

***Urban sprawl as a threat to sustainable development:  
consequences, scenarios, options***

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**Integrated approach:  
anti-sprawl policies and instruments for  
sustainable development of European cities**

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# The background



- This presentation is based upon the book Couch C, Leontidou L & Petschel-Held (Eds), 2007, *Urban Sprawl in Europe: landscapes, land-use change & policy*, Blackwell, Oxford.
- The book is based upon the findings of a 5th European Framework project URBS PANDENS funded by the European Commission (EVK-CT-2001-0052) and carried out by a consortium of nine partners in seven European countries, coordinated by the Potsdam Institute for Climate Impact Research (PIK).  
<http://www.pik-potsdam.de/>



## **Other research findings:**

- “Urban Sprawl – Ignored Challenge” (EEA, 2006)
- INTERREG III B Alpine Space /CADSES programme
- URBACT II programme
- EC reports

# Aims and presentation structure

The aim of the project is to provide a general discussion of the nature and processes of urban sprawl and to consider:

- The extent to which common patterns and processes of urban sprawl could be found across Europe, distinct from those previously identified in the USA;
- Whether new theories could be formulated to explain urban sprawl;
- What *innovations* might be suggested regarding the management of urban sprawl

## The structure of this presentation:

- Definitions of urban sprawl;
- Differences between Europe and the USA;
- Causes and consequences of urban sprawl;
- ‘Archetypes’ of urban sprawl;
- Planning cultures and cultures of urbanism;
- Policy management and conclusions

# Definitions of urban sprawl in USA

## Peiser (2001, p.78) :

- “the term »sprawl« is used variously to mean the gluttonous use of land, uninterrupted monotonous development, **leapfrog discontinuous development and inefficient use of land**”;

## Squires (2002, p.2):

- “a pattern of urban and metropolitan growth that reflects **low-density, automobile-dependent, exclusionary new development** on the fringe of settled areas, often surrounding a deteriorating city”;

## Galster et al (2001, p. 681-685):

- “the term has variously been used to refer to: **patterns** of urban development, **processes** of extending the reach of urbanised areas, **causes** of particular practices of land use, and to the **consequences** of those practices .... Therefore the sprawl is a pattern of land use in an urbanised area that exhibits **low levels** of some combination of **8** distinct dimensions: **density, continuity, concentration, clustering, centrality, nuclearity, mixed uses, and proximity**”.

# Contextual differences between Europe and the USA (1)

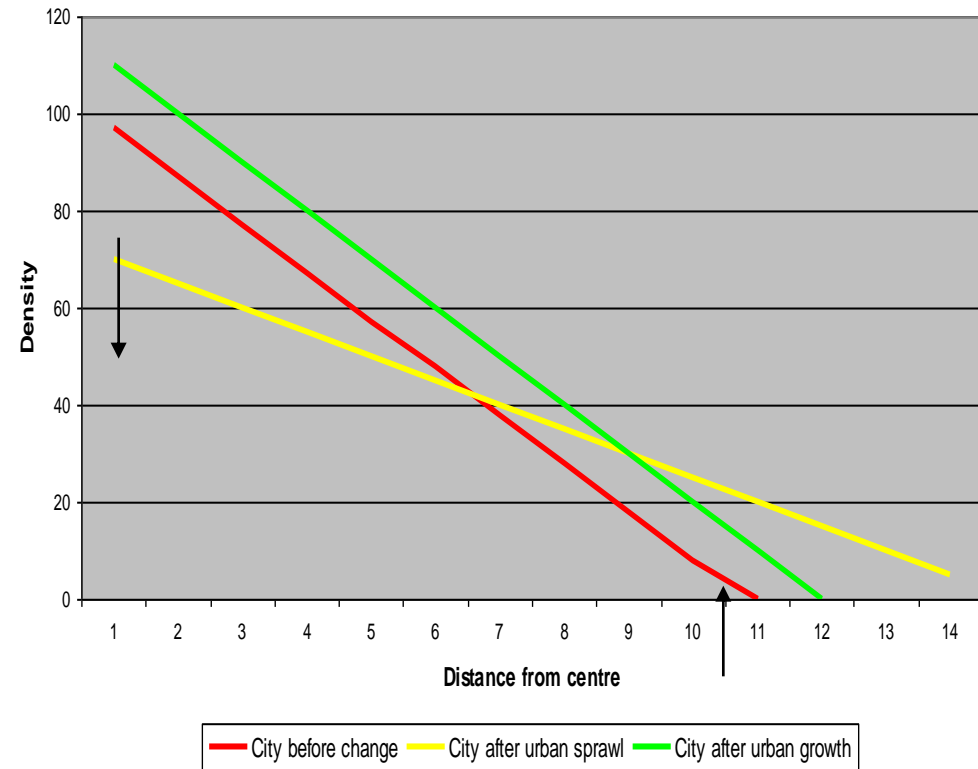
<b>Policy and governance</b>	
Supremacy of the market and market-led solutions:	USA > EU
Taxation level:	EU > USA
<b>Local government</b>	
Influence of international, national and regional government over municipalities	EU > USA
Average size of municipalities	EU > USA
Control over land use and density	EU > USA
<b>Political/scientific concern for sustainable urban development</b>	
Environmental policy/sustainable urban development	EU > USA
Pro-sprawl backlash	USA > EU

