



LIFE III

focus



# LIFE in the City

*Innovative solutions for Europe's urban environment*



European Commission



## European Commission Environment Directorate-General

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# Foreword



*Marianne Klingbeil, Head of Unit,  
with Susanne Wegefelt  
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Many environmental issues are particularly acute in urban areas, and with four out of five European Union citizens already living in cities, the quality of the urban environment is important for most of us. Sustainable urban development is central to the priority area 'environment and health and quality of life' of the Community's Sixth Environmental Action Programme (6<sup>th</sup> EAP). The objective of sustainable urban development is to improve the quality of the environment and reduce the adverse impact on the wider environment of cities. The resulting high quality of life attracts investments and skilled labour, which, in turn, contributes to a vibrant and competitive economy.

Though the scale and urgency of the issues vary, most urban areas in Europe face common environmental problems. Nevertheless, every city and its context are unique, and calls for tailor made solutions. Action is needed at EU, national, regional and local level. The aim of the Community policy is to assist national, regional and local authorities in their efforts to achieve the sustainable development of their cities. The Thematic Strategy on the Urban Environment, adopted by the Commission in January 2006, seeks to facilitate the implementation of EU environmental policies and legislation at the local level. The promotion of methods and instruments supporting integrated urban management constitutes a central component of this objective.

The European Commission's LIFE (Financial Instrument for the Environment) programme plays a key role in promoting these methods and instruments, by funding innovative projects, facilitating the dissemination of good practice, and encouraging the widespread adoption of proven and transferable responses to the many environmental problems faced by Europe's cities. Since 1992, the LIFE programme has co-financed over 150 projects directly related to the urban environment, and assisted in the widespread dissemination of the results of these initiatives.

Following the framework set by the Thematic Strategy on the Urban Environment, this edition of the successful LIFE-Focus series looks specifically at urban projects co-financed by the LIFE programme. Spanning a wide range of issues, the 24 projects have tested and validated innovative approaches that are both effective and widely applicable. Contact details of the project beneficiaries are included, to enable direct communication with those involved. We are confident that the experiences, lessons learnt and results presented in this brochure will be of interest to the many local actors across Europe who work daily to improve the environmental performance of their cities and the quality of life of their citizens.

**Marianne Klingbeil**  
*Head of Unit – Clean Air & Transport  
Directorate-General for the Environment  
European Commission*



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# The aim: a sustainable urban Europe

For most European citizens, the future is an urban one, and in a densely populated Europe, the sustainable development of urban areas is essential to the well-being of the Community as a whole.



*Cities: where the action is (San Fermín in Pamplona).*

Urban environmental management is a key issue in the effort to improve environmental conditions and the quality of life in Europe's cities. Some 80% of Europe's citizens live in towns with a population of at least 10,000 inhabitants, and it is here that the effects of many environmental problems are most severely felt. The majority of cities in Europe face a common core set of interrelated and often mutually reinforcing environmental problems. These include increasing levels of traffic, air pollution, ambient noise and greenhouse gas emissions, neglect of the built environment, improper land-use, lack of open space, soil contamination, as well as the generation of large quantities of waste and wastewater.

Environmental problems are often closely linked to other problems facing society. It is, indeed, in urban areas that the environmental, economic and social dimensions of sustainable development converge most intensely. Socio-economic and cultural issues, such as changes in lifestyle, a growing dependence on the private car, the

growth in one-person households, the increasing use of resources per capita, the loss of community identity, and the marginalisation of segments of the population, also have to be taken into account when developing solutions for the urban environment.

Especially in new Member States, the phenomenon of urban sprawl is worsening existing environmental and social problems, generating yet higher levels of traffic and congestion, pollution and resource consumption, and making service delivery and the provision of social infrastructure extremely costly, as well as increasing the segregation of certain income, ethnic and age groups.

The buildings and traffic in and around cities are huge consumers of resources, and producers of pollution and waste. A city's environmental footprint therefore covers an area extending well beyond its administrative and geographical boundaries, and a substantial share of cities' problems is exported to their surrounding areas and beyond.

## Both problems and solutions

At the same time, however, cities play a central part in Europe's economic, social and cultural life, generating the major share of its wealth and knowledge. As principal motors of economic growth in an increasingly global economy, they play a key role in delivering the objectives of the EU Sustainable Development Strategy<sup>1</sup>. A high quality urban environment will contribute to the attractiveness of European cities, enhancing their competitiveness and

potential for growth<sup>2</sup>. Urban areas are therefore important strategic locations for pursuing the goal of promoting all dimensions of sustainability.

Almost paradoxically, while cities have huge environmental impacts, concentrating large quantities of people, infrastructure and activities in a single place is better for the environment in many ways. Urban communities are the most efficient users of natural resources. For instance, as a result of shorter journey distances and better access to public transport, car use per capita is considerably lower in cities than in rural areas. Similarly, per capita land and energy consumption are lower. Public transport, as well as waste and wastewater collection and treatment systems benefit from economies of scale. Indeed, while sub-urbanisation poses a significant environmental threat, the solutions to many environmental problems lie – and must be found – in Europe's densely populated cities.

<sup>1</sup> COM(2001) 264 final  
<sup>2</sup> COM(2005) 330

*Cities: where the money's made (Downtown Frankfurt).*



Photo: Eric Sarven



# EU policy and legislation

Many Community policies and programmes address the environmental problems affecting cities. However, the specific needs and opportunities of the urban context are not always specifically considered. Since January 2006, the Thematic Strategy on the Urban Environment provides a framework for an integrated and focused approach using existing policy instruments and initiatives.

## Chief policy instruments

Over the past years, the Commission has sought to guide policy in the area of sustainable urban development, combining economic, social, environmental and good governance objectives.

The 1990 **Green Paper on the Urban Environment**<sup>1</sup> was the start of a new focus at the European level on urban issues. Recognising that the majority of Community policies have, directly or indirectly, an influence on urban areas, it represented a first step towards moving beyond sectoral approaches, considering the social and economic factors that are often at the root of environmental problems.

The 1997 Communication from the Commission, **Towards an Urban Agenda in the European Union**<sup>2</sup>, examined possibilities for improving urban development and for increasing the effectiveness of existing Community intervention in urban areas. Its intention was not to develop Europe-wide urban policies for issues best dealt with locally or regionally, but to identify opportunities at the European level to share and facilitate potential solutions.

The 1998 Commission Communication on **Sustainable Urban Development**<sup>3</sup> in the European Union: A Framework for Action supports a more integrated urban development by aiming at better coordinated and targeted community action for urban problems.

In 2002, the Council and European Parliament adopted the **Sixth Environ-**



Photo: Eric Savan

**mental Action Programme** (6<sup>th</sup> EAP)<sup>4</sup>, laying down environmental objectives and priorities for the following decade. The 6<sup>th</sup> EAP forms the environmental component of the Community's strategy for sustainable development. Taking account of economic and social conditions, it makes the link between environment and the Lisbon Strategy's goals of enhancing growth, competitiveness and employment, and eco-innovation. The four priority areas for action defined by the programme are:

- Climate change
- Nature and biodiversity
- Environment, health and the quality of life
- Natural resources and waste

The 6<sup>th</sup> EAP requires the European Commission to prepare Thematic Strategies covering seven areas:

- Air pollution (adopted on 21.09.2005)
- Prevention and recycling of waste (adopted on 21.12.2005)

*Walking to work in Newcastle.*

- Protection and conservation of the marine environment (adopted on 24.10.2005)
- Soil
- Sustainable use of pesticides
- Sustainable use of resources (adopted on 21.12.2005)
- Urban environment (adopted on 11.01.2006)

Representing the next generation of environmental policy, the strategies work with themes rather than with specific causes or economic activities, setting environmental objectives and providing a policy framework for up to 2020. The aim has been to create synergies between the seven strategies.

Accordingly, the **Thematic Strategy on the Urban Environment**<sup>5</sup>, which explicitly addresses all four priority areas set by the 6<sup>th</sup> EAP, also refers to the 6<sup>th</sup> EAP's other Strategies.

For further information on the Thematic Strategy and on the preceding interim Communication Towards a Thematic Strategy on the Urban Environment, which was adopted in February 2004 to seek the views of stakeholders, please see the box on page 7.

### Key EU legislation

In response to the growing challenges of urban planning and management, the European Parliament and the Council have adopted a number of directives to provide for a sound economy and a high standard of living without impairing the environment and human health. Though these directives are binding, they are sufficiently flexible for Member States to implement them through their own legal and administrative systems.

The **Water** Framework Directive<sup>6</sup> defines four groups of objectives for sustainable water management throughout Europe: the protection of the environment, the supply of drinking water to the population, the supply of water for commercial use, and the mitigation of the effects of floods and droughts. Local authorities are responsible for much of the water-related infrastructure, and they have permitting and taxation powers that can be used to influence the use of water considerably.

The **Urban Wastewater Treatment** Directive<sup>7</sup> concerns the collection, treatment and discharge of urban wastewater and wastewater from certain industrial sectors.

The Directive on **Ambient Air Quality Assessment and Management**<sup>8</sup> requires plans to be established for urban zones when limit values are or might be exceeded. Daughter directives set the limits or target values for benzene, CO, lead, NO<sub>2</sub>, NO<sub>x</sub>, par-

ticulate matter, SO<sub>2</sub> and tropospheric ozone. Various directives set emission ceilings for different categories of vehicles and motor fuel quality, as well as for volatile organic compounds (VOCs).

The Directive on the **Assessment and Management of Environmental Noise**<sup>9</sup> requires Member States to map exposure to ambient noise and to adopt action plans for its management for urban agglomerations.

The **Waste** Framework Directive<sup>10</sup> lays down the principles for waste management in Member States, including the obligation to draw up waste management plans and establish a system of permits and registration. Other waste-related legislation relevant to local authorities includes the Landfill Directive<sup>11</sup>, the Directive on Packaging and Packaging Waste<sup>12</sup>, the Incineration Directive<sup>13</sup>, as well as the End-of-Life Vehicles (ELV)<sup>14</sup> and Waste Electrical and Electronic Equipment (WEEE)<sup>15</sup> Directives.

The Directive on the **Energy Performance of Buildings**<sup>16</sup> requires new buildings and existing buildings of over 1,000m<sup>2</sup> that are undergoing major renovation work to meet minimum energy efficiency requirements that will be set by each Member State following a common methodology.

Several directives have an influence on **urban land-use**, notably the Directives on Environmental Impact Assessment (EIA)<sup>17</sup> and Strategic Environmental Assessment (SEA)<sup>18</sup>, as well as the Water Framework Directive. The Directive on the Control of Major Accident Hazards<sup>19</sup> requires Member State's land-use planning and/or other relevant policies to seek the prevention of major accidents and the minimising of their consequences.

1 Council Resolution 91/C 33/02

2 COM(97) 197

3 COM(98) 605

4 COM/2001/0031 final, Decision

No 1600/2002/EC

5 (COM(2004)60)

6 European Parliament and Council Directive 2000/60/EC

7 Council Directive 91/271/EEC

8 Council Directive 96/62/EC

9 European Parliament and Council

Directive 2002/49/EC

10 Council Directive 75/442/EEC

11 Council Directive 1999/31/EC

12 European Parliament and Council

Directive 94/62/EC

13 European Parliament and Council

Directive 2000/76/EC

14 European Parliament and Council

Directive 2000/53/EC

15 European Parliament and Council

Directive 2002/96/EC

16 European Parliament and Council

Directive 2002/91/EC

17 Council Directive 97/11/EC

18 European Parliament and Council

Directive 2001/42/EC

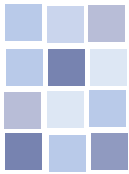
19 Council Directive 96/82/EEC

*A walk in the park in Riga.*



Photo: Eric Saranen





# Integrated environmental management

**Managing the urban environment requires a holistic approach to tackle issues that are characterised by their complexity, their mutual reinforcement, the range of stakeholders they involve, and their close links with the economic and social aspects of sustainable urban development.**

Urban elements (such as buildings, infrastructure, green space and water bodies) and urban functions (such as housing, employment, mobility, access to goods and services, cultural activities and social interaction) have aspects that impact on the environment. While different administrative levels and departments address these elements through different policies, they often act in isolation from one another. This can lead to fragmented policies and the uncoordinated implementation of actions. Similarly, environmental management tools and methods (such as environmental policy statements, participatory planning processes, performance indicators or environmental impact assessments) are often designed for specific tasks. These technical and political tools form a patchwork of instruments that often results in gaps, overlaps and a lack of harmonised information, decision-making and practices.

*A street in early-morning Seville.*



Consequently, the Thematic Strategy on the Urban Environment calls for the better management of urban areas through integrated environmental management at the local level. This is characterised by a strategic management of the environmental impacts of all activities within the entire functional area of a political authority and/or a built-up city. The approach should ensure cross-departmental and sector cooperation, an engagement with all relevant stakeholders in the city, as well as vertical integration by addressing local, regional and national spheres of government.

The approach should define the organisational structures, procedures, responsibilities and resources for developing policy, establishing long-term visions, setting targets, defining actions and measures, monitoring implementation, evaluating results and communicating outcomes. It should also include a system for ensuring delivery of results, such as the International Organisation for Standardisation's ISO 14001, and the EC's related Eco-Management and Audit Scheme (EMAS). Though initially designed for private organisations, both systems can also be applied to public administration, and over the past 10 years, numerous local government services and sites have achieved certification by one of these standards<sup>1</sup>.

<sup>1</sup> See also the LIFE-Focus publication: *A sustainable approach for the environment – LIFE and the Community Eco-Management and Audit Scheme (EMAS)*, 2003



*The park in lunchtime Leipzig.*

Systems such as EMAS define the organisational structures, procedures, responsibilities and resources for developing policy, establishing long-term visions, setting targets, defining activities, monitoring implementation, evaluating results, communicating outcomes and ensuring the system's own continuity.

Integrated decision-making, therefore, does not only involve overcoming the traditional barriers between different administrative units, and between a local authority's operational and political tiers. It also requires surpassing administrative boundaries to increase horizontal cooperation with neighbouring municipalities, as well as improving vertical linkages among the local, regional, national and European levels of public administration. This task can prove very difficult, for instance if coordination also demands the amalgamation of budgets traditionally controlled at different levels of government or by different departments within individual authorities.



Engaging all relevant local actors in solution-finding helps avoid conflicts and achieves a common long-term vision for the development of a city. Demands for greater stakeholder participation in the setting of goals, the definition of activities, and the evaluation of results, has led to efforts to combine governance aspects and processes such as the Local Agenda 21 with environmental management.

However, the concept of sustainability, on which the Local Agenda 21 is based, goes beyond environmental considerations, and seeks to achieve an urban development that is not only environmentally responsible, but also economically vibrant and socially just. The economic, social and environmental dimensions of sustainability are complex and highly interdependent, making the impacts of policy action hard to predict and measure. Furthermore, sustainability often entails contradictory objectives, and planning processes are frequently conflict-ridden.

Sustainable urban management requires mainstreaming the urban environment into relevant city-council policies in areas such as infrastructure provision, service delivery and economic growth. The challenge is to move forward from a sector-based approach, to an integrated *environmental* management and, finally, to *sustainability* management that address all aspects of sustainable development and integrate political processes into the larger scheme of urban governance.



## The Thematic Strategy on the Urban Environment

The Sixth Environmental Action Programme (6th EAP) called for the Thematic Strategy on the Urban Environment to be developed with the objective of contributing "to a high level of quality of life and social well-being for citizens, by providing an environment where the level of pollution does not give rise to harmful effects on human health and the environment and by encouraging sustainable urban development". Adopted by the Commission on 11 January 2006<sup>3</sup>, the Thematic Strategy on the Urban Environment's goal is to facilitate the better implementation of EU environmental policies and legislation by encouraging an integrated approach at the local level. Member States and regional and local authorities are to be assisted through the provision of guidance and support for the exchange of knowledge, experience and good practice, so as to improve the environmental performance of Europe's cities. The opportunities offered in the Strategy include funding under the LIFE+ Regulation, and Member States are strongly encouraged to exploit this for the benefit of the regional and local authorities.

The Thematic Strategy on the Urban Environment is based on extensive research and on the results of discussions with a wide range of stakeholders. The consultation process began in 2002 and involved Member States, regional and local authorities, NGOs, academic institutions, city networks and the general public. An interim communication, *Towards a Thematic Strategy on the Urban Environment*<sup>4</sup>, was issued in February 2004. To further develop central ideas contained in this communication, expert working groups were established to consider technical issues for environmental management plans, sustainable urban transport plans, and the future priorities for research and training<sup>5</sup>.

The lack of an integrated approach to managing the urban environment is the key issue addressed by the Thematic Strategy, and measures proposed, including technical guidance, seek to support local authorities in their efforts to adopt a more integrated approach to urban management. Integrated approaches include long-term strategic visions and link different policies at different administrative levels to ensure coherency.

Given the diversity of urban areas, the existing national, regional and local obligations, and the difficulties involved in establishing common standards for urban environment issues as a whole, the Strategy does not dictate the solutions that cities should adopt, or propose the mandatory implementation of environmental management plans in urban areas. The Thematic Strategy does, however, strongly encourage national and regional authorities to support municipalities in achieving a more integrated management at the local level.

<sup>3</sup> COM(2005) 718 final  
<sup>4</sup> COM(2004) 60 final  
<sup>5</sup> The working groups' contributions are available at [http://www.europa.eu.int/comm/environment/urban/experts\\_working\\_groups.htm](http://www.europa.eu.int/comm/environment/urban/experts_working_groups.htm)

*The seashore in evening Ostende.*



Photo: Eric Sarvan



# LIFE and the urban environment

The current brochure contains examples of some of the LIFE programme's many exciting projects. These address a wide range of problems experienced by our urban communities, and demonstrate opportunities offered by new approaches and technologies.



*Sustainable urban development requires integrated solutions at all levels.*

Despite differences in size, budget, administration, and geography, most Member States' cities and towns face a common basic set of environmental issues. Differences in environmental problems are generally more of a quantitative than a qualitative nature. At the same time, problems in responding to environmental challenges are similar in many municipalities. These include the top-down and sectoral organisation of administrative structures, the want of strategic planning and inadequate community involvement, insufficient coordination between cities and surrounding areas, the weak enforcement of regulations, as well as the lack of target-setting, monitoring and evaluation.

As both environmental issues, on the one hand, and the barriers to sustainable urban development on the other are common to most urban areas, many of the solutions designed at the local level are transferable to other European municipalities. Consequently, one of the LIFE programme's key roles is to support the widespread dissemination of pioneering technologies and good practices.

