



URBAN-NET

Research Anthology 2010





Introduction

Some 80% of Europe's population live in urban areas. Our cities and towns are confronted by complex, interdependent environmental, social and economic issues that have local and global dimensions. Addressing these issues demands a more integrated approach. Collaboration amongst researchers, professionals, practitioners and citizens is key to developing fair and effective responses to the common challenges that we face in a globalised world.

Transnational research can bring multiple benefits to this process by sharing knowledge, experience and resources from across Europe and beyond. This fosters innovative approaches to common problems, helps with the adoption of good practices and promotes the creation of adaptable solutions.

URBAN-NET's core focus is on integrated transnational research on urban sustainability. This anthology presents eleven transnational research projects funded by URBAN-NET in 2008/9. At the time of writing not all of the projects have finished so we cannot present conclusions and recommendations. This anthology is not intended, however, to present a scientific exposition of each project but to give a flavour of the nature and scope of issues being addressed by integrated research on urban sustainability. We hope that it will appeal to a wide audience: from professionals to interested citizens; from research associations to civil society organisations.

All of the projects involve a mix of disciplines; planning, engineering, anthropology, political science, psychology, geography, ecology etc. The subjects range from urban policy and retailing to housing degradation and climate change. They offer a testament to the complexity and interdependency of the urban phenomenon.

Governance is a fundamental issue for many of the projects. The first project "Democratic dilemmas of participatory planning" investigates the pitfalls and dilemmas of greater "public" participation in urban planning. It takes an innovative look at the institutions, relationships and strategies associated with planning processes and asks how we can have greater democracy in urban planning without compromising the functionality and accountability of civic administrations and our elected representatives.

GDUS looks at governance from the perspective of gender and diversity and explores whether integrated urban policies that address gender and diversity discrimination can also contribute to sustainable neighbourhoods by addressing mobility, social exclusion and structural changes more holistically.

This brings us to the issue of resilience. How do we ensure that our cities and urban areas meet the multiple demands of society in an era of increasing and uncertain change without constraining further development as the planet's population increases?

SUPERCITIES looks at resilience from a land-use perspective; comparing land-use patterns and planning policy developments for four countries and their influence on the resulting spatial forms for different city regions within each country.

Three projects deal with urban resilience from a sectoral perspective: DEGRA-CO investigates how we evaluate and address degradation of privately-owned flats in large housing estates in deprived neighbourhoods; REPLACIS considers the rise of experiential consumerism, its influence on retail planning structure and implications for the social and economic resilience of cities; and CURE focuses on the new cultural and creative industries replacing former industrial areas.

We depend on many essential services that can only be provided by healthy functioning ecosystems: food, water, building materials, energy, clean air etc. The SUPER project proposes integrating "ecosystem services" into urban spatial planning to improve urban resilience. It explores how

interactions between socio-ecological systems and governance systems could improve resilience to ecological and climate change.

The final four projects are devoted to climate change. Urban tourism is one of Europe's largest economic sectors. "Urban Tourism and Climate Change" investigates awareness of, attitudes and behaviours towards climate change within the tourism industries of three countries.

The Research Network for Climate-neutral Cities aims to integrate climate change mitigation and adaptation actions into urban planning. By bringing together city planners and researchers it prompts knowledge exchange on the successes and constraints of strategies and visions adopted by different cities and urban districts to improve resilience to climate change.

Heat stress amongst urban populations is predicted to rise as a result of climate change. The penultimate project looks at how air temperature and the urban heat island effect are influenced by the characteristics and design of urban streets.

Finally, TOPEUM seeks greater understanding of how urban space and building materials can be modified and designed to minimise energy use in Mediterranean cities where denser settlements favour greater shading but poorer air circulation.

Contributions from each of the research teams have been edited for the purposes of this anthology.

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Democratic dilemmas of participatory planning



To organise planning capacity for sustainability, long-term processes are needed that transcend formal divisions of authority across all public, private and civil sectors of society.

The paradox of participatory planning

Although there are many good reasons for collaborative and participatory planning, we know that participatory planning strategies are organised in temporary projects with vague and ambitious mandates, sometimes creating more frustration than traditional planning approaches.

In this article, we argue that an important cause of, and reason for, the problems has to do with democracy. Can participatory planning really be reconciled with traditional institutions of representative democracy? How do citizens' and politicians' conflicting ideas of accountability and the roles and mandates of participants meet, merge or clash when abstract ideas are transformed into everyday practices? Are these diverse notions dealt with explicitly?

The worst-case scenario, we assume, is when all actors are frustrated and locked in a planning process where genuine dilemmas are handled temporarily by ignoring them. Such a "coping strategy" is not likely to lead to sustainable collaboration processes.

Through comparative research, and by combining anthropological and political science, we believe it is possible to learn how such tensions are perceived and handled by participants. We can identify institutional design principles (if not specific solutions) to promote the organisation of participatory planning within the overall framework of representative democracy.

Participatory planning as institutional gaming

By approaching this planning phenomenon from the perspectives of anthropology and political science, we can gain a more detailed and innovative understanding of the prospects and problems of participatory planning. While planning theory entails analysing and developing planning strategies, political science offers a better understanding of the political context that affects attempts to institutionalise participatory planning. To make planning more participatory is to change the rules of planning and urban politics: positions, opportunities, privileges, resources etc., for different categories of actors, are reorganised. We refer to this as the institutional level of the planning process. We believe that it is fruitful to analyse participatory planning as a *game* between different actors trying to achieve their goals and interests through various strategies.

To evaluate participatory planning, its problems and potentials, we need to understand its relationship to other parts of the political system. Actors occupying different positions may share an interest in developing collaborative planning processes, but they will have conflicting ideas about how to make planning decisions legitimate and planning actors accountable. Political science offers the means to understand what drives specific actors in planning games and to evaluate the processes and outcomes in terms of democratic values and institutional tensions.

Four ideals of participatory planning

Participation as policy implementation

According to the first ideal, participation is a new approach for increasing the capacity to implement policies of the representative political system. Citizens are crucial sources of knowledge and experience which are important to the planning process. We predict that this is often what drives politicians and civil servants to embrace participation at the heart of the political system.

Participation as functional problem solving

According to a second ideal, participation is a strategy to coordinate every actor who controls a resource relevant to resolution of the planning problem. There is no political problem; participation is a response to a pure coordination problem. We believe this is what drives professional planners and developers to initiate and take part in participation.

Participation as interest articulation

According to a third ideal, participatory structures are promoted as new arenas for interest articulation and representation in order to advance the interest of certain groups that otherwise would be disadvantaged. The primary idea is to improve the opportunities for wider mobilisation within the planning process.

Participation as democratic deliberation

Finally, from a fourth perspective, the value of participation lies in the construction of a shared position, overcoming special interests, through



communication between participants and collective reflection on different positions and policies. Here, the primary idea is to organise a process for debate amongst affected actors. We expect that different types of citizen groups are driven by deliberative and participative notions of planning.

Participation within a political context may mean many things and therefore can give rise to complex tensions. Tensions may exist not only between the vertical parliamentary and administrative chain and horizontal modes of participation and communication, but also between different types of horizontal collaboration and participation: functional, participative and deliberative.

The promotion of open and flexible participatory networks and institutions poses two fundamental dilemmas. First, the promises of innovative participatory planning are open and holistic negotiation, communication and deliberation across not only

government and administrative boundaries, but also within a vertical hierarchy that is supposed to hold public servants and politicians accountable to the electorate. The horizontal processes of participatory planning need to be reconciled with the vertical chain of representative parliamentary democracy. On the other hand, there seem to be both democratic and efficiency rationales for horizontal planning arrangements.

Participatory planning in everyday life

Planning participants are seen as individuals, rather than as representatives of specific interests. Their motives and strategies are embedded in their everyday lives and social networks outside the social relationships and positions of the planning process and the formal political system. In order to understand the interactions and new (political) identities emerging, participants' negotiations and interactions must be examined in the context of their formal and informal relations. In contrast to the political science approach, we should expect these processes to differ from one individual to another. To improve our understanding of participatory planning we need to investigate what it means for the participants and how their views change over time. We must also examine whether and how their positions are informed by interaction with political institutions, administrations, citizens and political discourses.

Anthropological policy research focuses on the interaction between discourses, agents and systems of governance, the way they influence



one another in different contexts, time and space. When, for example, a new law, a political reform, or a protest movement is examined, the surrounding context of related events and phenomena is scrutinised by moving back and forth from part to whole; from micro to macro-processes. We can investigate single events as keys to understanding larger processes of societal change. Ongoing anthropological policy research on new regimes of governance and power is examining new political positions and changing relations between politics, public administration and citizens, such as fiery spirits, fixers, ethnic minority group representatives etc. An anthropological approach may provide overlapping and even conflicting stories constructed by participants trying to make sense of their network practices.

The value of national comparisons

Participatory planning is a catch-phrase used across continents. There cannot be a universal

“best practice” for participatory planning, but there could be good “design parameters” that would apply in each case. Comparative analysis of the process in different countries and for different cities will help us learn more about the dilemmas and pitfalls of participatory planning and develop strategies to improve the process.

For instance, participatory planning in Sweden, with its strong “local self-government” – taxation powers, etc. – may be very different from what happens in France, where traditionally there has been less scope for intervention and local government autonomy.

Swedish local democracy is traditionally closely related to the national party system, whereas in France, decentralisation of urban planning started in the 1980s with horizontal urban governance becoming progressively institutionalised. In 2002, legislation on “proximity democracy” made neighbourhood councils compulsory in every city with more than 80,000 inhabitants.

Spanish social movements on urban issues during the 1970s were an essential component of the creation of a new political culture. Spanish participatory planning processes are intermediate between the neighbourhood movement and the dominant role of national and regional governments. In the Netherlands, a need for integrated solutions and governance networks emerged in response to changes in the traditional “pillarised” society, together with strong sectoral divisions. Participation in urban planning started in the early 1970s when citizens were involved in urban regeneration.

The value of ambition and paradigms

It is easy to be cynical about planning. Planning research is filled with stories of failures and fiascos. We want to avoid this pathological tradition and are more interested in learning about the fundamental democratic dilemmas of participatory planning from ambitious and sophisticated examples.

Botkyrka is a suburban city in the southern Stockholm area. A large number of differing local arrangements for dialogues between politicians, planners, civic associations and citizens demonstrates the coexistence of networks for coordinated problem-solving and public participation. Institutional arrangements have been developed under the Botkyrka Dialogue to improve public participation coordination and mechanisms.

‘Neighbourhood groups’ (*områdesgrupper*) are at the centre of this strategy. These multi-actor institutions developed as part of the local implementation of the national Metropolitan Development Initiative in Botkyrka. The ‘neighbourhood groups’ are supposed to work as a forum for collaboration (*samverkan*) between interdependent actors from different sectors (schools, social security authorities, housing associations, etc.) and as an arena for public participation and dialogue between different actors, local citizens and residents. These ‘neighbourhood groups’ also provide a platform for the latest institutional innovation, the dialogue forum, where politicians from the municipal assembly have special responsibility to implement dialogue policy in each of the seven neighbourhoods of Botkyrka.

This is an example of the ideologies of participatory planning. Here we find strategies to (a) coordinate different local authorities and semi-public companies, (b) mobilise participation from those affected, and (c) link these processes to the formal representative structures of local democracy (the municipal assembly and board).

This brief description of the Botkyrka case highlights the idea that the complexity of planning requires new and more horizontal, collaborative approaches. There are ambitious examples of “Botkyrka-cases” around the world and fruitful comparisons should start with them.

Conclusion

Promoting participation and dialogue entails introducing new notions of accountability, democratic legitimacy and the roles of politicians, planners and citizens. As long as the norms and ideas of representative democracy are important among politicians and civil servants, we expect there will be no easy answers to the question of how we can organise efficient participatory and cross-sector planning networks. In practice, the notion of vertical chains of responsibility coexists with new ideas about participatory and holistic planning approaches – but not without tensions. The introduction of such innovative modes of planning will create frustration, tensions and even conflicts; not only within the planning process, but also for the wider political system and actors, such as politicians, planners and citizens.

If urban sustainable development requires institutional frameworks that encourage and enable actors with different aims, perceptions and positions to collaborate and communicate across formal and traditional boundaries, we need to take these democratic issues seriously. Failure to find legitimate ways of implementing participatory forms of planning could hamper planning innovation. The tensions and dilemmas of participation raise issues of democracy. Addressing them should be a crucial concern of planners and politicians.

Our fundamental arguments are as follows:

- Urban planning for sustainability requires long-lasting participatory network processes in order to formulate and implement integrated and holistic solutions.
- If such participatory network planning strategies are successfully established, they will challenge the traditional democratic structures and change the rules of urban politics.
- there is a need for practical solutions to difficult questions concerning the relationship between the institutions of representative democracy and the new modes of horizontal participation.

To expect tensions and dilemmas is not to assume conflict between more horizontal modes of planning and the traditional notion of representative democracy. This will depend on how the relationship is organised. Though specific cases of participatory planning may undermine accountability of representative democracy through non-transparent and



elite-dominated negotiations, other cases seem to contribute to a vitalisation of representative democracy by introducing clearly defined and participatory mechanisms within the overall framework. The introduction of participatory forms of planning and governance may also strengthen the potency of representative democracy by increasing the capacity of the system to solve problems of specific social groups.

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GDUS gender, diversity and urban sustainability



The Gender, Diversity and Urban Sustainability [GDUS] Network investigates and analyses experiments in urban policy which try to address gender inequalities in everyday practices of the city.

Rapid urban sprawl in the last century has had far-reaching consequences for sustainability; profoundly changing time-space patterns steered by essential everyday activities. Large urban areas and single-use zoning cause excessive transportation, energy and water consumption and waste production. Sprawl places stress on family life and paves the way for social friction and difficulties.

Political leaders try to address these issues but implementation of sustainable policies is often frustrated by complexities, such as economic factors and market-forces. Within Europe, the interplay of highly diverse cultural traditions has led to very different policies, and outcomes vary widely between states.

As the Leipzig Charter on Sustainable European Cities 2007 points out, holistic strategies and coordinated action are increasingly necessary in working towards sustainable cities. Problems regarding social exclusion, structural change, climate change and mobility have to be tackled in an integrated manner.

Perspective

In GDUS, we choose to view social cohesion and sustainable development from the perspective of gender inequality. As an interdisciplinary domain, the gender perspective in urban studies is concerned with supporting everyday life through adequate housing, neighbourhood services, meeting places, transport, etc. as well as by improving participation in, and influencing of, city planning.

Taking account of everyday time-space patterns and planning for greater efficiency are responses to the demands of numerous grass-root organisations and initiatives, as well as to demographic and social realities. Greenhouse gas emissions can also be reduced and the acceptability of territorial measures addressing climate change and urban sustainability may be enhanced.

Objectives of GDUS

- to organise expertise across EU-member states and explain implications for practice and policies regarding gender-aware planning;
- to create an inventory of good practices; to recommend best practices that support sustainable urban development;
- to experiment with innovative methods of knowledge exchange with practitioners, policymakers and citizens groups;
- to develop new evaluation tools for urban policies that take account of gender;
- to evaluate the effectiveness and impact of policies;
- to draw recommendations for different stakeholders, planning systems and scales;
- to disseminate GDUS results across the member states; and
- to develop knowledge that will advance spatial planning theory and practice.

