Strategic Research Framework in the Field of Urban Sustainability

URBAN-NET

SIXTH FRAMEWORK PROGRAMME

URBAN-NET – a Network of European National Programmes

The URBAN-NET project addresses urban sustainability in Europe. Its overall aim is to increase the cooperation and coordination between European Member and Associated States through networking and collaboration on joint research activities. In particular the network intends to:

- stress the character of the European City in sustainable urban development and research
- coordinate programmes in various fields of research against the background of national policies
- generate tangible added value through research results
- lay the foundation for permanent cooperation and a coordination platform for funding programmes in this field of research.

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 through its membership of 16 partners from 13 countries. It is managed by a consortium formed by these partners and will run for four years until July 2010 in its first stage. 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.

URBAN-NET seeks to complement, strengthen and inform the activities and capacities of European Commission and nationally funded programmes. The network perceives further development and strengthening of a European research funding network and coordination with EU activities and other related networks.

This publication is the synopsis of a full report which is available for download at www.urban-net.org.

16 urban research funding partners from 13 European countries and 1 global partner

Austria (1)
BMWF
(Ministry for Science and Research)

Austria (2)
UBA-A
(Federal Environment Agency of Austria)

Bulgaria
ASDE (Agency for Sustainable Development and Eurointegration)

Cyprus
RPF
(Research Promotion Foundation)

France
MEEDDAT (Ministry for Ecology, Sustainable Development and Planning)

Germany
TÜV Rheinland Consulting GmbH

Global
UN-HABITAT Secretariat of the United Nations Human Settlements Programme.

Portugal
FCT
(Science and Technology Foundation)

Romania
IPA
(National Institute for Research and Development)

Scotland
The Scottish Government

Spain
MVIV (Ministry of Housing)

Sweden
Formas (The Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning)

The Netherlands (1)
Nicis Institute

The Netherlands (2)
SenterNovem (Netherlands Agency for Innovation and Sustainable Development)

Turkey
TUBITAK (The Scientific and Technological Research Council of Turkey)

UK
SNIFFER (Scotland & Northern Ireland Forum for Environmental Research)

European Research towards Urban Sustainability

More than half of the world's population lives in towns and cities, a number expected to rise from 3.3 to almost 5 billion by 2030. Unprecedented urban growth presents comprehensive risks and immense socio-political challenges but also offers significant potential for innovative and far-reaching solutions.

Desirable, sustainable urban areas have to be fostered economically, socially and ecologically. That means cities have to become sustainable, meeting the needs of the current generation without compromising the abilities of future generations.

Well-functioning cities are a decisive prerequisite for economic development of a country and key to societal well-being. The dense cohabitation of people must be organised so that:
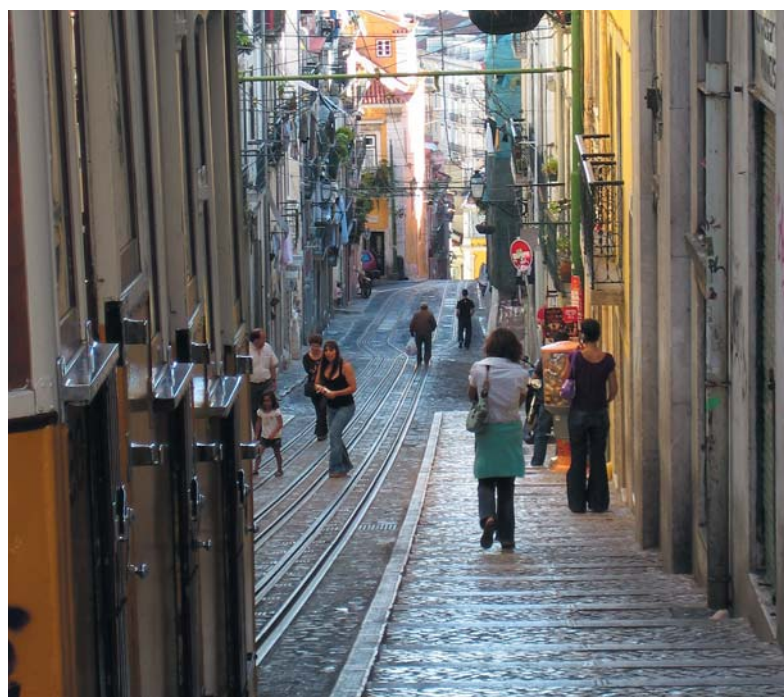
- cities remain habitable;
- traffic networks function;
- environmental problems are avoided;
- resource use and waste generation are minimised; and
- water and energy services are assured for all.