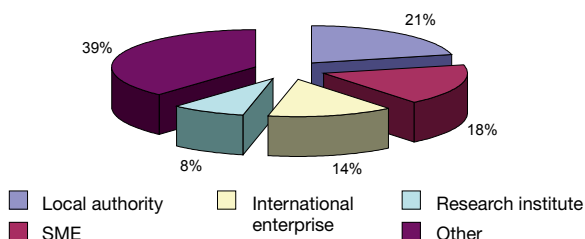
## The projects

LIFE has co-financed an average of 11 projects on the urban environment annually, totalling 158 projects since 1992. Indeed, over 10% of all LIFE-Environment projects have addressed specifically urban issues. Among the old Member States, a high number of

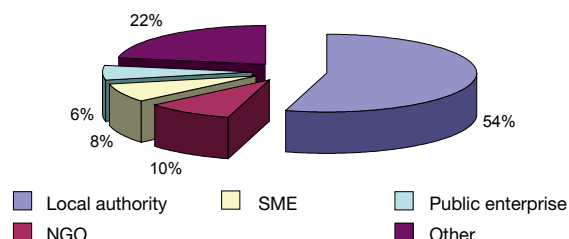
the Spanish (16%) and Belgian (15%) LIFE-Environment projects have focused on towns and cities. The high number of Romanian (39%), Slovakian (33%) and Estonian (14%) LIFE-Environment projects focusing on urban issues may reflect the particular difficulties faced by cities and towns in new Member States.

Considering the special role and responsibility that local authorities have in managing the urban environment, it is not surprising that they constituted almost 55% of the LIFE-Environment beneficiaries of urban projects, as opposed to their 21% overall share of LIFE-Environment projects. This is reflected in the present publication, with 13 of the 24 projects featured managed by local authorities, and municipalities playing key roles in nearly all initiatives. As beneficiaries of urban projects, local authorities are followed at a distance by non-governmental organisations (10%), small and medium-sized enterprises (8%) and public enterprises (6%).

**LIFE-Environment projects by beneficiary**



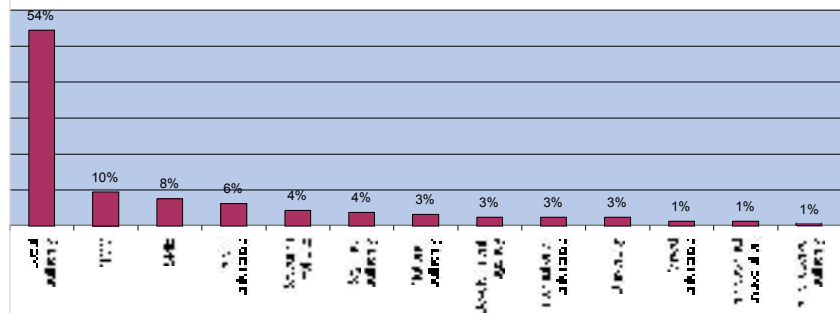
**Urban LIFE-Environment projects by beneficiary**



Many projects, especially those dealing with integrated urban management, were implemented by groups of local authorities, working together to exchange experience and expertise. Recognising their added value, LIFE encourages the formation of international project-implementation networks. Firstly, the central issues of sustainable urban development are shared by almost all European cities. Secondly, the challenges are large, and initiatives benefit from the pooling of expertise from across Europe. Thirdly, the solutions developed must be easily adaptable to a range of local circumstances, and they should therefore be tested in more than one Member State. And finally, the roll-out of best practice across the Community is greatly increased by transnational demonstration and dissemination.

In general, LIFE-Environment projects have either a technology-oriented (49%) or a method/tools-oriented approach (44%), with awareness-raising/community-engagement projects constituting only 7% of all initiatives. In contrast, almost a quarter of urban LIFE-Environment projects have a predominantly awareness-raising/community-engagement approach. This could reflect a recognition of the importance of engaging the community in local environmental decision-making and in achieving changes in citizens' behaviour, for instance in the fields of transport or consumption.

**All beneficiaries of urban LIFE-Environment projects by type**



*Local authorities constituted more than half the LIFE-Environment beneficiaries of urban projects.*

While nearly half of all LIFE-Environment projects have a technology-based approach, only 17% of urban LIFE-Environment focus on technological innovation. Instead, 59% are methods/tools based-oriented, many of them focusing on integrated urban management or on particular aspects of this approach.

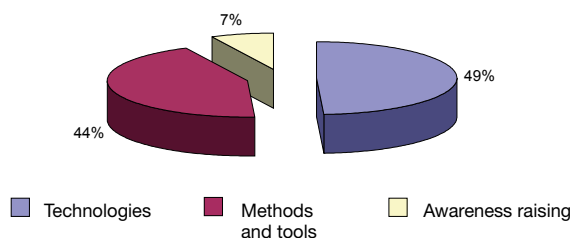
### Proof of LIFE

The projects presented in this brochure were selected for their level of innovation, the sustainability of their outcomes, their relevance to environmental policy and legislation, and their demonstration value and transferability. The projects included are from 10 countries and range from overarching strategic methods to task-specific technologies, covering a wide range of issues from integrated urban man-

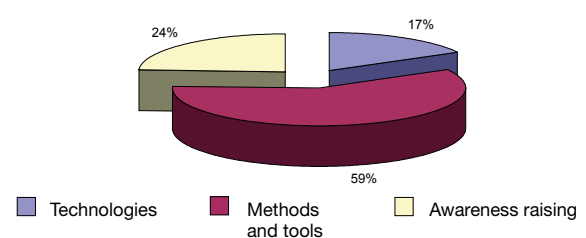
agement to sustainable construction and from urban biodiversity to green procurement.

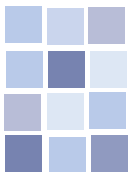
Urban development impacts on the protection of habitats and listed species, and as a result, the LIFE programme's LIFE-Nature branch has also been of service to EU urban policy. Between 1992 and 2005, more than 50 LIFE-Nature projects included measures relating to urban issues. Furthermore, some 35 LIFE-Third Countries (LIFE-TCY) projects focusing on urban issues have contributed to the creation of expertise and capacity, as well as to the development of environmental policies and programmes, in the environment sector in LIFE-TCY countries.

**LIFE-Environment projects by approach**



**Urban LIFE-Environment projects by approach**





The structure of this publication follows the framework provided by the Thematic Strategy on the Urban Environment. Strong interdependencies and overlaps exist between the six themes chosen as section headings, and many of projects featured could, needless to say, be classified under more than one of these chapters.

Due to reasons of space, only a small number of the numerous LIFE projects on the urban environment can be presented in this brochure. You will find other LIFE projects relevant to your field of work listed on page 58.

*Sustainable urban development requires involving local stakeholders.*



## The role of local authorities

The LIFE programme has co-funded more than 300 projects with local authorities as beneficiaries, and many more in which local authorities have participated as partners. Since the Agenda 21 was adopted at the 1992 Earth Summit<sup>1</sup>, the central role that local governments have in helping to achieve sustainable development has been recognised internationally. The Local Agenda 21 calls on local authorities to enter into a dialogue with their citizens, enterprises and other stakeholders, so as to prepare strategies for the sustainable development of their municipalities.

Many environmental problems are caused – and felt – locally. As the actors closest to these problems, local authorities play a decisive role in improving the environmental performance of their cities. The subsidiarity principle recognises that the diversity of Europe's urban areas in terms of geography, climate, and administrative and legal conditions also calls for locally developed solutions.

Local authorities can play an important role in raising public awareness and encouraging changes in their citizens' behaviour. To fulfil this function, however, they must also 'clean up their own yard'. Local authorities are major consumers and producers of goods and services. By using their purchasing power to favour goods and services that take into account environmental considerations, municipalities can not only improve their own environmental performance, but also serve as models to influence the behaviour of other organisations and individuals – and sometimes even influence the market for 'greener' goods and services.

In 1994, a number of towns, cities, and local-authority networks in Europe adopted the **Aalborg Charter**. To date, political representatives from more than 2,500 European towns and cities have signed the charter, committing their municipalities to the development of long-term action plans towards sustainability. The Community endorses the Aalborg Charter and has supported the resulting Sustainable Cities and Towns Campaign. Various related initiatives have received financial and technical support through the **Community Framework for Cooperation** to Promote Sustainable Urban Development<sup>2</sup>.

Ten years after the Aalborg Charter, the Aalborg+10 Conference in June 2004 established the **Aalborg Commitments**. So far, more than 300 signatories have committed to entering a target-setting process in dialogue with local stakeholders, incorporating existing Local Agenda 21 or other integrated action plans.

While the specific activities and policy decisions of local authorities have a significant impact on their respective local environments and the quality of life in their cities, the sum of their environmental performances significantly influences the global environment.

<sup>1</sup> United Nations Conference on Environment and Development  
<sup>2</sup> Decision 1411/2001/EC of the European Parliament and of the Council





## Integrated environmental management

One message that runs through the Thematic Strategy on the Urban Environment is that a systematic and integrated approach to environmental management at the local level is essential for achieving long-lasting improvements in the urban environment.

Integration is about coherently and comprehensively combining distinct environmental instruments to management a municipality's administration and territory. It involves cooperation among municipal departments, as well as with neighbouring municipalities and other administrative and political levels. It enables local authorities to make decisions that do not ignore information, duplicate efforts or even contradict the policies of other departments or sectors. Involving both the political sphere and relevant community stakeholders is crucial to achieving a clear development vision and a high-level strategic approach. The resulting framework serves to set targets, steer daily management decisions, monitor implementation and evaluate progress.



# PRESUD: A municipal peer-review system for sustainable development

The PRESUD project designed, tested and made publicly available a peer-review tool that promotes the exchange of local authority knowledge and expertise, and can advance the progress of European municipalities towards sustainable development.



*From 1998 to 2001, Newcastle-upon-Tyne's city council successfully coordinated the LIFE project Euro-EMAS.*

progress towards sustainable development in Member States' cities; to pilot the tool by undertaking two rounds of performance assessments in the cities; to implement action programmes in the partner cities on the basis of the resulting recommendations; and to make the peer-review system available to local authorities across Europe.

## Gold standard benchmarking

Allen Creedy, who coordinated PRESUD, explains that the project is based on two well-known and tested approaches. The OECD's 'Environmental Review Programme' for Member States examines pressures acting on the environment, the state of the environment, and Member States' responses to the situation. This 'Pressure - State - Response' (PSR) model is at the heart of the PRESUD assessment methodology. Secondly, the project builds on the UK's Improvement and Development Agency's (IDeA) 'Local Government Improvement Programme', which was introduced in 1996 and offers a framework providing benchmarks to assess councils' performance. By English law, all local authorities have to undergo a Comprehensive Performance Assessment (CPA) carried out by government inspectors.

Newcastle-upon-Tyne has a long commitment to sustainable development. From 1998 to 2001, it coordinated the LIFE project Euro-EMAS<sup>1</sup>, which successfully demonstrated the value of the EC's Eco-management and Audit Scheme (EMAS) to local authorities seeking to improve their environmental performance. Today, 60% of the local authority has been EMAS certified, and the process is in place to achieve certification for all other areas in the near future.

The LIFE project 'Peer-reviews for European Sustainable Urban Development' (PRESUD) builds in part on the Euro-EMAS project. It was proposed by Newcastle to prove the benefits of using peer-review tech-

niques to measure and improve the effectiveness of existing municipal policies.

The University of the West of England, the Improvement and Development Agency for Local Government (IDeA) and the network of cities, EUROCITIES, were the project's technical partners. The participating city councils of Birmingham, Malmö, Newcastle, Nottingham, Leipzig, The Hague, Venice and Vienna undertook peer-review performance assessments and prepared sustainable development action plans.

The project was based on four core objectives: to create a new Europe-wide tool to assess and encourage

<sup>1</sup> LIFE98 ENV/UK/000605

The PRESUD performance assessment model covers three themes that collectively represent sustainable urban development: governance, environment and integration. For each of these themes, the project defined ideal policies and practices. The result was a total of 13 benchmarks representing the 'gold standard' of municipal performance against which the project's reviews would assess progress made by the cities.

The 'governance' benchmarks were based on those developed by the IDEa and were adapted to fit a flexible and Europe-wide model of municipal government. Similarly, the 'environmental' standards were taken from the OECD's PSR model and were adapted for municipalities. The 'integration' benchmarks were newly developed by the project. They represent ways in which city policies and practices can be judged as to their effectiveness in balancing and integrating the economic, social, and environmental dimensions of sustainable development. They also gauge the cooperation between neighbouring administrations, agencies, and different tiers of government in defining and implementing policies contributing to sustainable development.

### Peer-reviewing

As a first step, the participating cities undertook self-assessments which sought to reflect the opinions of the city administration and politicians, as well as those of other local stakeholders, including representatives of governmental agencies, NGOs, businesses, media and academia. The resulting reports served the peer-review teams for desk studies prior to their on-site visits.

Comprising municipal politicians, senior technical staff, as well as national and European experts, these multicultural and multilingual teams possessed a broad range of skills and experience, covering the full range of sustainable development themes. During the first round of performance assessments, the teams held discussions with various stakeholders from government, community and the private sector. They then prepared reports identifying measures that the respective city councils should take to better respond to the economic, social and environmental pressures being faced.

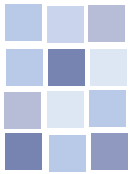
Participating city councils were contractually committed to act on the observations made by the peer-review teams. Most municipalities consulted a wide group of stakeholders and established political steering groups to translate the recommendations into measures. Actions were designed to be specific, measurable, achievable, relevant and time-limited (SMART), thereby making them easier to monitor, evaluate and report on. The resulting action plans provided a systematic framework for cities to gain a clear understanding of priorities and to improve their policies and approaches.

In total, the municipalities committed to more than 170 actions. Measures to improve governance included changing decision-making processes, extending consultation arrangements, involving minority groups and monitoring performance. Steps towards a better integration of economic, social, and environmental issues included applying the 'polluter pays' principle, charging for parking, implementing EMAS and carrying out a full review of economic development policies. Examples of environmental actions carried out were encouraging bicycle use, introducing more regular waste collection for recycling, restoring damaged wildlife habitats, and carrying out noise mapping.

Before the end of the project, a second round of performance assessments was carried out in each of the nine cities. Though few direct environmental benefits could be registered after an interval of only 14 to 20 months, the reviews found that 87% of the measures defined by the SMART action plans had been partially or fully completed.

*The Pressure-State-Response model formed the heart of PRESUD's assessment methodology.*





## Integrated environmental management

### Agreeing to differ

One of the review teams' first steps was to understand the competency framework within which the respective cities were situated, in order to determine where there was potential for intervention. In some Member States, municipalities are directly responsible for providing a wide range of services such as public health, security, transport, and the generation and delivery of heat. In the UK, on the other hand, many functions were privatised long ago, and municipalities have had to learn to be more creative in working with the community and influencing the private sector.

Major differences were also encountered in the management cultures of the participating local authorities. Paul Whiston, regeneration manager from Newcastle's civic centre, says that "many technical officers complain that we in the UK tend to be over-regulated in terms of performance management. We are overly 'SMARTed'". He was, therefore, astonished to find that in some countries, the concept of measuring performance did not form part of the public authority management culture at all. Within some municipalities, significant resistance to assessing municipality operations prevailed. For these cities, SMART action planning posed new management, cultural and political challenges.

Differences between participants, however, went well beyond competency or managerial issues alone. A major challenge – and perhaps what was most valuable to this type of exchange among peers – was the difference in normative values among the organisations and individuals involved. Already during the cities' preliminary self-assessments, it became clear that some of the benchmarks, especially those on 'governance' and 'integration', were contested by various partners and would require revision.

For instance, it was almost impossible to agree on the ideal balance between economic, social and environmental priorities. Views on leadership and on the benefits of public participation in decision-making also differed strongly from country to country. Some participants took for granted that local authority staff had to be country nationals, while others regarded this stipulation as bordering on institutional racism. And while some cities sought to promote the cultural identity of neighbourhoods with high percentages of ethnic minority communities (such as Newcastle's China Town), municipalities in other countries did everything possible to mix up what they considered to be ghettos that were preventing ethnic integration.



As certain issues were outside the realm of what the project could challenge or resolve, the partner cities agreed to use the same suite of benchmarks, but to set individual priorities. The PRESUD benchmarks thus served as a framework for discussion and exchange, including on fundamental cultural issues. In fact, soft skills was a major focus of a training session of more than 50 participants that took place in the run-up to the second round of peer-reviews. Due to major cultural differences, learning how to ask sensitive questions tactfully in a foreign language should not be underestimated.

### Politically challenging results

A problem that had to be overcome in all cities was the lack of a holistic approach to sustainable development in both policy and administrative practices. Departmental structures prevail and data, for instance, could be collected by one unit without being shared with others, thereby making it difficult to establish correlations between related issues. To overcome this 'silo mindset', a number of cities undertook changes to politicians' portfolios so that they could cover cross-cutting issues.

Not all cities were equally disposed to providing information for the assessments, and a few were inclined to keep the review teams' findings quiet. In some cases, politicians actually objected to their general release and blocked reports from being published on the project's



*The PRESUD benchmarks served as a framework for discussion and exchange.*



website. Some municipalities, on the other hand, supported the publication of the findings, and even went as far as to invite the peer-review teams to openly debate their recommendations in the city council. In either case, comments made by the review teams were often very challenging to the host cities and their authorities.

However, though not all messages were those that politicians wanted to hear, technical officers were often glad to have independent parties state what they themselves were either unable to say in their own municipality or had been saying, albeit without effect. Having both technical staff and political representatives on the teams was a crucial factor for success, as sometimes politicians can open doors and pose questions that officers cannot.

### Critical friends

An extensive evaluation of PRESUD's activities and results was performed by Newcastle University. The evaluation confirmed the usefulness of the methodology, though it also made clear that work remains to be done to make the tool more flexible and, at the same time, more concrete in its target-setting. Materials and resources supporting the method's use and its adaptation to suit local conditions are available on the project website, which features an interactive training section.

Interest in the peer-review system is especially great in new Member States, says Paul Whiston and explains that, instead of having to travel across Europe to acquire knowledge, the system enables a "home delivery of top expertise". "A lot of staff time was invested, but it was absolutely worth it" he says.