Connection to everyday urban practices

Experts of the Gender, Diversity and Urban Sustainability [GDUS] Network collaborate to investigate and analyse experiments in urban policy which try to correct the discriminations arising from gender inequalities in the everyday practices of the city. They contribute the results to the theory and practice of town-planning and urban development on the one hand and social policies supporting urban sustainability on the other. Tools, pilot projects and manuals have been created to move towards urban development that will improve social cohesion, reduce impacts on climate change and

raise the quality of decision-making processes. GDUS members enable policymakers to make more efficient and effective use of existing EU-funded research on gender and anti-discrimination policies.

Research design and methodology

GDUS is transdisciplinary and involves researchers with a gender perspective working together from the fields of landscape planning, urban design, spatial planning, sociology, political science, architecture and geography. It combines theoretical concepts, methodologies and research from these disciplines to bring a holistic approach to the complexity of everyday life in cities.

Holistic strategies and coordinated actions are increasingly necessary in working towards sustainable cities to ensure that social exclusion, structural change, climate change and mobility are addressed in an integrated way.

To enhance connectivity between research and policy, GDUS works with local authorities and other stakeholders to develop new integrative tools that will link research and practice in the design and implementation of sustainable policies. In this way, we help exchange knowledge and scientific analyses to improve sustainable development and climate change policy.

Two examples of collaboration demonstrate the value of operating as an exchange network:

- GDUS co-organised a series of thematic

sessions at the Madrid 'City Futures' conference in July 2009. These sessions brought to light numerous local initiatives and evaluated the benefits and constraints of a paragraph on gender included in national planning legislation. On this occasion, the network expanded beyond the URBAN-NET project partners, incorporating experiences from Italian policies.

- At the 2009 annual GDUS hosted by BoKu in Vienna, besides monitoring progress on building a body of knowledge, GDUS also joined forces on a local case-study; applying the different tools to one of the local 'large urban projects', Nordwestbahnhof.

Examples of tools and interventions

From Gender_Archland, we share the experience of Gender Practice and Criteria in Spatial Planning (2006) Recommendations for the implementation of Gender Mainstreaming in Spatial Planning are issued on the basis of different existing regional examples and by researching products, processes and structures. This was further developed as Gender Compass Planning (2009); a supportive instrument for the planning administration of Freiburg and for external planning offices. This brought the gender perspective into projects and processes: from land-use planning and local master plans through to individual building plans.

Working with Umeå city council, northern Sweden developed ideas around the gender equal city to find new ways of improving women's participation



in city planning. Particular focus was given to the young, the disabled and immigrants. The new participatory methods included “brainstorming” sessions with representatives from different women’s organisations and focus group interviews with different groups of women to create visions for the “woman-made city”.

The results of the Daily Routines Project, funded by the European Social Fund, have been disseminated more widely to enhance communication between social policy and spatial planning. This has resulted in the development of several planning instruments, some of which can be consulted online: a virtual version of the traveling exposition ‘all around (the clock)’; best practice time-based planning and a do-it-yourself scan.

In Austria, gender mainstreaming has been successful as a top-down strategy. Since 2001, a number of experiences have originated from the planning departments of larger cities. The first “gendered district”, Mariahilf in the City of Vienna, is based on the concept of a fair-shared public space (Kail, 2005).

The transnational project GenderAlp! paved the way for a gender-based approach for the province of Salzburg in the revision of the spatial zoning plan for the Greater Salzburg Region during 2003. GenderAlp! is a rare example of gender-aware spatial planning on a regional scale. The “3R” method developed in Sweden was translated to spatial and urban planning in the framework of GenderAlp! In spite of very different regional

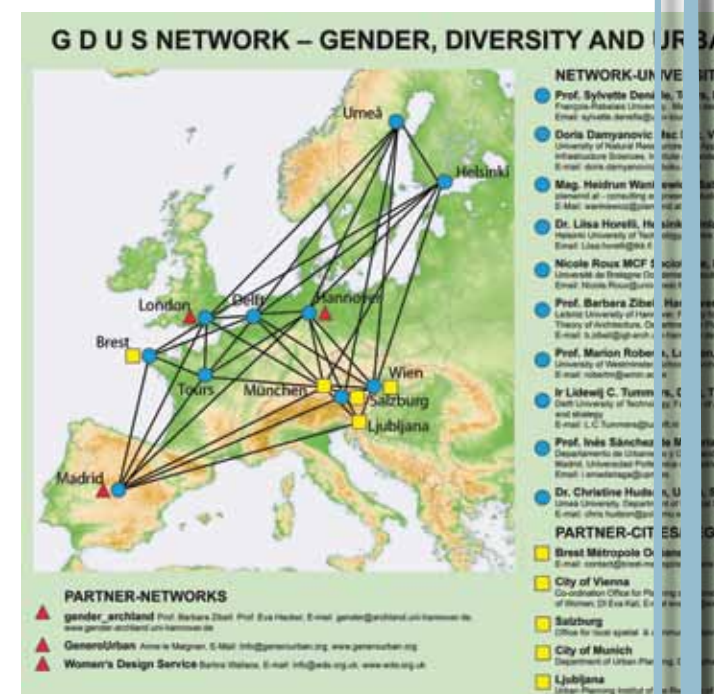
administrative systems, traditions and planning cultures, a common understanding of key issues in gender-aware planning emerged from this example of transnational cooperation, revising stereotype concepts and strategies; including those for mixed-use areas.

Concern with spatial issues not only involves municipalities but also balances urban and rural development and migration between both areas.

Project examples include: “Being young – getting older” in rural Austria which combines sustainable municipal development with equal opportunities in decision-making processes or “Together we develop our spaces” - an example of requirement oriented municipal development, increasing efficiency and acceptance of measures through space-saving settlement and municipality development in rural communities while noting age and gender-specific needs and requirements, (BOKU, Institute of Landscape Planning).

Future steps

GDUS network continues to develop criteria for the evaluation of local experiences in a cross-cultural comparison. This will not only enhance the local strategies but also build a body of knowledge to contribute to the innovation of European planning systems.



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GDUS website: www.rali.boku.ac.at/gdus.html

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SUPERCITIES sustainable land-use policies for resilient cities

The European urban landscape is changing profoundly under different economic, ecological, social and political dynamics.

Diverse spatial dynamics, such as urban sprawl (fragmented development beyond the city) polycentric development on city-region or regional scales and urban shrinkage can be observed simultaneously. Cities undergo continuous change; accelerated by transforming urban economies and new functions assigned to cities in this era defined by global economic imperatives.

Economic conditions and changing ecological pressures necessitate effective land-use policy instruments; both to confront the problems at hand and to assess risk and uncertainty. The question as to how urban systems might accommodate future crises, disasters and emergencies has become critical due to the increasing vulnerability of urban systems to both global and local ecological problems and catastrophes. Creation of integrated land-use policies that will increase the ability of urban systems to predict, absorb, and cope with changes, and reorganise and develop sustainably, has become increasingly important and defines the context of “resilience”.

Resilience thinking focuses on adaptive capacity which aims to equip urban systems to deal effectively with change, uncertainty and risks. Adaptive capacity is about optimising the ability of urban systems to pre-empt and respond to change. This is especially important for the built environment and infrastructure where change cannot happen rapidly. Effective land use policy instruments can confront the problem at hand and assess conditions of uncertainty. In this way, land-use policies

and planning processes can be understood not as predetermined, but as tools whose use must vary with circumstances. Creation of an integrated land-use policy requires seeing the larger picture of complex urban systems. In other words, sustainable urban policies should be introduced to enhance the ability of urban systems to increase their adaptability to absorb changes, reorganise and develop sustainably.

Aim of SUPERCITIES

SUPERCITIES will evaluate new policy instruments in diverse planning contexts and compare the consequences of unexpected changes due to crises, threats or disasters that have diverse impacts on the spatial development of cities. We will identify the resilience of urban systems by assessing the sustainability of land use policies and explore the different development pathways of case studies from four countries with diverse urban dynamics.

Turkish cases - rapid urban growth and population expansion.

Portuguese cases - both urban shrinkage and sprawl.

Dutch cases - moderate urban growth within a polycentric urban structure.

Swedish cases - moderate urban growth within an ‘emerging’ polycentric urban structure.

Firstly, we analyse current urban policy instruments, their implementation and outcomes, by taking sustainability as a reference point. Secondly, we design and apply an evaluation methodology focused on sustainable planning for selected case studies. Thirdly, we identify the main underlying reasons behind the success and failure of planning practices for each city. Lastly, we provide a number of solid contributions to the wider theoretical debate on sustainable development.

Why the project is urgent

Urban resilience is a relatively new but rapidly developing area of research. In addition to recent literature on the subject, research groups and consortia focusing on urban resilience have been formed, such as the Resilience Alliance (a global consortium of scientists and practitioners from various disciplines collaborating on the resilience of complex socio-ecological systems). However, the question of how further urbanisation could be transformed to harness cities as generators of innovation and solutions to global sustainability has not been studied.

The concept of urban resilience is very broad, and, as a consequence, definitions of resilience cover a range of different issues. Some definitions focus on the resilience of ecological species or the environment (disciplines from which the concept originates) to withstand some sort of change or disruption, while other definitions focus more broadly on the resilience of the city's population, infrastructure,

social structure, economy and environment. Many definitions consider resilience in terms of vulnerability and being able to withstand both natural and man-made hazards. Others define urban resilience as the degree to which cities are able to tolerate alteration before reorganising around a new set of structures and processes, claiming that urban resilience can be measured by how well a city simultaneously balances ecosystem and human functions.

Recent trends are very interesting

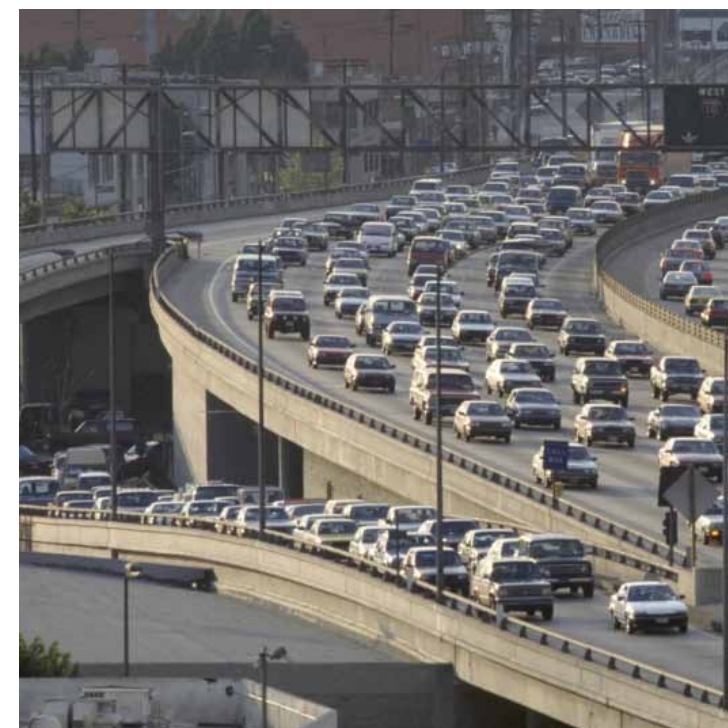
The urban landscape of our cities has been shaped by the recent emergence of new urban forms – large residential, office, commercial, and science and technology developments, amongst others. These new forms are associated with:

- new mechanisms of urban space provision and management, driven entirely by private investment or public-private partnerships;
- transport infrastructures, e.g. road, motorway and railway networks; and
- other urban facilities that can secure international competitiveness (facilities for fairs, exhibitions, entertainment parks and arenas etc.)

Large developments are detached from immediate surroundings and existing infrastructure, e.g. gated communities, closed condominiums, thematic parks, shopping centres (Ellin, 1999; Soja, 2001). The academic literature increasingly questions these types of urban development projects (Swyngedouw, 2005).

The decline of traditional industries in cities has led to the transformation of derelict or degraded land, such as brownfield sites. Due to growing traffic congestion and increasing environmental issues caused by spatial decentralisation policies, inner-city locations became more attractive to individuals, society and local governments; increasing sociocultural diversity and gentrification by private investors. Additionally, brownfield sites brought new opportunities for inner city development and motivation to reconsider compact city policies.

Development of these areas has been uncoordinated and fragmented, causing increasing concern



over the implementation of regeneration projects. This demands careful assessment of the specific outcomes of land use policies, plans and programmes used in different countries and cities.

Turkey - Istanbul

Politics and urban policy took a new turn at the start of the millenium. Attempts begun in the early 1980s to integrate into the world economy were intensified. Central government's approach within the last decade has depended on enhancing the market economy, increasing interaction with foreign capital and growing privatisation. Behind changes to the urban legislative framework lies the domination of a new approach towards the city – urban space. The redistribution and greater authority of local administrations allows the city to “become” an economic tool. Urban development is viewed as an economic source by local governments.

Legitimation of the generation of land rent in urban areas is linked to new and unequally distributed privileges in urban re/development projects. Privileges that are granted to facilitate implementation of ‘urban projects’ accelerate the generation of greater economic values from urban land. These issues are highly problematic because they intensify social, spatial and economic inequalities and polarisation within the city.

In terms of spatial organisation, the new urban policies, which are partly related to urban population growth, have enhanced sprawl and created huge pressures on ecological systems.



Sprawl has also led to increased traffic and rising congestion which has negative effects on the environment and quality of life.

Urban land development and form have no major focus in national policy documents or urban legislation. Urban sprawl is associated with the rapid rise in car ownership and implementation of new policies, especially by the 1980s. Although some issues, such as the loss of rural/agricultural land, protecting environmental and cultural assets,

economic sustainability etc. are mentioned, no course of action is proposed.

Istanbul Case Studies

Büyükdere Avenue, Levent-Maslak Axis development shows inner city transformation under market mechanisms, providing new spaces demanded by new functions within the metropolitan area. If meeting demand for commercial real estate is not

handled successfully in planning and relevant policy instruments and projects initiated by the public sector, market mechanisms create pressures by inflating commercial real estate prices that lead to re/development initiatives by the private sector. The study area is the most important example of private sector-led re/development projects in Istanbul. The development pattern of the area contributes to urban resilience due to the compactness of the high-rise office buildings, mostly by redeveloping inner city former industrial sites. By becoming an important part of the Istanbul CBD (Central Business District), the area contributes to the economic resilience and social cohesion of the city. However, high rise commercial real estate developments in this area have negative effects on urban resilience in terms of urban ecology. Increased traffic and more bridge crossings over the Bosphorous have caused traffic congestion and associated problems such as pollution and noise, which contradicts the sustainability principle.

Bahçeşehir (“garden city”) is a large residential development which accelerated Istanbul’s urban sprawl. Much of the development is on former agricultural land. Infrastructure and facilities provided by the Bahçeşehir project attracted more housing on neighbouring land and paved the way for further sprawl at increasing distance from the CBD. Evaluation of the development process shows both positive and negative impacts on urban resilience. Supplying high quality housing for a rapidly increasing population, albeit largely for upper income sections, is a positive impact, whereas the

use of agricultural land and high dependency on private transportation are negative impacts.