What are the right visions, principles and models for achieving this?

Compared to other urban models the 'European City' has advantages based on compactness, functional structuring, citizenship and comparatively good preconditions for sustainable development. This widely acknowledged common value model provides a good base to build upon.

Sustainable cities need investment: investment of finances, of political and civic commitment and additionally of knowledge that is necessary for enabling cities, curbing the manifold problems and hazards they are confronted with. Thus, research on urban sustainability is an important key. It is an indispensable provider of basic and applied knowledge suitable for deploying solutions on urban development problems.

Today, we are finding that many urban problems increasingly are not confined to national boundaries. Unfortunately, up until now, European integrated research on urban sustainability has been fragmented and of low priority. URBAN-NET proposes adoption of a more pan-European focus for urban policy and research with a stronger focus on transnational research collaboration.

The Strategic Research Framework is the culmination of efforts by URBAN-NET to analyse national and regional urban research programmes across all European Member States and Acceding Countries followed by extensive partner and stakeholder engagement to finally distil, what we hope, is a coherent agenda for promoting collaborative endeavours on urban research across Europe and internationally.

A Framework for European Research

Pan-European advancement needs strategic and focused research that addresses current, evolving and future challenges. This framework promotes the vision of the sustainable city by focusing on future research needs and activities that will stimulate the planning, financing, performance, dissemination and utilisation of research amongst all stakeholders at all levels including local, regional, national, transnational and European.

Through a process of extensive stakeholder engagement four priority research areas emerged from an original 15 action and research fields.

Action fields for research on urban sustainable development

- **Integrated urban management and city leadership**
- **Sustainable land-use in city regions**
- **Climate Change in the urban context**
- **Health, quality of life and public spaces**

- Proximity, access, transport and mobility
- Social stability and deprived neighbourhoods
- Energy efficiency and infrastructure management
- Competitive urban futures and adaptation to globalisation
- Environmental management and social behaviour
- Demographic change - opportunities and consequences for cities
- Migration and diversity as a challenge and an opportunity
- Heritage, identity, culture, tourism and branding
- Shrinking Cities
- Commercial locations and centralised supply areas
- Housing and urban design in highly differentiated cities

The framework covers 3 main topics:

MAIN PRINCIPLES OF URBAN RESEARCH

In addition to the thematic priorities **"Main Principles of Urban Research"** are presented which provide a frame for future research activities at European level (page 5). The principles were developed in response to comparative analysis that URBAN-NET carried out on all national and regional urban research programmes for each European country and for Turkey.

PRIORITY AREAS

The priority research areas are expanded upon in pages 6 - 13 and include future research topics and questions.

IMPLEMENTATION OF THE FRAMEWORK

The members of URBAN-NET believe that clear added value can be achieved by adopting the **Framework as a primary reference** in the coordination of national and transnational research activities on sustainable urban development. Partners are pursuing a range of activities to promote the Framework (page 14).

Main Principles of Urban Research

An effective research framework has to recognise and encourage a range of methods and approaches. A deeper understanding of the challenges and the dynamic complexity of urban governance and management is needed.

New approaches and mindsets, innovative solutions, methods, tools and instruments need to be developed. Furthermore, it is essential to disseminate, discuss and debate results, findings and conclusions, in order to raise awareness and stimulate necessary urban change.

To achieve the greatest added value and the best cost-benefit ratios URBAN-NET recommends adopting the following 'main principles of urban research' for future research at EU and transnational levels:

- Respond to the most constraining knowledge gaps, upcoming complex problems and future challenges which are significant at European level
- Ensure that knowledge and options offer mid to long-term solutions, are far-reaching and will provide clear added value for national research arenas, local policy makers and practitioners
- Promote strong horizontal and vertical integration that will help to identify, examine and incorporate interdependencies and relationships across different sectors, services and tiers of governance
- Cultivate problem-oriented, inter- and trans-disciplinary approaches, uniting scientists and practitioners in the discovery of new knowledge and understanding that will inform and influence policy and practice
- Foster greater experimental scope including more pilots and demonstration projects, innovative dissemination methods as well as training provision
- Develop research concepts and methodologies which include questions of dissemination, demonstration and transferability of research outputs
- Encourage research approaches that comprise:
  - Multi-dimensional case studies of particular topics or localities
  - Cross-national comparative analysis of specific topics
  - Evaluation studies on the strengths and weaknesses of alternative approaches
  - Improving comparative databases on organisational forms of governance Action research projects to generate new insights from demonstration projects
  - Studies with a strong focus on developing best practice
  - "Universal" indices for monitoring the comparative sustainability of cities.