### PRESUD's legacy

- A number of PRESUD cities, including Birmingham, The Hague and Venice, continue to implement PRESUD actions which have been embedded in their cities' strategic planning.
- In December 2005, Venice undertook a third peer-review performance assessment on its own accord.
- Based on the PRESUD methodology, The Hague has set up a system of peer-review among the Netherlands' five principle cities.
- Parts of PRESUD have been adapted and integrated into the online tool 'Sustainability tools and targets for the Urban Thematic Strategy' (STATUS), which aims to develop targets for municipalities across Europe to self-assess progress towards sustainable urban development ([www.sustainable-cities.org.uk/status/project.html](http://www.sustainable-cities.org.uk/status/project.html)).
- The City of Aalborg is currently studying the potential of adapting the PRESUD methodology to carry out baseline reviews for implementing the Aalborg Commitments.
- The Union of Baltic Cities (UBC) has rewritten the PRESUD methodology for application to the transport sector in preparation for 13 peer-reviews in new Member States.
- The EUROCITIES project 'Liveable Cities', which supports cities in their efforts to improve local sustainable urban management plans, can be seen as a continuation of the PRESUD project ([www.eurocities.org/liveablecities/rubrique.php?id\\_rubrique=1](http://www.eurocities.org/liveablecities/rubrique.php?id_rubrique=1)).

"Peers' experience can save us learning the hard way through pilot projects – especially since some claim we have more pilots than British Airways!"

Compared to commercial consultancies, the peer-review system is very cost-effective. But Paul Whiston says that there is also a unique added value of expertise from public-sector professionals. Peers are 'critical friends' who bring with them very practical expertise. Says Paul Whiston: "You're not left with yet another report on your shelf, but with unbiased, pragmatic and tested advice. Unlike some private consultancies, colleagues know what they're talking about. After all, they too have had their fingers burnt!"

**Project Number:**  
LIFE00 ENV/UK/000891

**Title:** Peer-reviews for European sustainable urban development

**Beneficiary:** Newcastle City Council

**Total Budget:** € 1,456,000

**LIFE Contribution:** € 706,000

**Period:** 01-Nov-2001 to 31-Oct-2004

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# CLEAR methods for cities' environmental accounting and reporting

The first Italian environmental accounting and reporting system for local authorities is proving popular with the country's municipalities and provinces.



In business administration, accounting is central to the measuring and reporting of financial performance. In the same vein, the Cities Environmental Accounting and Reporting (CLEAR) project has developed a tool to assist local governments to measure and report on their environmental performance, thereby contributing to transparency in local governance.

Led by the City of Ferrara, 12 municipalities and six provinces from across the country tested the CLEAR methodology, which can be incorporated into local authorities' existing planning and accounting processes. CLEAR foresees the establishment of financial and environmental 'budgets' that use both monetary and physical indicators to monitor, assess and report on the environmental impacts caused by policies and activities at the local level.

## From project to campaign

With the support of the regional government of Emilia-Romagna and the French local-authority association Les EcoMaires, the project's results were disseminated widely in Italy and abroad. The initiative has since developed into a national campaign, 'Making account with the environment', which brings together Italian local authorities and the National Local Agenda 21 Association<sup>2</sup>, and

cooperates with the Italian Ministry of the Environment, the Italian Eco-label-Ecoaudit Committee<sup>3</sup>, the international network Local Governments for Sustainability (ICLEI), and the office of the EU's Eco-Management and Audit Scheme (EMAS).

The campaign offers technical support to municipalities wishing to apply the CLEAR methodology. For instance, a course on implementing CLEAR was held in Bologna in November 2005, and, owing to great demand, further trainings are planned. The former project partners continue to implement the environmental reporting system and meet regularly. The CLEAR methodology is now being adopted by five other Italian municipalities. Flexible in its design, some cities have decided to lengthen their accounting cycles from 12 months to three or five years, since environmental change is often only measurable after a certain period of time.

Unlike the ecoBUDGET approach (presented on page 54 of the present brochure), which seeks to address the environmental impacts of a municipality's entire territory, the CLEAR method focuses more on the performance of the council administration itself. A second difference is that, unlike CLEAR, ecoBUDGET does not ascribe monetary aspects to its accounting.

Finally, while both methods have 'ex-post' budget balances as instruments for environmental reporting, ecoBUDGET also foresees an 'ex-ante' budget proposal that sets targets at the beginning of the accounting cycle as a basis for the planning and assessment of measures.

In 2005, a new LIFE project, Integrated Development of Environmental Management Systems (IDEMS)<sup>4</sup>, led by the Municipality of Ravenna, a former CLEAR partner, was launched with the aim to integrate the CLEAR method, ecoBUDGET and EMAS.

<sup>1</sup> 'Facciamo i conti con l'ambiente'

<sup>2</sup> Coordinamento Agende 21 Locali

<sup>3</sup> Comitato Nazionale Ecolabel e Ecoaudit

<sup>4</sup> LIFE05 ENV/IT/000808 ([www.idems.it](http://www.idems.it))



## Project Number:

LIFE00 ENV/IT/000144

**Title:** City Environmental Accountability and Reporting

**Beneficiary:** Comune di Ferrara, Italy

**Total Budget:** € 1,929,000

**LIFE Contribution:** € 964,000

**Period:** 01-Oct-2001 to 01-Oct-2003

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# Guía-llave: A 'key' guide to local environmental management

**A code of good environmental practice provides local authorities with a common methodology for improving the integrated and participatory management of their natural, financial and human resources.**

Representing more than 8,000 town councils, the Federation of Municipalities and Provinces<sup>1</sup> (FEMP) is the principle local government association in Spain. In 1998, it launched the Guía-llave project with the aim of fostering the implementation of good environmental practices in Spanish town councils.

FEMP was keen on developing a practical methodology for environmental management, which could be easily applied even by small municipalities with limited resources. Furthermore, the methods developed needed to be sufficiently flexible for different municipalities to adapt them to their respective circumstances.

FEMP joined forces with 12 town councils from across Spain, representing a diverse set of characteristics and needs: Aranjuez, the Alto Valle del Aragón grouping of municipalities, Cuellar, Gijón, Mataró, Murcia, Puertollano, San Fernando de Henares, Sueca, Talavera de la Reina, Vall d'Uixó and Vitoria.



## Code of Good Environmental Practice

The handbook the initiative developed – the 'Code of Good Environmental Practice' (CBPA)<sup>2</sup> – was one of the first of its kind in Europe and provides municipalities with practical and standardised tools for environmental management. It covers two instruments that are key to sustainable local development: stakeholder participation and management standards. The first two sections cover the Local Agenda 21 and offer a systemisation of good practices from across Spain and Europe. The code's third section focuses on the environmental management systems ISO 14000 and EMAS<sup>3</sup> and contains an innovative approach to adapting these management regulations to the respective contexts of local authorities.

An important aspect was the development of indicators to enable a more objective control of environmental quality by town councils and to facilitate their communication with the public, as well as with other cities.

*The good practice guidelines come with an online 'key' to facilitate their use.*

## Project Number:

LIFE98 ENV/E/000445

**Title:** Environmental good practice guide for environmental management in local administration

**Beneficiary:** Federación Española de Municipios y Provincias (FEMP)

**Total Budget:** € 520,000

**LIFE Contribution:** € 254,000

**Period:** 01-Nov-1998 to 01-Nov-2000

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The best-practice handbook is available online and is made accessible by a complementary 'Key Guide' – a user-friendly Web interface that facilitates the code's use. Presented in October 2000, the handbook has since been widely disseminated and is well known among Spain's local authorities. A third, updated, edition of the guide was published in 2004, and in the same year, FEMP received the National Association of Environmental Verifiers and Auditor's<sup>4</sup> Prize for the promotion of sustainable development in local administration.

<sup>1</sup> Federación Española de Municipios y Provincias

<sup>2</sup> Código de Buenas Prácticas Ambientales

<sup>3</sup> The European Commission's Eco-management and Audit Scheme

<sup>4</sup> Asociación Nacional de Verificadores y Auditores Medioambientales (ANAVAM)



# ECO-LUP: Applying EMAS to local authorities' land-use planning

The ECO-LUP project has demonstrated the application of an environmental management system to the land-use planning processes of four municipalities bordering Lake Constance in southern Germany and Austria.

The European Union's voluntary Eco-Management and Audit Scheme (EMAS) is a management tool for organisations to assess, report and improve their environmental performance. Originally restricted to companies in industrial sectors, EMAS has been open to all economic sectors, as well private services and local authorities, since 2001.

The ECO-LUP project, selected one of the Best LIFE-Environment projects 2004-5, demonstrated the application of EMAS to the process of urban land-use planning, by developing and applying the scheme in the municipalities of Dornbirn and Wolfurt (Austria), and Constance and Überlingen (Germany). Environmental teams were created in the four municipalities to assess and establish procedures for sustainable land-use planning. As planning processes related to land-use are often conflict-ridden, the local authorities considered an integrated and participatory approach necessary to cope with cross-cutting issues such as water and soil protection, air quality, local climate change, transport demands, waste management, and the protection of natural habitats.

## Sustainable land-use management

ECO-LUP was coordinated by the Lake Constance Foundation (Bodensee-Stiftung) and assisted by the Institute of Applied Research at

Nürtingen University, Germany. The project effectively demonstrated the integration of environmental management into municipal development planning processes. In the long term, applying EMAS to land-use planning is expected to result in the continuous improvement of environmental quality standards in municipal planning for development, leading to an average reduction of land consumption of 5% per local authority. Further environmental benefits are also expected, such as the sustainable management of urban green zones, reductions in energy consumption due to the promotion of energy-efficient housing and improved flood protection.

Central to the project's successful introduction of an EMAS-oriented environmental management system to the four municipalities, was the prior preparation of a detailed SWOT (strengths, weaknesses, opportunities and threats) analysis for each municipality. This was done through a series of local and regional workshops that addressed all planning issues of municipal and regional relevance, and were closely linked to the existing Local Agenda 21 processes. The team then carried out the trial certification of the respective municipal development planning processes according to current EMAS standards, and in October 2004, the Town of Überlingen was recognised as the first municipality with an EMAS-certified communal land-use planning process.

The handbook, "Environmental Management for Municipal Development Planning"<sup>1</sup>, was published by the project and widely distributed in English and German for use by municipalities throughout Europe. Local authorities wishing to do so can now base the integration of EMAS into their development planning process on the successful trials carried out by the LIFE project.

<sup>1</sup> [http://europa.eu.int/comm/environment/emas/local/pdf/ecolup\\_en.pdf](http://europa.eu.int/comm/environment/emas/local/pdf/ecolup_en.pdf)



### Project Number:

LIFE00 ENV/D/000326

**Title:** Environmental management for local land-use planning

**Beneficiary:** Bodensee-Stiftung, Germany

**Total Budget:** € 695,000

**LIFE Contribution:** € 347,000

**Period:** 01-Jul-2001 to 31-Mar-2004

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## Sustainable urban transport

Sustainable urban transport must consider a wide range of often competing issues, such as access to goods and services, safety, energy consumption, air pollution, noise, greenhouse gas emissions and land-use. This can only be achieved through the integration of diverse policies and the cooperation between administrative tiers, thereby ensuring that individual measures are implemented in line with – and not in contradiction to – efforts by other sectors or levels.

The Thematic Strategy on the Urban Environment strongly recommends local authorities develop and implement sustainable urban transport plans. Based on stakeholder consultation, these plans provide a long-term vision for urban mobility and serve to set policies and define objectives. Integrated into the city's spatial and environmental management plans, they should include locally relevant targets and indicators, as well as a transparent monitoring and reporting system.



# In Town, Without my Car: a Europe-wide movement towards sustainable mobility

On 22 September 1999, the LIFE project 'In town, without my car!' staged the first Europe-wide car-free day. Today, literally hundreds of cities across Europe celebrate 'In town, without my car!' day as part of European Mobility Week. The awareness-raising initiative has already reached millions of citizens and is now spreading to further cities in Europe and beyond.



*A reason to celebrate: citizens rediscovering their city on 'In town, without my car!' day.*

ronment decided to hold a country-wide car-free day to unite these scattered, isolated and one-off events. Together with the French Environment and Energy Management Agency (ADEME)<sup>2</sup>, it brought together 35 cities to hold the first French 'In town, without my car!' day in 1998.

The day was a great success, and the following year, a number of Italian and Swiss cities joined the initiative. "Some experiences are so good and so remarkable that you want to share them" thought the ADEME staff, and, together with the networks EUROCI-TIES, Climate Alliance and Energie-Cités, they secured LIFE funding to prepare the first Europe-wide 'In town, without my car!' day.

A pilot event was carried out on 22 September 1999 in a 'small' number of cities, in preparation for the full-scale campaign to take place the year after. 264 French, Italian and Swiss municipalities sealed off their inner cities to all traffic except public transport, bicycles, vehicles run on alternative fuel (such as liquefied petroleum gas or natural gas) and, of course, pedestrians.

Transport currently contributes almost a fourth of the world's greenhouse gas emissions and by 2010 it will be the largest single cause of climate change. The use of private motor vehicles is also a principal cause of air and noise pollution, the depletion of non-renewable resources, land consumption and the endangering of natural habitats. Across Europe, the migration of people from city centres to the suburbs is leading to increasingly dispersed settlement patterns, with low population densities and long travel distances. This phenomenon, known as urban sprawl, goes hand in hand with an increase in car ownership and commuter traffic. European local authorities are therefore confronted

with significant and increasing transport-related problems. Indeed, the European Commission's White Paper "European transport policy for 2010: time to decide"<sup>1</sup> states clearly that "The big problem that urban authorities will have to resolve, sooner than might be thought, is that of traffic management, and in particular the role of the private car in large urban centres".

In the 1990s, a small number of municipalities began staging car-free days as a means of demonstrating that other forms of mobility are possible, closing their inner cities to private motorised traffic and opening them to a wide range of mobility-related events. In 1997, the French Ministry of the Envi-

<sup>1</sup> COM(2001)370 final

<sup>2</sup> Agence de l'Environnement et de la Maîtrise de l'Energie

The campaign had three main objectives:

- > To raise awareness of the harm caused to both environment and public health by the absurd number of motorised private vehicles in towns.
- > To encourage people to use public transport, cycle, or walk more often, or at least use a combination of private car and these different transport modes ('intermodality'). To this purpose, it was important that citizens discover alternative means of transport without having to compromise their comfort or mobility.
- > To present urban centres in a different light, by enabling city dwellers to rediscover their town under less polluted, noisy and congested conditions. The place of pedestrians, cyclists and those dependent on public transport was to be reaffirmed vis-à-vis the users of private vehicles. Indeed, the campaign had a lot to do with improving the quality of urban life of all citizens.

On 22 September 2000, the European 'In town, without my car!' day went big. In 10 countries, 1,262 municipalities, ranging from small towns to capital cities, participated in the project, reaching an estimated 70 million citizens. In Spain alone, 215 towns took part, representing 45% of the country's population, and while in Ireland only five cities participated, they represented 40% of the country's inhabitants.

Photo: Eric Sarvan



### Rediscovering the town

For municipalities, as well as NGOs and associations from all over Europe, 'In town, without my car!' offered a platform to emphasise their commitment to sustainable urban transport, by consolidating existing or launching new policies and initiatives. Almost all participating cities used the day as an occasion to introduce permanent measures, such as new bus routes, bus/cycle lanes, pedestrian zones, bicycle parks, car-sharing schemes and stakeholder mobility advisory groups.

'In town, without my car!' allowed inhabitants to rediscover their town and reclaim their streets. Most cities organised cultural or sporting events to give the day a festive spirit. Information stands, exhibitions and roundtables were set up by numerous organisations on mobility and mobility-related issues. The initiative targeted groups of the population that are particularly dependent on public transport and often suffer from lack of access to mobility, such as teenagers, the elderly and the disabled.

*Widely recognised success: the 'In town without my car' / European Mobility Week' logos and graphic design.*

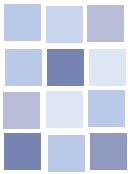
*Intelligent urban mobility. Unfortunately, new Member States continue to experience major shift away from public transport.*

To ensure inner-city businesses also profited from the event, several towns staged special commercial events to attract customers, thereby gaining the support of (sometimes sceptical) retailers and restaurant owners. The campaign even developed a good-practice guide, available on the project website, for shops and restaurants on how to display goods outside shops and arrange tables with food and drink on the car-free pavements.

Since traffic and emissions in the adjacent urban areas remained equally heavy, and because – especially in built-up areas – heavy atmospheric pollution disperses gradually, monitoring results showed that pollution levels generally decreased only slightly. Limiting road







## Sustainable urban transport

traffic in the town centres, however, did have an immediate impact on noise reduction. The ambient noise recorded on car-free day was not created by high levels of traffic, but by the merry hustle and bustle on the street!

Citizens' satisfaction with the event was also measured, and an opinion survey conducted in four participating towns showed that over 80% of those asked considered the initiative a good idea and wished to see it repeated.

### Partnership and participation

In the individual cities, factors that contributed significantly to the initiative's success were the close partnership between local authorities, public transport companies, NGOs, businesses and other relevant local actors; the involvement of both elected municipal officials and technical staff; and the colourful and festive character of the occasion. Ivo Cré, the campaign's former contact person from EUROCITIES, assures "if the political will exists and local stakeholders are involved, 'In town, without my car!' is almost always a success".



Photo: European Commission

The success of the campaign's international rollout has been greatly due to its multi-tiered approach. Firstly, the project targeted local authorities directly, inviting municipalities to establish their own 'In town, without my car!' day. Secondly, the initiative worked through the individual Member States, calling on national authorities

*Transport currently contributes around 24% of the world's greenhouse gas emissions and by 2010 it will be the largest single cause of climate change.*

to assign national coordinators – often the environmental ministries – to promote the campaign at the national level, to provide municipalities with technical assistance, and to assist them in liaising with other participating towns in the country. Thirdly, at the European level, the campaign's many partner associations and organisations helped drive the campaign forward by contributing technical assistance, and encouraging their respective members to join in. Finally, and decisively, in 2000, the then European Commissioner for the Environment, Margot Wallström, established 'In town, without my car!' as an official, regular and lasting European initiative.



*Peace at last: cyclists dare taking to the street (note the space that could be used for vegetation).*



## European Mobility Week

Following the success of the 'In town, without my car!' project, the campaign was extended to include a full week of activities, so as to give towns time to address sustainable mobility more adequately and prove that they truly had a long-term commitment to the issue. Local authority's credibility was further enhanced by the inclusion as a requisite in the campaign's charter of the implementation of at least one permanent measure promoting sustainable mobility. Cities that wished to join in but, for whatever reason, were unable to sign the Charter or entirely comply with its conditions, could nevertheless participate as 'supporting cities'. 316 local authorities from 21 countries across Europe signed the first European Mobility Week Charter, and a further 422 local authorities supported the event that ran from 16 to 22 September 2002, ending with the fifth 'In town, without my car!' day.