Portugal - Lisbon and Oporto

The Portuguese planning system, created largely after the so-called April Revolution of 1974, established parliamentary democracy and created new institutions, such as the Regional Coordination Commissions. The 1976 Land Law introduced new tools in the planning system, such as the renewal of urban areas and controls over the development of illegal urban areas. The Municipal Master Plan (Plano Director Municipal - PDM) was introduced in the early ‘80s, however only a few municipalities had prepared and approved their plans according to this new legal framework by the end of the decade.

The basis for the present spatial and urban planning policy was established in 1998. The Framework Law of Spatial Planning and Urban Development created a territorial management system, regulating vertical and horizontal inter-relationships between different levels and sectors of public administration and called for the participation of citizens and social and economic sectors. The legislation provided, for the first time, a comprehensive planning framework including national, regional, and municipal scales of planning. It defined the framework for spatial and urban planning policy and introduced the National Programme for Spatial Planning Policies (Programa Nacional de Política de Ordenamento do Território – PNPOT). The PNPOT sets a number of guidelines and principles for sustainable territorial



development and cohesion and coordination of sectoral policies with territorial impact, establishing a territorial model for economic and social development. The PNPOT is articulated with other important strategies, such as the National Sustainable Development Strategy 2005-2015. One of its goals is the promotion of a more inclusive urban dynamic that is less environmentally destructive.

The resilience concept is not explicit in any planning policy or programme documents, however indirect references are found in other concepts such as sustainability. For example, Urban Planning and Environmental Management Systems programmes refer to the adoption of an urban development

model, focused on social and territorial cohesion, the need for urban rehabilitation and effective use of urban centres and planned urban developments.

Lisbon

Cacém is a residential suburb with good railway access to Lisbon. Alcântara is an inner city, former industrial area in decline since the middle of the 20th century with good road and rail links but experiencing urban shrinkage. These case studies, with different socio-economic and physical dimensions, will be analysed for different attributes of resilience.

Multilevel coordination and vulnerability will be analysed in the case of Cacém. Multilevel coordination is an important socio-economic aspect which enabled greater flexibility in legislation and institutions. This also allowed for environmental classification of streams, conservation measures and the rehabilitation of soils through the reformulation of public spaces. The impact on environmental vulnerability will be examined as a result of these changes.

The attributes of connectivity and adaptative capacity will be analysed in the case of Alcântara. Recent changes to roads, railways and pedestrian networks will improve local and regional connectivity. Alcântara's potential, together with:

- programs and policies that increase social inclusion;
- the introduction of mixed land use; and
- improvement in urban continuities,

will promote changes in the economic and social fabric of the area that increase its adaptive capacity.

Oporto

An urban heritage area in the centre of Oporto; and an old industrial site, surrounded by farmlands, in a peripheral municipality of Greater Oporto, provide two different socio-economic and physical settings.

Baixa District of Oporto is an historical area with important heritage value that needs to be preserved but most of all rehabilitated. Social problems are critical in the Baixa district. In the last three decades a shrinking and ageing population has led to an increase in vacant properties. Younger and more active members of the population, with greater economic opportunities, move out to more attractive or affordable areas of the city. Low housing standards, poverty and unemployment are the most common problems. giving rise to crime and delinquency.

Santo Tirso - Ave Valley Region demonstrates that social capital exists, but needs to adjust to a new development scenario. The area has natural population growth, although the crisis in the industrial sector created difficult conditions for the local economy. Positive transformation framed by the social and ecological dynamics of the area is needed. Santo Tirso - Ave Valley exhibits spontaneous development with almost no planning strategies and no clear criteria for re-urbanisation (similar to other peripheral cities that have a continuing process of urban expansion).

Sweden-Stockholm

In Sweden, the social welfare state was created by strong government machinery, an important public sector and self-governing local authorities. The 1970s were the starting point for a new epoch of national physical planning with legislative changes in 1972. The legislative amendment stated that all new developments should be suitably located and assessed by municipalities, which strengthened their planning monopoly. In 1987, the Building Act of 1947 was replaced by the so-called Plan-och Bygglagen (Planning and Building Act), which made municipal comprehensive planning mandatory. Although such comprehensive plans are not legally binding, they promote public interests and have to be kept up to date. They are increasingly used as municipal development programmes focusing on public interests such as housing, employment, the environment and peoples' wellbeing, in the form of social welfare goals.

The 1987 Planning and Building Act provides the main statutory guideline for spatial planning in Sweden. It emphasises support for a good, long-term sustainable living environment for the existing population and for future generations. However, given national government's limited spatial planning and urban development planning role, it is not surprising that only a few strategic policies touch upon sustainable land development, compactness or resilient cities.

A more recent move, initiated by the Government Offices of Sweden, the Swedish Board of Housing, Building and Planning and the Swedish International Development Cooperation Agency (SIDA), highlights the main strands of intended national activities as:

- promoting sustainable cities;
- creating a delegation for the development of sustainable urban areas, with a particular focus on climate change; and
- communicating and cooperating.

Stockholm

The Stockholm region has a classic monocentric urban configuration which, due to urban sprawl and development along radial transport axes, is becoming more polycentric. The two central ambitions of land development planning can be easily read from the present draft plans; one plan for the Stockholm region, and the other a comprehensive plan for the municipality of Stockholm.

Six regional urban cores (to be developed around the city of Stockholm), plus one central regional core (the city of Stockholm) are studied according to three main hypotheses:

- polycentricity at the regional level (developing six regional urban cores to release developmental potential from the central core) can contribute to 'urban resilience' if existing regimes or mechanisms have adaptive capacities;

- polycentricity gives a metropolitan area 'room' to manage urban dynamics;
- a functioning system of regional polycentricity is less vulnerable to future disturbances.

The case studies will help shed light on the implementation of a polycentric strategy in the Stockholm metropolitan area since 2001. As the area is very dependent on its historic city centre, the interplay between the (emerging) regional urban cores and the central one is critical. The objective is to analyse how much a polycentric strategy can be a robust and promising tool to identify trade-offs in contested projects with a strong impact on land-use.

Netherlands - Rotterdam

Changes in Dutch spatial policy are characterised by:

- concentrated decentralisation (1960 to 1980) where national policy aimed at dispersing growth out of the Randstad towards more peripheral regions of the country;
- a compact city era (1980 to 2000) where increasing policy interest in network concepts was noticed, reflecting the interdependencies between the cities of Randstad; and
- decentralisation and deregulation since 2000 with relaxation in urban development legislation.

Urban planning legislation has undergone immense change since the 1960s. The first memorandum

on Spatial Planning (1960) was aimed at creating physical conditions for the growth of modern industries and the building of new houses. The second memorandum on Spatial Planning (1966) was the first powerful stand against suburban sprawl. The main idea was to make efficient use of land and fund services and infrastructure to preserve the Green Heart. The memorandum advocated a spatial policy of spreading population and economic activities more evenly in the country and introduced the concept of 'collected de-concentration' to control the suburbanisation process around the larger urban agglomerations. This policy was seen as a feasible compromise between concentration and low-density dispersal of urban activities.

Compact urban development has remained central to Dutch spatial planning. The third memorandum on Spatial Planning (1973-78) suggested restricting suburban growth to 'growth centres'. The fourth memorandum on Spatial Planning (1988), followed by an extra edition in 1994 (VINEX), shifted the planning focus from the suburbs back to the cities, which needed new growth impetus to maintain a competitive climate. Thirteen cities were designated as 'urban nodes' with priority status for public investment and efforts to concentrate amenities. The government tried to guide new urban re/development to locations within the existing urban areas ('brownfield' sites) and new 'greenfield' sites near existing cities ('VINEX' locations) (Geurs and van Wee, 2006). The fifth memorandum on Spatial Planning (2001) underlined the crucial importance of creating 'spatial quality', i.e. spatial and cultural

diversity, economic and social functionality, social justice, sustainability, attractiveness and 'human measure'. It suggested drawing clear contours around present and future built-up areas (red contours) and areas where nature and environment have predominant value (green contours).

In the early 1990s, Rotterdam city council (and the Dutch government) introduced strategies for the future of the city with the main aim of increasing economic competitiveness and attractiveness of the city in local and global networks. This brought about a set of changes including large urban regeneration projects in the inner city to create space for new economic activities and new residential environments in response to the needs of new urban classes. It also saw new projects on the edge of the city that were intended to provide a way of stemming urban out-migration while providing attractive new residential environments for employees in the city of Rotterdam and its surroundings.

Kop van Zuid is a large-scale urban regeneration project that aims to contribute to the economic competitiveness of the city as a whole but its contribution to the social resilience of the city has been problematic (despite social cohesion objectives) due to a market-led (rather than socially-led) approach.

Nesselande

New town housing developments around large cities that aim to contribute to the social resilience of the city as a whole (by providing liveable and attractive housing) can have a negative impact on

environmental and social resilience by upsetting natural and social balances, due largely to market-driven approaches. 'New town' housing areas at the edge of the city, aiming to contribute to the

competitive advantage of Rotterdam in an environmentally sensitive manner, have still had negative environmental impacts.



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DEGRA-CO degradation of large, privatised housing estates (built 1950 - 1990)

You recognise the scale, the blocks and the managed open space as the unmistakable features of mass housing but their uniformity and lack of identity are confusing, you don't know where you are and you realise "I could be anywhere in Europe".

Large housing estates with multi-storey buildings and functionalist urban composition are ubiquitous in Europe, as are their associated problems, opportunities and challenges. Although large housing estates have resulted in strikingly similar looking neighbourhoods, the political, economic and social conditions from which they emerged are very different. Since most of them were built between the 1950s and the middle of the 1970s, the political setting on both sides of the iron curtain (socialism in the east, welfare capitalism in the west) explains some of their specific social and economic characteristics.

Within the former politically-defined 'blocs', however, the differences are also remarkable. Apparently, there has never been a uniform socialist way to solve problems with collective housing buildings, and the same is undoubtedly true for the way western countries have dealt with similar challenges. Partly, these strategies are reflected in the proportion of such estates relative to the total housing stock, partly in the percentage that is owner-occupied ('condominiums'). Their position in the housing market affects the amount and severity of the physical and social problems associated with them.

Imagine you have landed by parachute somewhere in Europe. You look around and find yourself in the familiar environment of a high-rise housing estate.

Focus of DEGRA-CO

The main goal of DEGRA-CO is a solid understanding of the degradation status and processes in collective housing estates under private ownership. We ask "How can the degradation status and processes of privatised large housing estates be understood on the building and urban scale?"

In many European cities, post-war collective housing estates are "dormitories"; parts of the city lacking spatial and functional diversity, many of them deprived neighbourhoods where social exclusion and spatial segregation phenomena are interrelated with the problems of the built environment. However, the housing policies and intervention experiences are very different from one country to another. Evaluation tools and methods are the first step in understanding degradation, developing a suite of realistic remedies and establishing policy to prevent degradation in high-risk vulnerable cases.

Objective

DEGRA-CO is analysing diagnostic methods and instruments of degradation in privatised large housing estates built during 1950-1990. It is based on a comparative approach for problems and associated solutions in Bulgaria, France, the Netherlands and Romania. These four countries have strikingly different housing markets with great variations in the proportion of large estates, so that the differences associated with large-scale owner-occupied apartment buildings are almost incomparable at first glance. How can we define their deterioration

and decline? What kinds of strategies have been developed to improve their situation? What is the most efficient scale for dealing with them, the individual block or the neighbourhood?

The economic and social circumstances that lead to these blocks of owner-occupied flats largely define their present state. Private ownership in the housing neighbourhoods of Romania and Bulgaria is close to 100%. It is difficult to find similar cases in western countries as LHEs (large housing estates) are predominantly social housing with public or cooperative ownership.

The resilient city

DEGRA-CO proposes an integrated approach for analysing the various dimensions of urban decay in privatised housing estates, in order to provide an estimation of the scale and intensity of the degradation phenomena. Creative intervention scenarios can only be considered by conducting an integrated diagnosis; through local as well as national housing policies, in order to ensure sustainable development for the whole city, including these estates.

Physical degradation is the most visible part of complex socio-economic decline phenomena characterising large housing estates. There is a snowball effect on the future of these housing estates in terms of quality of life, competition between cities, and market position within the city. DEGRA-CO has a multidisciplinary approach: degradation is a cross-cutting theme integrating the economic, socio-cultural and ecological dimensions of sustainability.

Diagnosis takes into consideration links between spatial, social, cultural, ecological and economic development issues. DEGRA-CO is a quest for a better understanding, both in the east and the west of Europe, of what causes some large housing estates to become degraded while others remain attractive on the housing market.



Connection to everyday urban practices

Romanian and Bulgarian LHEs share similar degradation features and evaluation and diagnosis problems. The current remedies are unclear and insufficient. Specific policies are needed to stimulate more sustainable solutions to improve living conditions.

France has developed successful risk assessment, evaluation and diagnosis methods for addressing degradation in high-rise privatised housing areas. In the Netherlands, large housing estates are atypical and privatised condominiums in LHEs are very rare. Housing policy is designed to minimise the risk of degradation.

DEGRA-CO has created opportunities for knowledge exchange between the national teams, fostering transnational competence in understanding complex degradation processes. It also facilitates an interdisciplinary approach. Meetings held in the participating countries, together with field visits, analyses and presentations by local stakeholders, allows a common understanding of degradation processes in the context of specific national and local issues.

Firstly, we must understand the history of the creation of the LHEs, their subsequent privatisation and their current status in the four participating countries. Secondly, we must identify diagnosis and evaluation tools to assess degradation. The third step is the evaluation and experience of existing support and intervention programmes with special attention to analysing stakeholders' roles. Lastly, we will present significant conclusions and recommendations both for the diagnosis of policies and for the design of programmes to address degradation in privatised LHEs.

The future of degraded condominiums is a major issue across Europe, east and west. It is a sensitive subject for public debate. In spite of historic,

political and economic differences between the east and west, DEGRA-CO believes that common issues can be identified for the four participating countries and remedial measures adapted for local situations.

The history and markets of the four countries are focused on private ownership. Rules and procedures are required for dealing with assets in common ownership, e.g. outer walls, foundations, roofs, entranceways, etc. A clear legal framework is essential for management and maintenance. The deterioration of a condominium is a complex process. No single factor or agent is responsible. It is more often a complex combination of various factors with cumulative effects. It is not easy to distinguish causes and consequences: for example, general deterioration prompts co-owners to sell their property at a low price to modest households who may not be able to pay condominium charges in addition to their mortgage. If the first signs of deterioration are not identified and addressed, conditions can deteriorate rapidly. In other cases, a lack of global upkeep due to unpaid charges or an ineffective managing agent may prompt co-owners to leave.

Indicators of degradation

One of DEGRA-CO's main results has been identifying a series of indicators as either endogenous or exogenous degradation factors.

Endogenous indicators

Social: low income residents who cannot meet management and maintenance charges; overpopulation; despondency due to growing degradation; decreased value resulting in negative equity.

Sociological: misunderstanding of condominium functioning; tensions between co-owners; divergent expectations; decision stale-mates; co-owner demobilisation.

Stakeholder functioning: incompetent management agents; lack of participation; non-existent or demoralised co-owners' committees; lack of collective decisions.

Financial: unpaid common charges; condominium debts caused by unpaid charges; personal debt; risk of loss of utility services – water, heating, power; increased repossession of homes.