Research Area 1: Integrated Urban Management and City Leadership

Increasingly rapid changes in modern society require new and more integrated approaches in how governments plan and manage cities and city regions. Such new approaches and modes of operation will require more dialogue between different actors involved in the transformation and regeneration of cities. Moreover, these adaptations will happen in the context of constantly evolving communication tools and technologies.

Enhancing citizen participation in urban governance

The forces of globalisation have weakened the ability of many local communities to articulate their needs and secure development that responds to local priorities and concerns. Rapid migration to and from urban areas across Europe has created further strains on local political processes.

Cities will only become sustainable as citizens adopt sustainable lifestyles, values, behaviours and attitudes. This requires the design, development, adoption and adaptation of participative, inclusive and cohesive forms of governance across all sectors and hierarchies - individuals, communities, authorities and representatives.

Key Research topics
- Alternative approaches to community involvement
- Community involvement needs of different ethnic groups
- Community leadership and community empowerment, for example, participatory budgeting
- Use of new interactive modes of operation in urban governance, to widen public input into decision making
- Communities' ability to organise and influence decision making
- The roles of elected politicians in facilitating public participation
- Engaging the 'third sector' or NGOs in participation processes.

Organisational innovation to achieve integrated urban management

In order to meet the changing needs of society, governance institutions need to modernise. Research is needed to compare and contrast the effectiveness of different institutional reform strategies. Three overlapping drivers of change are distinguished:

Global economic restructuring means that cities and city regions now compete and collaborate in ways that differ markedly from the past. These pressures have spurred moves to establish metropolitan governance or collaborative arrangements between cities in many parts of Eu-

rope. The **shift from 'government' to 'governance'** requires city governments to become more effective in working with other stakeholders. **Citizen demands for more responsive services** that meet their needs 'in the round' lay down major challenges to traditional approaches to decision-making.

Key Research Topics
- Comparing the strengths and weaknesses of alternative institutional arrangements and metropolitan governance models
- Alternative leadership models and strategies for connecting agencies at city or city region level
- Ways of monitoring the long-term impact of organisational reforms for balancing short-term political considerations and long-term objectives
- Comparisons of differing conditions on performance across various sectors of government and administration in order to understand barriers to more holistic and integrated urban management.

Policies and practices to secure sustainable development

Research is needed on the policies, instruments and approaches considered most effective in promoting sustainable urban development. Research can help gain insights on policies, procedures and practices in different contexts and help to identify and develop innovative learning processes and approaches.

Key Research Topics
- Evaluation of sustainable development policies and instruments at local, national and European level
- Sustainable development practices at city level, both intra- and transnational
- Frameworks and "universal" indices for comparative monitoring of the performance of cities within countries and Europe as a whole
- Learning processes used by cities and agencies to enhance their ability to promote sustainable urban development
- New city learning networks on sustainable development for anchoring cross-national exchange more firmly within urban policy-making.

Changing dynamics of local democracy

Globalisation is diminishing 'place-based' leadership and management which is weakening the democratic legitimacy of local, city and regional governments. Research on the changing dynamics of local democracy is needed to determine how to strengthen the democratic legitimacy of local systems of governance.

Key research topics
- The relative financial power of local authorities coupled with the implications of local capacity to address collective challenges
- Governance models used by cities and city regions in different countries to identify strengths and weaknesses of alternative models
- The role of professions in local government and how to strike the right balance between specialist knowledge and general management skills
- Alternative relationships between different levels of government, e.g. concordats, contracts, performance regimes and constitutional protection
- Alternative approaches to public service innovation in different countries and contexts.

Research Area 2: Sustainable Land-Use in City Regions

Land-use and land management practices have a major impact on natural resources including water, soil, nutrients, air, plants and animals, landscape and landform. They also affect social and economic development, e. g. affordable housing contributes to social integration whereas social segregation is often caused by spatial mono-structures. Integrated, long-term land-use policies are crucial for sustainable urban development at local and regional levels.

