

DRAFT  
WORKING PAPER



**Please note that this is a working paper**

## **Discussion paper**

# **“Future Research Areas in the field of Urban Sustainability”**

## **in the context of URBAN-NET**

developed by Work Package 3,



**A project funded under the 6<sup>th</sup> Framework Programme  
of the European Commission**



## TABLE OF CONTENTS

<b>I. FUTURE RESEARCH AREAS FOR URBAN SUSTAINABILITY</b>	<b>3</b>
1. Integrated urban management through multi-sector / -actor governance	6
2. Demographic change -opportunities and consequences for cities	7
3. Competitive urban futures and adaptation to globalisation	8
4. Shrinking cities	9
5. Social stability and deprived neighbourhoods	10
6. Migration and diversity as a challenge and an opportunity	11
7. Health, quality of life and public spaces	12
8. Proximity, access, transport and mobility	13
9. Urban sprawl or compact city – integrated re-use of land	14
10. Environmental management and social behaviour	15
11. Housing and urban design in highly differentiated Cities	16
12. Climate change and risk management	17
13. Energy efficiency and infrastructure management	18
14. Developing commercial locations and centralised supply areas	19
15. Heritage, identity, culture, tourism and branding	20
<b>II. BASIC CONDITIONS FOR FUTURE RESEARCH AREAS</b>	<b>21</b>
<b>ANNEX:</b>	<b>22</b>
1. Information and data sources:	22
2. Bibliographical Reference	22

**1. FUTURE RESEARCH AREAS FOR URBAN SUSTAINABILITY**

Research areas are characterised by complex, inter-dependent and European or even global challenges. However, impacts as well as solutions and adaptations to these future developments are visible at the local level. The idea is to concentrate on future challenges and related developments as well as to describe research needs and possible approaches to deal with them.

Although a number of diverse interdependencies between research areas exist, a clustering aligned to the most pressing challenges is necessary to make them manageable. The following thematic research areas have been identified as most relevant for urban sustainability and are thus filtered out of the existing sources stated in the annex. Below, these research areas, which are holding a substantial need for further research at European level, will be described in brief.

<b>Research Area</b>	<b>Summary</b>
1. Integrated urban management through multi-sector / -actor governance	<ul style="list-style-type: none"> <li>- Simultaneous and fair consideration of different concerns and interests</li> <li>- An inter- and trans-disciplinary urban policy and research which involves at least two sectors and policy areas and integrates the relevant stakeholders into a dialog and learning process</li> </ul>
2. Demographic change - opportunities and consequences for cities	<ul style="list-style-type: none"> <li>- A continuously ageing population in relative and absolute proportion</li> <li>- Elderly people with their special needs, interests and culture will play a dominant role in public space, housing, business and mobility as well as in social and health services</li> </ul>
3. Competitive urban futures and adaptation to globalisation	<ul style="list-style-type: none"> <li>- The competition of sites and cities has been intensified</li> <li>- Minimum size necessary to be visible and to handle the immense infrastructure costs</li> <li>- Exchangeable styles and designs all over the world</li> </ul>
4. Shrinking cities	<ul style="list-style-type: none"> <li>- Fast running de-industrialising or suburbanising developments cause city shrinkage</li> <li>- New functions for existing quarters and decisions whether some quarters should even be completely cut off</li> </ul>
5. Social stability and deprived neighbourhoods	<ul style="list-style-type: none"> <li>- Within the same city, considerable differences can prevail in terms of economic and social opportunities, but also in terms of the quality of the environment</li> <li>- Not only for minimising the impacts of deprived neighbourhoods on other quarters (re-active approach), but also for its own value an integrated urban policy is necessary (pro-active way)</li> </ul>
6. Migration and diversity as a challenge and an opportunity	<ul style="list-style-type: none"> <li>- Current and future challenges for cities caused by new circumstances of migration need to be reflected</li> <li>- A new approach considering education and</li> </ul>

**DRAFT  
WORKING PAPER**

Research Area	Summary
	training needs, local labour market, intercultural public spaces and housing has to be developed within each city
7. Health, quality of life and public spaces	<ul style="list-style-type: none"> <li>- The benefit of high quality public and green spaces is broadly accepted</li> <li>- The exact relationship between the multifunctional and overlapping advantages of public and green space would benefit from further research</li> <li>- Most important in terms of urban management and urban research are financial and organisational aspects for planning, creating and maintaining public and green spaces</li> </ul>
8. Proximity, access, transport and mobility	<ul style="list-style-type: none"> <li>- All forecasts indicate that traffic growth will continue because of increasing mobility needs</li> <li>- A permanent task for cities is to reduce the traffic impacts</li> <li>- A basic policy and research orientation could be green/zero emission and safe transport</li> </ul>
9. Urban sprawl or compact city – integrated re-use of land	<ul style="list-style-type: none"> <li>- Particular environmental concerns are attested to urban sprawl which is characterised by growing and decentralised single function areas</li> <li>- The antithesis is the so called “compact city” which is characterised by a higher density of land use and a mix of functions</li> <li>- New land consumption for residential purposes must be minimised through reusing derelict or brownfield sites within the city</li> </ul>
10. Environmental management and social behaviour	<ul style="list-style-type: none"> <li>- Conflict between individual rationality and common quality of live</li> <li>- Two changes are necessary: a sustainable management of all natural media and a change of social behaviour and consumption patterns</li> </ul>
11. Housing and urban design in highly differentiated Cities	<ul style="list-style-type: none"> <li>- Increasing differentiation between regional housing market developments and the change in housing markets</li> <li>- Dissemination of existing knowledge and technology to new local solutions solving typical and overall future challenges</li> </ul>
12. Climate change and risk management	<ul style="list-style-type: none"> <li>- Two strategies: Mitigation through reduction of greenhouse gases emissions in all sectors; Adaptation to climate change in terms of reduction and management of the expected impacts</li> <li>- A long-term vision of a “zero-emission-city” and an overall ecological risk management</li> </ul>
13. Energy efficiency and infrastructure management	<ul style="list-style-type: none"> <li>- Current available and economic technology to efficiently use the existing energy sources</li> <li>- Sum of many single measures and public or private investments in all parts of human and urban sectors</li> </ul>
14. Commercial locations and centralised supply ar-	<ul style="list-style-type: none"> <li>- A spatial and regional concentration can be considered</li> </ul>