Technical: deterioration of building fabric, common areas and facilities due to lack of maintenance. This can result in health or security problems for inhabitants; high-energy consumption due to poor thermal insulation; building defects arising from poor construction etc.

Property: decrease of real estate market value; empty flats and squats; absentee landlords seeking rental profit but neglecting assets.





Exogenous Indicators

Examples include: location; whether regeneration is planned for the area; public transport services and whether local facilities value or devalue the condominium. Other examples include environmental factors such as noise, pollution, traffic etc; technological or natural risks and hazards; access to social support; resident committees etc. There are also less tangible indicators, such as the perceived image or aesthetics of an area or block of flats.

DEGRA-CO has created a hierarchy of dysfunctions and assets from analyses of endogenous and exogenous factors. These are related to various

sectors: physical environment, managerial environment, economic environment etc.

French strategies take into account partnership possibilities, economic and spatial feasibility, social, judicial, technical and urban dimensions. Intervention strategies are elaborated by the mobilisation of concerned partners. Evaluation of a condominium's condition is not based solely on expert objective surveys, but also on the views and opinions of co-owners' associations, local authorities, and other stakeholders with financial input. Of the four participating countries, France has the most advanced system of public intervention

in vulnerable condominiums. During the '80s and '90s, the public authorities had to give strong justification for their actions but nowadays intervention measures for condominiums facing difficulties are integrated into public policy.

Examples of intervention measures

- maintain the social function of the building stock as housing to secure access to property for poorer households; socially disadvantaged and marginalised people, e.g. single parents, large families, immigrants etc.;
- repair and modernise ageing buildings to improve security, living conditions and sustainability;
- promote social cohesion on different territorial scales;
- address unacceptable housing, especially in older areas;
- offer co-owners the option of participating in local urban regeneration projects.

By focusing on privately owned housing, DEGRA-CO highlights differences in the understanding of LHE property in relation to the socio-economic status of the residents. By sharing practices and experiences of French, Dutch, Romanian and Bulgarian situations, DEGRA-CO brings added value in analysing and questioning perceived opinion and practices and evolving a systematic methodology for evaluating and diagnosing LHE degradation problems and possible solutions.

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The background of the page is a photograph of a modern, multi-story building with a glass facade, situated on a waterfront in Amsterdam. The building is reflected in the water, and the sky is overcast. The text is overlaid on this image.

CURE

cultural industries and urban resilience

From the IJ Kantine, the restaurant at the waterfront of the former NDSM shipyard in Amsterdam Noord, you have a great view of the skyline of Amsterdam right across the water IJ.

The men and women in this restaurant, most of them colourfully but casually dressed, drink their mint teas, cappuccinos or chardonnays, talk into their mobile phones or glance at their blackberries. They sit alone or with others. They may come and go at any time between say 9.00 am and 12.00 pm. It might not look so at first glance, but these people are working and, moreover, their work is part of the brave new world of the cultural industries. They discuss new projects, the opening up of new markets and they talk about who is hot and who is not. They may be employees, self-employed or a combination of both. Most of them live across the water, in the centre of Amsterdam; some are from elsewhere in the Netherlands and others are from abroad. Their networks comprise not only people they meet in the restaurant but contacts in New York, London, Hamburg, Stockholm; many miles distant but only a phone call or a click away. Together, they work on a new video clip for the nearby MTV studios or for another audiovisual firm around the corner, a new format for a television programme, a new advertising campaign, a new design or product with a strong aesthetic component. This aesthetic dimension is essential in escaping, albeit temporarily, competition on price by carving out a particular niche. Aesthetic innovation is indispensable to stay ahead and people have to work hard to come up with it.

What may appear, at first glance, to be leisure turns out to be an integral part of working in the cultural industries: meeting other people to combine ideas, exchange knowledge, be part of the “buzz” and come up with *conceptual innovations*.

Not so long ago, this restaurant was the canteen of the NDSM shipyard. Large ships were built here until the yard had to close in 1978 due to the structural decline of manufacturing activities resulting from competition from low-wage countries. Before closure of the shipyard, the workers came in every weekday at the same time and left at the same time. They all congregated in that same restaurant at regular times, such as during their coffee and lunch breaks. Their work was to build large ships on the basis of detailed blueprints. Their creativity was mostly limited to a small domain or only practised outside the shipyard. The ships may have been sold to customers abroad but the lives of the workers were strongly centred around the shipyard.

The change in composition of the clientele of the IJ Kantine is evidence of a much larger and broader process of structural change taking place in developed urban economies. The departure of many large-scale manufacturing and logistical activities, such as shipbuilding, left a gaping hole both in the economy and in the spatial fabric of many cities. In the closing decade of the 20th century, however, so-called cultural industries - economic activities concerned with the production and marketing of goods and services that have aesthetic or semiotic content - were clearly filling some of these gaps. In quite a few cases, as with the NDSM shipyard, cultural industries started in former industrial buildings and areas that had been deserted for years. A new post-industrial layer was being added. These cultural industries tend to display a particular spatio-organisational format. They are typically organised

in dense networks of mainly small firms, located within close proximity to one another to be able to reap agglomeration economies, notably in the form of a specialised local labour market. In addition, dedicated, localised infrastructures of, for instance, educational facilities, meeting points, quality control and distribution channels emerge.

This infrastructure underpins the competitiveness of the clusters of firms in the cultural industries; in the short run by cutting costs, and in the long run by fostering the capacity to innovate. Innovation (a condition for long-term survival in cultural industries) is not, however, a guaranteed outcome of clustering but is dependent on the institutional setting and, of course, on talented individuals. We want to explore how cultural industries are *embedded* in an institutional sense, how they are spatially articulated, and which role the public sector plays regarding innovation in cultural industries from a comparative perspective.

The CURE research programme

In recent years, cultural industries have received significant attention in policy and academic circles. Their contribution to the economy of places, as well as their social impact, have been recognised and (partially) assessed. Old factories are now being converted into offices and places for all kinds of cultural industries. They boost economic growth and employment and at the same time they also add to the quality of places. Moreover, their complexity as highly networked and fragmented sectors of activity



has been observed and they have been deemed as unique sources of innovation, as well as engines of growth, given their above average growth rates. Cultural industries, in principle, have the potential to increase urban resilience and adaptability, as they are one of the mainstays of the emerging post-industrial urban economies. Moreover, “the growth of cultural consumption (of art, food, fashion, music, tourism) and the industries that cater to it, fuel the city’s symbolic economy, its visible ability to produce both symbols and space”. The link between cultural clusters and the post-industrial city has received

new impetus with the buzz around creativity and innovation. Different types of clusters can be identified, along with variegated policy discourses.

Research on the creative city has somewhat overshadowed a more accurate analysis of the cultural industries’ embeddedness in time and space and their economic, societal and cultural impacts. One key issue here is the struggle with measurement and definitions. Moreover, the question of how to measure impacts has received great attention, with methodological advances which are still sketchy.



Notwithstanding the rapidly rising number of publications on cultural industries, the potential role of cultural industries in urban resilience has not been thoroughly examined. Yet, the recognition by the European Commission of the role of cultural industries in the context of the Lisbon Agenda stresses the relevance and urgency of analysing relations between cultural industries, resilience and sustainable urban development.

This partnership addresses the gap in current research, by delving into how cultural industries work, how they are connected to place and how we might foster sustainable, robust cultural industries, exploring the local conditions of creativity and their translation into stable and sustainable cultural industries.

CURE focus

Generally speaking, cultural industries are concerned with the production and marketing of goods and services that have aesthetic or semiotic content, reflecting an economic and cultural conjuncture where commodity production has become tied in with artistic experimentation, and vice versa. In this respect, we seek to understand the dynamic relationship between artistic experimentation within, and sustainability of, a cultural industry.

As our point of departure, we are interested in unpacking the (potential) tension between culture and commercial considerations which arise in cultural industries. Culture, on the one hand, has become an important source of economic growth and job creation, particularly within advanced *urban* economies. On the other hand, the process of *commodification*, making culture subject to market forces and the profit imperative, has also transformed the context in which artists work. Research on cultural industries, however, has clearly revealed a latent tension between artistic and commercial considerations.

This leads us to an analysis of the loci of creativity from which the cultural industries draw their 'raw material'. We explore the extent to which artistic experimentation requires shielding (temporary or partial) from market pressures and the types of (organisational, spatial, institutional) configurations this might entail. We expect these loci of creativity to take the form of socio-spatial configurations, embedded in institutional arrangements, physical

spaces and social networks. Our analysis, rather than taking experimentation as a given, goes further in uncovering the (more or less) formalised arrangements and structures behind artistic experimentation and how this feeds into processes of commodification within specific cultural industry sectors.

These different loci will be, we expect, contingent on national institutional frameworks, sectoral characteristics and on local context, with each case forming a concrete *configuration* encompassing: national and local government; the characteristics of markets for final products (scope and size); the role of intermediaries (media, taste-makers and shapers, creating aesthetic systems against which cultural industry products are measured); educational institutions (formal and informal); the role of the private sector (for instance in the form of patronage or sponsorship); initiatives by semi-public institutions (such as lotteries or foundations) and the role of individual artists (both amateurs and professionals).

We will identify these types of loci and investigate how they are *embedded* in these configurations. Our approach looks at cultural industries within the framework of inter-relations between urban environments, wider policy frameworks and economic systems. We will focus initially on three cultural industry sectors: classical music, fashion design and contemporary dance. These sectors vary in levels of public funding and infrastructure and also in the pace of change of aesthetic values.

CURE objectives

CURE aims to explore the relationship between creativity and markets, in other words, between artistic and commercial logics in the cultural industries and their embedding in place.

Objective 1: *Which different types of loci enabling creativity in cultural industries can be identified?*

- **Institutional frameworks** - supporting institutions and organisations on different spatial scales and their network intelligence and governance networks.
- **Social-spatial dynamics** - exploring human capital and questions of equality. Cities which can be seen as foci of creative and innovative production are also places where 'a broad social divide exists between the upper and lower segments of the labour force and this divide has tended to widen in recent years'. Research on cultural industries has revealed that many creative workers often have a portfolio of activities in order to 'make ends meet' and not all are linked to their artistic/creative profession.

Objective 2: *What is their organisational logic and their spatial articulation? How have they changed over the past three decades?*

- **Production chains** - exploring the cultural industries' production chains, from creativity to consumption. This will entail selecting a few case studies and exploring the spatial and temporal dynamics and characteristics at work.



- **Spatial footprint and sustainability over time** - an analysis of the spatial footprint of selected sectors in cities over the last three decades and sector-related data on employment trends and national/international positioning (using GIS to map the location of cultural industries) and their impact on the quality of place, their environmental friendliness. The question of geographies of impact is very interesting and pertinent: at a local level we could look at the transformation of neighbourhoods (also in terms of impacts on real estate values and use) and the use of space by cultural industries in everyday practice. However, there is also a trans-local dimension, calling upon a more 'culture-centred' issue of the circulation of cultural industries' products and their consumption on a global scale. In this sense, it would be interesting to look at the links between different actors in the value chain and their spatial connections.

Objective 3: *Which levers are available to policy-makers to boost and nurture creativity?*

- Understanding in what way cultural industries can contribute to the resilience of the post-industrial urban economic, social and environmental fabric and develop sustainably.

Research design and methodology

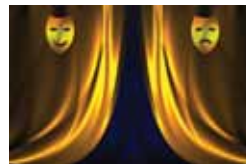
We want to investigate how the relationship between market and culture is structured in different institutional settings. We expect that the relationship will be contingent on the national, local and sectoral context and we anticipate significant changes over the past three decades due to neoliberal policies, globalisation, and technological change.

To explore the different institutional configurations and their trajectories of change, our research consists of a set of case studies, which can be compared along four dimensions: through time (comparing the situation in 1980 with the current one); internationally; between cities; and sectorally. This allows us to construct different sets of case studies consisting of matched pairs to address various sub-questions. We expect that these structured comparisons will uncover a palette of institutional configurations.

We will initially focus on three particular cultural industries, which although similar in terms of their need for experimentation, reflect a variety of positioning of art and cultural productions in relation to markets.

The three sectors we have selected are:

- Performing arts (in particular contemporary dance);
- fashion design; and



- Classical music (contemporary 'serious' music).

Investigating the cases will involve a variety of methods; each targeted to address the specific research question, including historical research, quantitative mapping (using GIS to capture the spatial dimension), content analyses (newspapers, magazines, professional journals), network analyses and ethnographic research (participant observations and actor biographies).

Potential implications of CURE

Cultural industries are without doubt a mainstay of contemporary urban economies. The future of many advanced economies is dependent on the competitiveness of cultural industries. Whereas competitiveness was associated for a long time with high-tech industries, recent research has underlined the importance of high-concept activities. As in the case of high-tech industries, high-concept activities can be fostered or hampered by particular spatio-institutional contexts, as well as by concrete policies of local and national actors. By comparing selected sectors in the cultural industries in a

number of national and urban contexts, we will be able to identify which spatio-institutional configurations contribute to the potential success of cultural industries. In this way, we will contribute to debates on competitiveness of urban economies among urban scientists and among policymakers.

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REPLACIS retail planning for sustainable cities

Demand and supply are
the main architects
of change in urban retail
systems.

Consumers constantly renew their needs, wants and desires, change their behaviours and lifestyles, with direct consequences on shopping activities. To survive and grow in a highly competitive environment, shopkeepers have to renew their strategies; introduce new retail concepts, innovative shopping environments and products. In recent decades, these changes have intensified with an increasing pace of change and a broader scope, creating large imbalances in the structure and spatial organisation of urban retail systems. These changes challenge the vitality and economic viability of the retail system and jeopardise the sustainability of cities. The decline of small retailers at the expense of large retail chains, the weakened role of the city centre over the periphery, the disappearance of neighbourhood stores and the expansion of large outlets with parking facilities, the devaluation of utilitarian premises in favour of the “spectacular” shopping experience, the staging of consumer environments, shopping as a leisure activity; these are all common features now shared by cities with different positions in the urban hierarchy.

Looking at retailing as a key element of urban sustainability, REPLACIS investigates urban retail changes and their driving forces and how planning policies and governance in different countries are dealing with this issue in order to foster the resilience of the city. Our hypothesis includes three main ideas: firstly, in a consumer society, retailing and shopping are essential to urban life, and their vulnerabilities affect quality of life and sustainability of the city.

Secondly, urban sustainability is connected with preserving the diversity of retail systems by allowing them to respond efficiently to the needs, wants and desires of different consumers.

Thirdly, recent trends show that different urban retail facilities and shopping districts have distinct levels of resilience that can be empowered by sector and spatial planning policies.

To test these ideas, REPLACIS blends an economic and cultural perspective with the analysis of different geographical case studies shaped by different socio-cultural values, institutions and rules.

By applying a transnational approach we are trying to:

- encompass national similarities and differences in the development of a conceptual and methodological framework to assess the vulnerabilities and adaptive capacities of retail facilities and shopping districts;
- find a set of comparable indicators that can be applied in different urban socio-spatial contexts; and
- think about adequate policy options to promote urban sustainability and improve city resilience in terms of retailing.

The dynamics of urban retail systems

Retailing has always been an urban activity par excellence, requiring centrality and accessibility. It was so in the past, it remains so today, and despite the potential of e-commerce, it is likely to continue in the near future. When there is a dearth of customers, as happens in villages and small towns, retail shops tend to disappear or curtail their activity to cover only bare essentials, low order goods and services.