# Contextual differences between Europe and the USA (2)

<b>Economic and social geography and scale of urban problems</b>	
GDP per capita	USA > EU
Housing and transportation costs	EU > USA
Urbanised land	EU (5-10%) > USA (1%)
Strength and attraction of central cities (as cultural / residential locations)	EU > USA
Racial tensions and segregation	USA > EU
Size and scale of sprawling suburbs	USA > EU

# Urban sprawl as a process of urban change

- ‘Sprawl’ (v) is a *process* through which the urban density gradient becomes less steep.
- It can be contrasted with ‘urban growth’, which is a process through which the urban density gradient moves outwards (to the right)



## Urban sprawl in Europe (operational) definition (Couch et al. 2007):

... sprawl is to be considered as a **process** of extending the reach of urbanised areas and not merely a **pattern** of land use in urbanised areas, that exhibits **low levels** of: **density, continuity, concentration, clustering, centrality, nuclearity, mixed uses and proximity**”.....

and so...

***Urban sprawl in Europe*** has sometimes much in common with that found in the USA, but with its own different characteristics and context.

Therefore, urban sprawl in Europe requires separate, possibly different, theoretical explanations and policy responses from those developed in the USA.

Furthermore, Europe itself has to be subdivided into regions, each with different geographic and institutional contexts, if urban sprawl is to be understood and managed.

# Causes of urban sprawl

## • **Macro level:**

- Rising real incomes
- Globalisation and competition between cities
- Cheap energy and reducing transport costs
- Failure to account for socio-environmental costs of production/ consumption
- Demographic changes and declining household size
- Ideology of property owning democracy