**DRAFT  
WORKING PAPER**

<b>Research Area</b>	<b>Summary</b>
eas	<ul style="list-style-type: none"><li>- New huge commercial estates offering interesting architecture and specialised supplies, but creating neglected facilities in traditional sub or rural centres</li></ul>
15. Heritage, identity, culture, tourism and branding	<ul style="list-style-type: none"><li>- Each city tries to possess a unique architectural and to maintain a specific local culture</li><li>- City tourism has become an important economic factor and its revenues enable the preservation of old buildings even in remote locations</li><li>- The future urban challenge is how to maintain and improve the potential of civil engagement and participation for the city as a whole.</li></ul>

## **1. Integrated urban management through multi-sector/-actor governance**

### *Keywords*

*Participation, democracy, user groups, municipal, local government, decision-making procedures, interdisciplinarity and interconnection*

*"Integrated urban development policy means simultaneous and fair consideration of the concerns and interests which are relevant to urban development. Integrated urban development policy is a process in which the spatial, sectoral and temporal aspects of key areas of urban policy are co-ordinated"* (Leipzig Charta, 2007, page 2). The integrated approach is undoubtedly a constitutional element of Urban Sustainability as the current and future problems and challenges are interrelated and mutually dependent. Without consideration of the existing ecological/spatial, economic and social relations and driving forces, single measures and projects would fail and create more damage than benefits in terms of future applications and solutions. This refers especially to a resources management which has to be balanced. Sectoral dependencies e.g. housing, mobility, electricity and water supply and return systems, production and consumption as well as education and training have to be mutually analysed and considered. Only an integrated approach and perspective (different disciplines and different methods) enables the local decision maker to reach the ambitious goals of a sustainable urban development which is characterised by energy efficiency, social cohesion and cultural and economic prosperity as well as by health and safe built environments. Also different spatial levels (building, quarter, city and region) and many different stakeholder and interest-groups (sectoral and overall decision makers, citizens, concerned residents, entrepreneurs, interested laymen, experts and scientists) should be reflected and integrated. Therefore, an inter- and trans-disciplinary urban policy and research has been agreed which involves at least two policy areas and integrates the relevant stakeholders into a dialog process. Not to combine too many goals and policy areas is needed to handle the real urban complexity, without overwhelming local action and decision making. An integrated approach considers the common European environmental, economic and social priorities without neglecting regional and local peculiarities, values and traditions.

### *Research need and contribution*

Research need exists in terms of measurability and effectiveness of integrated approaches as well as of comparison methods, processes and technologies. What are the critical success factors and what are the barriers of managing complexity for a sustainable future? How can a consistent local vision based on strengths and weaknesses be developed in order to coordinate different neighbourhoods, sectoral and technical plans and policies and to spatially focus the use of public funds? What is good urban governance and how could it be implemented and transferred? Integration should be an overall philosophy in urban management and is very closed with other visions like cradle-to-cradle or zero emission. Integration ought to be implemented in all research activities and projects dealing with urban development – regardless if it is a research area itself.

**DRAFT  
WORKING PAPER**

**2. Demographic change - opportunities and consequences for cities**

*Keywords*

*Ageing, elderly, life-expectancy, birth rate, public services, sun cities, multi-ethnicity, social conflicts, demography*

Not the decreasing size of households and changing family structures lead to the main demographic challenge cities are confronted with. It is the continuously ageing population in relative and absolute proportion, which is predicted to most European countries. Reasons are a longer life expectancy, a low birth rate and a later first birth per women. Over the next decades the average age of Europe's population will increase to approximately 47 years or even higher in some countries and cities. The current average age is approximately 34 years. More than 35% of the population will be older than 60 years, which will impose enormous pressure upon the public pension systems. However, this is not the focus here. Elderly people with their special needs, interests and culture will play a dominant role in public space, housing, business and mobility as well as in social and health services. Therefore, cities are well advised to understand the obvious demographic changes and to develop attractiveness in a pro-active way. A positive vision stressing the quality of life is necessary to mobilize financial, political and personnel capacities to further develop and adapt the city. Besides a focus on the elderly, a sustainable local vision has also to incorporate and target at younger people and families. Many cities or even neighbourhoods will have to decide what direction they want to go. Extreme approaches are for instance the Sun cities, that are designed exclusively for people exceeding 55 years and which meet the human needs of this homogeneous group in a more specialised manner. Other examples are multi-generation and multi-ethnic models which seem to be more appropriate to European cities but which often hide the real existing conflicts and contradictions of different generations and ethnic groups. Integration is not as simple as it seems and migration does not solve all problems of a "lack" of younger people.