Urban life has never blossomed in any civilisation without the presence of stores. Retailing is one of the city's *raison d'être*; it makes city life feasible; it explains its inner cohesion and it justifies a good deal of the city's dynamic. Through retailing and the localities it takes place in, people satisfy their consumer needs, meet their wants and make some of their dreams come true. It follows that owing to the diversity of people and merchandise involved, any place which is given over to buying and selling becomes simultaneously an important source of information, a dissemination centre for innovation, an opportunity to make new contacts, a playground and leisure spot.

The relationship which retailing has with the modern city however has very little in common with that of bygone days. Over the past fifty years changes have been so vast that most cities in the developed world have experienced a retail revolution.

Despite observed differences amongst the urban settings of different countries and cultures, the

impacts of this revolution are seen everywhere. Within a short time, retailing has changed from being a dull, business backwater to become one of the most important, dynamic sectors of the urban economy. Due to the ever-changing array of products and services and the fascinating environments in which to buy them, shopping is no longer a basic activity to satisfy consumer needs. This retail revolution has transformed consumer society and retail places and environments into a culture of consumption.

This revolution has had an irreversible impact on the spatial organisation of urban retail systems. The merging of retailing with centrality and proximity was a basic principle for the hierarchical system

of shopping centres set up by geographers. This was followed by convenience linkages offered by car accessibility, circulation and parking facilities. More recently, the assets of third places, psychodistances and mindscapes are explored by a wide variety of retail premises and urban sites. These are designed, marketed and publicised to evoke particular feelings or emotions, favouring their appropriation as spaces of leisure, conviviality, happiness and other virtues highly valued by consumer society.

Spatially, this process of increasing decentralisation of retailing and fragmentation of urban space has resulted in a significant weakness of the role played by downtown and traditional neighbourhood centres. In postmodern times, shopkeepers'





interests have turned to the city outskirts. With cheaper land prices and more flexible regulations regarding the change of land use and the building of new premises, retail and service investors find the suburbs and urban edges more attractive. At the same time, a wide variety of intra-urban sites, hitherto devalued by retail capital, such as waterfronts, brownfield sites and historic districts, have been rediscovered. By mixing entertainment with retailing they are transformed into hot spots, cool spaces and brand lands for creating the “consumer experience”.

A close look at the impacts of the retail revolution in recent years shows that the backdrop to its restructuring has moved gradually from “commercial spaces” to “consumer places” where the central pillar has been the sign-value and symbolism of its shops, environments and commodities. What we can identify during this period is a process whereby

retail facilities have been transformed from “point of sales” into commodities to be “consumed”, in the same way that goods, brands and products are sold and purchased inside.

The role of symbolic content and sign-value in the identity of the new retail facilities is best understood in contrast with the period dominated by Fordism. Fordist consumption used to be an answer to the modern mass-market rationale, homogenised and standardised by technology in which the vital condition for manufacturing cheaper goods and extending markets lay in mass assembly-line production.

Postmodern conditions have changed this rationale by breaking up traditional lines into a diversity of niches, each guided by different values and life styles leading to growing individualisation. During the modern era the price and quality of merchandise were used to determine the segmentation of supply and the hierarchical ranking of , in the postmodern marketing approach, these principles have lost much of their strategic value.

In order to respond to consumer demands, where consumers seek to build their identities with objects and shopping places, the more enterprising retailers have segmented their merchandise into multiple niches and have resorted to a fountainhead of cultural values constructed out of eclectic, paradoxical practices.

The retailer has ceased to view the consumer as “easy game”, without a will of his or her own, who looks on passively as the consumer performance

is played out. Instead, the consumer is now being regarded as a whole; as a thinking person capable of using consumption as a language in which to communicate with oneself and with others.

This new way of looking at consumption and the consumer goes along with deep changes in the conception of retail spaces and the functions they are required to undertake. Of course, the shop’s role is none other than selling commodities and, by means of this exchange, reproducing the investor’s capital. Nevertheless, to continue carrying out this function efficiently, it has become increasingly obvious that shops need to be more than just spaces in which transactions occur. In postmodern times, retail spaces are no longer merely places of exchange; places where people go to obtain supplies. This rationale does not even apply in the hypermarket, which is the retail blueprint for mass consumption. Like other stores, not only does the hypermarket sell merchandise but it also transforms itself into a commodity. Nowadays many shops, by means of architecture, design, environments, brands, performance and the symbolism of objects, are making an effort to offer the consumer real life experiences. In new retail environments, people can not only get supplies and satisfy their consumer needs but they can also enjoy themselves, fulfil their desires, make their dreams and fantasies come true, become a tourist and “act out many different styles of life with the aim of acting out their own particular style” (Morace, 1990).

The propensity for shops to progress from being simple spaces in which to buy things to places that offer experiences was tested in two medium-sized Portuguese cities from a consumer's perspective (Cachinho, 2002 and Barata-Salgueiro et al., 2007). Consumers were asked what meanings they gave to the shops and to the retail districts that they patronised. A large number of consumers tended to describe the shops by referring to a set of attributes that clearly transcended the material dimension, carrying them into the world of the intangible, of signs and symbols which nurture consumer experiences. Similar to what has been observed in the case of consumer products, many stores have also become a source of pleasure, fun, exoticism, prestige, nostalgia, friendliness, tradition, identity, sociability and responsibility. For many consumers it is these attributes, rather than the merchandise, that influence their decision to patronise particular retail spaces.

Planning for retail change

REPLACIS investigates the driving forces behind urban retail changes and how planning and public policies in Portugal, Sweden, France and Turkey are dealing with these changes in order to manage the retail system and promote urban sustainability. The investigation is carried out through the lens of resilience applied to urban retailing. As retailing is a key element of the fabric and experience of the contemporary city, urban sustainability can be intrinsically associated with the preservation of retail systems by ensuring a diversity of facilities

and shopping environments able to respond to the needs, wants and desires of different consumers. Inspired by, amongst other studies, the body of knowledge developed by the Resilience Alliance, city resilience is understood by REPLACIS as being the degree to which the retail system is able to tolerate economic, social and cultural changes before reorganising around a new set of commercial structures and processes. It can be measured by the capability of the retail system to incorporate changes in its functioning, wrought by the retail revolution, without changing qualitatively. It is assumed that different urban retail facilities and environments have distinct levels of resilience that can be empowered by adequate sector and spatial planning policies. The ability of vulnerable shopping areas to respond to change, favours the re-establishment of an equilibrium in the system which would also improve urban sustainability.

Aims of REPLACIS

Framed by these key ideas, REPLACIS aims to

- understand the change in urban retail systems and the evolution of retail planning policy in different socio-cultural contexts; stressing the commonalities and specificities in order to assess their ability to promote the vitality and viability of different shopping facilities and districts, as also the promotion of urban sustainability and resilience;
- offer insights into the role played by consumption and retailing in the production and

experience of the postmodern city; namely through the new urban retail environments, consumption-led regeneration projects, and the "public" space generated by these new urban developments;

- conceive a theoretical and methodological framework to assess the resilience of different urban retail areas to back the spatial planning policies concerned with urban sustainable development and the competitiveness of the traditional retail facilities and shopping environments and
- test the resilience of different retail centres by a set of key indicators in view of recent changes induced by the new retail dynamics, with special reference to the malling of centres and peripheries, the spectacular consumption-led regeneration of brownfields and other post-industrial areas, the crisis of inner cities and the decline of retail neighbourhood centres.

To reach these objectives, the research benefits from three key conceptual and methodological anchors. The first consists of the double perspective used to read the urban retail system, their shopping places and environments and the "productive" role of consumption in the urban fabric. Retail landscapes are analysed, on the one hand, as material artefacts selling goods and services, where consumers can meet their needs. On the other hand, the outlets and shopping areas are considered as places of experience and social distinction, intrinsically related to the "hidden properties" of consumption fostered by the theatricality and symbolism of

retail spaces and the sign-value of commodities. Whilst the first perspective looks at the visible world and considers the exchange and the value of shopping areas, the second one explores the invisible world of consumption and stretches the Baudrillard concepts of symbolic and sign values of commodities to retail stores and urban shopping areas, which are essential in order to be perceived by consumers as places of experiences.

The second anchor is the mix of methods used to assess the vulnerabilities and adaptive capacity of urban shopping districts and retail environments. Two sets of indicators will be generated. One is based on quantitative data and evaluates the dynamics of shopping districts. The other is founded

on qualitative data gathered by observation studies, questionnaires and interviews, and seeks to identify and assess consumer values and the sense of place.

Last but not least, taking advantage of transnational cooperation, we will sample case studies located in very different urban and socio-cultural contexts. Urban sustainability theory often promotes compact cities with liveable centres and well-preserved neighbourhoods as a common goal. Global trends are deepening both similarities and challenges; producing new urban policies driven by competitiveness and engaged in cultural or consumption-led regeneration projects. However, every city is different and a successful policy in one place does not necessarily lead to success in another, with different social values, institutions and rules. Being transnational, REPLACIS tries to develop a set of comparable indicators that can be applied in different urban socio-spatial contexts.

The case studies show that in all countries urban retail systems and centres are dynamic; continuously evolving under the influence of internal and external factors. This means we need to take account of time scales and be able to assess the state of equilibrium of the retail system. To measure the vitality, the viability and monitor the health of different retail centres and how this changes over time, we need regular information from local authorities.

Our findings should help to enlarge the concepts of sustainability and resilience from the traditional ecological approach, to encompass the social and

economic dynamics of the city. To achieve this, we are working on the design of a conceptual and methodological framework to build a set of key performance indicators of urban sustainability anchored in retail resilience. Monitoring of urban retail systems based on these indicators will allow local authorities to understand system dynamics, which is of utmost importance to sustainability, because it enables decision-makers to choose between actions that involve adaptation to future changes and actions that mitigate those changes.

We intend to show the potential of a comprehensive approach to town planning that incorporates retail as a strong factor, given its importance in contemporary city life. It is important that retailing is planned in accordance with the role it plays in the urban fabric and people's daily lives.

REPLACIS emphasises the vital importance of transnational research cooperation. International comparisons allow a cross cultural perspective, which is essential for questioning the effects of global trends in different local contexts. In a global world (deeply connected by flows of information, people and capital, shaped by converging sensitivities, lifestyles and consumption patterns), the answers to local problems should be sought on multiple geographical scales. Problems related to retail system resilience and urban sustainability are not an exception. Much can be learned from experiences across borders. Interdisciplinary research on the different territorial realities of retailing and planning in Sweden, Portugal, France and Turkey



offers important added value for the generation of new ideas to manage the complexity of urban problems linked with spatial planning, management and governance of retail activities and a chance to discover alternative futures.

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The Resilience Alliance data base offers more than 200 papers on applying the principles of resilience.





SUPER sustainable urban planning for ecosystem services and resilience

Over half of the world's population is urban. By 2030 nearly 5 billion people are expected to live in cities. Over the same period, the built mass on Earth is predicted to double. This development will produce ever-greater demands on services provided by local and global ecosystems.

Cities and the related processes of urbanisation alter and transform terrestrial ecosystems. This is particularly noticeable in biodiversity rich areas. The United Nations-supported Millennium Ecosystem Assessment (MA) recently concluded that ecosystem services are diminishing at an alarming rate globally, putting such strain on the environment that the ability of the planet's ecosystems to sustain future generations can no longer be taken for granted. Ecosystem services represent all the goods and services that natural systems supply to humans, and on which societal welfare and economic development directly depend.

Categories of ecosystem services

- Provisionary – products obtained from ecosystems e.g. food, fibre and energy;
- Regulatory – benefits from regulation of ecosystem processes e.g. air and water filtration;
- Cultural – nonmaterial benefits from ecosystems, e.g. spiritual enrichment, cognitive development, recreation, and aesthetic experiences; and
- Supportive – necessary for the functioning of all other services.

The MA showed that with appropriate actions it is possible to reverse the degradation of many ecosystem services, but the changes in policy and practice required are substantial and not currently underway. It concluded that urban settings are a priority area for increased research efforts and actions needed



to build the capacity of ecosystem services. This means that urban governance needs to address the immense challenges of reversing negative trends in the loss of ecosystem services. This requires novel frames for thinking and acting. SUPER can make a real difference on the ground, especially as there have been very few attempts to integrate ecosystem services as frameworks for spatial planning.

Project aims

SUPER aims to understand how urban resilience can be improved by integrating ecosystem services into urban spatial planning. SUPER strives to lay the foundation for innovations in urban planning and governance that enables cities to navigate change, build local capacity to respond to disturbance and to prepare for uncertainty, and thus to foster transitions to more sustainable urban futures. Through in-depth case studies in three cities (Stockholm, Istanbul, and Arnhem-Nijmegen), in combination

with comparative cross-city studies, we aim to produce new theoretical insights on how to improve urban resilience, and to deliver detailed knowledge of value for practitioners in each city-region.

The SUPER partners have hands-on experience of developing theoretical frameworks that are of strategic use in professional practice. This call for pan-European collaborative research can lead by way of example and can deliver first class interdisciplinary-based scientific research with new knowledge exchange between science and practice. It is precisely this integration of research-policy-practice that SUPER aims for. It involves research that is of immediate concern to urban citizens and that will help improve everyday life in European cities.

Resilience planning

To develop a scientifically supported understanding of cities as resilient systems, it is essential to create an informed foundation for the professional practices that intervene in the urban fabric, including those related to the fields of urban governance, planning and design. Resilience refers to the ability of a system to incorporate changes and various types of disturbances in such a way that the system retains its capacity to maintain essential functions and services. For example, when a city grows, many natural ecosystems are utilised or lost, e.g. converted into paved urban surfaces, with the risk that many ecosystem services are undermined and face gradual demise. This in turn reduces the capacity for a city to cope with different types of change and disturbance, such as buffering



climatic change or impacts from socio-political and economic crises.

Resilience is also about the opportunities that disturbance may provide in terms of recombining evolved structures and processes, renewal of a system and the emergence of new trajectories.

SUPER considers that resilience science is important to planning theory and practice for at least two key reasons: Firstly, it fundamentally challenges our way of understanding natural processes and human-nature relations and interactions. Improving our knowledge of such system dynamics and interactions is critical when global ecological limits are

receiving renewed attention through the tentative identification of planetary boundaries and the detrimental impact of urbanisation on global ecosystems. Secondly, by translating the metaphors of change from resilience science to urban planning theory, we can explore new ways of effecting change and transitions towards sustainability. This is particularly pertinent as we find ourselves searching for new modes of planning in face of the critique of the modernist understanding of the world and our capacity and effectiveness to act within it.

The role of governance and civic participation

Systems that have the ability to respond to change and reorganise constructively are likely to have flexible institutions (rules and norms) that allow for adaptation to changing circumstances. By institutions, we mean the rules and conventions of society that coordinate human interaction, including formal constraints (rules, laws, constitutions), informal constraints (norms of behaviour, conventions and self-imposed codes of conduct), and their enforcement characteristics. Property rights arrangements, including rights and obligations to land and its resources, represent key institutional mechanisms that frame human activities related to organisation and management of ecosystem services and other social services. Hence, institutions are key social mechanisms in the design and evolution of governance systems that respond to and shape change in desirable directions. SUPER uses “spatial-institutional designs” as a framework for analysing spatial planning and governance processes.



