

# TURaS: Transitioning to Urban Resilience and Sustainability

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## 1 ABSTRACT

The TURaS Project brings together neighbourhood communities, researchers, local authority and urban councils as well as small or medium enterprises (SMEs), in order to research, develop, demonstrate and disseminate transition strategies and scenarios to enable European cities and their rural interfaces to build vitally-needed resilience in the face of significant sustainability challenges. This paper is an illustration of how the TURaS Project will carry out research in collaboration with communities, agencies and institutions within selected cities, with the target of moving towards a reduction of their ecological footprint through proposing new visions, feasible strategies, spatial scenarios and guidance tools to help cities address these challenges. This paper illustrates how the impact of these new approaches will be measured across participating cities and a final set of strategies and tools will be developed for demonstration, dissemination and exploitation in other European cities. Community representatives and SMEs are integral to all aspects of the project, and specific measures have been put in place to ensure the optimal economic impact of the project is achieved. While there are numerous studies into resilience and urbanisation, little is known of the impact that participation by different kinds of urban stakeholders may have on communities and environments, or the effects that greener environments may have on communities and human health. This paper will conclude by showing how TURaS will explore these themes, leading to a stronger understanding of how to mainstream sustainability in urban areas.

## 2 INTRODUCTION

The extent and financial cost of global biodiversity loss related to unprecedented urban growth is only just being realised. From pollinator declines to the loss of coastal protection services, anthropogenic-driven loss of ecosystem services have impacted communities, governments and industry worldwide. Built upon old models of high density living and economic development, Europe's cities are beginning to encounter detrimental environmental impacts. Responding to these complex challenges requires a long-term and integrated approach to city planning and development, involving significant participation by all stakeholders towards a common goal. The TURaS Project has a design methodology that partners different institutions in research couplets (figure 1) within a resilience focused paradigm.

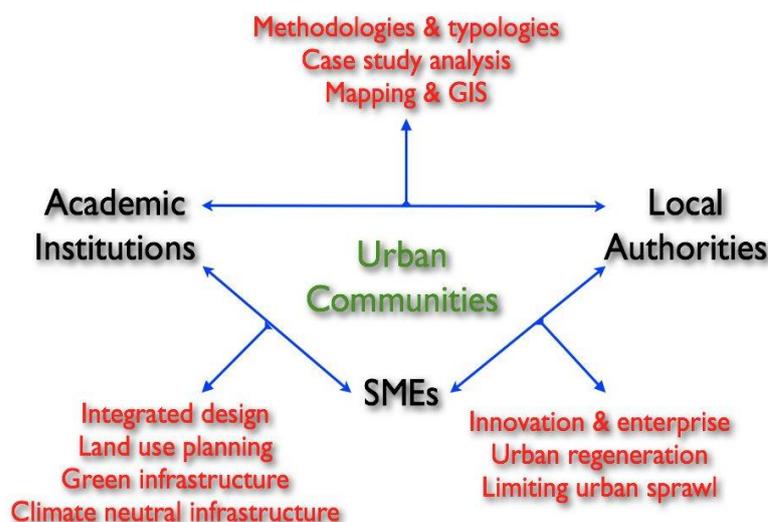


Fig. 1: Research typology of the TURaS twinning concept illustrating three expertise couplets and their respective areas of speciality (red). Central to the concept are urban communities in the form of local neighbourhoods or districts.

## 2.1 Resilience

Resilience thinking derives from studies of ecosystem dynamics and conservation practice. It is an explanation of how complex ecological systems change and persist over time particularly with their interaction with human interference especially in relation to how systems recover from human-oriented environmental change. Resilience can have different meanings. It can be used to describe a response to environmental disturbance or how habitats and ecosystems can re-organise spontaneously after a disturbance. It can mean the capacity for adaptation within a system and, in relation to human systems, the ability to learn and adapt. Thus, resilience theory is at the root of what are known as social-ecological systems. These are the complex interactions between humans and ecosystems and have particular poignancy in urban settings. The notion of urban resilience is a relatively new concept and is still hotly debated. However, the TURaS Project has taken the ideas of resilience and aims to see how these ideas can be practically adopted.