*Research need and contribution*

Research projects and scientific approach could help to develop the above named positive local vision by analysing interrelations, interdependencies and limits of adaptation and integration of different needs, interests and cultures. Also an European/international comparison or even a competition of methods, theories and practises is imaginable. Could and should European Cities learn from American Sun Cities or are they two completely different models and philosophies? Cooperation with already existing initiatives and research activities (e. g. Global Age-Friendly Cities Project of World Health Organisation) is recommended.

**DRAFT  
WORKING PAPER**

**3. Competitive urban futures and adaptation to globalisation**

*Keywords*

*Competitiveness, infrastructure, skills, industry, internationalisation, 24-hour city, communication technology, exchangeable styles, unemployment*

With the metaphor "globalisation", all ongoing and expectable economic and technical changes are summarised having a huge impact on cities as the financial and institutional conditions are going to be under pressure. First of all, the competition of sites and cities has been intensified since information and communication technologies as well as rapid transport connections and cheap transport costs enable a real-time global market. Without a high-capacity infrastructure or without being a node in the global information network the local competitiveness will suffer. Cities need to define their role within the global process and to specialise in terms of abilities, products and markets which also could be knowingly local or regional. Another precondition for the global market is a minimum size to be visible and to handle the immense infrastructure costs. Probably the region or the metropolitan areas become more important.

Secondly, due to global production and products as well as due to efficient production technology a lot of industrial jobs in the cities have been cut. Increasing local unemployment is the result of these global processes as personal skills and mobility, housing and production sites and also public services and infrastructure need a long time to be adapted to these new and fast changing framework requirements. Especially the poor and less skilled population groups "go to the dogs" and remain within the old industrialised city quarters which have lost their local and global function. *"Labour -intensive industries in high wage-level countries are disbanded and transferred to low-wage areas. Also, other production locations which were previously in the urban area transfer their factories and works to "green-field sites", where it is possible to acquire larger and less extensive land surface"* (Research and training needs, annex page 15, 2006). Cities in the periphery without a special landscape potential or any unique selling point will not be able to guaranty high standard public services and supplies.

Other implications of globalisation are the internationalisation of architecture and the mainstreaming of exchangeable styles and designs all over the world. The extension of private time frames to 24 hours a day leads to a demand on around-the-clock public infrastructures and supplies which are not prepared and financially equipped to do so. This refers to the identity and organisational basis of cities which both are changing, but which are wished not to change too rapidly by local populations.

*Research need and contribution*

Research methods could help to understand the ongoing processes and develop means on how to react strategically to changing circumstances. An analyses and documentation of best practise is as useful as recommendations about integrated models and strategies. Is there a need for a common European urban platform and regional foresights on the impact of global economy and new technologies which might be a threat to urban sustainability?

**DRAFT  
WORKING PAPER**

**4. Shrinking Cities**

*Keywords*

*Suburbanisation, abandonment, crime, regeneration, degeneration, disintegration, urban art, fast ongoing structural changes*

In cases of economic fractures and fast running de-industrialising or suburbanising developments a new type of city is emerging. The so called "Shrinking City", in which economic, social and spatial developments cumulate in a fast ongoing downward spiral, creates largely abandoned quarters or even "ghost towns". For reasons of focusing public support it is necessary to decide on new functions for existing quarters and whether some quarters should even be completely cut off. The challenge is not only a decreasing population or unused buildings but the intensity, rapidity and dimension of changes which are accelerated by the often mono-structured economy within the concerned cities. When additionally criminal activities come into play, no-go areas could be a possible consequence. Similar to growing cities it is a huge management and cultural task to handle this nearly uncontrollable process. To emphasize and develop new qualities in a city going through an existential crisis is however a completely different issue than to build new houses and infrastructure for a growing population – and these cities are normally not in the position to finance the necessary investments.

Paradoxically, shrinking cities could also be an effect of the ongoing urbanisation of metropolitan areas having negative consequences for smaller places and cities, just because they are small, especially in the already more sparsely populated regions. When young people leave for more prosperous regions services, health care centres, and, most negatively, schools gradually disappear and thus the possibility for young people to stay is further worsening. The downward spiral may not be as dramatic, but nevertheless requires new ideas just as the shrinking cities.

*Research need and contribution*

Shrinking cities could constitute a research area on their own, because they represent extreme examples of ongoing developments (globalisation and technical changes, deprived neighbourhoods, sub-urbanisation and migration etc.). A lot of studies and research materials are already available as well as the experience of a project analysing a great variety of international examples. Especially the cultural and experimental dimension of shrinking cities, which is often neglected in promoting urban development, offers a wide range of needs for future research.