A diverse set of stakeholders shape and influence the urban landscape and its services, which in turn respond to and shape change. The capacity of urban ecosystems to provide ecosystem services is therefore not just an “ecological” affair but depends on a mix of governmental and non-governmental stakeholders that manage and protect them. A key finding is that the nurturing of resilience in urban landscapes depends on crafting spatial planning processes that can integrate knowledgeable stakeholders at various scales to support continuous learning, management and stewardship. This parallels recent developments in collaborative planning which demonstrate that increased participation by civil society has the potential to mobilise collective efforts to achieve strategic urban governance. Increased participation, through decentralized governance and planning, represents a highly interesting combination of planning theory and resilience

theory that we aim to explore through the integrative potential of the concept of ecosystem services.

Organisational structure and key questions

SUPER is organised around seven research sub-projects, three of which are in-depth case studies from the Stockholm, Istanbul, and Wageningen regions, and four are studies representing integrated cross-city comparisons.

We have framed our sub-projects around four research questions.

- What can resilience theory contribute to urban spatial planning processes?
- How might a transdisciplinary approach to spatial planning and governance, based on ecosystem services, contribute to the emergence of resilient urban landscapes?
- What are the critical barriers for integrating ecosystem services into spatial planning practices and how can they be bridged?
- In relation to the above, what “spatial-institutional designs” exist or can be developed to integrate ecosystem services.

Ongoing and planned research activities

In-depth case studies

SUPER partners, in collaboration with a group of architects, have been critical in integrating socio-

ecological considerations into the early planning process of a new, world-leading university campus in Stockholm. The aim of this working group, known as the Albano Patch Work Group, is to increase the capacity of the campus area to generate ecosystem services. In this action-research oriented project, researchers take the double role of problem solvers on an equal footing with practitioners and as observers evaluating and documenting the process and its results.

A second SUPER study involves the integration of bundles of ecosystem services into urban spatial planning practices in the Arnhem-Nijmegen region as a way of building spatial resilience and understanding how design of an “energy landscape” can be combined with other services such as recreation, biodiversity conservation. Air pollution mitigation is key to this study. Four scenarios are examined with multiple case studies for specific spatial-institutional designs that will inform the city region administration about opportunities to integrate multiple ecosystem services into a biomass production landscape.

A third study centres on the Omerli watershed which supplies 40 % of Istanbul’s drinking water. Due to rapid urbanisation of the Istanbul metropolitan region, urban spatial planning regimes have difficulty enforcing zoning schemes and protecting threatened ecosystem services – especially water quality and flood mitigation. The Istanbul study focuses on spatial planning practices needed to control and sustain water flow and water quality in the face of urbanisation and climate change. The objectives are to: articulate the multiple ecosystem

services (biodiversity, recreation, water quality etc.) that watersheds provide; identify spatial-institutional designs for co-management and co-protection of ecosystem services; and facilitate the integration of climate change trends into local planning efforts and policies.

Integrated cross-city comparisons

Several cross-city comparisons are addressed in parallel with the above studies. One centres on comparing “green urban commons” in Stockholm, Arnhem-Nijmegen, and Istanbul. Green urban commons are examples of urban common-property resource management systems, i.e. designs in which natural resources are governed and managed by many individuals in common, holding great potential as designs for communicative urban planning. Comparisons also include insights from other city-regions, e.g. Cape Town (South Africa), which demonstrates a wealth of integrated resource management systems. This cross-city comparison provides the rationale for SUPER to explore “spatial-institutional designs” that integrate the social and ecological dimensions of ecosystem services and allow for greater public participation in the governance of urban ecosystem services.

Another cross-city comparison involves analyses of key metropolitan planning strategies to understand to what extent, and in what ways, city spatial plans have accounted for the four categories of ecosystem services at various landscape-scales. Barriers such as scale mismatches and critical gaps to be addressed in current planning modes are identified.



SUPER is involved in publishing a book, *Exploring ecosystem services in cities through the lens of resilience*, that brings SUPER partners together with an team of 25 interdisciplinary scholars from political science, urban planning, ecology, economics, human geography and architecture, including Carl Folke, Fikret Berkes and Nobel laureate Elinor Ostrom. The book will examine how local-to-

regional urban resilience can be improved through governance of ecosystem services and it is aimed at interdisciplinary professionals and urban practitioners.

Synthesising all insights generated from the in-depth studies and cross-city comparisons will be key to increasing our understanding of the social-ecological factors that underpin urban resilience and the practices and institutions involved in integrating ecosystem services into urban spatial planning. The aim of the synthesis will be to provide answers to the four overarching research questions that guide our research.

We hope to identify useful principles and rules of thumb for the planning of ecosystem services, promoting sustainable urban development and developing theoretically informed spatial-institutional designs that can be used as tools in the planning, design and development of more resilient cities. The synthesis holds promise of being groundbreaking by merging inter- and transdisciplinary insights for a much needed theoretical framework for urban resilience planning.

SUPER partners and ongoing work

SUPER comprises ecologists and spatial planners from three European city-regions and researchers from the Beijer Institute and the Stockholm Resilience Centre in Sweden, the Istanbul Technical University in Turkey and Wageningen University in the Netherlands.

We aim to develop knowledge, planning practices and policies that will address two key dimensions of urban resilience: the inclusion of diverse ecological processes and functions in planning metropolitan landscapes; and the integration of the many human relations, physical spaces, urban forms and design and the institutions that are integral to this urban fabric.

SUPER held three workshops in Istanbul, Stockholm and Wageningen. The concepts of resilience and ecosystem services proved to be very useful theoretical constructs to bridge the disciplinary divide between urban planners and ecologists participating in the workshops. Since project inception, we have developed several publications

and ongoing projects. We currently have a PhD student, MSc and Bachelor students conducting their research in conjunction with SUPER. In addition, several scientific deliverables are underway, including an edited volume. SUPER partners are also involved in outreach activities, including workshops and public performances. We are developing a film project in partnership with URBAN-NET on green urban commons. Our approach aims to be of high value in developing tools and innovative planning practices, as well as outreach measures that promote sustainable urban development more generally in European cities and beyond.

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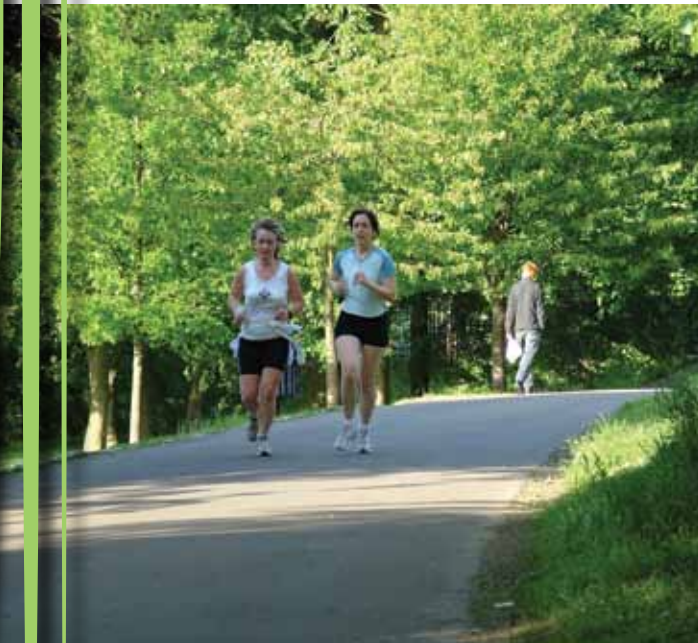
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Urban tourism and climate change

Tourism in Europe is expected to shift north as a consequence of climate change.

An increase in global temperature is expected to hit urban areas hard, especially in southern Europe. In contrast, summer and winter tourism in northern Europe is expected to benefit from climate change. Tourism is climate sensitive but it has also an effect on climate change through CO₂ emissions. How will these changes affect economies, everyday lives and the environment in European cities? The issue is addressed by this interdisciplinary and transnational research project comprising researchers from Sweden, Turkey and Portugal.

The aim is to investigate people's attitudes, awareness, emotions and behaviours in relation to the predicted consequences of climate change. The participants are tourists, decision-makers and actors within the tourism industry and urban planning. Why relate tourism actors to climate change? Tourism is permeable to both conjunctural factors – such as economic crises, terrorist attacks or fluctuations in fuel prices – as well as to long-term, in-depth structural changes, such as the transformations that might result from climate change. Being one of the largest economic sectors, it seems reasonable that we should pay close attention to factors that could influence trends in the tourism industry and in urban planning.

European urban tourism has increased significantly in the last 30 years. According to a report from the European commission in 2000, tourism plays a strategic part in urban planning. Urban areas need to meet growing tourist expectations, urban development and citizens' wellbeing. The topic of the project

is of great concern for the whole of Europe. Countries within Europe need to cooperate in order to mitigate and adapt to the effects of climate change. By choosing research teams from north, southwest and southeast Europe the project incorporates different geographical and climatic areas and also different tourism markets.

Previous studies on tourism and climate have stressed the need for an interdisciplinary research perspective, due to the complexity of tourism-climate issues. The researchers for this project come from academic disciplines such as urban climatology, tourism geography, psychology and urban and regional planning.

Climate change, cities and health

The expected rise in temperature will lead to increased heat stress, especially in cities. The air temperature in cities can be 1-12°C higher than surrounding rural areas due to the density and fabric of buildings and infrastructure, the combustion of transport fuel, anthropogenic heat from humans and human activities and waste heat from machines (e.g. air conditioning). Increased use of air conditioning during heat waves can increase the urban heat excess further. The lack of cooling in European cities during the heat wave of 2003, however, was one of the reasons for the increase in heat-related deaths.

Potential health effects due to intense heat stress have been highlighted in recent years. In Gothenburg, for instance, the number of hours of strong

and extreme heat stress is expected to triple, from an average of 50 hours to 150 hours per year if the air temperature rises by 2.8°C. According to a Swedish government report, heat-related deaths due to climate change are expected to cost Sweden € 50-70 billion between 2011 and 2100. In Lisbon, mortality is expected to increase by more than 30% per 1°C increase in air temperature above 34°C. Summer temperatures for Antalya in Turkey are predicted to increase by 4°C by 2080 and precipitation is predicted to decrease by 200 mm with both warmer winters and summers and a higher frequency of heat waves.

Tourism in three European countries

Weather is an important factor for outdoor activities as well as for place-related perceptions and emotions. International scientific literature estimates that the rise in temperatures and other climate factors will negatively affect tourism demand in southern Europe and the Mediterranean region, especially in summer, and lead to a change in the seasonal variations of tourist activities. Summers will most probably be hotter and longer throughout Europe, whilst winters will be milder and shorter. Climate change effects will differ for different destinations. Heat stress will be more severe in the south than in the north and tourists will seek weather-related activities in different latitudes. As the project continues, we will analyse connections between destination characteristics and respondents' behaviours and concerns in relation to the consequences of local and global climate change.

Destination case studies

Lisbon, Portugal

The climate in Lisbon is Mediterranean with a dry, warm summer season and peak rainfall between October and April. Pleasant temperatures typify the weather, thanks to regional geographic factors such as latitude and proximity to the Atlantic Ocean. On the official national tourism website (Visit Portugal), the country as a whole has adopted the epithet "Europe's West Coast", while Lisbon is portrayed with references to its seafaring history. It is introduced as a city that has "always been ready to welcome new visitors and to bid a fond farewell to those departing".

Tourism demand in Lisbon has been growing increasingly in the last two decades and places Lisbon as the second most important tourism destination in Portugal. Favourable natural assets can, to a great extent, explain the attractiveness for tourists, such as two sunny coast lines – Estoril and Arrábida that are sheltered from the frequent north and northwest winds. A number of initiatives and the hosting of several events since the 1990s onwards (European Capital of Culture in 1994, Expo98, Euro 2004) served to enhance Lisbon's international image which is becoming increasingly attractive as a "city breaks" destination.

The typical tourist to Lisbon travels with a company, is between 36 to 55 years old and is highly educated. Among all the different regions of the country, Lisbon is the one that attracts the most diverse international demand and offers the greatest variety of tourist activities despite being a rather small

geographic area. There are white sandy beaches; all kinds of water- and land-based sports, including numerous golf courses; entertainment facilities;



diverse architecture and rich cultural heritage sites such as Manueline (Portuguese late Gothic architecture) monuments; local cuisine and shopping.

In addition, Lisbon has become firmly established as one of Europe's leading conference destinations thanks to investment in infrastructure. According to the International Congress and Convention Association (ICCA), Lisbon was the world's eighth most popular destination for congresses in 2004, and sixth in Europe.

The Gothenburg Region, Sweden

The city of Gothenburg, which is the second largest city in Sweden with 500,000 inhabitants, is located on the Swedish west coast. The weather is milder than expected thanks to the influence of the Gulf Stream. The climate of Gothenburg is generally described as temperate and maritime. Summers are predictably warm whilst winters can be cold with frosts and snow but the city has much to offer tourists, irrespective of the time of year. In 2008, domestic tourists accounted for 77% of all overnight

stays. Germany, Norway and Denmark are the largest foreign markets accounting for 40% of all foreign overnight stays.

Gothenburg is undergoing transformation from an industrial seaport to a contemporary cultural and international sports venue. The city opened a new opera house in 1994 and has reorganised some of its museums. According to the local official guide to Gothenburg and West Sweden (Göteborg & Co), the most surprising change in the city is in its restaurants and other eateries which have given the city an international reputation for innovative cuisine using local produce, mainly North Atlantic fish and shellfish. Gothenburg boasts several Michelin Guide restaurants.

Gothenburg is also a gateway to the Western Archipelago, easily accessible by boat from the city. Its proximity to the sea and other natural environments are highlighted by organisations, such as Visit Sweden, promoting urban tourism. Gothenburg is also becoming a major European venue for congresses and events, including the World and European Athletics Championships and the Volvo Ocean Race.

In 2007 Göteborg & Co received the "European Cities Tourism Awards" from European Cities Marketing (ECM) in the category 'European City Tourism Organisation of the Year'. Göteborg & Co was the unanimous winner because it was viewed as an excellent example of real, planned and long-term co-operation between all stakeholders, both public and private sector.



The Antalya Area, Turkey

The Antalya region has a typical Mediterranean climate with hot rainless summers and moderately warm but sometimes rainy weather for the rest of the year (approximately 300 sunny days per year). The mean annual temperature is 18.7°C with sub-zero temperatures very rare. High humidity combined with a lack of northerly winds can make summers feel hotter, although the sea breeze and northeasterly winds help to keep temperatures more bearable.

Antalya has been the major tourist destination in Turkey since the beginning of the 1980s and is the most globally connected and dense tourist area in Turkey with the highest number of foreign visitors (48.9%) and the highest share (60%) of tourism investment. It is the second most attractive province for foreign firms in Turkey. The countries that invest most in Antalya are mainly those that also contribute the most visitors to the area. These two characteristics indicate that Antalya is extremely vulnerable to changes in consumer preferences.

