephones or web cameras. Therefore, massive building blocks are divided into smaller pieces to contain the activities for a new era. Separately redundant spaces, each of which may be isolated, can be functionally connected by ICT (Fig. 4.) (Frey, 2009), connecting knowledge and social dynamics (Oldenburg, 1999) in intangible ways (Alexander, Ishikawa & Silverstein, 1977; Böhme, 2006; Oswalt, Overmeyer & Misselwitz, 2013). As a result, the agglomeration of digital activities can help to achieve the cluster effect, which is a great contribution to knowledge capital (Delgado, Porter & Stern, 2010).



*Fig. 4. The revitalisation of fractional lots by ICT*

### **East Asia experiences**

In the context above, after the World War II, the economy of most countries in East Asia, such as Taiwan, Korea and Singapore, galloped ahead which resulted in a population explosion and dramatic transformations of infrastructures. Population growth brought about massive residential needs and thus numerous urban plans had been delivered rapidly with relatively low precision.

Without considering local spatial context, those urban plans fragmented the original urban form and consequently fractional lots had been created. Furthermore, the transformation of industry led to the acceleration of urbanisation. Land scarcity became a critical issue and resulted in the development of suburban areas (Sieverts, 2005; Whitehand & Carr, 2001) which may damage the nature environment and increase energy consumption. Based on the above, two approaches identified by this paper are solutions to reduce the impact from the ineffectiveness of current planning system and achieve sustainability. In many East Asia cities, various pop-up restaurants are installed on fractional lots, which can be a remedy for inaccuracy in urban planning. The heterogeneous forms of these places can incubate diverse activities and thus enhance the competitiveness of cities (Jacobs, 1969).

### **Achieving sustainability through knowledge**

Sustainability or, more specifically, the self-balancing of the environment could be broken as natural resources are overused which, in urban areas, may be caused by inefficient land management. Based on the concept, “knowledge cities”, ICT may be the key components to improve the efficiency of urban land use, and further turn these spaces into essential places for social connection. The introduction of ICTs in urban planning can help planners to explore more possibilities of each urban land unit. In light of the incompatibilities between urban development and the natural environment, knowledge dynamics may be the answer to break the current impasse in sustainable development.

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## CHAPTER 66.

### NOW OPEN: THE SMART CITY

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*Image: Wikimedia*

In 1950, the late science fiction author Ray Bradbury published a short story called “*There Will Come Soft Rains*.” It describes an automated house in the post-apocalypse whose appliances continue to perform their functions despite the owners’ absence. These appliances are responsive, automated, programmable, networked — not unlike the connected devices we have come to characterize, in today’s lexicon, as the Internet of Things (IoT), referring to a proposed technological scenario in which everyday objects are connected to the Internet and are able to send and receive data. As an industry that expects to grow to \$7.1 trillion by 2020, IoT is changing the way that we conceptualize the spaces around us at various scales: our bodies, our households, our neighborhoods, even our cities. At the city level, IoT articulates itself most clearly in “smart city” rhetoric, which endorses the use of sensors and data feedback loops to reveal aspects of the city’s performance to key authorities. Imagine individuals not only able to control appliances in the home remotely, but cities likewise able to control utilities, traffic, and energy consumption remotely. At first blush, these capabilities may sound convenient and pragmatic, but they are no less deserving of critique and caution. The most provocative critique about the the first smart city designs — i.e., SongDo, Korea (Cisco); Masdar City, UAE (Siemens); and PlanIT Valley, Portugal (IBM) — could also be made about Bradbury’s futuristic house: they are utopian, generic, and devoid of human life.



But the future doesn't have to be this way. It can be designed with *people* in mind first, not just technology. Unlike the first corporate conceptualizations of smart cities, an emergent 'image of the smart city' is one scaffolded by philosophies of open data, civic engagement, and collaboration.

In 2010 to 2011, a series of major earthquakes destroyed over 1,800 commercial buildings in the central business district of Christchurch, New Zealand. Two years after the initial earthquake, the city began to rebuild. A core part of the new infrastructure would be a "*carpet of sensors...to monitor everything from noise levels to water use in realtime at a granular level*" deployed and managed by the SensingCity initiative. This initiative foregrounds a larger effort for Christchurch to become a living laboratory to better understand how technology such as big data, the internet of everything, low-cost sensors, and pervasive computing can mediate sustainable urban environments. Not only that, SensingCity aims to make all data open and publicly accessible in a "datastore" where it can be used by city officials, citizens, and industry alike. The sensor networks in Christchurch's business district will eventually monitor a slew of environmental factors that impact urban life. For instance, SensingCity is receiving support from another New Zealand-based organization called Callagan Innovation to use its air sensor network toward investigating the health impacts of air pollution. SensingCity is one of the first open data smart cities in the world, dedicated to values of transparency and accountability; supporting social and commercial value for data; and civic engagement with data. It is an initiative involving stakeholders at various levels, from the average citizen to industry partners, regional universities, and government.

Chicago's Array of Things, led by the Urban Center for Computation of Data and Argonne National Laboratory, also endeavors to apply this model. The AoT (a clever play on IoT) project aims to equip city blocks with environmental sensor nodes that can report data back in real time, informing residents and municipal employees about the city's performance. The nodes are going to be plainly visible so passersby are aware of their location and modular so that they can be adjusted as the technology itself evolves. The data itself will be available to the public and accessible through web and mobile portals. To address the issue of privacy and ethics, there is a data privacy committee actively vetting sensor data streams to ensure that any personally identifiable information is protected. The project's conceptualization was not restricted to any one group but involved conversations among municipal government, scientists, residents in Chicago, and members of the Chicago civic hacking community. This inclusive approach to planning the project distinguishes AoT from many other smart city initiatives. People who live in Chicago have a stake in the planning process of the project, and the technology is designed to better serve those people.

The increase in mobile sensing applications and wearable technology also challenges notions of fixed sensing networks. Mobile devices and wearables that people carry with them on an everyday basis can also be used to collect data about the environment and public health. For example, NoiseTube and EveryAware's WideNoise are both citizen science applications that enable people with mobile phones to log and map levels of noise pollution. This information would not only be compelling from a research perspective but also an urban planning one. Similarly, wearables like the Clarity sensor and the AirBeam log and map citizen-collected data about air pollution. Citizens also seem open to hosting local sensor nodes to assist with gathering environmental data, as seen with the Air Quality Egg project and the Data Canvas: Sense Your City project. Some established, fixed sensor networks (e.g. weather stations) managed by the city may not collect data with as much spatial resolution as one might need; mobile sensors mediated by citizens could be one method used to groundtruth existing data or ascertain higher spatial granularity. In any case, data collection is already happening at the civic level, enabled by technologies that have

already penetrated urban populations. Many of these projects are designed for public engagement with environmental data, but there may also be a place for citizen-collected data toward urban planning.

In an essay called “What is a city?” Lewis Mumford writes, “[T]he physical organization of a city, its industries and its markets, its lines of communication and its traffic, must be subservient to its social needs.” I propose Mumford’s vision in place of Bradbury’s. There is no such thing as a smart city without its citizens to imbue it with sense and spirit.

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## CHAPTER 67.