*SMILE compiled the results of permanent measures adopted by local authorities to promote sustainable mobility.*



## Joining the Campaign in 2006

The next European Mobility Week, and its 'In town, without my car!' day on Friday, 22 September, will focus on one of the biggest challenges the world is facing: climate change. Local authorities wishing to join the campaign are requested to:

- Register their events online, stating their compliance with the general outline and guidelines of the initiative; and
- Formally sign the European Mobility Week Charter.

The campaign's European coordination provides participants with a handbook on the event's practical organisation, and a dissemination kit containing several communication tools.

For further information and advice, towns are invited to contact their national coordinator or visit [www.mobilityweek-europe.org](http://www.mobilityweek-europe.org).

The campaign now focuses on a new theme each year, enabling a more thorough treatment of selected issues and ensuring fresh annual momentum. In 2003, the theme 'Accessibility' was chosen, as a contribution to the European Year of Persons with Disabilities. 2004 focused on 'Safe Streets for Children', while 2005 placed an emphasis on 'Clever Commuting'.

In 2004, the LIFE project 'Sustainable Mobility Initiative for Local Environment' (SMILE), implemented by the same group of partners together with several energy and environmental agencies, presented a study of the results of the many permanent measures implemented as part of European Mobility Week. An online database with good-practice examples for sustainable mobility was published, as well as a number of in-depth recommendations and guidelines for municipal decision-makers and planners<sup>3</sup>, all of which are available on the project website.

The LIFE programme has assisted in transforming 'In town, without my car!' from a single-city, single-day event to

an all-week, European-wide campaign. More than 950 cities and towns were involved in European Mobility Week 2005 and over 1,450 participated in its finale, 'In town, without my car!', reaching an estimated 170 million citizens in more than 30 countries.

The campaign is now also enjoying increasing popularity outside Europe, with numerous cities in Argentina, Brazil, Canada, Colombia, Indonesia, Japan, Taiwan, USA and Venezuela organising events following the guidelines of the European Charter. The challenge now, says the campaign's focal point at EUROCITIES, Valérie Bénard, is to go global.

### Project Number:

LIFE99 ENV/F/000459

**Title:** European day 'In town, without my car!'

**Beneficiary:** Agence de l'Environnement et de la Maitrise de l'Energie, France

**Total Budget:** € 2,046,000

**LIFE Contribution:** € 1,023,000

**Period:** 01-Apr-1999 to 15-Apr-2001

**Website:** [www.22september.org](http://www.22september.org) or [www.mobilityweek-europe.org](http://www.mobilityweek-europe.org)

**Contact:** Valérie Bénard

<sup>3</sup> LIFE00 ENV/F/000640. [www.smile-europe.org](http://www.smile-europe.org) or, for a full report, see "Best LIFE-Environment projects 2004-2005", European Commission, 2005



# IMMACULATE: Piloting the application of clean-vehicle technologies

Through the integrated and multi-level application of clean-vehicle technologies and other innovations in urban transport, the IMMACULATE project demonstrated cost-effective means of improving air quality and reducing noise levels.



*The IMMACULATE website contains information on clean-vehicle technologies and other innovations in urban transport.*

Greece is the fourth largest producer of CO<sub>2</sub> emissions in Europe<sup>1</sup>, a large part of which is generated by road transport. With a population of approximately one million, Thessalonica is the metropolitan centre of northern Greece. A financial and transportation hub, it has seen a striking 76% growth in the number of vehicles from 1990 to 2001. As a result, it is heavily congested, and air and noise pollution levels are unacceptably high, particularly in the city centre.

Accordingly, the chief objective of the LIFE project IMMACULATE was to contribute to improving the

<sup>1</sup> Transport and Environment Reporting Mechanism (TERM) 2001 report: <http://reports.eea.eu.int/term2001/en>

air quality and reduce noise levels in Thessalonica. This was to be achieved by combining clean-vehicle technologies (such as electric power-assisted bicycles, electric scooters and a hybrid car) with other innovations in urban transportation (including enhanced driver information services, vehicle telematic systems and smart-card technology).

Led by the Hellas Centre for Research and Technology, the project consortium comprised the Institute of Accelerating Systems and Applications, the Municipality of Thessalonica, the European Electric Road Vehicle Association and the Trans-European Consulting Unit of Thessalonica.

## Transport telematics

A series of complementary and interrelated tasks were undertaken, including:

- > An analysis of the specific mobility needs of different user groups and respective scenarios of transport use.
- > The definition of functional and technical specifications of the vehicles and state-of-the-art telematic applications to be employed (for instance for vehicle localisation or fuel-level monitoring and traffic management), including performance benchmarks based on an analysis of the city's current transport and air pollution situation.

- > The testing of the vehicles and telematic technology in the city under real-life conditions.
- > The conducting of technological, social and financial feasibility assessments, cost-environmental benefit analysis and a risk analysis.
- > A review of the Greek and European legislative framework regarding clean vehicles, including an evaluation of relevant local, national and European mobility-management policies, as well as the identification, clarification and documentation of organisational and insurance issues.
- > The formulation of application guidelines and policy recommendations, as well as their dissemination at national and, through the European Electric Road Vehicle Association, at the European level.

**Project Number:**  
LIFE02 ENV/GR/000359

**Title:** Improvement of urban environment quality through an integrated application of clean vehicle technologies

**Beneficiary:** Hellas Centre for Research and Technology / Hellenic Institute of Transport, Greece

**Total Budget:** € 1,273,000

**LIFE Contribution:** € 570,000

**Period:** 01-Sep-2002 to 28-Feb-2005

**Website:** <http://immaculate.ece.ntua.gr>

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# CATCH: Integrated strategies for cleaner mobility

The CATCH (Clean Accessible Transport for Community Health) project demonstrated the effectiveness of an integrated package of practical measures for more sustainable mobility.

The project aimed to reduce the environmental impacts of transport by developing and implementing an integrated approach to transport-related environment policy in Liverpool (UK). This was coupled with the transfer of knowledge and experience to Accession Countries and to Southern Europe through the participation of partners in Suceava (Romania) and Potenza (Italy).

CATCH sought to improve air quality both directly, for instance through the use of clean fuels and reductions in traffic, and indirectly through increased use of public transport, cycling and walking. A greater understanding of the impacts of personal travel-decisions on air quality, health and the quality of urban life was to be achieved among the local community.

The project fostered multi-disciplinary cooperation between transport and land-use planners, environmental health officers, as well as other public and private sector organisations. It established a new agency to promote the widespread introduction of clean fuels, the implementation of green travel plans and the promotion of environmental objectives within regeneration plans.

## A complementary suite of measures

A wide range of hard and soft measures were adopted and demonstrated. An air-quality management area was established in Liverpool's city centre, together with a corresponding air-quality action plan. Particulate traps were installed on 104 city buses, 16 of which were kitted with exhaust gas re-circulation equipment to reduce NOx emissions – the biggest trial of this technology in the UK. A city-centre shuttle route was initiated, operated by six diesel-electric hybrid buses – the first fleet of such vehicles in the UK – to encourage modal interchange and support sustainable travel in parallel with the city centre's regeneration.

The many activities in Liverpool included: the adoption of innovative pollution monitoring techniques; the production, in partnership with local stakeholders, of six community mobility plans incorporating sustainable transport modes; the setting up of a community cycle training programme; the operation of information points on sustainable mobility; and the testing of advanced pollution-monitoring techniques with a view to establishing a real-time particulate mapping tool using existing CCTV systems.

## Project Number:

LIFE02 ENV/UK/000136

**Title:** Clean Accessible Transport for Community Health

**Beneficiary:** Merseyside Passenger Transport Executive, UK

**Total Budget:** € 3,945,000

**LIFE Contribution:** € 1,494,000

**Period:** 01-Sep-2002 to 31-Aug-2005

## Website:

[www.cleanaccessibletransport.com](http://www.cleanaccessibletransport.com)

**Contact:** Alan Lewis, Karen Booth

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The transferability of solutions was a central objective, and the project identified a series of potential barriers to the implementation of different measures, which were categorised under the six headings: political, institutional, financial, awareness-related, technical and legal/regulatory. The topography of Potenza, for example, meant that hybrid buses were considered unsuitable for the city. In Suceava, on the other hand, the lack of technical expertise on hybrid vehicles made liquefied petroleum gas (LPG) vehicles more feasible as a first step towards the use of cleaner fuels. Many of the factors influencing greater transferability are context-specific and therefore differ from city to city, and national policies and legislation have an especially strong influence on the choice of methodologies and therefore on the outcomes achieved.

*Analysis of the transferability of solutions applied in Liverpool to the partner cities of Potenza and Suceava.*

Measure	Potenza			Suceava		
	Technically Applicable?	Applied?	Planned?	Technically Applicable?	Applied?	Planned?
Particulate Traps	Y	N	N	Y	Y	Y
Exhaust gas Recirculation	Y	N	N	Y	N	N
Hybrid buses	N	n/a	n/a	Y	N	N
City Centre Shuttle Service	Y	N	(Y)	Y	N	N
Air Quality Action Plan	Y	N	N	Y	N	Y
Support Infrastructure	Y	N	N	Y	Y	Y
Information Bureau	Y	N	Y	Y	Y	Y
Healthy Travel Promotion	Y	N	Y	Y	N	N
Pollution Monitoring	Y	N	N	Y	N	N



# GOAL: Reducing noise emissions while promoting personal fitness

An integrated approach to improving conditions for healthy lifestyles links noise abatement to the promotion of health-enhancing physical activity

More than 120 million people in the European Union are affected by noise levels on the facades of their buildings above 55 dB, and in a 1999 survey carried out in Graz, Austria, the effect of traffic on the environment was ranked one of the city's most severe problems. As a result, the municipality's environmental agency launched the GOAL (Healthy without Car and Noise<sup>1</sup>) project, which adopted an innovative approach that combined the technical aspects of noise management with personal fitness. A series of initiatives were implemented, including:

- > A mobile 'noise-awareness laboratory' was set up on a city bus, equipped with computers providing information and advice on noise abatement, as well as a noise simulation programme that is also available on the project website.

- > More than 550 bus and taxi drivers were trained in 'low-noise' driving styles. The course now forms an integral part of the training programme of the Transport Association of Graz and the company Radio Taxi 878.
- > In cooperation with an insurance company, 'mobility action programmes' were initiated offering medical checks to participants to measure the improvements in their health, achieved by changes in their means of mobility.
- > Dissemination focussed on local schools and nurseries so that teachers and children would act as multipliers. This resulted in a 20% increase in the number of children walking and being walked to school.
- > The project trained 14 local agenda managers in selected residential areas to facilitate neighbourhood participation in the development and implementation of noise-related measures such as reductions in speed limits.

## Several subsequent projects

The project beneficiary states that collectively these initiatives saved 861,000 km worth of car journeys – the equivalent to a saving of 120 tonnes of CO<sub>2</sub>, 0.5 tonnes of Nitrogen Oxides (NO<sub>x</sub>) and 0.4 tonnes of Volatile Organic Compounds (VOCs) emissions.

The project, which won the Austrian Transport Association's<sup>2</sup> Mobility Prize in 2003, has been presented at several



More than 550 bus and taxi drivers were trained in 'low-noise' driving styles.

international events, including the Velo City Conference in Paris and the EC's Green Week 2005. GOAL has contributed to the European Local Transport Information Service (ELTIS), the World Health Organisation's (WHO) HEPA Europe network and the CULTURA campaign<sup>3</sup>. A number of projects have been developed in Austria, France, Liechtenstein, the Netherlands, Sweden and the UK that follow the GOAL project's approach of integrating the issues of mobility and health. The methods developed by the GOAL project are now being applied to the LIFE project KAPA GS<sup>4</sup>, which aims to reduce particle matter emissions from traffic in the cities of Graz, Klagenfurt (Austria) and Bolzano (Italy).

### Project Number:

LIFE00 ENV/A/000240

**Title:** Graz: Noise and emission reduction through the promotion of alternative means of transport

**Beneficiary:** Stadt Graz – Umweltamt, Austria

**Total Budget:** € 1,013,000

**LIFE Contribution:** € 504,000

**Period:** 01-Jan-2001 to 30-Jun-2003

**Website:** [www.goal-graz.at](http://www.goal-graz.at)

**Contact:** Rudolf Ruthofer, Wolfgang Thiel

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<sup>1</sup> *Gesund Ohne Auto und Lärm*  
<sup>2</sup> *Verkehrsclub Österreich (VÖÖ)*  
<sup>3</sup> [www.mobility-cultura.net](http://www.mobility-cultura.net)  
<sup>4</sup> LIFE04 ENV/AT/000006:  
[www.feinstaubfrei.at](http://www.feinstaubfrei.at)





## Climate change

Urban areas have an important role to play in both reducing and adapting to climate change. The heating and lighting of buildings alone produces around a third of all greenhouse gas emissions, and urban traffic accounts for over a third of transport-related CO<sub>2</sub> emissions. At the same time, urban areas are themselves vulnerable to the consequences of climate change and local authorities must be prepared for an increase in the frequency of intense rainfalls, storms, heat waves and water shortages.

The Thematic Strategy on the Urban Environment states that urban management plans should assist local authorities in their efforts on climate protection by setting targets for the management of energy and greenhouse gas emissions in their respective cities, and by integrating energy efficiency and the reduction of greenhouse gas emissions into their policies, planning and procedures.



# PRIVILEGES: Successfully reducing local authorities' CO<sub>2</sub> emissions

WWF and the Town of Chalon-sur-Saône demonstrate how municipalities across Europe could effectively contribute to lowering greenhouse gas emissions by integrating climate protection into their policies, planning and procedures.

Seldom is the concept “think globally, act locally” put as much to the test as it is with the question of climate change. While this challenge of reducing greenhouse gas emissions is one of the greatest we face, most municipalities and individuals feel powerless by what is perceived as a daunting global and political issue. Nevertheless, though measures adopted at the EU and national levels are essential, fulfilling the Kyoto Commitments also depends to a great extent on effective and widespread local action.

Since the mid 1990s, the World Wildlife Fund (WWF) had been encouraging local authorities in the country to do their share in protecting the global climate. By 2001, however, Jean-Stéphane Devisse of WWF-France was tired of not being able to answer adequately municipalities that said “Sure, we’d like to – but how?”. The PRIVILEGES project was conceived to provide answers to the question.

At the time, a few larger cities were known for their work in reducing greenhouse gas emissions. Hardly any examples, however, existed of good practices in small towns, posing the question whether smaller local authorities had the capacity and the money to engage in climate protection. Solutions generated by the PRIVILEGES project needed to be concrete and simple, enabling their implementation by local authorities, regardless of their size or budget.

*1 Projet d'Initiative des villes pour la réduction des gaz à effet de serre*

*One reason the Town of Chalon-sur-Saône was chosen was its long record of environmental initiatives.*



## A suitable testing ground

With only a rudimentary notion of what a ‘local climate plan’ could look like to offer, WWF published an online call for expressions of interest, to find a town that would be willing to act as ‘testing ground’. With 52,000 inhabitants, Chalon-sur-Saône, in Burgundy, was chosen due to its record of environmental initiatives and its big greenhouse gas-emitting production industries. A further important factor was the existence of a ‘Maison de l’Environnement’ that was created by the municipality in the early 1990s. This association of enterprises, which works to improve the environmental performance of businesses, facilitated the project’s access to the private sector.

The PRIVILEGES project brought together a consortium unusual for France, comprising the international NGO WWF; the Municipality of Chalon-sur-Saône; the local association Maison de l’Environnement, and the public agency ADEME (Agence de l’Environnement et de la Maîtrise de l’Energie).

There being no comparable forerunner initiatives to go by at the time, neither





*Hard work: 17km of new bicycle lanes were introduced.*

WWF nor ADEME knew what targeted reduction in CO<sub>2</sub> emissions would be realistic. Nevertheless, the town's mayor, Michel Allex, supported the initiative and agreed to sign the LIFE contract, which included an obligation to a 5.2% reduction in CO<sub>2</sub> emissions. Chalon-sur-Saône had thus laid a wager that it now had to win. Needless to say, the project enjoyed strong political backing throughout its implementation.

To obtain know-how on measures that small towns could take to reduce CO<sub>2</sub> emissions, a knowledge base of existing good practices was established. The compilation was also important for tactical reasons. Around the world, local decision-makers are much more likely to be convinced – and pressured – by good examples from their home country, rather than from elsewhere. Therefore, the online database, which was updated in summer 2005, comprises 100 concrete and replicable good practices from various sized towns in France. All entries feature the phone numbers of the registered focal points, increasing the chances of decision-makers reaching for the phone to speak directly with their counterparts from other municipalities.

### Supporting a sporting spirit

At the outset, the municipal team assigned with developing an action plan had little idea of how to achieve the set target, says Gilles Manière, who headed the PRIVILEGES programme in Chalon-sur-Saône. Like most municipalities, Chalon-sur-Saône did not have the capital for major investments. Furthermore, additional expenditures related to emission reduction had to be financially justified vis-à-vis the constituency. The municipality therefore opted to implement a comprehensive set of smaller measures, for instance, only purchasing new equipment when the old machines were anyway due to be scrapped. The main approach was to ensure that the goal of decreasing CO<sub>2</sub> emissions was mainstreamed into all policies and infrastructural planning, operations and procurement procedures.

Thanks to a serious awareness-raising effort, keeping this objective in mind became second nature for many of the administration's staff. The nature of the challenge and the political backing the initiative enjoyed, fostered a collective sporting spirit, and numerous small solutions were found across all tiers of administration.

An investment in energy-saving street lighting, amortised within 18 months, resulted in a 20% reduction in energy consumption and a 59% increase in bulb luminosity. A similar investment in traffic lights had an amortisation period of five and a half years. 15% of the municipality's fleet of light vehicles now runs on liquefied petroleum gas (LPG), and other municipal vehicles have had their engine's tweaked, thereby achieving a total reduction of 8% in CO<sub>2</sub> emissions. Improving the energy-efficiency of the municipality's buildings by installing automatic thermostats and, with time, improv-

ing insulation also contributed significantly to reducing emissions as well as operational costs.

The biggest emission reductions were achieved by the building of two cogeneration power plants, one with a wood-fired boiler. These were needed to provide heat to the new neighbourhood of Saint-Jean-des-Vignes, which itself was planned in keeping with strict eco-efficiency criteria. The new power plants enabled the town to cut the greenhouse gas emissions of its heating provision by 11.1% in two years.