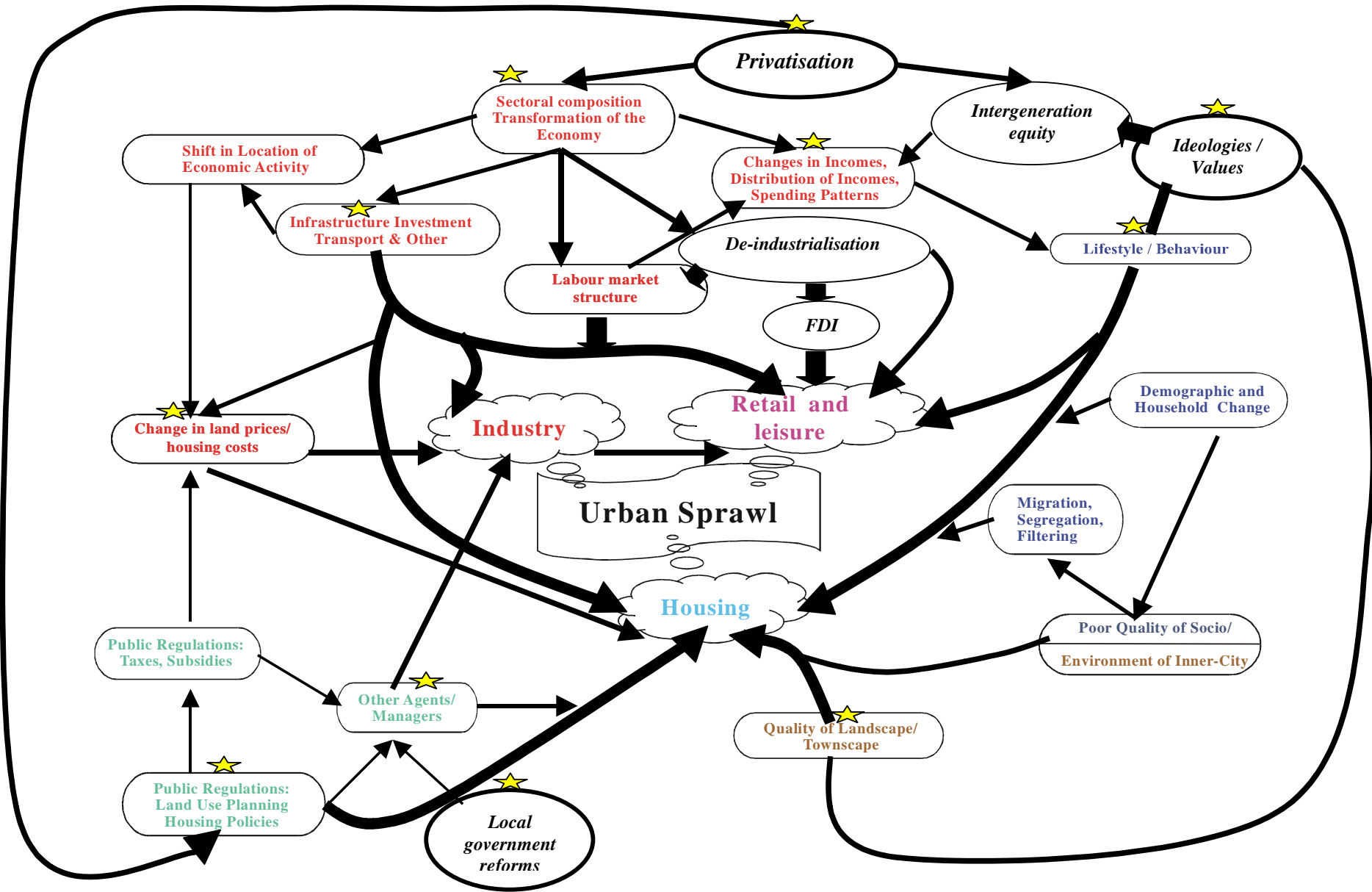
## • **Meso level (Functional urban regions):**

- Strength of the local economy
- Residential mobility, tenure structures, etc.
- Local government structures and tax systems
- Local development plans and planning decisions

## • **Micro level (Actors):**

- Household characteristics
- Firm/company characteristics
- Interest groups (lobbies...)

# CAUSES OF URBAN SPRAWL IN LJUBLJANA URBAN REGION (1991-2001)



# Consequences of urban sprawl

## **TRANSPORT** (Journey frequency, length and mode)

- ENVIRONMENT:** increased energy consumption, air pollution by CO<sub>2</sub>, NO<sub>x</sub>, water pollution by oil, petrol, rubber etc., noise pollution, land consumption, surface sealing, and ecosystem fragmentation;
- ECONOMIC:** costs of infrastructure construction and maintenance, vehicle production and maintenance, the personal costs associated with vehicle ownership and use, the amelioration costs of dealing with the socio-environmental costs of transport;
- SOCIAL:** accidents, stress, loss of time spent in commuting / travelling.

## **DENSITY** (residential and job density)

- ENVIRONMENT:** increased rural land consumption due to scale effects, increased energy use for heating (CO<sub>2</sub>), ecosystem fragmentation;
- ECONOMIC:** changes in the viability of local amenities, public services and retailing, increased public costs for infrastructure investments and maintenance;
- SOCIAL:** greater amount of living space, weakened sense of community, increased distance from the centre to the rural edge.

## **LAND CONVERSION** (urbanisation)

- ENVIRONMENT:** conversion of land with a destruction of natural habitats, a general deterioration of landscapes, surface sealing with impacts on runoff and possible floods, pollution (air, water, ground, noise, light);
- ECONOMIC:** increase of land value due to conversion and development, increased »hope« values and speculation on adjacent rural land, changing local tax revenues, requirements for infrastructure investment.
- SOCIAL:** urbanisation of the countryside with increasing economic activity, changing social values, potential social conflicts between the new and the old residents.