The official Turkish tourist web site – — portrays Antalya's rich cultural heritage; the wooden Ottoman mansions being restored as boutique hotels, narrow streets of the old town, the archaeological museum and Yivli Minare built by the Seljuks in the 13th century. Natural scenery also features, with images of mountain scenery, waterfalls, golden sands and the Saklikent, where you can ski just 50 km from the city centre. New and upcoming conference facilities are also showcased.

Antalya is a significant tourist centre whose assets provide for a wide range of interests such as sun-sea-sand and sports tourism, where investments in golf are about to change the city's profile. Rich areas of cultural heritage satisfy the needs of cultural tourism, while the inland mountain areas cater for hikers and climbers and untouched nature provides for eco tourists. Mass tourism is still popular but cultural, sports and business tourism – which are less sensitive to climate – are gaining ground.

Preliminary results

A realistic expectation from this two-year project is firstly to identify research-related issues between research partners from the three different countries. Secondly, the expectation is to provide a database on urban tourism and climate change that can be used for future urban tourism research analyses, recommendations and strategy developments throughout Europe. The target groups for knowledge generated by the project are actors within urban planning and tourism and researchers from different disciplines. The aim is to provide a knowledge base that can be used for strategic planning and action in order to respond sustainably to new circumstances. Sustainable urban tourism management needs to act for both city developments and economics, in harmony with environmental needs.

First we mapped the tourism sector's decision-making structure for each of the three countries to identify differences and similarities in policy and knowledge implementation among



tourism stakeholders. We then interviewed decision-makers, entrepreneurs in the tourism industry and tourism researchers to form an understanding of their reactions to climate change. Tourists were also interviewed to investigate their knowledge and concerns. The decision-making structures were investigated at a national level and tourists and tourism entrepreneurs were interviewed for the case study area.

Organisational and policy efforts

Tourism issues cannot be dissociated from national development as a whole for any of the case study areas or countries. Policies and strategies for environmental protection, cultural heritage, planning and building are often core factors of both constraint and opportunity in the tourist industry.

Portugal

Tourism is a key cross-cutting sector for the Portuguese economy that involves a variety of services and entails many other economic activities and policy areas. Its economic importance has increased over recent years, accounting for 11% of GDP in 2004. Besides stimulating growth, tourism plays an important role in job creation (tourism employed 10.2% of the working population in 2004). Tourism is

also seen as an important driving force for fostering development, by creating infrastructure or providing new economic activity in areas undergoing deindustrialisation or urban regeneration.

Decision-making is, to a great extent, entrusted to the government member in charge of tourism and to its administrative body, Turismo de Portugal, I.P. (Portugal National Tourism Authority) upon government approval. Local public actors and the business sector have mechanisms to express their interests and participate. During restructuring and the creation of institutions, Turismo de Portugal, the National Association for Tourism Regions and the Portugal Tourism Confederation were given the chance to state their position.

Each matter entails different sets of relations between the stakeholders. For instance, in tourism promotion, a strategy for Portugal as a destination is defined every three years (and revised annually) by the Turismo de Portugal, I.P. and supported by the seven Regional Tourism Promotion Agencies (ARTP). They seek advice from market opinion-makers and from Portuguese economic representatives abroad and evaluate the results of previous annual strategies.

Turismo de Portugal, I.P., is participating in a think-tank on climate change, under the Ministry of Environment, Territory Planning and Regional Development. So far, none of the documents produced for tourism expresses concerns and no policies have been formulated to cope with climate change.

Turkey

The actors in Turkey's tourism development are comprised of central government, local governments, semi-governmental and non-governmental institutions, investors, managers, tour operators, etc. including local people who have a significant role to play. The Five-Year National Development Plans have increasingly defined tourism development as a joint responsibility of the public sector, private sector and NGOs. Besides the public institutions, there are private or non-governmental actors which impact on the tourism sector.

During the 1970s tourism became a priority in Turkey's development targets and plans. The 'Second Five-Year Development Plan (1968-1972)' introduced a target for supporting mass tourism because of its economic benefits. The "Fourth Five-Year Development Plan (1979-1983)" aimed to improve investment in tourist accommodation and tourist complexes to meet the needs of mass tourism in priority regions.

Five-Year Development Plans have continued to steer tourism policies and the private sector, NGOs and other associations have more recently led tourism developments as opposed to the government.

Sweden

Sweden is a new, less established destination for foreign tourists. Most tourism is domestic and the industry accounts for less than 2.85% of GNP, but it is still one of Sweden's fastest growing sectors



with 160,000 employees. Paradoxically, state interest in tourism and leisure has been quite extensive throughout the twentieth century, but tourism legislation is weak and almost non-existent. One reason for this is that national ideas about what tourism is and what its role in society should be are constantly changing. There has been constant opposition between user and producer perspectives.

The user's perspective is noticeable with the introduction of statutory holidays in 1938. This is probably the one law that has had the most impact on tourism and travel in Sweden, giving everyone access to free time. The holiday period increased from two weeks to 5 or 6 weeks a year. This, in connection with rights of access to scenic areas, has initiated laws such as the right of commons, protected shoreline areas and nature reserves. All are included in the Miljöbalken, The Environmental Code, which is the central Swedish environmental law. Swedish legislation, however, is general and does not explicitly declare anything about tourism.

The contemporary understanding of tourism among stakeholders is that state-level politicians do not prioritise tourism as a central industry and do not recognise the growing importance of cities as tourist destinations. Urban tourism is quite a new concept in Sweden, so Gothenburg stands out as a forerunner. Swedish national tourism took an important step forward in the autumn of 2009 when two central tourism organisations initiated a national strategy for the tourist industry, with firm state support. The strategy, incorporating climate change considerations, will be implemented in 2010.

Questionnaires and interviews

Preliminary results of interviews with the tourist industry in Antalya indicate that almost 90% of respondents think that climate change will affect tourist preferences and more than half think that the impact will be very serious. Despite this, almost 65% of the respondents are not taking any measures in respect of potential climate change impacts.

Preliminary results from interviews with market stakeholders in Lisbon indicate that 80% of the respondents expect changes in tourism arising from climate change. Although there seems to be an apparent inability to predict what transformations climate change will bring to tourism demand, around 50% of the respondents believe that it may increase tourist numbers in between seasons and during winter. In brief, it seems that the market structure is anticipating changes in seasonality patterns, rather than changes in tourist volume but does not consider climate change to be a real threat to urban tourism. Consequently, 55% of the enterprises interviewed have not planned any measures to cope with future climate change impacts.

Preliminary results from Gothenburg show that tourists visiting the city were most concerned for their children and least concerned for their own lifestyle in relation to climate change. Generally women were more concerned than men but all participants were more hopeful for the place where they live than for the world as a whole. Tourism is predicted to increase with a warmer climate in Gothenburg, mostly because the summer season will be longer.

A comparative overview of initial conclusions indicates that there is near consensus among stakeholders' knowledge and awareness about the future changes in tourism demands and preferences due to climate change. How they anticipate these changes varies quite differently. Most importantly, stakeholders generally do not appear to be doing anything or, even worse, planning anything despite their level of knowledge about climate change. This makes this issue an important challenge for future research.



Conclusions

So far, in our first year of study, we have found

- * consensus on the economic, social and environmental consequences for the future tourist industry due to climate change
- * A lack of interest from politicians and stakeholders to take action, despite awareness of climate change consequences for tourism
- * A reasoning among stakeholders (especially in Portugal) that climate change will not reduce the number of tourists to certain destinations, but will only change seasonal patterns

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RNCC **research network for** **climate-neutral cities**

First we must ask why people move to cities, which are often described as places with high living costs and severe pollution problems.

The majority of people on earth now live in cities and in developing economies. This process of migration to cities has been very fast. Cities thus have a profound influence on how our societies affect the ecosystems that support life on earth. As an example, cities occupy only 2% of the land on earth but they emit around 75% of all greenhouse gases from human activities. Should we then regard cities as a major threat towards sustainability?

First we must ask why people move to cities, which are often described as places with high living costs and severe pollution problems. People move into cities because the city offers more possibilities for work and cultural and social activities. The city is a meeting place and an important driving force for innovation and change; both concerning technology and lifestyles. The density of cities offers both advantages and disadvantages regarding pathways to sustainable development. To be more sustainable, cities must provide good living conditions without endangering supportive ecosystems. We must address this NOW, as the infrastructures we are currently building will determine the sustainability of our cities for many years to come. The urgent issue now is to formulate and have a broad discussion around visions as to how urbanism can become more sustainable.

Sustainable urbanism as a concept is criticised due to its seemingly vague nature and the broad range of issues that it involves. Sustainable urbanism cannot be defined by the research community but it is basically a political concept involving values

about which kind of future urban areas we want. When talking about the environmental impacts of urbanism, the research community, however, plays an important role in formulating goals and different visions of the future, so as to create a broader discussion in society around these issues. Climate change is a key environmental aspect of urbanism. Mitigation and adaption to climate change are often discussed as a global issue but we see local initiatives arising more and more. We believe that at a local level there is a great need for cooperation between actors in society (such as local authorities, businesses and the research community) to formulate strong visions for addressing climate change.

Sustainable urbanism has to be built on both environmental sustainability and social sustainability, while maintaining sound economic development. Environmental sustainability is defined as a process of maintaining or improving the integrity of the planet's life support system. Maintenance and improvement of this system is necessary for the welfare of present and future generations. Social sustainability is concerned with the conservation of social and cultural diversity. Issues of equity, gender equality and democracy are central to the notion of social sustainability. It is problematic to try and address social and environmental issues separately in sustainable urbanism. Social sustainability cannot be achieved without environmental sustainability and vice versa. What we do in one area will affect another. Ultimately it is about engaging people at all levels and across all sectors.



RNCC is formulating research questions on integrating climate change considerations into planning processes for Europe's urban areas. Cities must minimise their contribution to climate change while adapting to its impacts and consequences. This will require discussions on social and economic issues.

Creating a vision

RNCC will create networks between city planners and researchers to exchange experiences and ideas for cities to take action to become climate "neutral". Formulating visions and developing scenarios that involve and can be owned by people will be important aspects of this work. People have

their own motivations and reasons to act upon climate change but they must feel included. The vision should be broad and clear with achievable and measurable targets. Our current problem is in moving from awareness to action. Therefore, developing short term targets that measure progress towards longer-term goals makes sense and helps initiate and maintain action and motivation.

The vision needs to be ambitious and inspirational. It is important to include all stakeholders and citizens and to identify strengths and weaknesses of a particular city, area or district and recognise that what "works" for one will not work for another. Cultural, demographic, economic differences etc. will require different approaches and visions.

In order for diverse stakeholders to work towards a common goal, it is important to create visions which are broad and which offer discussion platforms for the development of urban areas. Climate Neutral Cities or City Areas are examples of such concepts. Other common concepts include Low Carbon Cities, Zero Emission Cities, Fossil-fuel free cities, Energy Positive Urban Areas etc.

The first RNCC workshop discussed these different concepts which could serve as platforms for creating visions of sustainable urbanism. It was important to gather experiences from the participants' own projects and to collect material for formulating visions for future workshops. Many cities and municipalities are already formulating visions using the above concepts and it is important to learn from their experiences.

Although it is important to have clear and simple visions, it is also important that targets are formulated so that progress along more sustainable pathways can be measured. An important part of RNCC's work is to evaluate the different concepts used to formulate the visions and to discuss how to measure progress.

- Are concepts such as Carbon Neutral, Fossil Free, and Low Carbon Cities fruitful for creating condensed visions of urban development?
- How can we use scenario methods in participatory planning approaches linked to the visions? What is the relationship between visions and scenarios and which should come first?
- Methods for evaluating, verifying and comparing different approaches
- Important research issues related to the topics discussed

Concepts used to create visions can be too narrow or not flexible enough to endure. Urban development is a long process and urban areas exist for a long time, so it is important to have flexibility to allow for changes in visions and pathways during the development process. Emissions of carbon dioxide from the burning of fossil fuels are linked to the global carbon cycle which includes important carbon sinks in the seas and forests. Perhaps the concept of carbon management could be used more in the future? Also, the idea of climate responsibility has been discussed within the network as a general and fruitful concept for actions at both individual and company level.

Cities are built for people which means that people at all levels must be engaged in building more sustainable cities; not just because decisions on how to develop cities affects people's daily lives, but because their collective knowledge and experience is a resource for making holistic decisions. Emissions of greenhouse gases are linked to the consumption of goods and services, in particular their production and transportation. It is important to build new areas in cities, so that the infrastructure facilitates new lifestyles with less environmental impact. This includes transport, buildings and planning of infrastructure.

Many city projects are now focused on transforming older areas, often in the suburbs. These transformations must include people and have broader visions. Climate neutrality is probably good for the environment and therefore people but it must also create a vibrant living city, which is what people really want.

The vision must be integrated to include all aspects of sustainability so that we can create more resilient and attractive cities. Resilience includes both social resilience and ecosystem resilience. The use of green areas and eco-loops for energy and waste in cities are examples of how the creation of attractive cities can be combined with ecosystem resilience. Local ecosystem thinking can also create awareness and social integration in urban areas.

Green areas are an important part of climate change mitigation. Cities must develop plans and regulations to protect and develop ecosystems and natural buffers to mitigate floods, storm surges and

other hazards, and ensure that climate change adaptation initiatives build on risk-reduction practices. Resilience also means variation. Differences in terms of history, geography, climate, administrative and legal conditions require tailor-made locally-developed solutions which will include many different options.

RNCC results

These will include:

- An active network of researchers and planners in Sustainable Urbanism with a focus on integrated solutions for mitigation and adaption to climate change.
- A report on important research issues which can be used by the network for applying for research funding.



- A guideline for using participatory back-casting scenarios in creating visions and action plans for sustainable urban areas with the focus on climate change mitigation and adaption.

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Further reading

UNEP's Kick the Habit is a guide for cities on how to eliminate oil dependency and become carbon neutral: "The term climate neutrality is used in this book to mean living in a way which produces no net greenhouse gas (GHG) emissions. This should be achieved by reducing your GHG emissions as much as possible, and using carbon offsets to neutralize the remaining emissions. "

www.unep.org/publications/ebooks/kick-the-habit/pdfs/KickTheHabit_en_ir.pdf

The Clinton Climate Initiative has developed a tool for calculating the carbon footprint of cities and assessing the effects of planned measures. www.project2degrees.org

Many cities and municipalities are working on visions for climate neutrality, fossil fuel free etc. Some examples include:

Fredrikshavn, Denmark www.energycity.dk

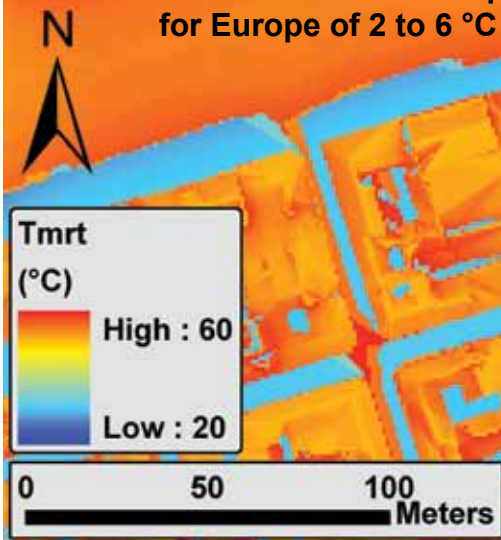
The new Royal Sea Port area in Stockholm, Sweden, www.stockholmroyalseaport.com

Newcastle, England www.newcastle.gov.uk/wwwfileroot/ns/energy/CChangeStrategy1.pdf

The Hague, Netherlands www.c40cities.org/best-practices/energy/hague_seawater.jsp

Climate change and heat stress in buildings and structures across Europe

The Intergovernmental Panel on Climate Change predicts a rise in mean air temperature for Europe of 2 to 6 °C by 2100.