**DRAFT  
WORKING PAPER**

**5. Social stability and deprived neighbourhoods**

*Keywords*

*Deprivation, inequalities, disadvantage, poverty, unemployment, social cohesion, access, affordability, public services, education and physical upgrading*

Social cohesion and common social standards and aims are broadly accepted within the European Union. As it depends on different economic and social developments and values, different local patterns of cohesion have to be considered. Within the same city, considerable differences can prevail in terms of economic and social opportunities, but also in terms of the quality of the environment (for instance buildings, public space, infrastructure and air). Not every spatial difference neglect the idea of social cohesion, but disadvantages cumulate in so called deprived neighbourhoods which are often characterised by a disproportionate number of poverty and unemployment, poor housing and run-down or dysfunctional public spaces. The social exclusion often affects groups with an ethnic minority background living in the concerned quarters. Deprived neighbourhoods affect the city as a whole. The developments within these quarters are mutually interrelated so that projects and solutions need also to be connected and long-term oriented. With the "Leipzig Charter on Sustainable Cities" a special focus on the deprived neighbourhoods has been agreed by the involved Ministers. They are aware that *"a policy of social integration which contributes to reducing inequalities and preventing social exclusion will be the best guarantee for maintaining the security in the cities"* (Leipzig Charter, 2007, page 5). Not only to minimise the impacts of deprived neighbourhoods on the whole city and social developments (re-active approach), but also for its own value an integrated urban policy is necessary to develop and to improve such neighbourhoods and quarters (pro-active way). An affordable quarter must not mean that the living conditions are dangerous or unsafe. The point is to generate healthy and sustainable environments where everybody has equal access to public supplies and services. Of course national differences and regional mentalities have to be considered to develop these qualities and it is not only a task for the mentioned quarters and neighbourhoods. Four integrative mutually interrelated strategies are common sense to achieve this. They were decided by the Leipzig Charta and need a political priority at the local level in terms of financial and organisational issues:

- Pursuing strategies for upgrading physical environment
- Strengthening the local economy and local labour market policy
- Pro-active education and training policy for children and young people
- Promotion of efficient and affordable urban transport.

*Research need and contribution*

There are still a lot of not answered research questions concerning the social cohesion and development within the whole cities (access, integration of disadvantaged people etc.) Research projects should concentrate on best practise and dissemination as well as on international comparisons and knowledge transfer. This refers to local projects as well as to local networks in terms of empowerment and other organisational aspects. Another important point could be – similar to the suggestions made within the research area of integrated urban management – the measurability and effectiveness of integrated approaches. Deprived neighbourhoods seem to be more of an implementation and management issue than a lack of knowledge. Good practise could be communicated.

**DRAFT  
WORKING PAPER**

**6. Migration and diversity as a challenge and an opportunity**

*Keywords*

*Migration, language, acceptance, segregation, inclusion, education, integration, neighbourhoods, diversity, unemployment*

Migration as a historical normality of cities receives increasing attention in the public discussion in relation to ageing societies, the compensation of missing labour force and the future funding of pension schemes. However, from an urban perspective it is more important to reflect and understand the current and future challenges for cities caused by new circumstances of migration. The first point is the changing labour market requiring more and more well skilled and intercultural people with a high basic education including good language abilities. Not all migrants are able to find a job in order to care for themselves which entails increasing public transfers and socially caused problems. Secondly, due to international available media like magazines, TV-programmes and internet as well as ethnic self-sufficient neighbourhoods and networks there is no real need to get integrated or assimilated. This explains the surprisingly new developments that some migrants of a second and third generation still do not speak the official language sufficiently or do not accept the legal and political frameset. Thirdly and maybe most important the cultural differences and conflicts are cumulating within the cities. Especially concerned are deprived neighbourhoods because of their spatial concentration of migrants and for social and economic reasons (unemployment and poverty). A local migration policy will be a key factor for sustainable development in order to avoid segregation and isolated ethnic quarters as well as to use differences to enrich economic, social and cultural prosperity. An integrated approach considering education and training needs, local labour market, intercultural public spaces and housing has to be developed within each city in order to deal successfully with migration.

*Research need and contribution*

Beyond the analyses and description of local good practises it seems necessary to get a better understanding of the current and future circumstances of migration as well as of local possibilities of integration. The question is if the overall conflicts and conditions of migrations could be influenced at the local level and by local projects. How could a successful local migration policy be developed and evaluated and how could a knowlegde transfer be organised? Migration and demographic development create the so called "future faces" of cities so we need in-depth research investigation and development of possible scenarios.

**DRAFT  
WORKING PAPER**

**7. Health, quality of life and public spaces**

*Keywords*

*Health, wellbeing, quality of life, pedestrian-areas, public spaces, green spaces, public access, environmental quality, recreation, cost benefit*

There is evidence to suggest that high quality public and green spaces can make a positive contribution to human health. This is beginning to permeate policy development and is broadly accepted in terms of the provision of green belts, parks, squares, biodiversity protection, waterfront areas, playgrounds, pedestrian and commercial areas. This knowledge is also shaping the provision of roads and car parks. Public and especially green spaces provide a lot of opportunities for health, recreation, social interaction, relaxation as well as for education and discovery. Furthermore, green space in particular provides a number of environmental functions, for instance with regard to the water cycle, urban climate cooling and habitats for animals and plants. The exact relationship between the multifunctional and overlapping advantages of public and green space would benefit from further research. Without free useable public space a city could not offer a high living standard. Therefore, the availability of public space is a prerequisite of city development, but more essential is its quality, condition, safety and the acceptance of the real existing public space within the cities. Access to public space is an important issue, because in some cases particular groups such as youth, elderly, disabled or homeless are directly or indirectly excluded by different measures. Most important in terms of urban management and urban research are financial and interrelated organisational aspects for planning, creating and maintaining public and green spaces. Public-Private-Partnership will become more relevant not only because of budget restrictions. Identity and participation, local working and qualifying sites, safety and wellness, intercultural enrichments and conflicts and last but not least "local patriotism" will be the decisive aspects which could be used and developed systematically by urban administrations and local policies.