# PLANNING FOR SMART CITIES AND ENVIRONMENTAL SUSTAINABILITY IN INDIA

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### **Introduction**

The rapid growth of the world's population, especially in developing countries like India, has already had and will continue to have an impact on settlement patterns and on the growth of some of the largest metropolitan cities. Situations of such human agglomerations will likely be aggravated because they are the centres of national spatial structure that, due to historical and political reasons, do not serve adequately the needs of developing nations (for e.g. India) (Hardoy, 1973).

It is a general perception that most urbanization policies are related to the interests of state level governments who aim to counterbalance the concentration of economic activities, populations, and institutions in particular geographical areas (Hardoy, 1973). It has also been recognized that state level governments are not fully equipped to solve most urban problems (Hardoy, 1973). We have wasted too much time, effort, and money trying to promote local or metropolitan master plans that have proved to be of little or no value because they did not anticipate for unplanned economies and/or they did not receive adequate support from state level governments.

Cities will have to be planned and built with new approaches and technologies that will require different institutions (e.g. geospatial technologies) to solve the many problems that they will pose, such as land utilization, communication, transportation etc. Solutions to the most pressing urban problems will depend on the values adopted by societies and therefore, making use of resources in a systematic manner. In this sense, making cities 'smart' is one such solution and an ambitious urban project of the Government of India, who plan to build 100 smart cities across the country, as proposed in the budget of 2014-15. As much as the vision of smart cities appears rational in terms of addressing several urban problems, the implementation of this massive urban project 'smart cities' with the present level of socio-economic condition might be difficult in India. However, as a rapidly developing economy, the country needs to keep up with global standards, and hence, the execution of this plan could help India take a major leap in the development race.

Globally, the conception of the 'smart city' is not new. To develop a city, planning is an essential part of addressing a profusion of problems ranging from energy requirements to proper

governance, all of which are to be smarter in the where all appears sustainable. Over and above all, sustainability of 'the environment' must not be sidelined. Here, pertinent questions are what a smart city is and how it could be smart?

A smart city is often defined as a city where information and communication technology is used in every sphere (Parikh, 2015), and which is essential for achieving the goals of a smart city. However, it is not, by itself, a goal. A smarter city is outfitted with high-tech communication capabilities. It uses digital technologies to enhance performance of urban living and well being, to reduce costs and resource consumption, and to engage more effectively and actively with its citizens. The idea of a 'smart city' came into formulation due to the need to accommodate rapid urbanisation. Interest in smart cities continues to grow, driven by a range of socioeconomic and technological developments across the globe. It is due to the increasing number of smart cities that established suppliers from energy, transport, buildings, and government sectors are moving into the smart city market, while start-ups are addressing a range of emerging opportunities in the same field.

### **Essential components of smart cities**

- Innovations in smart energy to accelerate smart cities
- Sustainable smart urban environment to boost smart cities
- Smart transportation runs smart cities
- Smart IT and communications is the nerve centre for smart cities
- Smart health is the lifeline for smart cities
- Smart education powering citizens for smart cities
- Smart buildings is the foundation for smart cities
- Smart cities will begin with smart governance (Smart City India, 2015)

Smart cities can be achieved through renewable energy, clean water for domestic and industrial purposes, urban sanitation, and waste management systems. To overcome water supply, waste water and sanitation issues, smart cities will seek to incorporate the latest technologies, products, solutions, and systems. Urban transportation is also an important element for smart cities. Hence, there is a need to review city transportation systems in India (including metros, monorail, trams, waterways, walkways, bicycle tracks, roads, etc.), to provide new and enhanced infrastructure for public transportation.

To implement smart information technology and communications, policymakers must develop a strong wired and wireless broadband network, and ensure its availability throughout the city to all its residents. Smart cities will use information technology to improve the quality of life of its citizens by providing citizen services over these communication networks. India's primary competitive advantage over other countries is its large pool of well-trained medical professionals and cost advantage for delivery of essential healthcare services. Rising incomes, easier access to high-quality healthcare facilities and greater awareness of personal health and hygiene has led to the growth of the healthcare industry in India. Smart education will change the way the people learn. Students and teachers will migrate from schoolbooks to e-learning delivered through computers, tablets and mobile devices. Schools must adopt these technologies and upgrade their infrastructure to allow students and schools to stay connected with real time information.

Smart governance is a process of reform in the ways that government works, and shares

information with the public to deliver services. This brings government organizations closer to the public by using technology such as e-services, social media, applications and other platforms. It is about improved governance and transforming the ways that public services are delivered.

## **Conclusion**

Citizens, residents and everyone involved could benefit from smart cities and it could be a win-win situation for everyone. But, what are the costs? Will the natural environment pay for it? Smart cities is not quick to implement because there needs to be a symbiotic relationship between human, natural and built environments. It is like a call for new urbanism in which India is struggling and will struggle with a number of significant barriers that continue to hamper the development of urban infrastructure. Hence eco-friendly cities in the form of smart infrastructure will be the requirement for a better quality of urban life.

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## CHAPTER 68.

### UNI-FI: REIMAGINING TECHNOLOGIES FOR THE URBAN POOR

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SANTOSH KESAVAN, CROSSLINKS FOUNDATION, INDIA



*Slum Integration in Smart City initiatives source: Civil Society Online*

People-centered economic transformation will play an important role in realizing inclusive and sustainable development in an increasingly urbanizing world. UN member states have therefore accorded a central place to “*Make cities and human settlements inclusive, safe, resilient and sustainable*” as Goal 11 on the “*road to dignity*” in the December Synthesis report of the Secretary-General on the post-2015 sustainable development agenda [1]. According to UN-Habitat, the UN agency for human settlements, around 33% of the urban population in the developing world in 2012 were living in slums.

Urbanization in most low-income and lower-middle-income developing countries has been characterized by environmental degradation, deepening economic divide and rampant proliferation of slum settlements. Slum dwellers have a poor quality of life and are deprived of access to basic services in the area of water and sanitation, electric power, street lights, healthcare and education [2]. Slum settlements have also been reported to have become breeding grounds for criminal incidents and other unlawful activities thus jeopardizing public safety in the neighborhood [3]. Urban slum dwellers suffer from a persistent digital and financial exclusion that prevents the fruits of larger economic growth from truly percolating to them. Recent developments in the area of “smart cities” offer a great opportunity to renew focus on the neglected urban poor.

For example, Government of India has recently embarked on an ambitious multi-year program to create 100 smart cities with an investment of over USD 1 Billion every year. The proposed initiative aims to harness the power of technology to create profound changes in how cities operate and to deliver more effective governance to its residents. As the smart city program has a strong focus on increased competitiveness and economic growth through technology-driven urban improvements, the challenges faced by slum settlements too can be appropriately integrated right at the specifications stage. The National Optical Fiber Network (NOFN) is Government of India's largest nation-wide optical network initiative that aims to extend broadband connectivity to 600 million rural citizens of India by 2017 [4]. NOFN is realized by using the 2.5 lac village offices as last-mile concentrators of Internet traffic from neighboring villages before further transportation to state service centers. A similar connectivity template may be used in an urban context by setting up multipurpose "slum service centers" that communicate with a central municipal office of the city. There is a need to reimagine conventional broadband and mobile technologies to address the empowerment needs of the urban poor.