The town's electricity and heating bill became a central document for the local authority's financial and environmental accountability. 5,220 tonnes of CO<sub>2</sub> were saved in 2004 alone – the equivalent of about €150,000 on the EU emissions market. Only two years after the project began, Chalon-sur-Saône's local authority surpassed its target of 5.2%, achieving an impressive 5.8% reduction in the greenhouse gas emissions of its buildings, public lighting and vehicle fleet.

*Investments in energy-saving traffic lights and street lighting have pay-back periods of one and a half and five and a half years respectively.*







### Poor private sector participation

Generally, a local authority is only directly responsible for a small part of its territory's CO<sub>2</sub> emissions. Therefore, while bringing its own house in order, the local authority, with the help of WWF, also sought to engage Chalon-sur-Saône's industrial sector. Based on a method designed by ADEME, PRIVILEGES proposed assessments of the energy and materials flows of industrial plants in the Chalon-sur-Saône area. These were to be followed by an 'eco-industrial' action plan focusing particularly on reductions in the consumption of energy. Together with the municipality, local companies were to implement the action plan and monitor its impact.

However, efforts to engage the private sector fell short of their goals. Despite the fact that the analysis was 80% financed by the project, only 30 of the 100 companies invited to undertake in-house assessments showed interest, with only 18 finally participating, representing more than 100 employees.

Jean-Stéphane Devisse says that enterprises consider data on production methods or energy consumption to be corporate secrets, and they are therefore disinclined to disclose such information. Furthermore, while Chalon-sur-Saône's local authority has one principal decision-maker, namely the mayor, its private sector has over 450 chief executive officers, who would have had to be won over. The greatest barrier to private sector participation, however, was the general amortisation period of 10 to 15 years for eco-efficiency investments in buildings and equipment, which is well beyond the usual two to five-year financial horizon of small- and medium-sized enterprises.

If all 18 participating firms were to implement the recommendations provided by the project, a 10% emission reduc-



tion could be achieved over a five-year period. At present, however, emissions have only been reduced by 1.5%. The most important factor that would motivate firms to improve their performance in terms of energy efficiency would be a rise in energy costs.

### Communicating with the community

Parallel to its efforts to improve the performance of its municipality and enterprises, Chalon-sur-Saône also sought to engage the community. Measures included financial incentives such as offering a bonus of €100 for every square metre of solar panning installed on private homes, and the creation of 17km of new bicycle lanes. According to WWF, electricity consumption in France could be reduced by 10 to 20% without any decrease in living standards, if citizens and employees were simply to switch off lights and office equipment when not needed. Awareness-raising therefore played a central role in the project. Activities included the publishing of an online database with good practices for citizens when at home, at work and when travelling; the creation of two moving exhibitions on climate change and energy saving; and the development of a 'One More Degree' teaching kit for use in schools (see box).

*Awareness-raising at work, home and school played a central role in the project.*

Chalon-sur-Saône expects to have achieved a further 10% reduction in its local authority's greenhouse gas emissions during 2005<sup>2</sup>, resulting in a total reduction of around 20% since PRIVILEGES began. The town is now seeking to expand the implementation of measures to the around 100 municipalities that, together with Chalon-sur-Saône, form the Pays du Chalonnais. In 2003, Chalon-sur-Saône received the Territoria Prize in the category of the environment for having the most innovative campaign, and in 2004, the city's scheme to reduce emissions of greenhouse gases received the Rubans Prize for sustainable development. From March to September 2005, Chalon-sur-Saône and the PRIVILEGES programme was among the French exhibits at the World Exhibition in Aichi, Japan. And in June 2005, Chalon-sur-Saône presented its achievements to the former vice-president of the United States of America, Al Gore, at the United Nation's World Environment Day in San Francisco.

<sup>2</sup> Final figures for 2005 will only be available during 2006



## Playing – an important part

Based on an idea by Georges Emblanc<sup>3</sup>, the children's training set 'One More Degree' was developed in cooperation with the Association Française des Petits Débrouillards and ADEME. Children are an interesting target group because parents can be reached through their children and, soon enough, children themselves grow up to be adults.

The first part of the training set contains 30 science experiments that seek to stimulate discussion on the topics: atmosphere, climate, human activities, and the impacts of these activities. As many politicians and municipal staff do in real life, school teachers often display an initial reluctance in taking the game on. In both cases, the prime reason is a lack of knowledge. Therefore, in-depth information and teaching ideas are also provided. The second, more playful part of the training set features a board game on the above three topics and on everyday things one can do to help protect the climate.

The game encourages children to come up with their own questions and answers on the issue of climate change, thereby developing awareness of the need to act, possible solutions and the complexity of these solutions' implications. Pupils can apply what they have learnt to their own school and homes.

The game's content has been rated "excellent" by the Swiss Foundation for Environmental Education<sup>4</sup>. 300 sets were produced as part of PRIVILEGES, with 3,000 produced in total. Tens of thousands of school children have since played and learnt from the game.

<sup>3</sup> [gemblanc@wwf.fr](mailto:gemblanc@wwf.fr)

<sup>4</sup> <http://www.educ-envir.ch/fr/documentation/detail.asp?RecId=932>

*The board game / training kit "One More Degree" was rated "excellent".*



PRIVILEGES has proven that effective and cost-efficient measures exist for local authorities to reduce their greenhouse gas emissions, sometimes even faster than specified by Europe's commitment to the Kyoto Protocol. Jean-Stéphane Devisse speaks of the project's "paradox innovation", which lies in the methodical use of simple measures to achieve significant results. The project's approach can therefore easily be replicated across Member States.

Jean-Stéphane Devisse jokes about how France has "as many parishes [i.e. municipalities] as churches" – over 36,000 in all. PRIVILEGES sought to demonstrate to these mostly very small towns that they too can contribute their share to reducing climate change. The cumulative effect of numerous municipalities in France and other Member States following suit would have a significant impact at the European level. In fact, because 74% of France's electrical energy is nuclear, similar measures taken in countries where a higher percentage is generated from fossil fuel



*Chalon's local authority achieved an impressive 5.8% reduction in its greenhouse gas emissions.*

would result in even greater reductions in greenhouse gas emissions.

Cities are slowly beginning to rise to the challenge of climate protection, visiting initiatives such as Chalons-sur-Saône, BedZed in London, the Vauban neighbourhood in Freiburg (Germany) or Stockholm's new Hammarby-Sjöstad district. And today, when approached by municipalities for help, WWF has the knowledge, experience and credibility needed to support Europe's towns and cities in their climate protection initiatives.

### Project Number:

LIFE02 ENV/F/000289

**Title:** Cities program for greenhouse gas reduction Chalons-sur-Saône

**Beneficiary:** World Wildlife Fund (WWF), France

**Total Budget:** € 712,000

**LIFE Contribution:** € 356,000

**Period:** 01-Sep-2002 to 31-Jan-2006

### Website:

[www.programme-privileges.org](http://www.programme-privileges.org)

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# CARRA: Linking CO<sub>2</sub> reduction to urban regeneration

The CARRA (Carbon Assessment and Reduction in Regeneration Areas) project aimed to link climate protection and urban regeneration in an underprivileged part of London

Islington, London's smallest borough, is located to the north of the city. With a population of 179,000 and an ethnic-minority population of around 20%, it is an area of significant social contrasts, comprising some high-income residences but also with 55% of the population living in council housing.

Headed by the Borough of Islington, in partnership with the Peabody Trust, the Islington Energy Advice Centre and the London Metropolitan University, CARRA addressed climate change at the local level via an area-based approach that aimed to find ways of engaging the citizens of a particularly deprived part of the borough in climate protection. These residents constituted a challenging target group since many of them were unaware of climate-related issues and of their own potential to contribute towards mitigating climate change.

**Project Number:**

LIFE02 ENV/UK/000147

**Title:** Carbon Assessment and Reduction in Regeneration Areas

**Beneficiary:** London borough of Islington, UK

**Total Budget:** € 422,000

**LIFE Contribution:** € 270,000

**Period:** 01-Nov-2002 to 31-Dec-2004

**Website:** [www.islington.gov.uk/Environment/Planning/PlanningPolicy/GreenPlanning/CARRA/](http://www.islington.gov.uk/Environment/Planning/PlanningPolicy/GreenPlanning/CARRA/)

**Contact:** Miles Duckworth

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## Carbon budgeting

The initiative sought to develop a 'carbon budget' for the area's CO<sub>2</sub> emissions and then determine whether CO<sub>2</sub> budgeting, linked to CO<sub>2</sub> reduction initiatives, would be relevant to – and capable of engaging – the many different stakeholders present in the urban regeneration area.

The project was implemented in three main phases. Firstly, energy-use and CO<sub>2</sub> emissions in the area were determined and recorded in a 'carbon baseline'. This was done by defining and collecting suitable information on energy consumption from which to extrapolate CO<sub>2</sub> emission values. Data was sometimes difficult to obtain and therefore alternative methods were devised and applied to the baseline analysis, which calculated the amount of CO<sub>2</sub> emitted in the area at the start of the project at 112,356 tonnes per annum.

Secondly, five 'energy action' projects were implemented to engage different sectors of the community including schools, residents of housing estates, and small and medium-sized enterprises (SMEs) in reducing energy use and CO<sub>2</sub> emissions. These initiatives linked climate change to energy-use and regeneration issues identified in the area's development strategies. An evaluation matrix was applied to each action project to assess its performance against a range of policy goals.

Finally, a review was carried out to judge the overall effect of the action projects on the baseline situation. The London Metropolitan University assessed the extent to which the CARRA project achieved its aim of engaging citizens and stakeholders and, ultimately, integrating climate-related considerations into local policies, programmes and actions. Following the implementation of the five action projects and the overall impact of the CARRA project, the reviewed baseline figure at the end of the project was estimated at 110,095 tonnes per annum, that is a reduction of 2.1%.

Though the 'carbon budgeting' approach itself did not prove as effective as expected for increasing levels of citizen participation in reducing CO<sub>2</sub> emissions, CARRA's action projects and awareness-raising material were successful in engaging different sectors of the community in local action to address climate change.

*Turnpike House was one of the areas targeted by the project.*



# Sustainable Retrofitting: Service packages and quality standards

**A network of service providers offers certified product quality and alternative financing solutions for the sustainable renovation of energy-inefficient buildings.**

Household heating and lighting accounts for over 40% of Europe's total energy consumption. The retrofitting of municipal and private residential buildings often incurs substantial costs and prevents measures that would be financially and energetically sensible in the long run from being taken. Moreover, for reasons of cost, renewable energy and environmentally friendly building materials are very seldom used during refurbishments, although construction and demolition account for around 34% of waste generated in Europe.

The Graz Energy Agency aimed to develop a service market for the environmentally friendly renovation of buildings. A range of activities were undertaken including:

1. As demonstration initiatives, municipal blocks of flats were renovated to test different renovation options, design calls for tenders and evaluate submitted bids.

By the end of the project, 20 residential buildings (Denggenhofsiedlung) had been eco-efficiently renovated and a further 74 were being retrofitted. As a result of the project, the renovation of three residential estates (Daungasse, Asperngasse, and Wagner-Biro-Strasse) in Graz was awarded the 'Energieprofi' 2001 prize by the Austrian Minister of the Environment and the Austrian Society for Environment and Technology<sup>1</sup>.

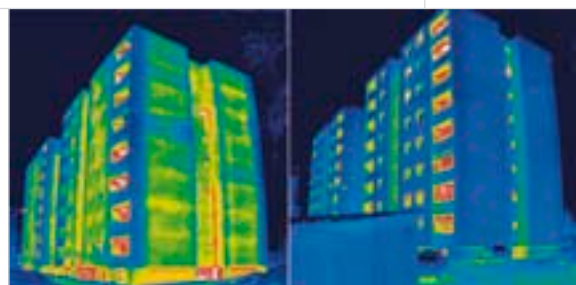
2. 21 companies from the construction industry – ranging from engineering offices to building service firms –

played an active role in establishing an 'ecological building renovation' network. The network had a view to creating a new market for regional firms offering high-quality products and services for sustainable renovation, the energetic and environmental assessment of retrofitting options, comprehensive environmentally friendly refurbishment packages, as well as alternative financing solutions such as third-party financing and performance contracting.

3. In order to stimulate demand, an information and marketing programme was implemented, targeted at building societies, owners of blocks of flats and municipalities. Quality standards were developed and two trademarks for service packages were introduced ('Grüne Wärme'<sup>2</sup> and 'Thermoprofit Plus') to provide quality assurance to potential customers.

The project involved a considerable amount of market analysis, including interviews with property owners and more than 200 enterprises from all fields of the building industry. A product catalogue with environmentally relevant building material was produced to assist planners and authorities when drawing up calls for tenders. Furthermore, an assessment system for the environmentally friendly retrofitting of buildings was developed in the form of a checklist based on the worldwide initiative "Green Building Challenge".

<sup>1</sup> Österreichische Gesellschaft für Umwelt und Technik  
<sup>2</sup> 'Green Heat'



*Monitoring the energy efficacy of buildings before and after retrofitting.*

The successful LIFE project paved the way for a bigger campaign to promote the ecological renovation of buildings. Several spin-off projects have since been initiated in Graz, including the retrofitting of two housing blocks with around 60 flats and a large administrative building.

## **Project Number:**

LIFE99 ENV/A/000392

**Title:** New services for the sustainable retrofitting of buildings

**Beneficiary:** Grazer Energieagentur GmbH, Austria

**Total Budget:** € 494,000

**LIFE Contribution:** € 247,000

**Period:** 15-Oct-1999 to 14-Apr-2002

**Website:** : [www.grazer-ea.at/cms/idcatart\\_188-lang\\_1-client\\_1-content.html](http://www.grazer-ea.at/cms/idcatart_188-lang_1-client_1-content.html)

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# S-House: Building on energy and material efficiency

The 'S-House' proves that office buildings can not only be designed to the highest energy-efficiency standards but also be built energy-efficiently using mostly renewable and recyclable materials.



*Renewable and recyclable: no metal or synthetic materials were used in the entire building.*

A 'passive house' is a building in which a comfortable climate is maintained with a minimal use of active heating and cooling systems – hence the term passive. With more than 1,000 such buildings, no country has as high a density of passive houses as Austria<sup>1</sup>. In line with the life-cycle approach, the S-House project aimed to prove that such passive houses can be built using only recycled or renewable raw materials, and with major reductions in energy consumption during the construction phase.

The building sector is characterised by an extremely high consumption of material and energy. Moreover, waste from construction and demolition accounts for around 34% of all waste generated in Europe, having a significantly adverse impact on the environment and creating substantial disposal costs.

The Centre for Appropriate Technology<sup>2</sup> (GrAT), at the Vienna University of

Technology, planned and constructed the S-House based on results obtained from research conducted in the framework of the 'Building of Tomorrow' programme, administered by the Austrian Federal Ministry of Transport, Innovation and Technology.

With an energy consumption of only 6 kWh/m<sup>2</sup>, the resulting office building not only meets the highest passive house standards<sup>3</sup>, but also demonstrates the effective employment of building materials derived from renewable and recyclable natural resources. Located in Böheimkirchen, 50 kilometres from Vienna, local materials were used for the building wherever possible, thereby reducing transport distances. Furthermore, numerous construction solutions were developed that enable materials to be easily reused at the end of the building's lifespan.

## Wrapped in straw

All the building's structural components and outer panelling are made of wood, and the entire building is 'wrapped' in straw due to its excellent insulating properties. The construction of conventional concrete walls was found to consume 10 times more natural resources than that of their wood and straw equivalents.

No metal or synthetic materials were used in the entire building. For example, a specially developed 'straw screw' was developed to afford maximum strength when applied to fasten wooden planks on the straw bales used for the outer walls' insulation.

The screw, which is a good example of the project's approach, is made of Treeplast®, a biosynthetic material that combines the advantages of renewable raw materials with those of modern synthetic material processing such as injection moulding.

The project, along with its integrated approach that combines a diverse range of sustainable construction techniques and materials, has received recognition at home and abroad, winning both the Austrian 'Energy Globe' award in 2005, and the 'Global 100 Eco-Tech Award' at the EXPO 2005 in Japan.

<sup>1</sup> See, for instance, the BBMPassiv project (LIFE02 ENV/A/000285), which was selected one of the 'Top Five' LIFE-Environment projects 2004-5.  
<sup>2</sup> Gruppe Angepasste Technologie  
<sup>3</sup> To achieve certification by the accreditation agency Passivhaus Dienstleistung GmbH (Darmstadt, Germany), a building must consume less than 15 kWh/m<sup>2</sup> per annum for heating.

**Project Number:**  
LIFE00 ENV/A/000243

**Title:** Innovative use of renewable resources demonstrated by means of an office and exhibition building

**Beneficiary:** GrAT (Gruppe Angepasste Technologie), TU Wien, Austria

**Total Budget:** € 1,507,000

**LIFE Contribution:** € 752,000

**Period:** 01-Jun-2001 to 31-May-2005

**Website:** [www.s-house.at](http://www.s-house.at)

**Contact:** Robert Wimmer

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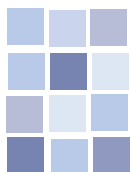


Photo: Eric Savary

## Nature and biodiversity

Urban green areas contribute significantly to the quality of life of urban citizens and are often highly valued by local communities. Some even contain endangered species. Urban wild spaces, however, are subject to increasing and complex development pressures from diverse stakeholders.

The Thematic Strategy on the Urban Environment states that sustainable urban design plays a central role in reducing urban sprawl, soil sealing and the loss of natural habitats. Green spaces need to be managed in the context of an overall urban strategy that integrates competing urban policy requirements. A participatory approach to planning processes can help overcome often conflicting development needs, and also raise awareness of the benefits of urban biodiversity to both wildlife and communities.



# SUN: Increasing community access to urban biodiversity through stakeholder engagement

A LIFE-Environment project on biodiversity demonstrates how urban municipalities can develop effective and inclusive community participation tools to plan and undertake measures to enhance the environmental value of their green space.



*The project sought to expand the range of those involved in biodiversity.*

The International Convention on Biodiversity adopted at the Earth Summit in 1992 foresees the development of national strategies for the conservation and sustainable use of biological diversity. While other Member States only have national biodiversity plans, the UK promotes breaking these down into local biodiversity action plans (BAPs) to better provide for the fact that many important decisions are taken and implemented at the local level. The UK therefore has a lead role in the decentralisation of biodiversity management.

Located to the south of the city, with a population of around 180,000 inhabitants, the London Borough of Sutton has one of London's widest ranges of income. While some of its southern

parts, situated near London's green-belt, have large houses with ample greenery, its north includes three of the UK's poorest wards. Sutton has long sought to be "the cleaner, greener borough", and its first environmental policy document was published 20 years ago. It was the first UK unitary local authority to be certified by the European Commission's Eco-Management and Audit Scheme (EMAS), and since 2000, all of the borough's 123 departments have achieved EMAS accreditation.