*Research need and contribution*

The question to be answered within Urban-Net is what aspects of creating and ensuring high quality public spaces are perceived as appropriate research topics. Are there knowledge and technical gaps or is it only a management and implementation topic? What function does public space have for an integrated development and how can stakeholder engagement be organised and improved? Research projects could analyse and reduce the divided responsibilities and multiple administration issues concerning green space and biodiversity. Last but not least, research projects could support the conservation and management of Natura 2000 sites within urban areas.

**DRAFT  
WORKING PAPER**

**8. Proximity, access, transport and mobility**

*Keywords*

*Efficiency, affordability, out-of-town developments, malls, mobility, congestion, traffic-safety, emissions, proximity, mass transport, public transport, integrated transport*

Exchange of goods and persons as well as the personal right of freedom both are values and benefits for themselves. Therefore, transport and mobility are constitutional elements of cities which need to be organised in a sustainable manner. All forecasts indicate that traffic growth will continue because of increasing mobility needs caused by economic and social activities, spatial and residential structures as well as individual behaviour patterns. Furthermore, the emergent type of urbanised or city-regions is both cause and effect of increasing mobility since regional facilities (malls, leisure parks, industrial areas or production sites) and events (sport, culture, fairs) generate regional or even inter-regional traffic. This development is ongoing and can only be structurally formed in a long-term perspective. Cities and regions otherwise suffer from this traffic pressure in form of noise, air pollution, traffic jams and accidents, but also in form of increasing infrastructure costs, less available land for other purposes and loss of "Urbanity" in terms of nearby supplies and possibilities.

A permanent task for cities is to reduce the traffic impacts in order to improve the quality of life and the safety for inhabitants and road users. How to do this is an important research problem. A basic policy and research orientation could be green/zero emission and safe transport including a lot of single measures inter alia transport system dimensions (infrastructure, vehicles and operations) and land use patterns. Another important point is to raise the efficiency in terms of costs, time and natural resources as well as to improve the organisational and financial structures. Raising efficiency also includes avoiding traffic, integrating cycling and walking as an adequate means of mobility as well as reducing daily routes which could be best done with an orientation of *short distances and function mingled quarters. The requirements of pedestrians as the most important road-users within the cities must set the standard for the design of streets and squares (see Urban Development Report of the Federal Government, Germany, 2006, pages I – VIII)*. Inter-modal transport and functioning mass transport systems and vehicles will definitely play an important role. Urban traffic management is not only a question of efficiency, impacts, emissions or integration of all traffic modes. Social aspects and goals are as relevant as technical or organisational issues. Public transport has to be affordable and accessible to all population groups and especially to those who do not have any cars or individual motorized vehicles. A huge task of future mobility and transport will be the adaptation especially to elderly people's needs

*Research need and contribution*

Research need exists in terms of how to organise urban traffic management in a sustainable way and how to finance it. A scientific evaluation and accompanying of local structures and decision making processes are also desirable and necessary in order to identify and analyse good practise. International comparisons and even competitions between similar cities (size, habitants and functions) are recommended in order to stimulate innovative projects and measures. Other activities and initiatives like Eranet Transport have to be analysed and considered to avoid double work.

**DRAFT  
WORKING PAPER**

**9. Urban sprawl or compact city – integrated re-use of land**

*Keywords*

*Urban sprawl, compact city, emissions, travel, biodiversity, green belt, land-use, brownfield, built environment*

Very close to transport and mobility issues are questions about the spatial extension of cities. Particular environmental concerns like land consumption and use of non-renewable resources, increasing emissions of rising transport and destruction of natural landscape are attested to urban sprawl which is characterised by growing and decentralised single function areas (housing, commercial, production, leisure). The main consequences are an increasing need to travel and a dependency on private motorised transport as well as more land consumption for residential purposes. Urban sprawl can also mean attractive living and working sites within green belts, but on the other hand, the loss of contextual huge green space threatens biodiversity. The antithesis of all-over urbanised areas is the so called “compact city” which is characterised by a higher density of land use and a mix of functions. In terms of resource-use per inhabitant the “compact city” is more efficient than urban sprawl, but with high costs for real estate and mass infrastructure and a high sensitivity to social problems it can also cause drawbacks. That means dense urban structures are more vulnerable to vandalism or criminal hot spots. High density also means less green space and more emissions – both detrimental to health so that the compact city is not automatically a sustainable solution. An integrated perspective could be to minimise new land consumption for building purpose and therefore to limit the growth of spatial extension through reusing derelict or brownfield sites within the city. This is a question of political and planning priorities and decision making. The re-use of built-on sites is as important as the improvement of the existing building stock in order to generate a higher living quality in the “compact city” (more green and public spaces, less traffic impacts, more frequently transport possibilities, better built environment).