# »Archetypical« perspectives of urban sprawl in Europe:

## SUPPLY SIDE:

- - **infrastructure-related sprawl**. Capital investment-led infrastructure-related sprawl has been recently visible in many European urban areas in line with improving the competitiveness of the entrepreneurial city, particularly as fostered by major infrastructure investment in preparation for e.g. the Olympic Games and other major sport or cultural events, coupled with speculative new medium and large scale housing development.

## DEMAND SIDE:

- - **lifestyle-driven sprawl** especially with respect to second homes at the urban periphery. In a number of European countries, second homes traditionally represent a major component of the way of living. Moving into second homes in rural areas, construction of new (second) homes, and/or their conversion into permanent residences, increase pressure on the local environment and infrastructure facilities.

## REGULATION-RELATED:

- - **sprawl in the post-socialist city** which were in the 1990-2010 dominated by the rapid transition from a planned to a market economy, - but showing different role of the central and local governments and spatial planning system in the sprawling process, with different effects on local economies, social patterns, and the environment.
- - **sprawl in declining urban areas** experienced a substantial loss of population during the last decades of the 20th century, yet concurrently experienced sprawl. This loss of population brings about specific issues associated with urban sprawl, which are quite distinct from those in areas with growing population and economic power.

# Life-cycle driven sprawl (especially in relation to second homes)

## STOCKHOLM



- In a number of European countries second homes traditionally represent a major component of the way of life. This trend is growing and itself represents a dimension of urban sprawl, often with adverse impacts on local services.
- The conversion of “weekend” and “summer houses” into permanent dwellings is creating a process of sprawl amongst the population, and putting pressure on local services, without additional dwellings being built.
- We can also observe around many cities a similar process of urbanisation of rural dwellings, as they are vacated by their traditional inhabitants and occupied by urban commuters through a process of ‘gentrification’.

# Sprawl in declining urban areas

- Urban sprawl continues to occur in declining (or shrinking) urban areas [such as Liverpool and Leipzig] partly due to:
  - A segmentation of inner city and suburban housing markets;
  - The pressure for economic growth (to reduce net job loss).
- The consequence tends to be a fragmentation of the urban fabric and a rise in urban dereliction and social deprivation in the inner city.
- Solutions appear to lie in programmes of urban regeneration combined with strong controls over peripheral expansion.



LEIPZIG

# LJUBLJANA



## Sprawl in the post-socialist city

- Each of these cities experienced strong processes of urban sprawl through the 1990-2010, particularly in the early years of transition when formerly centrally planned urban systems had to adjust to the notion of planning and controlling private investment.
- Sprawl was stimulated on the supply side by investments in infrastructure and businesses and speculative housing in suburban areas in support of rising demand for privately owned low density housing.
- Nevertheless, these cities remain more compact than many cities in western Europe.

# »Urban life cycle«

Stage of Development		Classification type	Population change characteristics			
			Core	Ring	FUR	
I	Urbanisation	1 Absolute centralisation	++	-	+	Total growth
		2 Relative centralisation	++	+	+++	
II	Suburbanisation	3 Relative decentralisation	+	++	+++	Total decline
		4 Absolute decentralisation	-	++	+	
III	De-surbanisation	5 Absolute decentralisation	--	+	-	-----
		6 Relative decentralisation	--	-	---	
IV	Re-urbanisation	7 Relative centralisation	-	--	---	Total decline
		8 Absolute centralisation	+	--	-	

> 1985 (new patterns of urban change?)

Source: van den Berg et al. 1982.

# URBAN SPRAWL IN EUROPE

## *Heterogeneous trajectories of urban sprawl vs. Urban »convergence«:*

- *»glocalisation«* of the cityscapes and landscapes;

- *coincidence of re-urbanisation with urban sprawl;*

- *»Mediterraneanisation«* of the Northern and Western (***urban revitalisation***) / *»Americanisation«* of the Southern, Central Europe (**wealth and life-style driven *suburbanisation***)

=

*»hybrid city(land)scapes«*

# So what can be done? 1: Contexts

## Planning cultures and the control of urban sprawl:

- **The *planning vacuum*** in the context of post-socialist transformation in the 1990s);
- **The *unenforceability of planning*** in contexts of unprecedented growth in western European cities;
- ***Compliant spatial planning*** in contexts of urban decline (“shrinking cities).