Urban spaces can sometimes be low in biodiversity, though Sutton, for instance, has a number of nationally important species including the small blue butterfly and the tree sparrow. However, for many city dwellers – and especially for lower income groups – they are the only chance of contact with nature and are therefore very important to the local community. As part of the London Biodiversity Partnership programme, Sutton was already in touch with the other London boroughs that got together to set up the SUN project. Sustainable Urban Planning Networks for Green Spaces (SUN) aims to improve communities' awareness of – and access to – local biodiversity through stakeholder involvement. The Boroughs of Sutton, Bromley, Redbridge, Richmond upon Thames, and Hounslow (represented by the Community Initiatives Partnership – CIP), were joined by the Municipality of Rome (represented by the non-profit association Legambiente), and the consultancy Global to Local (G2L).

All participating London boroughs are on the city's outskirts, bordering the rural counties. Due to changing lifestyles and internal immigration from other parts of the country, urban green spaces in England's southeast are subject to complex use requirements by different stakeholders and ever increasing development pressure. A participatory approach to policy planning and implementation can facilitate the further integration of urban biodiversity with other urban planning and development needs.

*Participation in decision-making and implementation helps promote a sense of 'ownership'.*





*Westmead allotments girls removing tree guards.*

Participation in decision-making and implementation can generate a sense of 'ownership' among a community. "If a group is in charge of writing a particular site's management plan, the participants are much more likely to stay on board for a long time, and are also more likely to work against planning pressures" says the SUN project's coordinator, Helen Woolston. The planning regime is heavily affected by public opinion, and as councillors' decision-taking can be lobbied by community stakeholders, this too is an important aspect of protecting urban biodiversity.

At the outset of the project, Bromley and Hounslow were the only boroughs with BAPs, and as living documents, these too were in need of revision. Except for G2L, which provided technical assistance throughout the project, all partners went through the same project steps. To begin with, 30 UK municipalities with good practice biodiversity strategies were identified. Urban biodiversity strategies were developed that built on these experiences. The general approach was to focus not so much on specific species, but on habitats such as rivers and wetlands, gardens and allotments, open grasslands and woods.

To find out what was important to the citizens of the respective boroughs, awareness-raising and consultation workshops were held. In Sutton, for instance, the River Wandle is one of the borough's main features and was given top priority by all groups.

Once community priorities had been identified, forums were set up to develop biodiversity action plans. A Biodiversity Action Plan Reporting System<sup>1</sup> (BARS) recently introduced in the UK was used to report on the BAPs' implementation in the London boroughs. As BARS is only available in the UK, Legambiente created a similar action plan reporting protocol for Rome.

<sup>1</sup> [www.ukbap-reporting.org.uk](http://www.ukbap-reporting.org.uk). The web-based system integrates all UK BAPs, thereby enabling a standardised reporting procedure.

*A cemetery very much alive with biodiversity.*

## Building on community networks

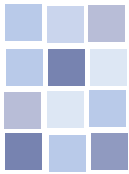
The project worked through existing groups and individuals active in nature issues. "There are some extremely knowledgeable and forthcoming persons out there," says Guy Harewood, SUN officer for Bromley, "and it is essential to tap into the expertise that the community has."

The partners, however, also sought to expand the range of those involved in biodiversity beyond the stereotype of the 'English, middle class, middle-aged' stakeholder. The Sutton Environment Network, for instance, still benefits from the commitment of the 'usual suspects' and the knowledge they have gained over many years. Today, however, community representation is much wider, and the network is enhanced by segments of the community that previously had little or no direct connection to biodiversity, for example, faith, disability and refugee groups.

One of the main lessons learnt was that addressing a 'general public' was not effective, and that one has to focus specifically on the many different groups comprising the community, such as church congregations, local horticulture and beekeeper societies, members of allotment centres, teachers and dog-walkers.







## Nature and biodiversity

G2L's Bruce Cockrean draws attention to the fact that green spaces are not always equally accessible to all groups, and that children from areas of high deprivation sometimes scarcely get to see any nature at all. People new to a country are often unaware of the existence of these areas, which can be small and hidden behind buildings. Families, in particular, are very glad to learn that enclosed green spaces exist that are safe, pleasant and open to them. To overcome the language barrier and reach those members of ethnic minority-groups with little or no English, information and questionnaires were made as simple and visual as possible, using, for example, pictures of the various species of insect or bird in question.

In all boroughs, adolescents were the group most difficult to win over. When addressed with the question of biodiversity, most pronounced that they "couldn't care less". Aimee Jones, SUN project officer for the Borough of Sutton, describes how it was important to find things the teenagers could connect with. While community allotments clearly left Sutton teenagers cold, the river was important to them, as many "hang out" there in their spare time. Aimee Jones observes that even people who understand little of biodiversity notice when a particular species disappears from the neighbourhood. One of the main message that the project sought to convey was that all areas of green, including small and intensely used patches, can be utilised to enhance a neighbourhood's biodiversity, and that this can be done without having to go from the extreme of an over-manicured lawn to that of a 'messy' biotope. Even small interventions in 'sterile' urban areas can do much to prevent species from leaving or encourage them to return.

### It's all about marketing

The project workshops combined awareness-raising and consultation, and took a variety of forms depending on borough and target group. Bromley, located in the southeast of the city, is London's largest borough in terms of area. One of the borough's main points of focus is the creation of a green corridor that will connect the urban north with the greenbelt land in the south, in an effort to counter the fragmentation of green areas. The population of Bromley is socially and ethnically relatively homogenous, and due to the prior existence of a BAP, people were more familiarised with the question of biodiversity than in some of the other boroughs. It was therefore possible to address people directly on the issue, for instance by offering them 'taster sessions' on how they could get involved in the practical side of BAP implementation. This was especially the case if people already identified with a certain site, for example a congregation with the churchyard, or students with their schoolyard. All in all, over 3,000 people were involved in consultations and actions in Bromley.

By way of contrast, simply inviting the public in Sutton to conventional workshops would not have resulted in the high and diverse attendance desired. Going out to the targeted groups, on the other hand, was very successful. The partners used a wide variety of channels to reach their audiences, such as local radio interviews, interactive sessions at 'youth parliaments', drama, photography classes, and ethnic sports events.

*Six-spot Burnett moth. Kidney vetch.  
Small blue butterfly.*

"It's all about how you enthuse people" explains Helen Woolston. "You almost need to know more about marketing than biodiversity". In fact, sometimes it was better to avoid the term 'biodiversity' altogether, until a minimum understanding for the concept it described had been created. The approach chosen was dubbed "biodiversity by stealth". "Join us at our biodiversity evening session on trees!" doesn't sell. So instead, the Ecology Centre organised the "Tree Extravaganza" funfair.





## Guidelines and good practices

The SUN project produced a number of reports with relevance to local authorities across Europe:

- Good practice stakeholder participation in urban biodiversity management.
- Good practice urban planning strategies for biodiversity.
- Good practices related to reporting on biodiversity action plan performance.
- Biodiversity action plan reporting protocol: the use of the UK reporting system BARS.
- A publication with practical guidelines for stakeholder engagement in local biodiversity planning (to be published after the project's final conference in July 2006).

These publications can be downloaded at:

<http://www.sutton.gov.uk/environment/sunproject/SUN+Reports.htm>.

And while visitors watched a professional tree climber at work, or waited in line to climb a scaling wall, they were informed about the Centre and about how they too could become active.

And so trainings on increasing species varieties in private gardens announced as "garden design workshops" were very well attended; children entomology courses were successfully advertised as "mini-beast hunting"; and the boys were just as eager as the girls to become "eco-warriors" and help in revitalising their schoolyard.

Unlike in the UK, biodiversity in Italy is managed at the regional level, and the project partner, Legambiente, worked on behalf of and with the Comune di Roma. Efforts in Rome focused on the River Tigris in the city's centre. Due to the river's state of degeneration, the city was turning its back on the river, and the aim is to revitalise the areas along its watersides both environmentally and economically. Actions include fun boat trips focusing on biodiversity, school visits, and handing out information pamphlets to local people on river taxis.

## Biological and human diversity

Though the BAPs are not statutory documents, the BAP Partnerships (which include the borough councils) have a certain tacit obligation to continue supporting the actions they recommend. The BAP implementation part of the SUN project is designed to be long-term, and due to the nature of the BAP planning and management, it is expected that the project processes will be extended to neighbouring municipalities, thereby ensuring a uniform approach over a wider area. This is important given that many of the key biodiversity sites run through several municipal boundaries.

The various methods developed and tested by the SUN project can help other urban municipalities to undertake biodiversity planning and citizen engagement without having to start from scratch. These techniques will also be transferable to sectors outside biodiversity and nature conservation. Other activities in local authorities that require wider citizen engagement and consultation might also find the process and results of this project useful, for example, those municipalities developing community strategies or Corporate Social Responsibility (CSR) action plans.

SUN has proven how new methods of stakeholder identification and engagement can bring together different local communities and organisations to effectively manage their green spaces in a way that benefits biodiversity, citizens' quality of life and the integration of minority groups. The project has also shown how successfully managing the diversity of wildlife within a community also involves successfully managing its social, age, ability and ethnic diversity.

*Pond clearance at the Eco Centre in Sutton.*



**Project Number:**  
LIFE03 ENV/UK/000614

**Title:** Sustainable urban planning networks for green spaces

**Beneficiary:** London Borough of Sutton, UK

**Total Budget:** € 1,824,000 (estimated)

**LIFE Contribution:** € 910,000 (estimated)

**Period:** 01-Sep-2003 to 31-Aug-2006

**Website:** [www.sutton.gov.uk/environment/sunproject/](http://www.sutton.gov.uk/environment/sunproject/)

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# Living River Liesing: A river runs free

Biological engineering is successfully applied in a large-scale river renaturation project in Vienna.

In the past half century, the River Liesing's course through Vienna has been heavily modified through flood-protection measures. These included a radical straightening and shortening of the river course, a lowering and hardening of its bed, the design of steep embankments and the prevention of vegetation from growing along the riverbanks. Ecological aspects were not taken into account, as the sole objective was to ensure a swift and safe flood discharge, and the interventions in the river's ecosystem have resulted in a dramatic loss of biodiversity.

The objective of the pilot project Living River Liesing, managed by the City of Vienna's River Engineering Department, was to maximise the ecological potential of the river. Covering 5.5 km of its course, the Living River Liesing project was part of a large-scale revitalisation project for the entire river and constituted the first river-restoration initiative of this size in an urban area.

A canal-like concrete stretch was redesigned into a semi-natural river that nevertheless meets tight flood protection requirements. Revitalisation activities included construction measures to restore the river's continuity by re-building bed drops, restoring semi-natural morphological conditions by integrating bays and areas of shallow water, re-establishing former meanders, constructing a semi-natural riverbed with a gravel substrate and restoring the river's natural transport capacity. The steep banks were flattened, partly enlarged and protected through bioengi-



*The River Liesing before and after renaturation.*

neering measures (such as willow fascines and wattle fences). Valuable existing mesoxerophytic grassland was preserved by removing it before construction work began and replanting it afterwards.

A string of aquatic ecosystems was established and new habitats were created for priority species such as the European beaver (*Castor fiber*) and the beautiful demoiselle (*Calopteryx virgo*). Diverse macrozoobenthos and river-specific fish species have repopulated the redesigned stretch of river.

## Biodiversity and quality of life

As the objective was not only to promote biodiversity but also to improve the quality of life of the city's inhabitants, a riverside pathway and a playground for children were constructed. Having a 'water playground' at their doorstep will be important for the environmental education of children, who are more likely to appreciate and want to protect what they know. Work was accompanied by intensive public relations activities. An information centre was operated in the project area, offering various publications and dealing with enquiries, requests and, when necessary, complaints.

Each of the project's many individual solutions can be applied independently or in combination for rivers with similar flow characteristics and environmental parameters, and the demonstrated bank protection structures can be applied to practically all European rivers.

By 2015, the entire Viennese part of the river Liesing will have been reconverted to a semi-natural river. Vienna will then have a new green corridor running through the city, offering its citizens an ideal environment to relax and enjoy nature.

**Project Number:**  
LIFE02 ENV/A/000282

**Title:** Demonstrative ecological reconstruction of a heavily modified waterbody in an urban environment

**Beneficiary:** Stadt Wien, Magistratsabteilung 45, Austria

**Total Budget:** € 2,005,000

**LIFE Contribution:** € 771,000

**Period:** 01-Oct-2002 to 31-Jan-2006

**Website:** [www.life-liesingbach.at/en/mainframe.htm](http://www.life-liesingbach.at/en/mainframe.htm)

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# Roof Greening: Augustenborg's botanical roof gardens

In Europe, millions of square metres of rooftops could easily be converted into natural green areas, as demonstrated by the Botanical Roof Gardens in Augustenborg, a suburb of Malmö, Sweden.

As cities continue to spread, green areas are being reduced in size and number. One response to this problem has been to consider roofs as locations for planting vegetation. Such roofs have significant environmental benefits. They are, however, generally expensive, as the roof must be designed to carry a substantial additional weight generated by plants and, above all, soil. A further cost factor is the high level of maintenance such gardens often require.

An alternative solution to conventional roof-greening is the so-called 'extensive green roof', which functions with a growing medium that has a thickness of only 15 centimetres or less and supports low-maintenance plants. The availability of thinner and lighter layers of growing medium makes it possible to 'green' large areas of roof, such as on industrial buildings or sports facilities.

Implemented by the municipality of Malmö<sup>1</sup>, the LIFE project examined the potential of green roofing within

the context of a much larger social and ecological renewal programme for the suburb of Augustenborg. It involved the greening of 9,500 square metres of industrial roofing, using various layers and types of growing medium to allow the monitoring and analysis of different solutions.

## Natural green cooling and insulation

The green roofs are sown, planted, or laid as prefabricated mats. Moss and sedum species are the main plants used. Water needs are met by natural rainfall, so the roofs need very little management.

The project, which was rated one of the best LIFE-Environment projects 2004-5, demonstrated a number of inspiring results:

- Green roofs enable a considerable reduction in storm water run-off. 60% of annual precipitation is absorbed by the roof and returned to the atmosphere through evaporation.
- Buildings' energy consumption can be reduced significantly, and their indoor climate improved, through the roofs' additional thermal insulation in winter and its provision of summer cooling through evaporation and transpiration.
- Green roofs can increase biodiversity in urban areas, making them not only of local but also of regional and national interest.

*Green fields: extensive green roofs require less growing medium and maintenance.*

- Green roofs can contribute to urban noise abatement.
- Roof greening can extend the life of a roof, offering savings in terms of maintenance and repairs.

The research work undertaken confirmed the various environmental benefits of the green roof installations, as well as the sustainability of such roofs under Scandinavian climate conditions. A number of postgraduate students and doctoral researchers have based research papers on the topic of green roofing in connection with the project.

The botanical gardens were opened to the public in April 2001 and have since become a unique attraction in Malmö. Opened during the project's LIFE phase, the visitors' centre continues to operate. The green roof area is maintained by the beneficiary and is expected to function for several decades.

<sup>1</sup> Malmö Stad Serviceförvaltningen

### Project Number:

LIFE98 ENV/S/000482

**Title:** Extensive roof greening

**Beneficiary:** Malmö Stad Serviceförvaltningen

**Total Budget:** € 1,394,000

**LIFE Contribution:** € 484,000

**Period:** 01-Sep-1998 to 01-Mar-2003

**Website:** [www.greenroof.se](http://www.greenroof.se)

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# Urban Woods: Sustainable management of people-friendly forests

The majority of Europe's urban population has been alienated from the woodlands that were once its natural environment. A Swedish-French project demonstrates new means of managing urban woodlands in a sustainable manner while increasing their recreational value.

The "Urban Woods for People" - project aimed to build the capacity and achieve the support of forestry organisations and forest owners, by demonstrating how, with proper planning and upkeep, urban woodlands can be made recreationally more attractive and safe in an environmentally responsible manner.

A collaboration between the Regional Forestry Board of Mälardalen (Sweden) and the French National Office of Forests<sup>1</sup>, the project also involved a number of municipalities, a national

*Activities targeted children, disabled persons, immigrants and elderly people.*



**Project Number:**  
LIFE00 ENV/S/000868

**Title:** Ways to increase people's recreational benefits from urban woodlands

**Beneficiary:** Regional Forestry Board of Mälardalen, Sweden

**Total Budget:** € 3,103,000

**LIFE Contribution:** € 1,498,000

**Period:** 01-Apr-2001 to 31-Mar-2005

**Website:** [www.svo.se/urbanwoods](http://www.svo.se/urbanwoods)

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governmental authority and an NGO from both countries involved in establishing pilot recreational areas in four urban forests surrounding Stockholm and Paris. While generally the participatory management of public forests focuses mainly on isolated patches of land, the project successfully involved several forests spread over a relatively large territory.

While environmental conditions were improved in the woodlands, the recreational and didactic value of the approximately 850,000 annual visits to the forests was also enhanced, through the implementation of more than 40 activities including field trips, presentations, training courses and conferences.

## Special needs groups

Groups like children, disabled persons, immigrants and elderly people were especially targeted, and more than 10,000 participants – twice the number expected – attended guided tours to get to know their local woodlands better. The range of people visiting forests is much wider than those using other municipal recreational facilities such as swimming pools and ice rings – and costs to the municipality are significantly lower per visitor.

To be successful, managing nature located close to urban areas requires a high degree of citizen involvement. In Sweden, pressure on private land through public use can pose significant problems for landowners, and the pro-

ject developed new insight into owners' standpoints, as well as means of promoting cooperation between proprietors, local authorities and the public.

In Sénart, near Paris, the project brought together representatives from 14 municipalities and 150 organisations to agree on long-term objectives for the forest's development. Around 50 meetings resulted in an agreed framework document regulating all activities within the forest. Though the process took two years, the municipality, forest managers, NGOs and the community, now agree on development objectives, management operations and recreational activities that would otherwise have caused conflict.

A number of innovative tools and methods were developed for zoning forest areas, mapping noise, classifying trails, managing waste, as well as disseminating good practices and lessons learnt. The project produced several publications targeting administrators, forest managers, urban planners and others working with urban nature<sup>2</sup>. A handbook on making forests more accessible to disabled people is believed to be one of the first of its kind. Equally novel are the activities targeting young people, a number of which caught the attention of professionals working, for instance, on issues of social integration.