**Uni-Fi Architecture:** Uni-Fi is a universal and cost-effective broadband network that is geared towards advancing the needs of slum settlements in Indian cities through superior service provisioning, improved governance and better quality of life for the urban disadvantaged in India. The Uni-Fi architecture comprises three key components:

**Multipurpose Streetlights:** Recent advances in technologies permit the cost-effective integration of surveillance cameras, energy-efficient streetlights and wireless broadband capabilities in a small form factor. The low profile camera is networked through a high-speed wireless connection so that the camera view can be observed remotely by public safety personnel for crime prevention and monitoring purposes. Use of such multipurpose devices can enhance the sense of safety and security of slum areas and deliver "livable streets" for the urban poor.

**Community Kiosks:** Uni-Fi includes shared broadband kiosks that serve as "broadband experience centers" to communicate the benefits of broadband to the poor through hands-on usage of computers and tablets pre-loaded with mobile governance apps. The broadband experience center will thus stimulate consumer interest in the service and enhance perceived utility of broadband with relevant applications and content. It also provides a two-way community channel for slum dwellers to voice their grievances to respective ward executives and for municipal officers to publicize civil works and other local initiatives. In addition, the kiosk serves as a single-window service center to facilitate awareness of and access to government benefits to unorganised (informal-sector) workers living in the slums.

**Online Shopping Access:** The broadband service center will host an online classifieds and local deals website that is designed exclusively for slum dwellers. It enables higher-income households, neighborhood stores and small businesses to list and sell daily-use items and other services at deep discounts to low-income buyers who are registered on the website. The website is coupled with a mobile shopping application with an integrated digital wallet facility for mobile payments that work on basic feature phones and low-cost (sub-\$40) smartphones using Android or Firefox OS. It provides an easy user-experience for slum dwellers to browse items on sale, discover attractive offers and receive automatic notifications about local deals.

Uni-Fi nodes in a city can be networked and managed centrally with an easy-to-use, drag-and-drop interface for transferring municipal content to these devices.

## **Key Benefits of Uni-Fi:**

1. Lack of broadband/Internet access imposes a “non-adoption tax” on the digitally excluded [5] by raising their relative costs of various activities such as shopping, travel and communication. UniFi benefits low-income communities that remain largely excluded from India’s eCommerce revolution due to a pervasive digital divide.
2. Unification of lighting with wireless enables new public-private partnership models whereby cash-strapped municipalities can join forces with mobile operators to significantly reduce their upfront investments for street light rollouts while advancing the operators’ objective of cost-effectively expanding mobile broadband coverage
3. By locating an IP camera inside of the lighting device, one achieves a bird’s eye view of the area, ideal for surveillance applications. Higher-quality lighting is also critical for enhancing detection for pro-active public safety interventions in public spaces.
4. The network backhaul connection has additional benefits such as transferring device related conditional data on energy consumption, temperature etc that can be used to detect impending failure events and enable pro-active fault management of the device.
5. Municipalities can leverage the Uni-Fi system to explore other monetization opportunities such as location-based advertising, merchant subscription fees, sales commissions on high-value transactions, income from other service providers leasing spare capacity from the Uni-Fi network.
6. Uni-Fi generates opportunities to mobilize, develop and empower low-income communities around the management and governance issues of their neighborhoods, thus improving their quality of life.

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## CHAPTER 69.

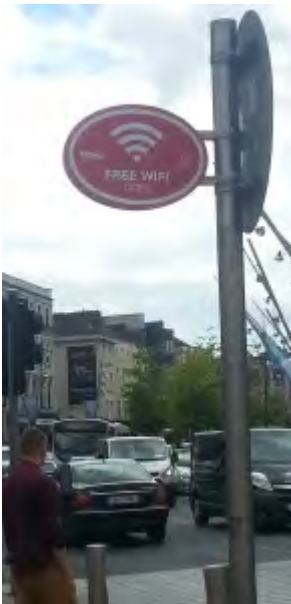
### URBAN DIGITAL DIVIDES: A THREAT TO SUSTAINABLE URBANISATION

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Urbanisation and the rapid (yet uneven) diffusion and uptake of information and communications technologies (ICTs) are key processes defining the contemporary era. Not only are more people now living in cities than rural areas globally, but more people are connecting to cyberspace through new technologies such as smart phones, laptop computers, and other devices. For processes of urbanisation to be sustainable, urban policy needs to pay attention to the social, environmental and economic issues that are critical to achieving a sustainable future for cities. ICTs are one component in creating sustainable futures for cities, though current evidence suggests ICTs are creating unequal and thus unsustainable realities.

The pervasive diffusion of ICTs is highly uneven. ICTs are contributing to a growing divide both between urban areas and within them. However, the digital era was heralded as one which would have the ability to transcend inequalities. As Graham (2002, p.35) noted, Cyberspace has been “*cast as a single, unitary and intrinsically unifying electronic space*” with the power to overcome a variety of segmentations and inequalities in the ‘off-line’, urbanising world. However, the reality is very different with emerging evidence that ICTs are “*servicing to underpin and support processes and practices of intensifying urban polarisation*” (Graham, 2002, p.35). Stephen Graham’s work highlights Bangalore, India’s Silicon Valley, as a prime example of the ways in which a rapidly urbanising city, investing significantly in high-tech industries, has seen a widening socio-spatial and now digital divide. Graham (2002) notes that an information technology park has also been constructed on the outskirts of Bangalore that has the full suite of technological activities and infrastructure, as well as international standard water, sanitation and waste disposal. There is also an upmarket residential development with high-end leisure facilities, which separates the high-tech workers and companies from the “*prevailing poverty in the shanty towns which still house the bulk of the city’s immigrant population (over 50 per cent of whom are illiterate)*” (Graham, 2002, p.45). Similarly, in relation to San Francisco, Richard Florida (2014) notes how the city has become a site for the location of high-tech start-up firms (e.g. Google, Facebook, Twitter, etc.), yet it is also home to a ‘68-acre homeless camp’. As a result of the growth and development of high-tech companies, there is a widening economic wedge between those in the high-tech industries and everybody else, such that there two key urban problems emerging: increasing economic inequality and worsening housing affordability. Urbanisation presents a series of challenges and uncertainties for the city, which is now compounded by the rapid diffusion of ICT, digital technologies and high-tech companies. As a result, the social, economic and environmental sustainability of the city is under threat.