## Post-modernity and cultures of ‘(anti)urbanism’:

- **‘Cultures of urbanism’** in southern and central Europe – compact cities in connection with main infrastructure provision vis-a-vis illegal/unplanned suburbanisation.
- **‘Cultures of anti-urbanism’** in northern and western Europe – lifestyle related suburbanisation in connection with out-migration of higher and middle income social groups to the countryside.
- **‘State controlled / induced sprawl’** in eastern Europe – the role of central / local governments on control or development of suburban areas which are not only residential.

# So what can be done? 2: Policies

- Some possible areas for policy development, depending upon the local context:
  - **At the macro level**
    - Accounting for social and environmental costs;
    - Questions of transport pricing;
  - **At the meso level**
    - Stronger land-use planning (targets, density controls, sequential testing);
    - Subsidies to urban regeneration;
    - Careful planning of infrastructure, including utilities and social facilities;
    - Changes to systems of local governance (size and function of municipalities)
    - Changes to systems of local taxation (property and development taxes)
  - **At the micro level**
    - Personal taxation and subsidies, especially in relation to housing and transport

**»sustainable urban sprawl«:** a process of urban change which seeks to fulfil the needs of the actors demanding sprawl without inducing problematic consequences.

# What are the innovative practices, new approaches to management of sprawl and delivery of *sustainable European cities*?

## *Spatial policies and instruments*

*max. allowed urban densities, land use patterns and »urban boundaries«*

<b>POLICY TYPE:</b>	<b>INSTRUMENTS</b>
<b>International level</b>	<ul style="list-style-type: none"> <li>- Policy recommendations, standards, monitoring, evaluation, benchmarking, publications, media</li> <li>- Pricing the localities for carbon emissions per capita and GDP level</li> <li>- Subsidiarity approach for developing countries</li> </ul>
<b>Institutional change, management and advocacy</b>	<ul style="list-style-type: none"> <li>- Size and function of municipalities and regions</li> <li>- Special agencies: especially for urban revitalisation</li> <li>- Advocacy, partnerships, networks and policy dialogues</li> <li>- Information, targets, benchmarking and »league tables«</li> </ul>
<b>Economic intervention: direct investment, taxation or subsidy</b>	<ul style="list-style-type: none"> <li>- Provision and upgrading of infrastructure: transport, energy, utilities and social facilities</li> <li>- Subsidies towards urban revitalisation</li> <li>- Development and environmental taxes</li> <li>- Property taxes</li> <li>- »Trading« in development permits</li> </ul>
<b>Regulation</b>	<ul style="list-style-type: none"> <li>- Efficient spatial (land use) and urban planning</li> <li>- Restrictions on specific land uses</li> <li>- Density controls and »urban boundaries«</li> <li>- Development controls</li> <li>- Environmental impact assessments</li> </ul>

# What is the appropriate level for action towards sustainable European cities – should this be the (inter)national, regional or the (intra)city level?

- **Multi-level approach and cooperation is needed urgently!**
- **International organisations** need to be responsible for recommendations, standards and monitoring as well as dissemination of information and benchmarking.
- Common but differentiated roles and responsibilities are needed between European countries.
- **Central government policy** is essential for success but implementation depends on particular **local governments** (municipalities) policies and other public and private actors.
- The **national urban policy** needs to address also the geographical, morphological and functional characteristics of urban areas and not only the administrative structure.
- Spatial and urban planning need to be strengthened at the **regional level**.
- **Cross-border cooperation** between cities and regions need to be supported by financial resources and projects of common interest.
- **Change of life-styles and consumer patterns** are urgently required.