<sup>1</sup> Office National des Forêts

<sup>2</sup> These publications are available either via [www.svo.se/urbanwoods](http://www.svo.se/urbanwoods), [www.svo.se/forlaget](http://www.svo.se/forlaget) or [www.onf.fr](http://www.onf.fr)

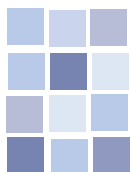




## Environment, health and the quality of life

Health and the quality of life are top priority areas of the Sixth Environment Action Programme. For people living in cities, a good quality of life depends largely on the quality of the urban environment. Nevertheless, nearly half of all EU citizens live in urban areas where existing air quality limits are breached. High volumes of traffic and noise, neglect of the built environment and a lack of open space also contribute to a lower quality of life, as well as a gradual weakening of the sense of neighbourhood and local community.

Different environmental policies and plans must be placed in the context of a strategic local framework. This enables an environmental management that can promote synergies and avoid duplications of – or discrepancies in – efforts undertaken to improve both the environment and the overall quality of life in an urban area.



# Mediterranean VerandaWays of conditioning open spaces and creating neighbourhood places

An eye-catching installation, affectionately nicknamed “el arbolito” (the little tree), aims to create a conditioned public area that affords a comfortable outdoor microclimate, promotes social interaction and provides the population of an anonymous new neighbourhood with a sense of identity.



*Enjoying a benign spring sun. Summer temperatures in the project area can reach 40°.*

tion of providing residential areas with local shopping facilities has largely yielded to commercial interests favouring large-scale shopping centres to be located further away.

Madrid's Municipal Housing and Land Authority (EMVS<sup>1</sup>) is, nevertheless, determined to make the best of the opportunity it has by being directly responsible for the development of an area of this size. It charged its department for Innovation in Residential Projects (PIR<sup>2</sup>) with developing the 'Eco-Valle' strategy, an ambitious initiative seeking to achieve an environmentally and socially sustainable urbanisation of sector UE1. The Eco-Valle programme comprises a number of integrated and complementary initiatives that focus on issues such as energy efficiency and the use of renewable energy, the provision of urban green space, and the promotion of alternative transport modes, including a residential building and a neighbourhood park<sup>3</sup>.

Madrid's growth over the past years has been impressive. Population increase results almost entirely from immigration, both within Spain and Europe, as well as from non-EU countries. Pressure on the housing market is further increased by the marked rise in the standard of living, which brings with it a demand for more living space per capita.

Begun in 1999, the expansion of Vallecás in the southeast of the city is currently Madrid's largest area of urban development. Within the next few years, 26,000 flats will be built for around 100,000 people on an area of approximately 1,300 ha. Investment in Vallecás is both private and public,

and housing will include all standards from simple to upmarket, resulting in a heterogeneous population.

Located in the western part of the expansion, the site known as UE1 covers around a fifth of the area being developed. Unlike the other sectors, this new neighbourhood is predominantly public land and its development is therefore largely in the hands of the local authorities. The 5,793 flats being built here are largely council property, and the resident population will comprise mainly low-income groups. It was feared that the character of the neighbourhood would be determined by the predominance of mono-functional housing blocks, as the original inten-

<sup>1</sup> Empresa Municipal de la Vivienda y Suelo  
<sup>2</sup> Proyectos de Innovación Residencial  
<sup>3</sup> The “Sunrise” and the “Water Spirals” projects, co-financed by the European Commission's 5th Framework Programme and the Cohesion Fund respectively

Conventional urban planning for the boulevard that forms UE1's main axis would have led to a solution typical for many recent residential areas in Madrid's outskirts: a 550m long and 50m wide stretch of pavement and poor vegetation, symmetrically lined by two-lane traffic and parked cars, bordered by 17m high residential building blocks and exposed to wind, dust and summer temperatures that can peak at 40°C.

The EMVS, however, decided to counter these adverse conditions, along with the social problems generally associated with the deterioration of public space in all of Europe's major cities. In late 2002, the unit was granted LIFE co-financing for a project that foresaw the "bio-climatic design and conditioning of an open space" – though without specifying exactly how this was to be achieved.

### Detailed specifications for unexpected solutions

Carmen Amorós, the EMVS officer responsible for supervising building works in the sector, remembers how the project title "Mediterranean Veranda-Ways" was chosen to evoke the image of the Mediterranean spirit of outdoor public life. The aim of the project was to revive this style of urban life that was formerly made possible by the existence of habitable exterior areas where neighbours, families and friends could meet. "Contemporary urban design", explains PIR project officer Catalina de Miguel García, "can make the city so unpleasant that many people go to the nearest shopping mall to feel comfortable and 'be outside'".<sup>4</sup> Though it would obviously be impossible to achieve outside temperatures comparable with the enclosed interiors of air-conditioned buildings, elements such as pergolas or sails, water, and vegetation were used in traditional urban design to create more congenial open-air environments.

As a first step towards a solution, the EMVS contracted the Barcelona Agency for Urban Ecology (BCN Ecología), a public entity forming part of the Municipality of Barcelona, to undertake a climatic analysis of the baseline conditions to be expected in the boulevard without any intervention, as well as the realisation of simulations enabling an approximate idea of what impact could be expected from a 'conditioning' of the public space in terms of temperature, humidity, wind and sunlight. With BCN Ecología, urban and environmental parameters were established which, along with a series of studies on urban vegetation, industrial construction materials, bioclimatic urban design and environmentally friendly neighbourhoods, fed into an extensive set of technical specifications. These formed the basis of an urban design competition to find the most innovative, effective, and financially viable means of realising the outlined scheme.

Ten teams of young architects were invited to present their ideas, and while not all teams were able to present convincing or realistic suggestions, some designs were both viable and attractive. The winning proposal, even though both financially and technically feasible, was something that, without exaggeration, could be described as extraordinary.

The panel of judges, comprised of a mixed group of architects, sociologists and physicists, opted for a design by the studio Ecosistema Urbano<sup>5</sup>, which entailed the erection of pavilions along a boulevard with limited access to cars that would act as 'air trees'<sup>6</sup>, providing shade, ventilation, and vegetation, and at the same time functioning as 'social activators' in the yet-to-be-built neighbourhood.

*The structure's inner surface will be covered in different types of ivy.*

### A tree is a tree is a rocket

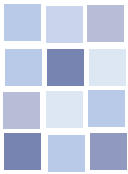
The prototype 'tree' is a 17m tall cylindrical structure of 80% recycled steel, with an outer diameter of 25m. The structure's inside surface will be grown over with different types of ivy, helping to create a microclimate similar to a wood. In the same way as a tree, the pavilion offers the most effective passive cooling system in the Iberian summer: shade. But the analogy of a tree goes further because, like trees, the structure uses the principle of evaporation to further cool the air. Placed on top of the pavilion are 'wind capturers' that funnel air into the tower. As soon as sensors detect an outside temperature of over 27°C, ventilators propel the air down vertical 'chimneys' and through dampened cellulose panels, creating an artificial cloud of water vapour, and thereby reducing the temperature of the air by 8 to 12°C in the first few metres of its fall. Because the system functions best at high temperatures and low humidity, it is ideal for most Mediterranean cities.

<sup>4</sup> Interestingly, the original definition of a 'mall' was a shady public walk or promenade

<sup>5</sup> [www.ecosistemaurbano.com](http://www.ecosistemaurbano.com)

<sup>6</sup> 'Árboles de aire'





## Environment, health and the quality of life



The play with natural and the artificial associations continues on the ground, which is made of rubber recycled from tyres, feels bouncy like turf, and is formed to create a 'dune' that shields against the wind. On the other hand, the outer membrane suggests a zeppelin, and indeed, as was the case with airships, the reflecting silvery colour was chosen to reduce the material's heat absorption. Illuminated at night, the structure looks no less alien. Its energy-efficient lighting can be regulated by an astronomical clock that changes the pavilion's night time colours with the changing seasons, so that at night, the boulevard can be doused in an ever-changing light. In 2005, the construction received one of three Holcim Awards Acknowledgements for Europe<sup>7</sup>.

<sup>7</sup> [http://www.holcimfoundation.org/awards/eur/ack\\_eur.html#2](http://www.holcimfoundation.org/awards/eur/ack_eur.html#2)

*With time, the artificial trees are to become clearings in a wood.*

Though the Research Centre for Energy, Environment and Technology (CIEMAT), which is responsible for monitoring and analysing the ambient conditions achieved by the prototype, will only have definitive empirical data after a year of testing, first trials have proven the cooling system to be extremely effective. In summer, the temperature under the tree is expected to be 10 to 15°C cooler than in the rest of the street.

Perhaps the best installation to improve the urban environment is a tree, and one may well ask, why not simply plant real ones? The project's architects acknowledge that the most sustainable solution would be to create a dense cluster of sufficiently large trees to generate a woodland microclimate under their foliage. These are being planted, but will take 15 to 20 years for them to grow to a fully 'functional' size. The aim was to provide a quick solution for what would otherwise be a barren space, providing a tree that works the moment it is switched on until the real trees grow. Consequently, the tower can be totally dismantled and reinstalled elsewhere, once the surrounding trees around it have grown and the structure remains like a clearing in a wood.

*The "rocket's" illumination can be programmed to change with time, season or occasion.*

### 50 metres along which to meet

The initiative's social considerations, however, are just as important as its environmental aspects. In an anonymous, newly created and primarily residential neighbourhood, the pavilion will mark a pleasant site where people can meet and relax. Possibly the most 'tangible' part of the prototype is a 50 metre minimalist-style bench of recycled PVC. The designers didn't wish to predetermine everything, but to allow the neighbourhood to decide how to use the installation, thereby increasing their ownership of the tree and reducing the risk of vandalism. "The real success is if activities take place in the shade of the tree that weren't foreseen", say the young architects, leaving one to wonder what they could have in mind.

The pavilion also has a symbolic value that should not be underestimated. The EMVS tries to establish landmarks in all new districts along Madrid's periphery, setting points of reference in areas that would otherwise be initially faceless. And indeed, people from the surrounding neighbourhoods have started walking up to the fence still surrounding the building site to see the progress being made on 'el arbolito', and it becomes apparent that the area is already acquiring an identity when taxi drivers refer to the structure as 'the rocket'.

Despite the structure's futuristic look, however, the designers are keen to stress that the technology used is 'off the rack', with even the membranes made of textiles usually used to manufacture tents. To be sustainable, the pavilion needed to be durable and easy to maintain, with cheaply replaceable components. Techniques like catching wind and using evaporation for cooling are widespread in traditional Mediterranean and Middle Eastern architecture,





as well as in greenhouses in southern Spain. Truly innovative, however, is the transposing of concepts and materials to a totally different context. So, though the technology used is deliberately low-tech, its adaptation and application is highly sophisticated.

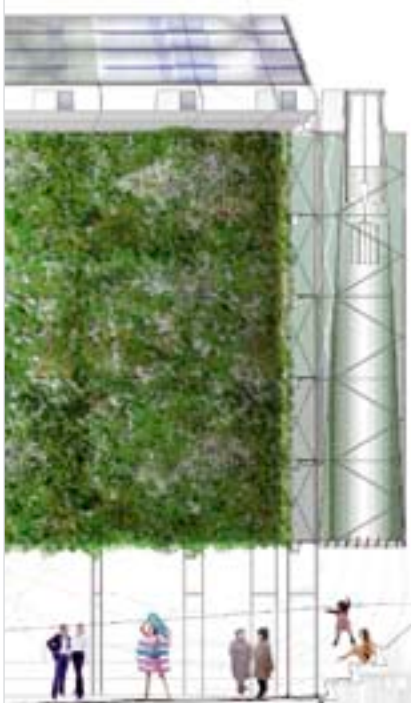
As the pavilion was a 'hand-made' prototype, with a lot of testing and changes carried out during construction, it cost a total of € 980,500 (including the costs of all other urban infrastructure around the structure). Future trees, however, are expected to be substantially cheaper. Furthermore, the tree requires a maximum of three to four days maintenance a year for adding fertiliser, cleaning the solar panels and, when preparing the tree for its winter sleep, emptying the evaporation system of water so it doesn't freeze up. Crowned by photovoltaic panels, the tree will generate 12,230 kW a year, around half of which will be used for cooling and illumination, leaving a surplus worth around €6,000 that will cover all maintenance costs.



Ana Iglesias Gonzáles, whose recent position as Director of PIR requires certain pragmatism, admits she wasn't sure what to think of the tree when she took office. The environmental, social and symbolic value of the pavilion, along with its energy and financial self-sufficiency once erected, however, has convinced her. Though not a panacea for all the new district's environmental and social issues, the concept will help check the deterioration of public space, improve the local climate and

*Barren landscape: the real trees will need 15 to 20 years to reach full height.*

create a sense of neighbourhood. With her backing, the EMVS is now preparing to erect two further trees along the boulevard before the end of 2006, one with a screen to project films, and one with a playground-character designed to attract both children and adults. "Let the neighbourhood decide in 20 years time if the towers should really be relocated" Ana Iglesias Gonzáles says. In the meantime, the 'tree' will have to wait a year or two for the ivy to grow in its interior – and for the city to grow around it.



#### The tree's components

1. Photovoltaic panels
2. Wind capturers with built-in ventilators
3. Dampened cellulose panels
4. Textile 'air towers'
5. Energy-efficient night-time illumination
6. Vegetation
7. Outer membrane
8. Metal structure
9. Artificial topography
10. The complete 'Air Tree'

#### Project Number:

LIFE02 ENV/E/000198

**Title:** Mediterranean Verandahways

**Beneficiary:** Empresa Municipal de la Vivienda y Suelo (EMVS), Madrid, Spain

**Total Budget:** € 1,835,000

**LIFE Contribution:** € 601,000

**Period:** 01-Sep-2002 to 31-Aug-2005

**Website:** <http://www.emvs.es/EMVS/ProyectosInnovacionResidencial/WEB/proyectolife/index.html>

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# GlpSyNOISE: GIS for the assessment and management of noise

**A GIS-based mapping and modelling tool assists local authorities in noise-related decision-making for policy and planning.**

Over 25% of Europeans are exposed to excessive levels of noise, which can have significant adverse effects on their health and quality of life, causing stress, sleeplessness, reduced learning capacity among children and even hearing difficulties. The total noise-related social cost in Europe is estimated at somewhere between €10 and 40 billion per year, incurred, for example, by depreciation in property value, medical costs and the loss of working days.

The European Directive relating to the Assessment and Management of Environmental Noise<sup>1</sup> requires all cities with more than 100,000 inhabitants to produce action plans to manage noise and adopt policies aimed at reducing the level of noise to which citizens are exposed.

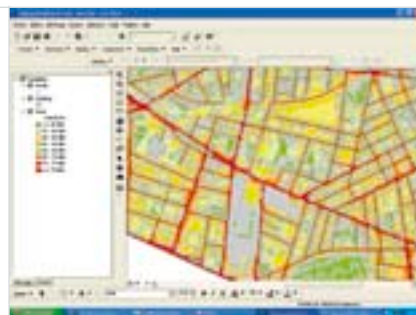
The GlpSyNOISE project aimed to produce a tool that would enable local planners and decision-makers to respond to the suite of requirements set by Directive 2002/49/EC regarding the measurement and management of ambient noise. Proposed and lead by the Municipality of Lyon (France), the partner cities of Barcelona and Huelva (Spain), Rome (Italy), Porto (Portugal), Prague (Czech Republic) and Szeged (Hungary) were to receive a first version of the developed software for test application.

The software tool developed by the GlpSyNOISE project assists local planners in key aspects of their decision-making, such as:

- The introduction of the standard models for the estimation of noise emitted by road, rail and aircraft transportation and industry.
- The analysis and correlation of noise data and geo-referenced city-management data.
- The selection of suitable indicators for assessing noise-related management and planning solutions.

## Noise and socio-economic data

The resulting multifunctional software, accompanied by a well-designed user manual, completely fulfils expectations. The instrument offers decision-making support related to the application of Directive 2002/49/EC, for instance in the areas of strategy development, action-plan design and communication. The Geographic Information System (GIS)-based tool, which runs on a common software platform, serves decision-makers for status quo assessments, as well as for the simulations of future developments. Furthermore, through the crossing of noise-related and socio-economic data, the tool can aid the integration of noise-pollution considerations into the design of new town-planning projects. The software can, for instance, help predict the economic and the social depreciation of urban areas through increases in noise levels. This enables the comprehensive and cross-cutting assessment of current and potential policies and measures influencing noise pollution and mitigation.



*The GlpSyNOISE software helps measure and simulate urban noise pollution.*

The software's flexible design allows a future compatibility and integration with traffic and air-pollution management tools, as well as its adaptation to fit possible future amendments in legislation, for example, in the harmonisation at the European level of calculation methods.

<sup>1</sup> European Parliament and Council Directive 2002/49/EC

**Project Number:**  
LIFE02 ENV/F/000295

**Title:** An efficient GIS tool oriented for the assessment and management of environmental noise

**Beneficiary:** Communauté Urbaine de Lyon, France

**Total Budget:** € 1,382,000

**LIFE Contribution:** € 617,000

**Period:** 01-Oct-2002 to 01-Oct-2005

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# IMOS: Urban drainage management for whether it rains or pours

The city of Genoa has established a management system that combines surveillance instruments, computer modelling and water cisterns to enable the real-time, remote-control regulation of rainwater flows in its urban drainage network.



*A meteorological radar for monitoring precipitation is one of a series of instruments constituting IMOS.*

For many cities, the management of rainwater drainage systems poses two central challenges. Firstly, under normal rainfall conditions, the first waters reaching the drainage system (so-called 'first flush flow') are usually contaminated with such substances as heavy metals, oils, greases and nutrients. Secondly, in cases of extreme precipitation, operators must avoid the overloading of drainage and treatment facilities, as flooding can cause significant material damage and also result in the mixing of wastewater (sewage) and rainwater. This can lead to a sharp increase in the amount of water requiring treatment before it can be discharged.

The IMOS (Integrated Multi-Objective System for the optimal management of urban drainage) project aimed to demonstrate an integrated management system that would enable an efficient regulation of its rainwater drainage under both normal conditions (i.e. the treatment of first flush flow) and critical conditions (i.e. the avoidance of capacity overload).

## First flush and flash floods

The main components of the system can be divided into three categories: monitoring apparatus consisting of a series of sensors and a low-cost meteorological radar, software programmes and hydraulic installations. The project's innovation lies in its combining of different elements to constitute an integrated system. Briefly, IMOS works as follows: data on precipitation are collected by the rain gauges and radar, and used for computer simulations that predict the sites and quantities of rainfall expected in the immediate future – a method known as 'now-casting'. Information is transmitted to a central processing unit, which simulates the consequences for the drainage system and proposes possible measures to be taken, for example, the activation of an underground retention tank.