In 2014, free Wi-Fi was introduced to the main inner city streets in Cork, Ireland (Source: Therese Kenna, 2014)

Digital divides are not only occurring between global regions and between cities, but crucially, these divisions are now increasingly evident *within* cities. This inequality is felt most strongly in cities given the density of population and the concentration of activities, with hyper-connected people co-located with people whom have limited or no access to the internet or new technologies (Graham, 2002). By way of example, evidence from Cork, Ireland highlights the local disparities emerging from digital divides. Data from Ireland's most recent census shows that urban areas have the highest disparities in terms of access to technology. In Cork, only 60% of households have access to broadband internet; with 30% of the households having no computer and no broadband internet access (Central Statistics Office, 2014). There is a spatial pattern to this lack of access, which correlates significantly with socio-economic deprivation in the city. That is, those areas of the city with a lower socio-economic profile are those less connected to the digital realm. While municipal governments are increasingly deploying free Wi-Fi to inner city areas (as is the case in Cork) as part of strategies for a 'smart' city, it also requires that people have devices to connect, such as smart phones, thus disadvantaging those without access or financial capital to engage. Age inequalities are exacerbated here too whereby some segments of the population do not have the technological literacies to participate in the digital era. As public services (e.g. job searching, banking, etc.) move into an increasingly on-line realm, those without access to technologies that enable access to such services are further disadvantaged. What becomes evident from a city like Cork is that ICTs are further widening gaps between sections of the population and reducing the life chances of many. This contributes to a strengthening of the processes of social polarisation at the local level within cities. ICTs work to exacerbate already established divisions, rather than transcend these inequalities, which poses a threat to sustainable urbanisation.

Other studies in this area internationally suggest that the composition of ICT users in the city is far from diverse. Work by Hampton *et al.* (2010) examined wireless internet use in a range of parks and plazas in North America, noted how their sample was young, single, well educated, and predominantly male. Importantly, results such as these suggest that social inequality in urban public spaces may increase with the addition of Wi-Fi and other forms of technology, and their

users, who are exceptionally privileged in human, social and financial capital (Hampton *et al.*, 2010, p.718). Essentially, those with high levels of social and financial capital are those accessing digital technologies and infrastructures in the city and thus other social groups are increasingly excluded.

The nature of ICT use within the city is also being seen to have implications for social sustainability. In particular, research suggests that while ICTs are increasing the number of people found in the city and in public spaces, the nature of encounters and social interactions between people has changed, whereby the withdrawal of people into the private realm of the internet and various forms of personal technology are reducing opportunities for meaningful engagement with others in the city (see Hampton & Gupta, 2008). Recent news coverage reported one such example using the photography of blogger Babycakes Romero, who has been chronicling the death of conversation due to technology. Essentially, ICTs are redefining the nature of engagement with others in the city. Engagement with others is potentially reduced by ICT use, thus meaningful encounters are being reduced. This presents a potential threat to social sustainability within the city.

Urban policy needs to take seriously the ways in which ICTs can exacerbate further the already ingrained inequalities and differences within cities and thus threaten efforts for sustainable urbanisation. As the process of urbanisation continues, and new technological innovations enter the market, it is necessary to take stock of the implications. Given the scale of population movement into cities globally, policy needs to attend to the social and spatial inequalities that are further enhanced through digital divides that can threaten attempts for sustainable urbanisation.

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## CHAPTER 70.

### SOCIAL MEDIA FOR SOCIAL HOUSING IN THE UK AND AUSTRALIA

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Living in an increasingly digital world makes new forms of social interaction possible. The emergence of social media, generally defined as Internet-based applications that enable users to create and share content within social networks (Kaplan & Haenlein, 2010), has been championed as an empowering movement where people are more connected, involved, informed, and heard. At the same time, existing structural inequalities can be reproduced in these new spaces where communities of social disadvantage continue to be excluded, unheard, and stigmatised (Carah & Louw, 2015).

A number of reports have highlighted that social and community housing providers are uniquely placed to embrace social media platforms for the purposes of tenant participation, community involvement, and social change (e.g. Jacobs et al., 2011; Rose et al., 2014). Almost universally, across social and community housing providers' mission statements and organisational goals is a commitment to strengthening communities and social justice. An effective social housing system *"should help vulnerable people, while providing opportunity and pathways for client independence where that is appropriate"* and as such, a networked approach that *"connect[s] tenants with employment, education, training and other community engagements"* is required (NSW Government, 2014, p. 7). Thus, the participatory web can offer significant opportunities to empower social housing tenants and create networked communities.

Yet the sector has been described as 'lagging' behind other comparable non-profit sectors (e.g. policing, education, and health) in terms of digital social innovations designed to engage service users (McCrossan, 2014). The 2014 Connected Housing Study (carried out by Visceral Business), which tracked the digital innovation and development of 235 social housing organisations in the UK within a twelve-month period, found that online initiatives for resident management and engagement are increasing but most organisations remain in the early stages of digitalising their practices.

In the Australian context, digital social innovations in the social housing sector are seemingly less visible in comparison to the UK scene. Rose et al., (2014) attributed the uptake of new digital platforms to the UK policy context of public service reform, welfare reform, austerity measures and digital inclusion targets in the transitions to digitalised public services. Even so, 'digital by default' public services continue to press forward in Australia too.

In both countries, social media participation may offer significant opportunities to address the stigmatization of social housing tenants. 'Stigma' can be understood as "*an attribute that is deeply discrediting*" which, when assigned, can result in spoiled identities (Goffman, 1963, p. 13). For Goffman (1963), stigma operates in a 'language of relationships' with others, which determines whether the attribute works to credit or discredit an individual, a social group, an area or place.

Mooney (2011) notes that "*we are living in a period characterised by a virulent and comprehensive assault not on poverty, but on people experiencing poverty*" (p. 4). Recent media representations of social housing tenants, Channel 4's 'Benefit Street' (UK) and SBS's 'Struggle Street' (Australia) for example, have been particularly problematic and are arguably indicative of the anti-welfare rhetoric and 'poverty porn' entertainment culture. Government policies and mass media representations that are anti-welfare and anti-poor can serve to 'other' social housing tenants into stigmatised identities. Research examining mainstream media portrayals of social housing and particular areas or estates largely finds predominantly negative representations (e.g. Hastings, 2004; Kearns, Kearns & Lawson, 2013). Jacobs et al., (2011) argue that new media spaces can enable tenant organisations to counter negative and present positive stories about the role of social housing and its tenants. "*All places have identities, but some places also have reputations*" (Kearns et al., 2013, p. 579) and by engaging tenants through social media, social housing organisations can renegotiate any 'spoiled identities' and provide alternative narratives of social housing.

By being digitally present, social housing associations can also reframe policy changes and communicate them to social housing tenants. Thus, their use of social media can play a crucial role in enhancing digital literacies and addressing issues of digital exclusion. Tenant scrutiny panels and neighbourhood resident groups can be seen to self-organise online developing digital presences and 'residing' online to set the agenda in the dialogues around social housing. However, there are significant gaps in the research, both nationally and internationally, around the role of social media in social housing. It is also important that social media engagement initiatives are evaluated in terms of their effectiveness for stakeholder engagement and tenant participation across the sector.

Our current project is exploring the use of social media by housing associations located in New South Wales. The study consists of two key components: 1) a comprehensive audit of tenant participation activities in New South Wales, and 2) interviews with representatives from social housing organisations about their experiences and future expectations of social media for social housing. This research will establish a baseline from which to build a body of knowledge around tenant participation in the digital age. Moreover, this project aims to provide support for the call for action (see Smith, 2014).

Social media can be a powerful tool for social justice and social change. If social housing providers are not engaging with their tenants through contemporary communication platforms, this raises concerns around the power, status, and agency of tenants to influence their own living circumstances and participate in their communities and neighbourhoods. Most importantly, digitally including social housing tenants "*represents a major opportunity to effect significant and lasting change*" (Rose et al., 2014, p. 15).

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## CHAPTER 71.