The Polycentric City Region model has been suggested as a basic orientation model and vision of Urban Sustainability in which autonomous cities create a continuum of densely developed and mixed-use areas and landscapes; integrating energy, food production, open space and spatial concentration of buildings.

Research is needed to understand the driving forces, interactions and dependencies and to find innovative solutions as part of a participatory decision-making process between citizens, local government and other actors.

Basics of land-use and settlement

While there is a high complexity of land-use issues, there is no clear scientific consensus on preferred settlement structures and how sustainable land-use should be measured. Comparative quantitative studies on the development of urban sprawl and analyses of existing knowledge are needed to inform regional and local learning processes.

Key research topics
- Legal frameworks, good and bad land-use practices and policies
- Urban structures in a European context
- "Universal" indicators, monitoring and bench-marking tools for comparative monitoring of the performance of cities
- Tools for integrated decision making to measure acceptance of land consumption and value of open landscape.

Driving forces of land-use

Although the driving forces of urban sprawl are well known and analysed, knowledge and implementation gaps still exist in terms of future scenarios and guidelines for action. It is still unclear what is meant by sustainable land-use and how different settlement structures can integrate and adapt to future trends.

Key research topics
- Social and demographic change and opportunities for land-use

- Climate change and its consequence for land-use
- Implications of rising energy prices and mobility costs
- Rising needs for agricultural productivity and effects for ecological functions of soil
- Changing needs of suburban structures and cites
- Vulnerability and resilience of single and mixed functions areas
- Unforeseen events e.g. the financial crisis and its impacts on settlement structures.

Spatial aspects of settlements and cities

One of the most important tasks of a sustainable land-use policy should be to minimise environmental impacts and in particular the consumption of natural resources. It is still unclear how this goal could be reached and what measures would be appropriate.

The model of a Polycentric City Region appears to combine the advantages of a Compact City such as density, mix of functions, public transport with the individual qualities of suburban areas e.g. green spaces, child-friendly environments and home ownership.

Key research topics
- Costs of different settlement models including infrastructure and public services
- Contents of the Polycentric city model and possibilities for its introduction
- Landscape urbanism: how can the landscape become part of cities and regions
- Understanding and dealing with complexity, various actors, interests, constraints
- Underground 3D-planning for new land-use opportunities
- Ways of responding to climate change
- Means for handling conflicting uses and rising demands for different land-use types.

Socio-economic impacts and consequences of land-use

From a social perspective urban sprawl contributes to social segregation often separating middle-income from low-income families and ethnic minority groups. A spatial concentration may turn particular areas into deprived neighbourhoods where social inequalities become more evident.

From an economic perspective the costs of a non-integrated settlement model are also highly relevant. Typical incurred costs include commuting time, congestion and travel delays as well as additional costs for urban infrastructure. Due to structural economic changes inner city areas often suffer from abandoned industrial sites.

Key research topics
- Relationship between lifestyles, environmental impact and land use
- Polarisation processes: contributing factors and conditions
- Cohesion as a common value: possibilities arising from European policy
- Sustainable regeneration of neglected or deprived areas
- New approaches for public transportation and promotion of non-motorised mobility.

Implementation of a sustainable land-use policy

The achievement of sustainable land-use and settlement structures seem to be mainly a question of decision-making and implementation. Thus, research should also contribute to implementation through scientific analyses, advice and evaluation. Research for and about implementation has a role other than implementation alone. It is about observing or preparing and analysing decisions and their implementation.

Key research topics
- Integrated management including measuring and comparing actions
- Regional orientation models and development plans and their connection to decision-making processes
- Governance and participation in terms of self-organising capacities, including the regional level
- Developing regional views beyond local perspective
- New policy instruments, e.g. obligatory urban growth boundaries and greenbelts, new development embargoes, developer impact fees, etc.
- New urban models and principles and ways for their introduction.

Research Area 3: Climate Change in the Urban Context

Anthropogenic climate change and its consequences are major challenges for European cities. With European cities traditionally being built in strategic geographical locations such as along major rivers or next to the sea, a substantial number of European cities are likely to experience direct impacts of climate change such as flooding and extreme temperatures.

URBAN-Net believes that the city of the future will need to be
- a complex adaptive system, which assesses and manages risks and uncertainties at the urban level
- an embedded system, which is a zero-emission, de-carbonized, low-waste, water-balanced, self-sufficient city that is regionally well connected
- a conscious community in which residents, citizens and consumers are well-informed by and with local political leaders and policy makers.