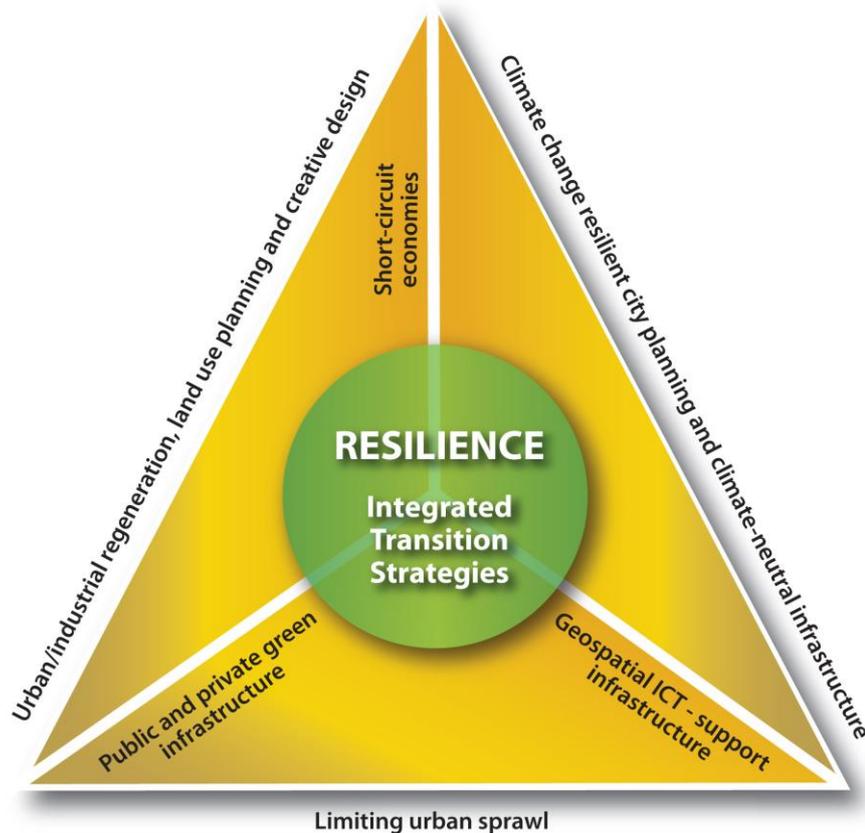


Fig. 2. Typology illustrating the six principal RTD work packages of the TURaS Project. All six are interconnected and inter-reliant with each other, and the ultimate focus is to establish mechanisms for building resilience into urban planning and design through integrated transition strategies.

## 2.2 Methodology

The cities represented in TURaS are representative of typical European regions in terms of size, geographical location and sustainability challenges. They include 6 European capital cities: Brussels, Dublin, London, Rome, Sofia, Ljubljana as well as other cities representing regional capitals and smaller cities including Nottingham, Seville, Rotterdam, Stuttgart, and Aalborg (Denmark). The TURaS Project will begin by developing a new infrastructure (currently under way) that will enable inventory, visualisation and analysis of a variety of aspects of urban resilience and sustainability. Provision of information infrastructures to support sustainable development and planning is still in its infancy. In the first phase of TURaS a new framework and process will be demonstrated for developing and using a geospatial information and communication technology (ICT) infrastructure at sub-city / neighbourhood scale, featuring relevant contextual as well as project-specific data. The most important and innovative element of the infrastructure will be its availability to local organisations and communities as a communication and project management tool. Using this infrastructure developed in the initial phase of the project, data will be collected and presented in a common format for a selected case study neighbourhood in each of the participating cities. In the next phase of the project, this case study data will be used to develop and test new approaches to build

increased urban resilience and reduce the urban ecological footprint of each participating city. Figure 2 illustrates the connectivity of the different approaches to building urban resilience, which will be developed in the TURaS Project and how these interact together to build urban resilience and reduce ecological footprints. The final phase of the TURaS Project involves the demonstration, dissemination and exploitation of results in other European cities with the ultimate target of motivating policy-makers, planners and managers at local, regional, national and international levels. Over the five year duration of the project, the feasibility of these new approaches will be tested in selected case study neighbourhoods and new measures to enable adaptive governance, collaborative decision-making, and behavioural change towards resilient and sustainable European cities will be tested.

### 3 DISCUSSION

Resilience is a contested and debated issue. For some it can mean a ‘bouncing back’ or recovery from disaster or serious impact to a status quo situation, where little has changed in planning and designing in the urban arena and a business-as-usual stance is taken. For others, resilience can mean a ‘bouncing forward’ to an awareness and acceptance of dangers and threats, and a thus there is a desire to change or modify the attitudes of urban communities and learn from past mistakes. This idea of resilience sees change as gradual and inevitable. Still others see resilience as a transformation act; a transition to a new urban development ideology and a mainstreaming of the original sustainable development ideals. This sees resilience as a motivator for societal change. The TURaS project seeks to explore the latter, by developing strategies using differing disciplinary approaches. By using this synergistic approach, the TURaS Project may yield practical information that communities, designers, planners and policy-makers all seek in the cities of a modern Europe.