# SMART AND SUSTAINABLE? TOWARDS FUTURE CONCEPTUALISATIONS OF SUSTAINABLE URBAN DEVELOPMENT IN THE DIGITAL WORLD

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VERONIKA ANNA NEUMEIER, FRIEDRICH SCHILLER UNIVERSITY OF JENA, GERMANY

*“Nothing about cities in the twenty-first century is insignificant; the stakes are always high in pinning down what cities are, in thinking about what to do with cities and in acting on/in/through the city, especially if one wants to bring to life more liberating and just futures. For this reason it is extremely difficult to find a conceptual path that cuts through the vicissitudes of the city without losing one’s way in blind alleys and dead ends.” (Pieterse 2008: 12)*

The growing importance of cities and their future role for the 21st century has initiated much discourse within public and academic spheres. A great majority of published texts on this matter start by introducing the pressing issues and challenges as well as the opportunities cities might provide for us. In particular, the subjects of economic development, ecology, and social change seem to be highly dominant in discourses about cities. However, one important question stands out: what roles do cities play for us now and which ones will they take in the future?

Regarding the rapid changes of cities and urban structures, extensive research has been conducted in the fields of both the social and natural sciences in the past few years. From a viewpoint of social geography (which I will take), it is important to examine the role of urban planning strategies and urban development concepts as the basis for a majority of planning activity in urban contexts. Such urban development concepts try to formulate common principles for a city, mostly developed by urban governors in top-down logics, in order to establish long-term goals and positive urban development over several decades. However, in times of growing digitalisation, increasing opportunities of civic participation and global change issues, is it still appropriate to establish such prescriptive urban development guidelines? On this note, this blog will specifically examine the idea of the so-called ‘smart city’ in relation to aspects of sustainability, increasing digitalisation, and possible positive urban developments in the future.

### **Smart city: a booming approach to urban development**

The idea and application of the ‘smart city’ approach has rapidly emerged since the early 2000s. With its strong focus on technological advance and ‘smart’ innovations, the concept generally aims *“to make [a city] more efficient, sustainable, equitable and livable”* (NRDC, in: Chourabi et.al. 2012: 2290). Thus, the ‘smart city’ approach can be applied to:

*“[a] specific region, achieving the informational and integrated management of cities. It can also be said to be*

*an effective integration of smart planning ideas, smart construction modes, smart management methods, and smart development approaches. Through the digital grid management of urban geography, resources, environment, economic, social and other systems, as well as the digital and informational processing and application of urban infrastructure and basic environment, we can achieve intelligent urban management and services, thereby promote the more efficient, more convenient and harmonious operation of modern cities.” (Su et al. 2011: 1028).*

The idea of creating a smarter, and ideally a more sustainable urban structure, is booming. Currently, major cities such as Vienna, Barcelona or Seoul for example, have adopted the ‘smart city’ approach within their urban development concepts.

According to Schaffers et al. (2012), three phases of application have been identifiable within the ‘smart city’ approach up to now. With the invention of the first large-scale technologies, the idea of implementing these new technologies in urban contexts developed in the early 1990s. This was followed by a period of professionalization and further inclusion of ‘Web 2.0’ adaptabilities in the subsequent decade. In the last few years, this process of digitalization and technologisation of the city has progressed to an even ‘smarter’ level. Before, the city was extended by an additional layer of technology; now, there is the idea of “*creating the digital space of cities*” in itself (Schaffers et al. 2012: IV) and adding new, digital spaces to the already existing, physical ones.

### **Understandings of sustainability**

Looking at the idea of the ‘smart city’, there is clear relation to the concept of sustainability. Since 1987, with the publication of the so-called Brundtland report, there has been a general shift within society in thinking around how to interact with the world.

The concept of the three pillars of sustainability derived from this very broad understanding and distinguishes aspects of social, economic and ecological sustainability. However, this very broad and overarching viewpoint cannot easily be put into an urban context, especially in relation to mainly top-down urban development conceptualizations. If the idea of ‘smart’ is considered as ‘more sustainable’, what does this mean on the concrete level of urban development?

***“Humanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs.” (WECD, Brundtland report 1987: 16)***

### **Study: Smart and sustainable**

In my research on the adaptation and application of the ‘smart city’ approach in a major European city, five distinct aspects were identified:

1. Considering the general notion of sustainable urban development, a clear affirmation of the three pillars of sustainability of the Brundtland report could be seen in the urban development concept; mainly with a strong linkage to technology.
2. Placing this understanding of sustainability in relation to the specific urban context, urban governors aimed to establish a more integrative approach that connects different issues, areas and stakeholders in the city for a ‘more sustainable’ urban development. Regarding the exemplary city, there was a clear integration of social, economic and ecologic issues, with a strong emphasis on the later.

3. For the concrete goals of urban development, a strong focus on the establishment of quantifiable goals could be identified, especially in relation to CO<sub>2</sub> emission. In order to succeed, energy use and energy distribution was heavily linked to the implementation new technologies, such as for example “smart” user apps and “smart” power plants.
4. On the level of strategy application, with the three pillars of sustainability as an underlying basis, especially social matters were put in the foreground. However, strong bureaucracy processes had major influence on the implication and realization of specific projects.
5. Considering the future expectation of success within the exemplary city, the ‘smart city’ approach defined clear ecological and social aims which sought to provide a broad framework for sustainable urban development. Nonetheless, economic issues played an important role and seemed to be highly relevant for the city’s future development. By adapting to the ‘smart city’ approach, the city tried to be open to new ideas and strategies in order to tackle difficult urban issues.

Relating the general understanding of sustainability to its conceptual adaptation in urban development concepts, the ‘smart city’ approach, in general, seems to be the first to extend the common notion of sustainability by a fourth pillar of application.

In the current discourse on, as well as application of, urban development concepts, the approach of the ‘smart city’ seems to be one of the most influential in times of increasing urbanisation. The approach itself has a strong linkage to technology and highlights new opportunities for technical applications in an urban context.

Thus, technology is used, on the one hand, to improve already existing urban structures, and on the other hand, to create new urban opportunities of digitality and ultimately, to refine the well-established concept of the ‘three pillars of sustainability’. Consequently, the ‘smart city’ approach seems to be the first to merge the opportunities of technology within the existing places/spaces of a city, in order to establish sustainable urban structures. New links and networks in a city are established, which might also better reflect and relate to our lifestyles that have become more interconnected through technology.

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Veronika Neumeier is a Masters student in Social Geography at the Friedrich Schiller University of Jena, Germany. Her work focuses strongly on action-centred ways to conceptualise urban spaces and places, as well as strategies for drafting urban development concepts. Veronika is especially interested in the concretisation of sustainability, the pressing issues of social cohesion in urban settings, and the implementation of social cohesion strategies within urban development.

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## CHAPTER 72.

# SENSE IN THE CITY: URBAN SENSING AS A DIGITAL INTERVENTION FOR PLANNING

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LILY BUI, MASSACHUSETTS INSTITUTE OF TECHNOLOGY, USA



Image: "Chinatown toronto spadina avenue" by chensiyuan - chensiyuan. Licensed under GFDL via Wikimedia Commons.

A city is a metaphysical experience. In a city, one confronts stimuli from all angles — sights, sounds, smells, textures, temperatures, tastes.