*Research need and contribution*

Both concepts (urban sprawl and compact city) have environmental, economic and social advantages or disadvantages which could be compared and evaluated. The reuse of land and the improvement of existing settlements ought to be analysed and compared with respect to planning procedures, costs, methodologies, participation, and international benchmarks. An other important research issue is the question how to understand and to deal with complex policy frameworks and the lack of political support-issues of governance for managing an integrated land use.

**DRAFT  
WORKING PAPER**

**10. Environmental management and social behaviour**

*Keywords*

*Environmental media, individual convenience and common damage, circle and long-term orientation, technology and incentives*

Beyond land use there are many environmental issues influencing the quality of life as well as the quality of the built and non-built urban environments. A lot of European urban standards like potable water, consumption, electricity and individual or public transport cause indirectly unhealthy and dangerous living conditions especially for the poor part of the population which could not afford alternatives and clean technologies. Waste, sewage, noise and air pollution are concentrated in urban areas because of the density and amount of inhabitants. It is a dilemma situation: the individuals seek the convenience of modern living and often are not willing of paying more money for solutions leaving smaller ecological footprints. In some cases it is also a question of missing awareness of the real effects. But the sum of these individual rationalities leads e. g. to contaminated rivers, wasted landscapes, congested infrastructure and diseased residents as well as to noisy and dirty surroundings. Water pollution from urban waste degrades water quality, impacts upon drinking water supply and human water-related activities. The costs to handle all these different impacts are still increasing and often overburden the concerned cities.

To abandon this vicious circle two changes are necessary. Firstly, a sustainable, long-term and cycle-oriented management of all natural media (air, water, soil, green space), and secondly, a change of social behaviour and consumption patterns must be achieved. An intelligent combination of organisation, technologies and incentives and a step-by-step-philosophy seem to be appropriate in order to reach measurable and comprehensible progress.

A very important part of this new environmental management is to further develop the national and European finance and subsidy system. The lack of stakeholder involvement in the decision making processes is one of the most crucial deficiencies of current urban policies and research. As it is not only a question of management or technology local stakeholders need to be integrated in this process towards Urban Sustainability.

*Research need and contribution*

Raising awareness can't be a research topic but it is a perquisite as dissemination of information is a key factor for transparent local and national policy. Research projects could help to understand and to deal with the described complexity and dependencies. They can also evaluate political and legal instruments like the mandatory noise maps which were introduced by the EU. From an overall perspective research can contribute by developing and improving predictions and scenarios or deploying technologies for measuring and monitoring urban air pollution, land use, waste and water consistence. Furthermore, it can help to develop integrated management technologies and systems for maximising material and energy recovery/recycling from municipal wastes. The aim of a scientific monitoring of urban environment should be to save soil sealing as well as land and nature resources.

**DRAFT  
WORKING PAPER**

**11. Housing and urban design in highly differentiated Cities**

*Keywords*

*Housing, economic cycle, housing demand and market, regionalisation, urban strategic visioning, simultaneous growing and shrinking Cities*

Social and economic developments are reflected in the built human made environment of cities which are subject to continual change and undergo phases of growth, stagnation and revitalisation. Demographic and also economic changes create new needs and constraints for all spatial activities especially for housing and mobility. But there will be major consequences from the increasing differentiation between regional housing market developments and the change in housing markets. Still growing cities with a high housing demand will contrast with housing markets with a supply surplus. Urban enlargement as well as renewal and restructuring need political, planning and financial capacities as well as scientific analyses and evaluation. It will be the key element of urban sustainability to disseminate and apply existing knowledge and technology to new local solutions solving typical and overall future challenges, be it a growing, stagnating or shrinking city. It is very important and in some cases also innovative to combine and to confront the decision making dimension including financing (either private or public), with the user or personally concerned dimension (e. g. owner, tenants) as well as with the observing third party dimension (media, science and interested laypersons). Local successful measures and ideas being a result of curiosity, courage and experimental testing and improving need to be told and communicated in order to transfer and to further develop them in other local circumstances. A common local vision of the future development of the city or neighbourhood encourages these three parts to join forces. This vision must be based on local strengths and weaknesses. Therefore it should be a mandatory criterion within public urban promotion or research programmes to have an integrated concept as a starting point and to organise a self-evaluating and learning process in which scientists and local decision makers have to work together.

*Research need and contribution*

Scientific approaches could help to organise self-evaluating and learning processes in order to identify good practise and to enable a knowledge and experiences transfer. What are the consequences of a higher differentiation between and within cities and what does it mean to urban sustainability? How could an integrated concept be developed and evaluated? Furthermore research projects should contribute to a better understanding of current and future developments in order to prepare the cities for local adaptation processes.

**DRAFT  
WORKING PAPER**

**12. Climate change and risk management**

*Keywords*

*Climate change, mitigation, adaptation, zero-emissions, greenhouse gases, reduction targets, risk management, ecological impacts, emergency planning,*

Since the report of Intergovernmental Panel on Climate Change (IPCC) has been published there are no serious doubts that greenhouse gases cause an increase of the earth's temperature. As a consequence, extreme weather incidents such as severe storms, floods and draught periods will increase steadily so that also the cities will be affected. Two strategies have been agreed globally to which every institution and city can contribute:

- Mitigation through reduction of greenhouse gases emissions in all sectors (mobility, building, production, consumption etc)
- Adaptation to climate change in terms of reduction and management of the expected impacts or even using the new environmental conditions from climate change.