## ***Institutional Context***



# What are the skills needed to plan, manage and deliver *sustainable European cities*?

- **Implementation of spatial planning and other laws** and by-laws at the local level is the most important issue.
- Enhance the **political interest** over the complexity of urban sprawl issues.
- Greater understanding of the **science and technology** that need to be put at community service.
  - **Training of municipal planners** how to introduce and “translate” anti-sprawl policies in land use plans and local sectoral policies in order to strengthen the ability of local government to manage and deliver Sustainable City.
  - **Local government** facilitates action through persuasion, education and provision of incentives to local inhabitants and businesses.
  - Municipalities influence people’s day-to-day lives and can promote **behavioral changes and life-style patterns**.
  - Development of **regional cooperation** (formal or informal) between municipalities in land use and building standards.
  - **Public awareness** through the involvement of the civil society in environmental issues.
  - Incorporating the environmental issues in the curricula of all **education levels**.
  - Promotion of **spatial planning studies** at universities.
  - The role of **international planners associations and networks** at the (inter)national level (ISOCARP; AESOP, EFHP).

# Conclusions

- We can speak of:
  - “**Urban Sprawl in Europe**”
  - But we cannot speak of “European urban sprawl”.
- **Causes of urban sprawl** can be identified at the macro, meso and micro levels of urban systems;
- **Policies for the control of urban sprawl** need to be devised accordingly;
- Policies need to recognise and respond to the multiplicity of **types** and **causes** of urban sprawl and the **variety** of urban situations found across European countries and regions.
- Climate change adaptation and mitigation policies, energy efficiency measures and reduction of greenhouse gas emissions need to become part of strategic, land use, economic, housing and transport policies at all levels of governance.

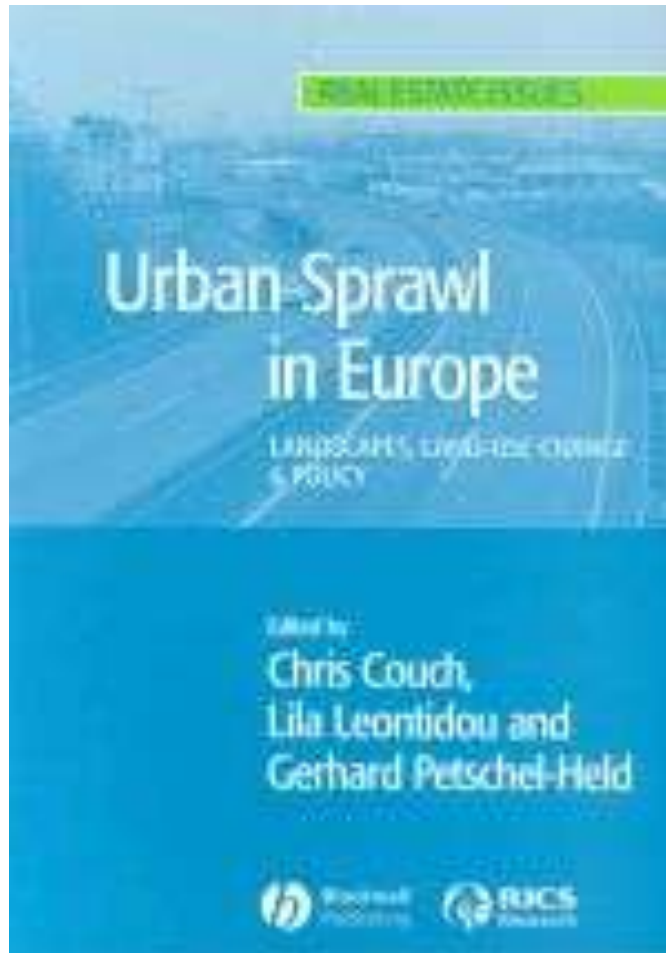
**Towards sustainable management and delivery of zero-carbon European cities?**



“Cities and local authorities have the potential to influence both the causes and consequences of climate change. They can also contribute to national and international strategies to prevent unacceptable climate change impacts. The cities need to provide leadership and direction and implement practical initiatives for the communities and citizens they represent. In a participatory manner, they can develop local strategies towards a sustainable future, addressing climate change impacts, mitigation and adaptation through good governance, urban planning and management including the application of new building codes and other appropriate laws designed to ensure minimal GHG emissions.

It is therefore imperative that urban planning looks at climate change as an opportunity to reassess itself and the models that it has promoted across the globe in the past, and looks at responses that fully recognises the mistakes of the past and the new trends in city growth.”

***Cities and Climate Change: The Perspectives of UN HABITAT, ISOCARP, Review 05, 2009.***



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