Curbing climate change – adaptation and mitigation

There is a strong need for the establishment of Resilient Cities, urban areas able to absorb changes, reorganize and integrate economic, socio-cultural and ecological developments. Strategies are needed to improve the collective responsiveness and preparedness of individuals, institutions and services to the inevitable consequences of climate change.

Mitigation aims to reduce emissions of greenhouse gases and curb further anthropogenic climate change by: reducing energy consumption, improving energy efficiency, the substitution of fossil fuel use and changes in land-use practice.

Adaptation and mitigation responses need to work together. Synergies and antagonisms between both approaches have to be fully considered and carefully assessed at all levels and across relevant sectors.

Key research topics
- Principles, models and tools for establishing Resilient Cities
- National climate change adaptation vulnerabilities and strategies and development of common principles for joint actions
- 'Climate check' of national and regional planning and building codes
- Cost/benefit ratios of options, including "do nothing" option
- Non-regulatory approaches towards climate change effects
- "Universal" indicators, monitoring and bench-marking tools for comparative monitoring of the performance of cities

- Community benefit from mitigation infrastructure (wind, solar, heat pumps)
- Communication and implementation of existing knowledge
- Hindrances to the implementation of mitigation models
- Synergies/trade-offs between adaptation and mitigation strategies.

Living with climate change - quality of life

Heat stress, cardio-respiratory complications, parasitic and infectious disease, flooding, drought etc. will inevitably present a greater threat to poor and disadvantaged communities, particularly in high risk areas. Education, health care, public health initiatives, infrastructure and economic development will become increasingly important in maintaining acceptable levels of quality of life

Key research topics
- Pan-European definition of quality of life, including minimal common standards
- Social, in particular psycho-social, impacts of climate change
- Socio-economic data and trends and their influence on social vulnerability to climate change
- Increasing public awareness and promoting positive behavioural change
- Empowering citizens to respond positively to climate change consequences.

Handling uncertainty: risk assessment and management

Risk assessment and management are critical in preparing urban areas for climate change. Information on spatial and temporal impacts of climate extremes and growing trends will help inform risk management in all spheres of urban planning and governance. Methodologies for handling uncertainties will need to become more prevalent and inherent in decision-making processes.

Key research topics
- High-resolution models on the urban environment and regions
- Socio-economic scenarios on potential risk situations for decision makers at local and regional levels
- Integrated decision support tools for risk assessment and management in light of uncertainties
- Common European baseline on minimum information for local risk assessments.

Policy making in the face of climate change - the integrated approach

Local authorities need to respond timely and adequately to the challenges ahead. Such responses might also include taking unpopular measures or making decisions based on uncertain risks. Thus it is essential that all branches of local government are fully involved in climate change related policy and decision making. In turn, such decision making and forth-coming policies need to be connected to decisions and policies on the regional, national, European and international scales.

Key research topics
- Options to improve local and regional administrative competencies
- Engaging citizens in climate change strategies
- Research capacity building at local and regional levels to bridge gaps between research and practice.

Research Area 4: Health, Quality of Life and Public Spaces

Public spaces are important for enabling and sustaining quality of life and promoting active, healthy lifestyles. They provide the setting for a wide range of social interactions that support personal and community well-being. Moreover they can contribute to biodiversity, control of air and water pollution and help combat climate change. Government and non-government agencies promote various policies, strategies and initiatives to encourage urban space planning and provision in the form of green and blue infrastructure. The Leipzig Charter on Sustainable European Cities gives particular emphasis to "creating and ensuring high-quality public spaces" and stresses that "attention should be paid to cultural and health aspects".

Planning, design and management

The level of citizen participation in urban planning and design varies across Europe. This influences the extent to which local needs are met with regard to provision of appropriate public space. Different modes of procurement for development also prevail between developer-led and local government-led provision of public amenities. These different modes result in very different patterns and qualities of development. Flexibility and future proofing is required for e.g. climate change, changing demographics and social needs. Provision for retrofitting needs to be borne in mind at conceptual and design stages.

Key research topics
- The influence of different procurement modes and planning instruments on the promotion of good public space
- Urban governance models that facilitate citizen participation in planning provision of public space
- Evaluating the effectiveness of strategic planning frameworks in ensuring that public space provision meets citizens' needs
- Regulatory assessment tools such as open space audits, health impact assessments and their contribution to the provision of good quality public space
- Tools that evaluate and promote sustainable design criteria
- Implications of city design and
- Incorporation of public space on a healthy active population.