The negative effects of climate change are more likely to decrease the faster the emissions can be reduced. But even if a stabilising of greenhouse gas concentrations can be achieved, an adaptation to the ongoing changing environmental conditions is necessary. To meet the needs, two enormous efforts are necessary at the local city level.

- A long-term vision of how to become a “zero-emission-city” so that all the sectors of society as well as interdependencies between the sectors have to be further developed and designed by new technical and organisational measures. Action plans, city competitions and obligatory reduction goals are appropriate instruments to start with this long-term orientation of zero emission which should be mandatory for current decisions.
- An overall ecological risk management and a continuingly environmental monitoring are recommended to deal with the impacts of climate change or other ecological threats. Cities need to anticipate possible hazards through scenarios, emergency plans, technical protection measures which should be available and be communicated, tested and further developed. It is recommended to clarify responsibilities of authorities and to define cooperation procedures. Extreme weather incidents do not leave much time for preparation when they appear. So a regular updating is necessary in order to be prepared.

*Research need and contribution*

Urban research can help to structure and analyse the field of opportunities and consequences of climate change and ecological risks as well as to evaluate target achievement and effectiveness of projects and measures. A communication about good and functioning praxis is recommended.

**DRAFT  
WORKING PAPER**

**13. Energy efficiency and infrastructure management**

*Keywords*

*Energy efficiency, emissions, building and eco standards, passive housing, technology, renewables, carbon footprint, waste management*

Energy efficiency makes a relevant contribution to reduce the emissions in terms of mitigation of climate change. It should be regarded as a current available and economic technology to efficiently use the existing energy sources (fossil fuels and renewables) for near future transport, electricity and heating/cooling purposes. In this way energy efficiency is a prerequisite as well as a part of an overall transformation process in using energy and reducing emissions which affect the quality of life and the natural environment. Energy efficiency emerges as the sum of many single measures and public or private investments in all parts of human and urban sectors (mobility, building, production, consumption etc). Particular upgrading of the existing building stock is as important as new buildings with a high energy-efficient standard to save energy for heating and cooling purposes. A very urgent question is if it is possible and economical to qualify the already built structures and buildings to current specifications and guidelines.

Using a holistic approach, Urban-Net should focus on interrelations and contradictions within and between the sectors as e. g. the promotion of "passive housing" without changing mobility or consumption patterns will not lead to energy efficient cities. By such singular measures energy efficient gains are consumed by increasing consumption in other sectors.

*Research need and contribution*

Until now there is no consensus on how an energy efficient city could be developed and how it could be evaluated. What are the right spatial levels (single building, quarter, city or even region) to solve each of the problems? Which public and private investments are purposeful and how could they support each other? What kind of common infrastructure is needed when houses and decentralised spatial units (e.g. quarters or streets) start to generate electricity instead of solely consuming it? Who should pay for more efficient products and structures (windows, buildings, heating systems, cars, trams etc) substituting the still functioning and not amortised predecessors and how should they be promoted publicly. What is the research need when already existing knowledge and technologies are available but not applied because of personal interests and calculations? As already explained within the strategy for a "zero emission city" economic and management tools are recommended like self-evaluating and learning action plans, city competitions and obligatory reduction goals. These strategies, tools and processes could and should be scientifically evaluated.

**DRAFT  
WORKING PAPER**

**14. Commercial locations and centralised supply areas**

*Keywords*

*Centralisation, spatial planning, regional planning, supply and sub-centres, durability (building-working lifespan), proximity, retail*

One particular consequence of economic and spatial change processes affects the commercial centres and locations within a city. Because of intensified regional or even international competition and high average car availability a spatial and regional concentration can be considered. These new and very attractive commercial centres which are located either in suburban areas or in former strong inner-city areas tie capital and knowledge in a dimension which smaller cities or small private commercial enterprises cannot afford. The visible results are new huge commercial estates offering interesting architecture and specialised supplies but also simultaneously causing neglected facilities in traditional sub or rural centres. To organise and manage the new growing centres in a sustainable manner it is necessary to focus on high energy-efficient building standards and on powerful public transport facilities and connections. The useful life of commercial buildings has been shortened dramatically since international investments are dominating the retail markets. For the not competitive traditional business centres it is essential that local networks of retailers, property owners and local stakeholders (politician, citizen) applying pro-active ways and contribute to keep up the property value. A chance for these affected quarters and sub-centres could be the often attested "renaissance of urbanity or cities" which means that more and more people are looking for supplies and infrastructure in a walking or cycling distance. A dense population in friendly and safe environments within the city seems to be a future alternative compared to a life in a single-family-house in an sub-urban area. It is difficult to adapt old cities to modern standards of efficiency and competitiveness because of the positive images of city life in the past etc. and because local decision makers subsidise local structures which are not competitive.