Michel De Certeau aptly describes how *Wandersmanner* (wanderers) consume the city through multiple senses by merely walking through it. Similarly, Allan Jacobs argues that just looking at cities — reading surfaces and surroundings as text — can serve as a means of interpreting human presence, inscription, and habit. In a foreword for Robert Laurini's *Information Systems for Urban Planning: A hypermedia co-operative approach*, Michael Batty, Professor of Spatial Analysis and Planning at the University College of London, identifies the role that our senses play in the future of urban planning: "Words and numbers and pictures are of course the critical elements in this new world but...sound and touch and taste all have a place in the tools which...will define digital planning in the near future. The 'convergence of media' offers new insights into the way we might integrate the elements of urban planning." Through this media lens, it would seem that the city becomes a palimpsest of human experience, of sensorial input and output.

However, while our own five senses are critical in helping us interpret the urban environment, they also have their limitations, prompting us to sometimes lean on technological conventions for aid. Sensor devices are often designed for tasks that either emulate or extend beyond our own five senses. For example, a thermometer is a sensor that measures temperature, which humans can sense with touch. A barometer, on the other hand, is designed to measure atmospheric pressure, something that lies beyond our own human capacity to sense accurately without proper tools. When applied to urban settings, sensors stand in where human presence isn't necessarily possible or safe, logging information about the environment and providing feedback in ways and at scales that our own five senses cannot.

In today's world, the rising ubiquity and decreasing cost of sensing tools has the potential to change the way we plan, structure, and manage our cities. The following are some proposed ontologies for sensor-enabled, digital interventions that support the identification, mediation, and management of urban problems in the built environment.

### **Sensor stewardship**

In a sensor stewardship scenario, citizens would be responsible for deploying and maintaining a sensor device that logs information about its environment. The materials may either be provided by another party, or citizens may use open source parts and construct the device themselves based on a shared, open schema. Some examples of projects like this include Data Canvas: Sense Your City; the Air Quality Egg; and SmartCitizen. All of these projects involve open source hardware and software and allow participants to map their device's data stream, which is then made publicly accessible. Protection of privacy and sensitive information becomes important in this scenario, especially if citizens are asked to deploy sensors in or near their homes or private spaces.

### **Mobile sensing**

A multitude of sensors is already embedded in our smartphones. Potentially, anyone with access to a smartphone could collect and submit data about the urban environment. For example, SeeClickFix is a civic app that allows users to report non-emergency issues. In Detroit, residents use SeeClickFix to report damaged water pipes that need repair to the City of Detroit Water and Sewage Department. The problems are usually mapped and logged in a news feed. Ideally, an app like this enables a platform on which citizens and cities can collaboratively identify issues. StreetBump, developed by Boston's Office of New Urban Mechanics, is a smartphone app that uses accelerometer data, allowing bike and automotive commuters to help collect information about the bumpiness of roads, potentially identifying potholes.

### **Fixed sensor networks**

There are also sensor networks already embedded in urban spaces. Most are controlled by city-level groups and in some cases the data may be proprietary, but there may be opportunities in the future to open access to these data streams to wider publics. AQICN is a realtime air quality index for Beijing, China as well as surrounding areas. Clarity is a similar type of air sensor network on MIT's campus which logs data about pollutant gas species and particulate matter. The Environmental Protection Agency (EPA) also has a national sensor network called AirNow which tracks air pollution across urban spaces.

## **Wearables and Internet of Things objects**

The Internet of Things, valued as a trillion-dollar industry in coming years, proposes a technological scenario in which any device or object can be connected to the Internet. This includes wearables, which are already commodified consumer goods, as well as “smart” appliances in and outside of the home (e.g. refrigerators, cars, street lights). With more objects around us generating realtime data, tools like Thingful — a map of public IoT devices — can help us navigate different urban spaces by looking at sensors that measure environmental and public health factors.

## **Remote sensing**

Remote sensing is carried out by sensors aboard various platforms: satellites, planes, boats and Argo floats. Though many of these platforms are controlled by government agencies, organizations or private companies (few, if any, by individuals), it is possible to get access to some data that they collect. For example, NASA’s earth observation satellite OCO-2 collects data about carbon dioxide in the atmosphere, an important metric for urban planning around climate change. OCO-2 has an open data approach and plans to make data products available to the public and to industry.

It is increasingly possible in today’s world to collect data from disparate resources, and across many scales. Sensors are simply one means of doing so among many other digital interventions in the built urban environment. Cities can benefit from sensor tools and data in various contexts, but we must not forget that it is people who run cities and people who make up cities. No matter what the innovation, we must foreground the citizenry, not the technology, if they are human problems we seek to mediate in in the end.

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## **Author Biography**

**Lily Bui** is a researcher and M.S. candidate for MIT’s Comparative Media Studies program. She is also a research assistant at ArchiMedia, a writing and rhetoric lab that explores various aspects of science communications. Previously, she worked as a STEM Story Project Associate at the Public Radio Exchange (PRX) and the Executive Editor at SciStarter, PLOS CitizenSci, and Discover Magazine’s Citizen Science Salon. In past lives, she helped produce the radio show Re:sound for the Third Coast International Audio Festival out of WBEZ Chicago; worked on Capitol Hill in Washington, D.C.; served in AmeriCorps in Montgomery County, Maryland; worked for a New York Times bestselling ghostwriter; and performed as a touring musician. In her spare time, she tinkers with electronics and thinks of cheesy science puns.

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## CHAPTER 73.

### AN INVITATION TO THE HYDROCITIZENS ONLINE COMMUNITY

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KATHERINE JONES, UNIVERSITY OF THE WEST OF ENGLAND; TOM PAYNE, UNIVERSITY OF ABERYSTWYTH, AND OWAIN JONES, BATH SPA UNIVERSITY, UK

Hydrocitizenship is a three year project involving communities from around the UK, more specifically in Yorkshire, mid Wales, Bristol and the Lee Valley. It involves a range of academics and practitioners in different fields and disciplines and from a variety of backgrounds.

**'Explaining the Hydrocitizenship Digital Strategy' by Tom Payne**

**[brief explanation of Hydrocitizens and how it relates to the Hydrocitizenship project]**

Hydrocitizens currently has 36 members and is averaging over 500 page visits a day. We are keen to foster and engage in conversations and exchanges about water and related issues with others that are already engaged in the field. Our hope is that we will not only produce a substantial record of our activities and discussions over the course of the next three years, but that others that are not directly involved in Hydrocitizenship might promote their work and engage in debates, making the community their own and enriching our research and their own.

Hydrocitizens is a product of Hydrocitizenship but does not aim to provide a unified authorial voice for the project. Instead, it hopes to do the following:

1. Provide a platform through which multiple voices might be heard.
2. Create a space in which others might share their work in the hope that unexpected conversations and collaborations might occur. This community hopes to help draw attention to the work of others whilst also revealing the day to day processes behind a large interdisciplinary research project (Hydrocitizenship).
3. Provide a way of linking up the four Hydrocitizenship case study areas (Yorkshire, mid Wales, Bristol and the Lee Valley, UK). The community has already led to collaborative ways of working, with ideas from various case study areas feeding into planning processes elsewhere. As time goes by this could prove to be an innovative framework for geographically dispersed interdisciplinary research.
4. Create a legacy for the project that exists independently beyond Hydrocitizenship. It is hoped that members will configure the community through the nature of their participation and that it will take on a life of its own.