Social well-being - interaction and inclusion

Badly designed and poorly managed public space is often found in the most deprived urban areas and aggravates the sense of physical and social decline. Good-quality

public space is crucial for childhood development. It provides opportunities for developing social, cognitive and physical skills. It can provide emotional and spiritual solace for adults. Well-designed public spaces foster social ties and shape the cultural identity of an area, providing a sense of place for local neighbourhoods.

Key research topics
- Models for spaces that enable and support community and cultural cohesion
- Analysis of how communities with poor access to good quality open spaces map against measures of well-being and how this pattern appears across Europe
- Examination of whether good quality spaces enhance educational success
- "Place-making" and "locale-branding" efforts and their benefit in building social capital for local residents
- Public spaces in enabling community development and cohesion and how to turn "ghetto" culture into "barrio" culture
- Types of public space that work for certain cultural groups and benefits that can be achieved though quality spaces
- Changing user-needs over time
- The effects of creating segregated space for different users and of integrated spaces that meet the interests of different user groups.

Ecosystem services, leisure and recreation

In line with sustainable development principles, policy decisions could benefit from improved understanding of the contributions of ecosystem services to economic and social welfare in the urban context. Research can help determine how to incorporate the benefits of ecosystem services into the policies of market-driven economies and how policies can incorporate measures to maintain, restore and improve ecosystem services.

Key research topics
- Relationship between ecosystem health and human health
- Normative ratios for urban green and blue infrastructure to help mitigate airborne pollution, heat-island effects and noise
- Basic principles for preventative health and appraisal of significance and effectiveness of urban green and blue space
- Physiological and psychological gains from exercising outdoors compared to indoors, what are the motivating factors for using public space?

Accessibility and safety

Different methods for planning, designing and managing public space can help allay fears that can deter vulnerable groups from using them. A key objective of public-space design and management is to balance conflicting modes of transport and improve safety. Streets and public space can be designed to make urban environments safer and more pedestrian/cyclist friendly. Zoning can demonstrate the benefits of enabling shared use by residents and pedestrians, not just the provision of access for motorised traffic.

Key research topics
- Safety concerns of citizens as a barrier to using public space and real versus perceived levels of crime in different types of public space
- Managing space to avoid anti-social behaviour, especially regarding the displacement of people and conflicting uses
- Ability of improved public space to act as a catalyst for turnaround in a community and options of activating community capital though the creation of environmental capital
- The importance of developing links between public and green/blue spaces and the use of mobility models
- The benefits of green and blue space in mitigating health and safety risks arising from climate change.

Implementing the Framework

Implementation of URBAN-NET's strategic research framework will include activities such as:

- influencing national and EU-research funding programmes and research projects
- coordinating the framework content and priorities with national agendas where possible
- identifying funding opportunities and facilitating creation of joint cooperation actions.

URBAN-NET will make full use of the tool box of public research instruments and opportunities for transnational collaboration including joint activities such as

- Joint calls for proposals: Pilot Call in 2008, Full Call in late 2009
- Coordination and clustering of ongoing nationally funded research projects
- Joint programming
- Establishment of a monitoring team for EC research calls
- Dissemination of research results and particularly good practices e.g. via shared events
- Exchange of good practice in programming
- Programme manager exchanges or training
- Shadowing, exchanging researchers and practitioners
- Exchange of evaluators (evaluator database).

Urban sustainability is very much a cross-cutting issue and URBAN-NET has National Contact Points to promote continued liaison with the national community including other relevant programme owners and research policy makers. This will help ensure that relevant aspects of national programmes of non-partner organisations are incorporated within URBAN-NET's focus by e.g. registering programmes in the URBAN-NET database and inviting organisations to participate in specific transnational activities.

URBAN-NET will also establish and develop working relationships with other European and International fora dedicated to urban sustainability, including, among others, URBACT (exchange of experiences), EUKN (transfer research results), EURA (networks of research organisations), Eurocities (networks of cities), ICLEI (networks of local governments) and Social Polis (social platform on cities and social cohesion).

URBAN-NET views the Framework as a key tool that will assist the consortium in establishing a long-term cooperation and coordination platform for funding programmes in the field of urban sustainability research.

Imprint

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