*Research need and contribution*

First of all research and science should help to analyse the ongoing development within the retail sector and its driving forces. An international comparison of planning tools and local practises to deal with or even to control these developments is recommended as well as its mutual transferability. Are there any positive examples of integrated new retail centres or of avoiding downward spirals in sub-centres? Is the "new urbanity"-concept really a chance and possibility to further develop former centralised areas?

**DRAFT  
WORKING PAPER**

**15. Heritage, identity, culture, tourism and branding**

*Keywords*

*Architecture, building culture, civil engagement, history, identity, branding, sense of place, values, events, marketing, preservation, re-use, retro-fitting, upgrading.*

Each city tries to possess a unique architectural and to maintain a specific local culture. Therefore a local building culture being the sum of public and private activities is a major component of the identity of a city and a major shared interest of the citizens. But in a lot of cases the cities suffer from a lack of "genius loci" and visible differentiation from the mainstream styles as well as from missing local citizenship. The future urban challenge is how to maintain and to improve the potential of civil engagement and participation for the city as a whole. A heterogeneous population in terms of income, skills, values and culture will definitely change the kind of public engagement and participation as a deeper differentiation can be expected. Otherwise the predicted "uniformity" of cities in terms of architecture, economic and commercial structures as well as increasing private movements will also affect the balance of public organisation and private engagement.

City tourism has become an important economic factor and its revenues enable the preservation of old buildings even in remote locations. The most important point is a further development of the historical environments to modern economic possibilities and activities as well as a re-use for future purposes. Preservation of old cities should be regarded as an economic and structural change connected to training and qualifying needs and skills. It also offers place for experimental and cultural urban development in order to convince visitors to become inhabitants or to get secondary residential sites. The capitalisation of city history needs to be combined with e. g. renewable energy sources or multi-actor governance to be sustainable. A balance between preservation and change has to be agreed and the potential conflicts between citizens, architects / urban planners and business economist / marketing leaders should be moderated by the city administration.

*Research need and contribution*

Urban research could contribute to a better understanding of the ongoing changing processes and could also help to develop new forms for citizen participation and to identify good practise and its dissemination. An imaginable result could be a database or public compendium giving recommendations. Other possibilities are cultural projects and networks to support or change the historical image and identity of areas and quarters. Could different European countries benefit when they compare their cities and practises in terms of systematic benchmarking? Furthermore, it could contribute to self-evaluation and learning processes.

## **2. BASIC CONDITIONS FOR FUTURE RESEARCH AREAS**

For the framework development procedure it is essential to agree on basic criteria of future research targeted at by Urban-Net. The Urban-Net consortium suggests the following criteria:

Research on sustainable urban development within the framework must respond to most hindering knowledge gaps, upcoming complex problems, major challenges and future necessities which are significant at European level.

It shall provide additional knowledge that has not been funded so far at any of the programme levels, be it supra-, transnational or national. The results shall offer most far reaching solutions and a clear added value to national research arenas, policy makers or practitioners.

Regarding the main principle of research on urban development, research shall have an integrative character. It shall concentrate on long- and mid-term approaches, addressing research areas and questions that inter-connect and integrate relevant aspects of urban sustainability with one another.

Projects funded in that area should pursue problem-oriented inter- and trans-disciplinary approaches.

Beside the fact that there is still a need for new results in the area of applied policy related research, there should be sufficient space for more experimental research, more pilots and demonstration projects as well as a more effective dissemination of results and the inclusion of appropriate training. Dissemination and considerations regarding demonstration and transferability should be widely included in the concept and methodology of research projects of the Urban-Net framework.

**DRAFT  
WORKING PAPER**

**ANNEX:**

**1. Information and data sources for this task are:**

- Existing programmes and their underlying policy and research objectives (Deliverable 2.3 and emerging Urban-Net Programme Database),
- Existing relevant studies and research agendas elaborated by national, international and non-governmental organisations
- Input Urban-Net's Short-Term Agenda and results from the work package 5 questionnaire for the Urban-Net pilot call
- Inputs from other relevant ERA-NETs and work done within the EC's framework programmes.

**2. Bibliographical Reference**

- "A European Union Strategy for Sustainable Development - Commission's proposal to the Gothenburg European Council", 2001.
- "EU Thematic Strategy on the Urban Environment" and its working Group focused on Research and Training needs, 2005 and 2006, but also the former studies like "Towards More Sustainable Urban Land Use - Advice to The European Commission for Policy and Action", 2001
- "LEIPZIG CHARTER on Sustainable European Cities" including its European political decision process as well as its accompanying scientific research and recommendations like "Integrated Urban Development - a prerequisite for Urban Sustainability in Europe" (difu - German Institute of Urban Affairs) or "Strategies for upgrading the physical environment in deprived neighbourhoods" (EUKN, Nicis), 2007
- "Urban Research Priorities Identified in the Implementation of the Habitat Agenda", Urban Development for Poverty Reduction: Towards a Research Agenda, UN-Habitat and The World Bank, December 2002.
- European Commission, DG RTD: "Raise people awareness of EU urban research", 2006.
- "State of the Art - Sustainable Urban Development in Sweden", Formas, 2005
- Research focal points, Academy for Spatial Research and Planning ARL, document only in German, 2005
- Summaries of German Discussion and Description for Future Urban Development like "Urban Development Policy Challenges in Germany", 2005 and "Key Urban Development Policy Areas", 2006