the URBES project

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URban Biodiversity and Ecosystem Services

The URBES project bridges the knowledge gap on the role of urban biodiversity and ecosystem services for human well-being. It further aims to inform urban management and decision-makers on how to best integrate the natural environment and human needs. The URBES partnership of academic institutions and international organisations translates science into action for cities.

factsheet 1

Cities, people and nature

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Investing in ecosystem conservation makes economic sense. It strengthens the ability of cities to adapt to climate change and make the transition to a more healthy and sustainable future. Ecosystems provide natural solutions to many challenges cities face by offering numerous services such as clean air, water filtration, flood prevention, noise reduction, recreation, as well as climate change mitigation and adaptation. This can help save money and generate economic benefits for cities.

The aim of URBES is to address significant scientific knowledge gaps in relation to urbanisation processes and the ecosystem services that sustain them. URBES also aims to build the capacity of cities to adapt to climate change and reduce their ecological footprint.

The main focus of the URBES project is the understanding of how urban ecosystems function, how they change and what strengthens or limits their performance. Increased knowledge on the functioning and role which ecosystems play in ensuring human well-being can help to find and promote approaches to development that are based on nature-oriented, innovative solutions to meet human needs. These solutions can support sustainable urban planning, decision-making and accountability. They can also strengthen interaction between experts and practitioners.

Pioneering urban ecosystems' research, URBES will further explore monetary as well as non-monetary valuation techniques of urban ecosystem services and biodiversity. It will develop guidelines to enhance ecosystem service benefits in urban landscapes.

Ecosystems provide natural solutions to many challenges cities face by offering numerous services such as clean air, water filtration, flood prevention, noise reduction and climate change mitigation and adaptation, as well as many non material benefits, for example recreation, education, aesthetic values and maintenance of social relations.

Bringing together leading research institutes from various European countries and beyond, the project will communicate research outcomes to key local governmental stakeholders, such as city planners and decision-makers. The focus will be the creation of practical applications for sustainable development in a selected number of case study cities: Berlin, Stockholm, Rotterdam, Salzburg, with contributions from New York and Helsinki.

What will URBES do?

The URBES project is organised in four specialised and mutually supporting project components:

I: What is the relationship between urban biodiversity, ecosystem services and land use change?

Biodiversity underpins many ecosystem services, which are indispensible to the functioning and prosperity of cities. The ecosystem services in urban areas are generated by ecosystems both within and outside cities. Nature areas in or near cities, for example, play an important role in the provision of clean drinking water. Better integrating natural values in spatial planning can help minimise the impacts of land use changes threatening biodiversity and ecosystem services. Despite the imperative to better understand the relationships between biodiversity and the generation of ecosystem services in relation to land use change, these connections remain poorly investigated.

In this project component, URBES will analyse how land use changes translate into changes in biodiversity and ecosystem services.

II: What are the monetary and non-monetary values of biodiversity and ecosystem services for cities?

The value of ecosystem services is not always taken into account in market transactions or adequately quantified in economic terms. The increasing demands on urban land use need to be reconciled with the sustainable use of biodiversity and ecosystem services. The monetary and non-monetary values of ecosystem services, as well as the costs and impacts from their loss, must be fully incorporated into urban decision-making processes. There is urgent need to improve the capacity to take into account the economic and non-economic values of biodiversity and develop an integrated assessment of ecosystem services for improved urban planning, as recently highlighted by The Economics of Ecosystems and Biodiversity (TEEB) study (www.teebweb.org).

URBES will focus on developing methods for monetary and non-monetary valuation of urban ecosystem services to support decision-making and urban planning.

III: How can cities integrate biodiversity and ecosystem services into planning and management?

In the face of urban expansion and densification there is a need for effective mechanisms for the planning and governance of biodiversity and ecosystem services. Such mechanisms can improve human well-being and strengthen the capacity of cities to adapt to change. Local governments can benefit from taking the leadership role in the effective integration of biodiversity and ecosystem services into land use planning, policy making and management responses.

This research component will develop land use scenarios and strategies for urban transitions that strengthen the capacity of local governments and communities to mainstream urban biodiversity and ecosystem services values in planning and management.

IV: How can knowledge be translated into local action?

The URBES project will communicate the research outcomes of the project components I-III to key decision-makers at local, national and European policy level and deliver practical training and capacity building activities for cities in Europe. The focus of these activities will be on improved management of ecosystem services and enhanced responsibility for biodiversity at local level.

URBES will contribute to increasing the values of biodiversity and ecosystem services. The project will also enhance the knowledge and professional skills of civil servants of local governments across Europe on integrating these values into sectoral policies, plans and actions.

Definitions

Biodiversity
The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part: this includes diversity within species, between species and of ecosystems (Convention on Biological Diversity).

Governance of ecosystems
The process of regulating human behaviour in accordance with shared ecosystem objectives. The term includes both governmental and nongovernmental mechanisms (United Nations Environment Programme).

Ecosystem services
Ecosystem services are the benefits people obtain from ecosystems. These include provisioning services such as food and water; regulating services such as flood and disease control; cultural services such as spiritual, recreational, and cultural benefits; and supporting services, such as nutrient cycling, that maintain the conditions for life on Earth (Millennium Ecosystem Assessment).

Project donor

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Project partners

The Beijer Institute of Ecological Economics
Drift Dutch Research Institute for Transitions
Erasmus Universiteit Rotterdam
Humboldt-Universität zu Berlin
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