In temperate climates, a 2-3°C increase in average summer temperatures will double the frequency of periods characterised by extremely high temperatures. This means that heat waves will become more frequent, more intense and last longer. Extreme heat waves, as experienced in central Europe in 2003, profoundly affect people's health and well-being and also have substantial economic consequences. Southern Europe is expected to be most affected, due to its already high summer temperatures and substantial increase in summer temperature, but northern countries such as Sweden may also have problems. According to the Swedish government report "Sweden facing climate change - threats and opportunities", the number of heat-related deaths in the Stockholm area could rise by 5% in summer if air temperature rises by 4°C. The same report estimates that the cost of heat-related deaths due to climate change would be €50-70 billion in Sweden, 2010-2100.

Heat stroke, heat exhaustion, heat syncope, heat eruptions, heat fatigue and heat cramps are typical heat illnesses. Most heat illnesses are symptoms of failures in the thermoregulatory system (of varying severity) which appear within a few days of exposure. Some groups, such as the elderly and people with cardiovascular and respiratory diseases, are more sensitive to heat. Temperature also affects people's mood and mental health.

Urban centres are particularly vulnerable as a result of urban heat islands (UHIs) and poor air quality. The UHI intensity, which is mainly controlled

by differences in geometry and thermal admittance between urban and rural environments, can reach up to 12°C in mega cities. In warm climates, night-time cooling is essential to human health and well-being. In cities, buildings retain heat at night, so inhabitants will sometimes experience sustained heat stress during both day and night. Approximately 75% of the European population live in urban areas. This number is expected to grow with an increasing proportion in older age groups. The average ratio of the population over 65 years old among all EU member states is predicted to rise from 17% percent in 2008 to 30% in 2060. The number of people exposed to high temperatures and the number of people at high risk will grow rapidly this century.

During warm summers, the demand for cooling in buildings will increase. If temperatures continue to rise, the increased use of air conditioning will create an additional demand for electricity and the release of more heat to the city. Climate-sensitive planning plays an important role in preventing heat stress at street level as well as minimising energy use, with large health, social, economic and environmental benefits. Compared to other mechanisms used to mitigate the effects of excess heat (such as the provision of air conditioning and the delivery of electricity) climate-sensitive planning is climate neutral, since it requires no additional energy and releases no additional carbon dioxide. Quantitative information on factors determining outdoor thermal comfort is required in order to mitigate the problems of intensified heat stress and design sustainable cities and high-quality outdoor public places.

Research Objectives

- Carry out a pilot study, including simulations of heat and cold stress under climate-change conditions for different urban environments in Göteborg, Sweden.
- Present and discuss pilot study results at a European workshop with researchers working on urban and regional climate, urban planning, thermal comfort and risk analysis in Göteborg, September, 2009.
- Write a full joint URBAN-NET research proposal, based on workshop findings; specifically knowledge gaps and common research needs and interests.

Göteborg Pilot Study

The city of Göteborg was founded in 1623. Lying on the west coast of Sweden, it is Sweden's second largest city with nearly 500,000 inhabitants. The area has a maritime west-coast climate

with relatively mild winters for its latitude and cool summers.

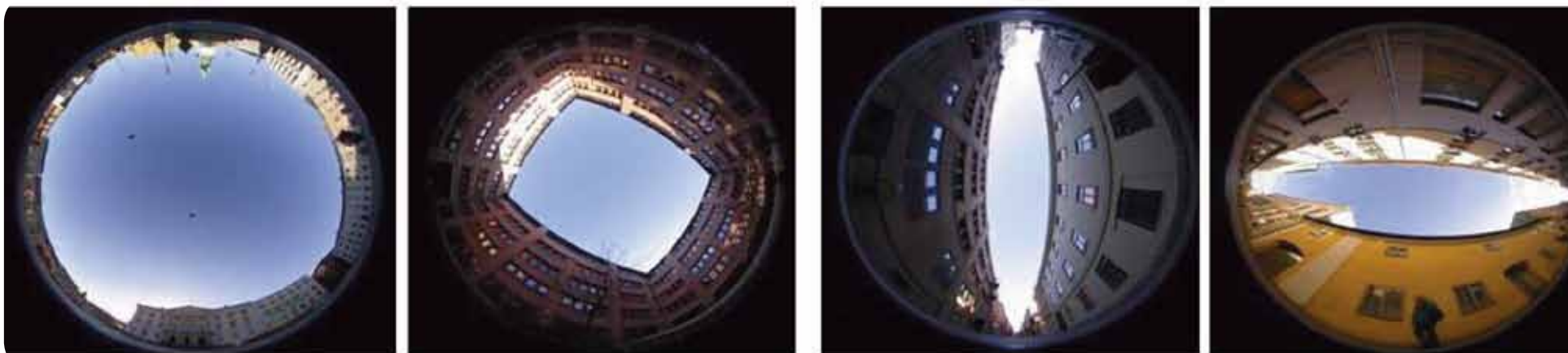
The city centre has a compact mid-rise design, consisting of compact brick buildings that are 3–4 stories tall, narrow street canyons and few trees or green surfaces.

The pilot study aimed to:

- analyse the influence of urban geometry on the outdoor thermal environment which affects human comfort; and
- simulate the potential change in heat and cold stress in different urban places due to climate change.

Four urban places with different built geometries were analysed: a large square; a small courtyard; a north-south oriented street canyon and an east-west oriented street canyon (see images below).

Outdoor thermal comfort changed dramatically over short distances as a result of urban geometry (street direction, spacing and width, building height etc). This is because urban geometry controls the amount of solar radiation that reaches the ground and building surfaces. On clear summer days, the square is generally warmer compared to narrow street canyons and small courtyards, as a result of the higher amount of direct solar radiation. However, when a narrow street is lit by the sun, the canyon is warmer than the square, as a result of multiple reflection of long-wave and short-wave radiation from the surrounding walls. Narrow street canyons and courtyards also tend to be warmer than large open areas in the early morning and late afternoon due to diminished loss of long-wave radiation through multiple reflections from the canyon surfaces.





The number of hours of strong and extreme heat stress could triple if the mean air temperature rises by 2.8 °C. For the city of Göteborg, which has comparatively cool summers, variable weather and few air-conditioned buildings, this is most likely to result in an increase in heat-related mortality in summer. Conversely, the number of hours with strong and extreme cold stress could decrease by 20-25% (400-450 hours) in winter, which is expected to result in a decrease in cold-related mortality.

Urban geometry, therefore, has a significant effect on outdoor thermal comfort. This highlights the potential for climate-sensitive planning to play an important role in maintaining thermal comfort under changed climate conditions and extreme weather.

By maintaining thermal comfort during heat waves or cold spells, public health and well-being will be improved, use of urban open space will increase and energy use will decrease; bringing large health, social, economic and environmental benefits.

Future research needs

The pilot study findings were discussed at a European workshop with partners and researchers working on urban and regional climate, thermal comfort, urban planning and risk analysis. Common research interests, identified from knowledge gaps and research needs, will form the basis of future research and cooperation.

- Quantitative information on factors determining outdoor thermal comfort; focusing on the significance of land use (greenery, water, impervious surfaces etc), urban morphology (street width and orientation, building heights) and street trees (type of vegetation, location and density).
- Quantitative information on the effects of regional climate change on general trends and extreme weather events on outdoor thermal comfort at urban, neighbourhood and street canyon scales and interactions at different spatial scales.
- Suitable adaptation strategies and design guidelines.

Once the significance of land use, urban morphology and street trees and the effects of regional climate change at different urban scales is understood, guidance on how to maintain health and outdoor thermal comfort under changed climate conditions and extreme weather events can be developed. This could include guidelines on optimising land use design, street and building geometry and use of street vegetation for different climate zones. The exchange of knowledge with stakeholders will help develop innovative policies to mitigate the negative impacts of a changing climate at the heart of city planning and management.

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TOPEUM

Optimisation of urban-planning and architecture for energy use in Mediterranean cities

Topeum brings together experts from different backgrounds and perspectives to address sustainable energy use in an integrated manner.

The main objective of TOPEUM is to investigate the influence of different urbanisation characteristics (such as the geometry and density of buildings within a city and the type of building materials used) on the intensity of the urban heating effect in the case of a typical Mediterranean city, such as a Cypriot urban area.

The consortium consists of experts from industry with close links to regulatory authorities and agencies, as well as technical experts involved in laboratory and field experiments and computational modelling. The network consists of five contributing partners from 3 countries: Cyprus, Sweden and Bulgaria. This transdisciplinary aspect enables the consortium to tackle the complexity of the problem effectively and efficiently.

Introduction

Over 50% of the world's population now live in urban areas, compared with only 30% in the 1950s. With this increase in growth, numerous issues have arisen, such as air pollution, energy consumption, waste generation and the socio-economic status of urban inhabitants. All these issues depend on sustainable urban planning, including the type of materials used in buildings as well as the organisation of economic and social life. Basic and applied research is needed to investigate the city as a human-made environment. The task is to achieve sustainability in the use of energy, food, waste, air and water quality.

Solar radiation is one of the major driving forces of the urban heat island effect. The observed effects are also influenced by urban design; namely the canyon radiative geometry, anthropogenic heat and the street materials' physical properties. At Mediterranean latitudes the preference is for dense urban geometries that favour shade and restrict ventilation. In a dense settlement the overall shape (both the skyline and the horizontal projection) affects airflow within the streets. In a round city the air flow along side streets, perpendicular to the direction of the wind, is from the centre towards the perimeter, while in a rectangular city the direction is from the perimeter of the city towards the centre. Compact city forms are associated with minimal consumption of land and energy and hence are often promoted as being more sustainable and the preferred form of urban development. Relocating 10 % of the urban population to the city's periphery would increase air pollution by about 10-15 % in a bigger area, but would reduce human exposure, suggests a study in the German Ruhr area.

The most important problem, however, caused by the urban heat island effect is energy consumption. To optimise urban formation for minimal energy use, both heat load use and removal must be dealt with simultaneously. Building materials that reflect long-wave radiation can reduce the effective load. Heat is removed by convective heat transfer, dependent on air velocity and turbulence. The latter is dependent on the building plan area density.

Objectives

In Mediterranean cities heat loss from buildings (in winter) is one of the primary sources of energy waste as little insulation is used. TOPEUM will investigate energy exchange processes between buildings and air in a typical south European city. It will also look at ventilation properties in relation to urban-planning and architectural parameters to minimise energy use.

This complex task will include the complementary use of Computational Fluid Dynamics (CFD) modelling, wind tunnel advanced velocimetry measurements - Particle Image Velocimetry (PIV) and field measurements of surface heat flux. CFD modelling will enable studies of air flow as well as the thermal performance of building materials; taking into account the structure of the modelled urban areas.

It will promote understanding of the contribution of heat conduction and heat radiation in the generation of thermal discomfort in urban canyons.

The experimental results, together with analysis of long-term existing data in for the participating countries, will help inform optimal practices for energy use savings. Corresponding payback periods will be calculated using a typical urban area in Cyprus as a case study. A cost-benefit analysis will be conducted to assess the prospects for achieving change within the prevailing socio-economic conditions.

Methodology & expected outcomes

Selection of the study site: identification of the site to be investigated will be on the basis of prescribed criteria including the building materials, geometry and location of the buildings.

Laboratory experiments: ventilation and heat efficiency effects will be investigated on scale models of selected city blocks in a wind tunnel. Determination of the velocity field will be achieved by employing Laser Doppler Anemometry (LDA) and Particle Image Velocimetry (PIV).

Field measurements of building heat flux will be taken to determine heat exchange between the urban canopy and the atmosphere for the properties of specific building materials used in Cyprus.

CFD modelling will contribute to the study, by examining the air flow and thermal performance of building materials; taking into account the structure of the modelled urban areas. It will provide an opportunity



to understand the contribution of heat conduction and heat radiation in the generation of thermal discomfort in urban canyons in Cyprus.

Based on the experimental and numerical findings of this project, modified spatial development practices will be introduced in order to promote and optimise sustainability in urban planning and development.

A cost-benefit analysis will be performed regarding the feasibility of suggested best practices.

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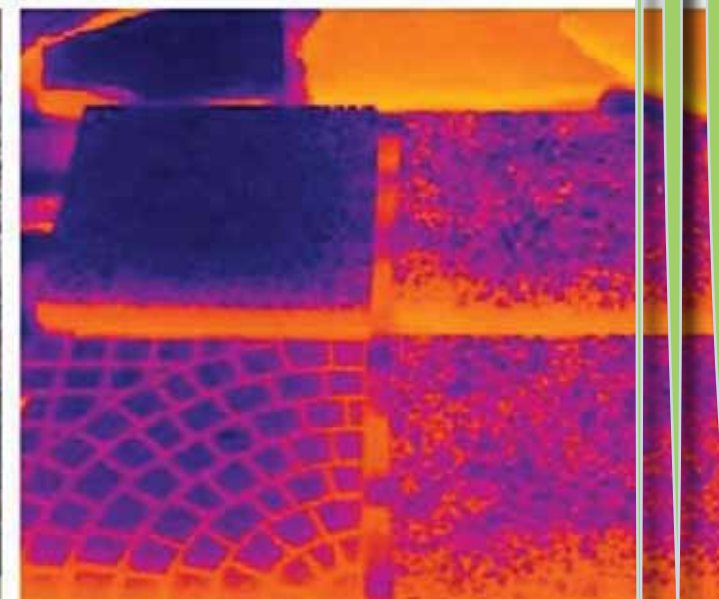
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URBAN-NET

URBAN-NET addresses issues of urban sustainability in Europe. It aims to increase cooperation between European Member and Associated States by networking and collaborating on joint research activities.

This anthology presents transnational research projects funded by eight of URBAN-NET's partner organisations(*) following the first call for proposals on integrated research on urban sustainability in 2008. A second call will result in the funding of more projects in 2010, bringing the total sum for transnational research funding by URBAN-NET to some 8 million euros.

URBAN-NET is funded by the European Commission's 6th Framework Programme under the European Research Area Network (ERA-Net) initiative. The project has wide geographical and cultural representation with 15 partners representing 13 countries, plus a global partner.

It is managed by a partners' consortium and will run for nearly 5 years, from August 2006 until end of April 2011. URBAN-NET sets out to address the urban research agenda in Europe and will result in long-lasting transnational coordination; primarily through jointly-funded research programmes.



Bulgaria
*ASDE (Agency for Sustainable Development and Eurointegration)



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*RPF (Research Promotion Foundation)



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*Agency NL



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*IPA (National Institute for Research)



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*The Swedish Research Council for Environment,
Agricultural Sciences and Spatial Planning*

Design and Layout

UrbanOcean

Artwork

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Photographs

greenspace scotland, bigfoto.com,
stockholroyalseaport.com, June
Graham and researchers' own

Printer

Tangerine, Stirling, Scotland, UK

www.urban-net.org





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Research Anthology 2010