There is also potential to begin engaging with other networks including Facebook, Twitter, Vimeo, Pinterest, Youtube and others.

Here is a selection of some of the many blog entries on Hydrocitizens.

### 1. Messing About in Boats by Stephen Bottoms

Re-reading Grant Kester's introduction to *Conversation Pieces: Community and Communication in Modern Art* (2004) recently, I was struck by his opening anecdote about a spring boat trip on Lake Zurich in 1994:

*"Seated around a table in the main cabin were an unusual gathering of politicians, journalists, sex workers and activists from the city of Zurich. They had been brought together by the Austrian arts collective WochenKlausur as part of an 'intervention' in drug policy. Their task was simple: to have a conversation. . . . Over the course of six weeks, WochenKlausur organised dozens of floating dialogues . . . Many of the participants in these boat talks would normally have taken opposite sides in the highly charged debate over drug use and prostitution, attacking and counter-attacking with statistics and moral invective. But in the ritualistic context of an art event . . . they were able to communicate outside the rhetorical demands of their official status. Even more remarkably, they were able to reach a consensus supporting a modest but concrete response to the problem..."* (pp.2-3)

What strikes me here is how unquestioningly Kester credits "*the ritualistic context of an art event*" with breaking down barriers — without ever considering the perhaps more obviously apparent fact of being on a boat on a lake... Although this is in no way to underplay the importance of an arts group as instigators to the initiative (thinking creatively, outside the box) I'm guessing that, if asked, the various participants might have spoken more readily of their floating context than of their conceptual framing.

### 2. An Andean Aqua-culture: Reflecting on the sacred landscape of the Yumbo by Maggie Roe

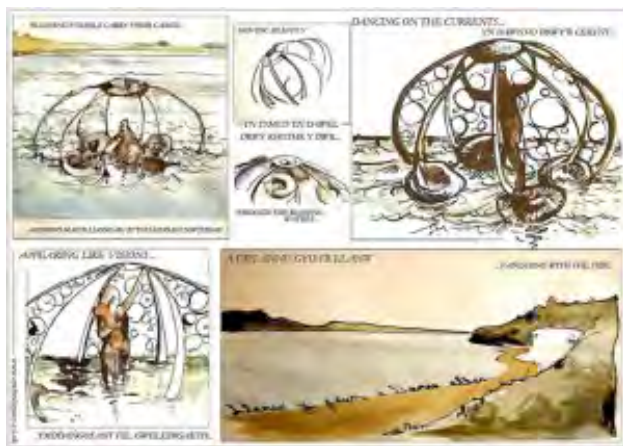


If you want to feel what it's like to be immersed in a water culture, visit a cloudforest like Tulipe where the clouds swirl around you and everything is dripping. Tulipe is high in the Ecuadorian Andes. It is an extraordinary and beautiful landscape which was manipulated by the Yumbo people to reflect their spiritual connection with the world through water. The Yumbos were an ancient civilization of peaceful agriculturalists and traders who carried goods up and down the mountains to the coast via narrow sunken tracks (culuncos) reminiscent of ancient hollow roads, created so that the vegetation would grow across the top of the routes to act as a cooling and shading green roof. The site I visited at Tulipe was the main sacred gathering site. In an area of flat land next to the river appear large pools, or piscinas. The walls of the pools are made of stone of approximately 1m in depth. Over 2000

mounds of various sizes have also been found in this area. The central piscina area is enclosed by four large flat-topped mounds or tolas (approx. 20m/65ft ht) set at the cardinal points of the compass. On first sight the tolas do not appear to be manmade because the pools seem to nestle amongst them naturally. Some tolas have steps and associated terracing and are thought to have had ceremonial functions. The Tsachilas have flood myths which indicate that tolas were also used as refuges and dwellings and thus become "*icons of danger, salvation and sanctity*" (Lippi & Gudino, 2010 p.270).

### 3. Urchin by Jenny Hall (artist)

The Urchins have grown from an experimental seed developed by a collective of skilled artists, sailors, and makers in the Dyfi Valley in Mid Wales. This collective of free range individuals are working in association with and as Craftedspace, a mid-Wales based design practice that creates art and architecture, making space for laughter and connection.



Initially conceived at 'Estuary Lab' in the Dyfi in 2012, funded by the National Theatre of Wales, the original Urchin was built as a simple prototype to explore and dance on the currents and to venture overland, inviting shelter inside its skeletal structure.

Keen to build on the beauty of the form, two urchins were constructed as a prototype and released to an audience at Festival No.6 at Portmeirion village in September 2014. Over a

few days we explored the dynamics of and the Urchin's place within the landscape.

With its striking form, and great potential for development of narrative, movement and structure, collectively we sensed a bigger journey afoot. With this in mind we have been approaching partners in both Wales and Scotland to initiate the creation of a final piece.

A journey over land and water, a tribe of primordial urchins drift, collect, connect, seek sanctuary. A journey that starts with their creation in the Dyfi Valley in 2015, moving up to Scotland, before returning back to Wales to the Eisteddfod in 2016.

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### Author Biographies

**Katherine Jones** is a geographer with an interest in human-environment relations, alternative living (ecological communities/eco-villages), governance and the everyday politics of human behaviour and choices. She recently completed a PhD focused on the Lamma eco-village in Wales, and the impact of grassroots political community action on planning policy and practice. She is currently a researcher at the University of the West of England on the *Towards Hydrocitizenship* project, focusing on human-water relationships in the context of Bristol. **Contact email:** Katherine12.Jones@uwe.ac.uk

**Tom Payne** is a performer, musician, filmmaker, facilitator, teacher, researcher and freelance digital strategy consultant. He is interested in artistic collaboration, socially engaged arts projects, running workshops, delivering training and providing advice about web strategy development. His practice as research PhD focused on the National Theatre Wales and new and innovative methods of understanding and performing location to produce an alternative theatrical mappings

of Wales. He is currently a researcher on the Borth-based case study of the *Towards Hydrocitizenship* project, for which he developed the hydrocitizens.com online community. **Contact email:** tsp06@aber.ac.uk

**Owain Jones, Professor of Environmental Humanities, School of Humanities and Cultural Industries, University of Bath Spa.** Owain specialises in geographies of nature-society relations, place and landscape, community and resilience, the role of memory, nonhuman agencies, and temporalities of landscape. He researches into water and community issues; tidal/coastal landscapes; co-production of knowledge with non-humans; and community, memory, flooding and resilience; in a series of Arts and Humanities Research Council and Economic and Social Research Council funded projects. He has an arts background and frequently collaborates with artists and works in interdisciplinary research teams. He has published a number of peer reviewed papers on the above subjects, and has recently edited the book *“Geography and Memory: Identity, Place and Belonging”* for the Palgrave Memory Studies Series. Previously he has published the book *“Tree Cultures: Places of Trees and Trees in the Place”*. **Contact email:** o.jones@bathspa.ac.uk

## CHAPTER 74.

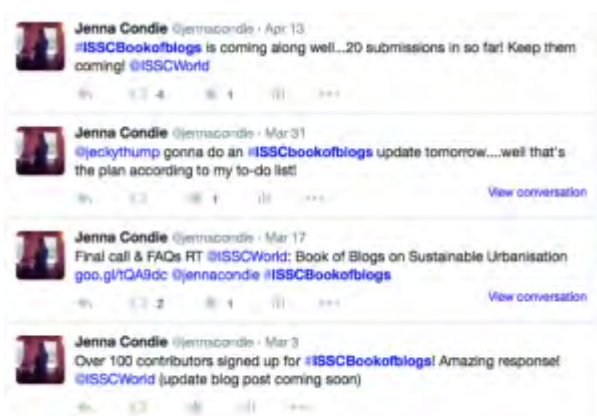
### CONCLUDING THOUGHTS: URBAN SOCIAL RESEARCH IN THE DIGITAL AGE

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The previous post in which the authors' invite you to join the Hydrocitizens online community provides a prime example of how researchers are making use of the 'participatory web' (Weller, 2011) to facilitate interdisciplinary collaborations and international networks on urban issues and sustainable practices. Hydrocitizens also demonstrates the diversity of our urban interests and the range of voices and perspectives possible from within and outside of academic and social science circles on the same topic. The Hydrocitizens blog, and many other initiatives like it, aim to instigate dialogues around the ways in which we shape the places we inhabit now and in the future. We need to use online platforms to share our research journeys, projects and findings, as well as to create and distribute content and messages about sustainable urbanisation and transitions to urban contexts. New media spaces are places where we can start things, spread things, make things happen, and bring about social action and urban change. This is the era of the 'digital scholar' (Weller, 2011).

That said, in putting together this collection of works by researchers across the world, I have been reminded of how 'traditional' communication platforms, primarily email and mail lists, prevail. In the digital age where researchers are increasingly moving online and participating in the social web for the scholarly purposes of knowledge sharing, information finding, and research dialogues, the potential contribution of online networks and social media platforms remains to be seen. More could be done. The questions are what can be done, and how can we make it work?



*An instance of lone tweeting about this book. There is some interactions in terms of retweets (shares) and favourites.*

At present, Twitter is one of the most prominent platforms for research dialogues yet the hashtag for this book (#ISSCBookofBlogs) has been sparingly used during the crowdsourcing, curation, and editorial stages of this project. Even as a heavy Twitter user, I have used the hashtag minimally to share this project with others. In contrast, my email account has been buzzing with emails about the book and lots of interesting discussions have happened there. Some of these discussions could have really helped other contributors, particularly those unfamiliar with blogging formats, to write their posts. If we move our electronic communication to more open online spaces, what else could be achieved? What other social connections would form? Who else might have contributed to this collection? Would new initiatives have taken shape?

The ‘traditional’ communication platforms of email and the mail lists of international organisations have realised this book into being. Without those networks, the range of posts would have been narrower and the contributions less varied. Whilst mail lists are great for sharing information, they function less well as dialogical spaces. We need more social online spaces to get to know one another, given that we are located across the world, living great distances apart with many interests in common. The web presents a wealth of opportunities for networked researchers to create environments for dialogue, discussion, and research. Still, researchers need to want to get involved in those online discussions by putting their identities ‘out there’, and in turn, reap benefits from doing so.

A call from one of the author’s in this collection encapsulates the ‘book of blogs’ ethos so well: “*we can start by reclaiming the discursive and material spaces that will enable the voiceless to be heard, and for the invisible, to be seen*” (Yee, 2015). In reclaiming discursive and material spaces for urban social research and researchers in this field, we have followed the lead of other ‘books of blogs’ (see Woodfield, 2014; De Souza, 2013, for examples) to break through some of the boundaries of established scholarly publishing channels. The ‘book of blogs’ format removed some of the restrictions of physical space and word count limits (although we did limit posts to ~1000 words), thus a greater number of contributions were made possible. Furthermore, the time between the initial call for contributors to final publication was around seven months – “*urbanisation is fast, and so are we*” (ISSC, 2015). This publishing format avoids our work becoming ‘historical’ (Morrison, 2012) by the time it reaches print in comparison to the slower publishing processes of peer-reviewed journals and books. The initial sign up (126 contributors) and 75 final posts from over 80 authors demonstrates what can be achieved from a more open and collaborative publishing format, as well as the desire and determination of researchers to produce content and disseminate their work in publications that at present, offer little in terms of academic career trajectory. Whilst curating this collection, I have felt the pressures of sticking with traditional outputs in terms of academic publishing: to be ‘REFable’ and to only write publications that count or ‘perish’ as they say. Such pressures run counter to a project such as this. Although the publishing landscape is changing an alternative, activist, public, and open projects are gaining traction.

For all its advantages, the ‘book of blogs’ inevitably remains tied to the traditional book format; monological and closed in the sense that the words remains fixed with limited options for comments and room to evolve. Yet in another sense, this project may indeed disrupt the ‘status quo’ as the very idea of this book was not to finalise anything about sustainable urbanisation. Far from it. The idea was to start new conversations and further established ones, inspire ideas and new collaborations in the transitions to more urban contexts across the globe. This is not just a conversation that academics and researchers should be having amongst themselves, but with all



those who have stake and interest in urban social research. Online spaces provide the opportunity for such research dialogues to start from, but extend beyond, this book.

I suspect that the digital world will have a more significant role when we distribute the final product, this book, to share. If you are reading this book right now, I encourage you to share it everywhere that research stakeholders 'reside' and find ways to comment and engage in dialogue with the authors who placed their work here for that purpose. I'd also encourage you to embrace new forms of publishing and working together as public intellectuals – this has been a rewarding and transformative journey.

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## Author Biography



Dr Jenna Condie is a Lecturer in eResearch and Online Social Analysis in the School of Social Sciences and Psychology, University of Western Sydney. Her work focuses on identity and how 'who we are' shapes our interactions with environments, places, media, and each other. Jenna curates and co-manages the Twitter community of New Social Media, New Social Science (NSMNSS). She is a World Social Science Fellow with the International Social Science Council on sustainable urbanisation and the transitions to urban contexts. Jenna is a Chartered Psychologist with the British Psychological Society, a Fellow of the

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## REFLECTIONS

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“Dialogues of Sustainable Urbanisation is a confetti of brilliant ideas put together by bright scholars from around the world. It is fraught with broad and burning topical ideas that try to close the age-long gaps separating social science urban scholars and researchers. This book is useful for policy makers, development institutions, civil society groups and casual readers interested in knowing the current debates on urbanisation.”

**Aliyu Salisu Barau**, ISSC Sustainable Urbanisation Fellow, Research Associate, Urbanisation and Global Environmental Change Project, Universiti Teknologi Malaysia, Malaysia.

“The transformation to a globally sustainable future is the key challenge of our times and requires brave, innovative thinking across all sectors of society. This book of blogs gives a fascinating insight into the breadth and scope of sustainability efforts currently underway and highlights the potential for new and exciting research collaborations at a global scale.”

**Craig Woolf**, Director Northern Community Power and PhD researcher, School of the Built Environment at Heriot-Watt University, UK.