Under normal conditions, pollution sensors enable the operators to decide if the water flowing through the final section of the drainage network can be conducted directly to the sea or if it needs prior treatment (as usually applies to first flush flow), in which case a sluice gate is operated to direct the flow to the plant. In critical situations, a retention tank is connected to the drainage network, and the water is diverted and accumulated in the reservoir, thereby reducing both those peak-flow levels within the system and those entering

the treatment plant. The water-level sensors throughout the network register the flow situation and provide real-time information for the taking of additional measures.

Due to IMOS, the frequency of inundations as a result of sewers overflowing is anticipated to decrease from once every 1 to 2 years to once every 5 to 10 years. Furthermore, the efficient use of the treatment plant, by which only contaminated water is directed to the facility and system overloads are avoided, has led to an impressive 40% reduction in the amount of pollution entering the sea. The project was selected one of the top five of the best LIFE-Environment projects 2004-5.

### Project Number:

LIFE00 ENV/IT/000080

**Title:** Integrated Multi-Objective System for the optimal management of urban drainage

**Beneficiary:** Comune di Genoa, Italy

**Total Budget:** € 1,075,000

**LIFE Contribution:** € 469,000

**Period:** 01-Sep-2001 to 31-Aug-2004

**Website:** [www.life-imos.com/](http://www.life-imos.com/)

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# AIRforALL: Forecasting extreme levels of local ambient pollution

An early-warning system integrates meteorological and pollution data to predict extreme local contamination levels, thereby enabling authorities and polluters to inform citizens and take preventive measures.

Due to its topography and the presence of two large smelting facilities, the city of Baia Mare suffers from high levels of pollution from toxic substances such as sulphur dioxide and lead powders. The county of Maramures, in which Baia Mare is located, is one of the country's 20 most polluted areas, and mortality due to air-pollution related diseases is 15% higher than the national urban average.

Certain weather conditions further increase the risk of high concentrations of pollutants accumulating near the ground. The National Administration of Meteorology (NAM) is responsible for issuing warnings about adverse weather and ambient pollution. At the start of the project, however, air-quality forecasting was not available in Romania, and the NAM had no method of predicting when and where exceptionally high levels of pollution would occur.

The aim of the AIRforALL (Air quality forecast and alarming system on pollution levels) project was to develop a system able of forecasting air-quality in urban and other sensitive areas 24 to 48 hours in advance, to be able to warn local administrations, polluters and the population. Authorities and polluters could then take necessary measures to counteract the predicted pollution levels. The project also aimed to promote cooperation between the NAM, central and local authorities and the polluters, in order to achieve concerted and coordinated action in times of increased hazard risk.

## Precisely predicting pollution

The project succeeded in developing a system that, based on remotely processed local meteorological and air pollution data, is able to forecast ambient air-quality with a high degree of accuracy 24 hours in advance. One of the project's principal success factors was the close cooperation with another LIFE project, ASSURE<sup>1</sup>, which developed a Geographical Information System (GIS)-based land-use planning system to assess and forecast the environmental impact of anthropogenic activities.

The success of the pollution-forecasting system has encouraged further cooperation between agencies in charge of environmental protection and other technical institutions, with a view to providing polluters with a sound scientific basis for steering their



*The forecasting system remotely processes local meteorological and air pollution data.*

technologies so as to minimise the risk of excess pollution. The GIS-supported system is also a valuable instrument for developing zoning policies and industry plans, and the NAM is currently implementing a further LIFE project, AIR-AWARE<sup>2</sup>, which seeks to assist spatial planning, traffic management and pollution control in the Bucharest metropolitan area.

With the early-warning system operational, and its application in other high-risk areas probable, the most important long-term criterion for the scheme's success will be the number of emitted pollution alerts that are reacted upon by industrial plants responsible for the emissions.

**Project Number:**

LIFE00 ENV/RO/000987

**Title:** Air quality forecast and alarming system on pollution levels

**Beneficiary:** National Administration of Meteorology, Romania

**Total Budget:** € 462,000

**LIFE Contribution:** € 201,000

**Period:** 01-Nov-2001 to 30-Apr-2005

**Website:** <http://life-airforall.inmh.ro/>

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<sup>1</sup> LIFE ENV 99/RO/6746

<sup>2</sup> LIFE05 ENV/RO/000106: Air Pollution Impact Surveillance and Warning System for Urban Environment





## Sustainable use of natural resources

The Thematic Strategy on the Urban Environment highlights the importance of using renewable and non-renewable resources, such as energy, material, land and water, efficiently, so as to reduce negative environmental impacts and ensure that consumption levels do not exceed the environment's carrying capacity.

Effective urban management involves influencing organisations and individuals to promote greater resource efficiency, more sustainable consumption, reductions in waste production, and increases in the recycling and reuse of waste. To achieve a more responsible use of natural resources, achieving changes in attitude among citizens, decision-makers, administration and enterprise is at least as important as planning, legislation and financial incentives.



# ecoBUDGET: A political management system for local environmental budgeting

**A system of environmental budgeting, possibly the first environmental management system specially designed for the needs of local governments as political organisations, helps municipalities to secure quality of life for citizens while managing their finite natural resources according to the principles of sustainability**

Since the First European Conference on Sustainable Cities & Towns, which took place in Aalborg, Denmark in 1994, over 2,000 European cities and towns have signed the Charter of European Cities and Towns towards Sustainability. Signatories of the Aalborg Charter pledge that they will “seek to establish new environmental budgeting systems which allow for the management of our natural resources as economically as our artificial resource, ‘money’”<sup>1</sup>. The ecoBUDGET concept is a direct response to this intent.

The basic question behind ecoBUDGET is, if a city can manage its artificial resources, that is its money, through a municipal budget, why not also its natural resources? Therefore, just as cities use financial budgeting to manage their financial resources, and personnel management for their human resources, ecoBUDGET was created to manage a municipality’s natural wealth.

The financial budget is a universally accepted framework for fiscal decision-making and management. ecoBUDGET follows the logic and terminology of financial budgeting which is known and understood by administration, politicians and, to a certain degree, citizens. However, unlike attempts at ‘environmental accounting’, it does so without seeking to assign monetary values to the environment. Instead, the ecoBUDGET’s resource-based approach foresees a separate but

parallel environmental budget for the municipality. The system seeks to provide municipalities the same planning support and implementation control, transparency and accountability for their environmental management that they have for their financial budgeting.

As with financial budgets, ecoBUDGET applies an annual cycle which follows the customary budgeting procedures of local governments. The ecoBUDGET cycle, which adheres to the principle of continuous improvement, is divided into three phases. In the preparation phase, administrative procedures are defined and a preliminary baseline report on the environment is prepared. This serves as the basis for a ‘master budget’ that sets targets for the municipality’s improved environmental performance. In the implementation phase, following the binding master budget’s ratification by the city council, an action plan is developed and its implementation monitored. The circle closes with the evaluation phase in which an internal audit is carried out and the ‘budget balance’ with the performance results are presented to the city council for appraisal at the end of the year.

## Budgets and politics

Holger Robrecht, director at ICLEI-Europe and one of the system’s chief designers, describes how the original ecoBUDGET system was developed by ICLEI-Europe as ‘ökoBudget’ and tested in a German pilot project from



*As with financial budgets, ecoBUDGET follows an annual cycle and requires binding ratification by the city council.*

1996 – 2000. The LIFE co-funded European ecoBUDGET project sought to further develop and adjust the original concept in order to demonstrate the system’s applicability and suitability for urban and rural local governments of different sizes in all Member States.

The project was coordinated by the Municipality of Växjö in Sweden, with the technical support of ICLEI, as well as with the cities of Dresden and Heidelberg from the German pilot project, and the Italian ARPA Emilia Romagna<sup>2</sup>, as observers. The municipalities implementing the project were Amaroussion and Kalithea (Greece), Bologna and Ferrara (Italy), Lewes (UK) and Växjö itself.

The six partner municipalities set up local implementation teams that were trained by ICLEI’s ecoBUDGET ‘master budget’, including seven to 20 environmental indicators along with long-term

and short-term targets. The six master budgets were ratified by the councils of all participating local authorities, along with the budget balances at the end of the year<sup>3</sup>.

Unlike most environmental management systems (EMS) used by local authorities, *ecoBUDGET* seeks to cover not only the municipality's administration or some of its functions or facilities, but also its community and entire territory. For example, the CO<sub>2</sub> emissions of an average municipality's administration, including all its operations, offices, vehicles, swimming pools, etc., is usually only around 1 to 3% of the total amount produced in its territory. Therefore, if a municipal-

ity wishes to do more than just to play a role model, it must seek to include the private sector and the community in its environmental management. Consequently, an *ecoBUDGET* indicator would, for instance, not measure energy consumption in 'kilowatt-hours per municipal employee', but in 'kilowatt-hours per inhabitant'.

What really distinguishes *ecoBUDGET* from other EMS, however, is the systematic and periodic involvement of the political level through the master budget's ratification by the city council. This gives the process the political legitimacy and necessary support for success. There is a clear distinction between the decision by

a city council to adopt *ecoBUDGET* as an EMS, and its approval of the running year's budget. In Bologna, for instance, the council voted to implement the system with the support of the opposition. The first year's master budget, however, was not ratified by consensus but by majority vote, the opposition being against the budget because it considered the targets to be set insufficiently ambitious. And-

1 Aalborg Charter, Part 1.14

2 Agenzia Regionale Protezione Ambiente dell'Emilia-Romagna (Environmental Protection Agency, Emilia Romagna Region)

3 The full methodology applied is described in the "*ecoBUDGET Guide*" available in hardcopy or at <http://www.vaxjo.se/vax-jowwww/uppskickadefiler/3199.pdf>

A mock *ecoBUDGET* budget balance made up of one indicator example from each project participant.

City	Resource	Indicator	Reference year value	Value 2001	Value 2003	Short-term target (2003)	Long-term target	Short-term target evaluation	Comments
Amaroussion	Raw Material	Total recycled waste (Tons/year)	2174 (2001)	2174	2566	2263	3000 (2005)		
		Distance to Long-term Target	0%	0%	39%	13%	100%		
Kalthea	Water	BOD in Sea Water (Coliforms/100ml)	31 (2001)	31	11	20	20 (2005)		Average measurements in 7 places in high season
		Distance to Long-term Target	0%	0%	182%	27%	100%		
Leress	Biodiversity	Wildlife Areas in School (% n. of schools)	5 (2000/1)	5	18	10	25 (2010)		The indicator definition has changed to reflect the sustainability of the wildlife areas. The target has been exceeded.
		Distance to Long-term target	0%	0%	65%	25%	100%		
Ferrara	Silence	Streets over 70 dBA (km)	99,7 (1997)	99,7	99,7	99,7	69,7 (2010)		The General Noise Plan is expected to be implemented in year 2004
		Distance to Long-term target	0%	0%	0%	0%	100%		
Bologna	Air Quality	Concentration of PM10 (µg/m³)	64 (2000)	53	45	45	40 (2005)		The concentration of PM10 was affected by extraordinary meteorological events
		Distance to Long-term target	0%	46%	79%	70%	100%		
Växjö	Good Built Environment (Green)	Trees in the streets (no.)	3183 (1997)	3649	4023	4023	5400 (2010)		
		Distance to Long-term target	0%	30%	38%	38%	100%		



## Sustainable use of natural resources

rea Burzacchini, an ICLEI expert who assisted the partner city of Bologna, says that this is a good example of representative democracy applied to the management of environmental resources.

### Integrating management tools

The project proved that *ecoBUDGET* could be adapted to the specific ecological, political and economic contexts of the participating municipalities, and was flexible enough to integrate diverse existing environmental instruments. Växjö, for example, sought to combine *ecoBUDGET* with its financial budget, and Bologna coupled it to its strategic environmental assessment VALSAT (Valutazione di Sostenibilità Territoriale ed Ambientale), the latter being compulsory for Italian municipalities. Amarousion chose to implement both complementary systems *ecoBUDGET*, with its political perspective and community-wide approach, and the EC's Eco-management and Audit Scheme (EMAS), which is more technical and introspective in its application.

#### Project Number:

LIFE00 ENV/S/000852

**Title:** European *ecoBUDGET* pilot project for local authorities steering to local sustainability

**Beneficiary:** Växjö Kommun (Municipality of Växjö), Sweden

**Total Budget:** € 2,331,000

**LIFE Contribution:** € 1,023,000

**Period:** 01-Sep-2001 to 31-Aug-2004

**Website:** <http://www.iclei-europe.org/index.php?id=683>

**Contact:** Torun Israelsson

**Email:** [torun.israelsson@kommun.vaxjo.se](mailto:torun.israelsson@kommun.vaxjo.se)

In a separate initiative, the City of Kaiserslautern (Germany) is implementing *ecoBUDGET* in combination with its Local Agenda 21 (LA21), as a means of achieving the periodical renovation of its LA21, and thereby giving the process continuous momentum. As a political EMS that targets the entire geographical area of a municipality and is open to stakeholder involvement, *ecoBUDGET* could also be an effective means of implementation for cities that have signed the Aalborg Commitments.

At the final project meeting, a side event of the Aalborg+10 Conference in June 2004, Anders Franzén and Torun Israelsson, project coordinators from the City of Växjö's Planning Department, highlighted *ecoBUDGET*'s potential to support local governments seeking a more sustainable development, and also outlined what the system still needs: further practice, further exchange, and further efforts by the cities to better integrate stakeholders. The six participating local authorities will therefore continue fine-tuning the system in the course of its implementation.

The LIFE project has demonstrated the potential of *ecoBUDGET* for European local authorities from different financial, organisational and environmental contexts, and the methodology is now ready for a wider application in Europe and beyond. As part of a Europe Aid project sponsored by the Asia Urbs programme, the cities of Växjö and Bologna are currently assisting the transfer and further development of the methodology to two local governments in Asia: the Guntur Municipal Corporation (India) and the Province of Bohol (Philippines). The goal is to adapt *ecoBUDGET* to the needs of local governments in the region and develop a model EMS for Asian cities by the year 2007.



All partner municipalities have shown shifts towards a decrease in natural resource consumption. *ecoBUDGET*'s reporting mechanisms have greatly improved accountability and transparency, making visible where set targets were not being met, allowing political and public discussion of where performance needs to be improved. Effective initiatives can be replicated and less effective measures can be modified or abandoned, enabling a more efficient use of financial and human resources.

The Impact Assessment accompanying the Thematic Strategy on the Urban Environment<sup>4</sup> mentions *ecoBUDGET*, along with EMAS and ISO 14001, as a management system that can improve environmental performance in the wider urban area. Needless to say, however, policies are defined, targets set and measures implemented by humans. As is the case with any system that requires both political will and technical capacity, the potentially achievable results depend crucially on those using it.

<sup>4</sup> COM(2005) 718 final

*"ecoBUDGETeers" at the European ecoBUDGET final conference during the Aalborg +10 conference in 2004.*





# GPPnet: Networking to promote green public procurement

The GPPnet project promotes green public procurement (GPP) among Italian local authorities, providing them with a handbook to integrate environmental requirements into tendering procedures.



*The GPP handbook in CD-Rom format can be ordered via the project website.*

Public authorities spend around 16% of the European Union's gross domestic product. By using their purchasing power, they have the potential to not only improve their own environmental performance, but even to influence the market for 'greener' goods and services itself. GPP can cover areas such as energy-efficient computers, office stationary and furniture made of renewable or recycled materials, eco-labelled appliances, organic food for canteens, electricity from renewable energy sources, municipal vehicles that run on alternative fuels and environmentally certified suppliers.

Nevertheless, only a small minority of public organisations systematically consider environmental criteria when selecting suppliers, service providers and contractors. One of the main barriers to GPP is the lack of skills and information among public procurement officers for including environmental requirements into

tendering procedures. The GPPnet project therefore aimed to provide public authorities with simple rules for their procurement decision-making and processes.

## National network on GPP

The initiative involved the creation of a network with the participation of the Provincial Administration of Cremona and 13 Italian municipalities.

A 300-page handbook, which was published in print form and on CD-ROM, contained background information on GPP and described its step-by-step introduction into a public administration's procedures. The publication includes a referential set of environmental criteria to be included in calls for tender, together with procedural instructions and detailed formsheets. The environmental specifications for 189 goods and service were compiled from 14 existing ecological labels and from guidelines established by national bodies such as the environment agencies in the United States and Denmark.

Easy to use and update, the handbook is an excellent instrument for public administrations seeking to introduce GPP and has been formally adopted by the local authorities involved in the project. Staff members in charge of public purchasing were trained to identify products and services with lower environmental impacts, and to introduce GPP without infringing existing laws and regulations.

Suppliers and service providers were also kept informed of developments, in order to be able to comply with upcoming contract stipulations. All the public administrations involved prepared calls for tender in accordance with the GPP manual's recommendations, in sectors such as furniture, paper, office equipment, services and public works.

Based on the results of the LIFE project, a national working group on GPP was established in Bologna in March 2005. The working group has been invited by the Ministry of the Environment to participate in the consultations for the elaboration of the National Plan on GPP. Under the auspices of the Italian Agenda 21 Coordination agency, it is expected that the results of the GPPnet project will be widely disseminated to local and provincial governments in Italy.

*1 Coordinamento Nazionale Agende 21 Locali*

## Project Number:

LIFE02 ENV/IT/000023

**Title:** GPPnet Green Public Procurement Network

**Beneficiary:** Amministrazione Provinciale di Cremona, Italy

**Total Budget:** € 850,000

**LIFE Contribution:** € 398,000

**Period:** 01-Dec-2002 to 30-Nov-2004

**Website:** [www.compraverde.it](http://www.compraverde.it)

**Contact:** Pesaro Mara

**Email:** [ambiente@provincia.cremona.it](mailto:ambiente@provincia.cremona.it)



# Household recycling partnership for waste management in Cyprus

A recycling scheme in the form of a public-private partnership, enhanced by a successful awareness-raising campaign, demonstrates the potential of integrated waste management in Cyprus.



*Ready for action: recycling containers awaiting their assignment.*

national authorities; and generally low environmental awareness. As a result, recycling activities in Cyprus are only partially developed, with the few companies working in the field focussing largely on industrial waste.

Managed by the Ministry of Agriculture, Natural Resources and Environment (MANRE), the project aimed to demonstrate the necessity of and potential for recycling, by cultivating awareness, calculating costs and benefits, and establishing a pilot recycling network as a public-private partnership.

The pilot scheme was implemented over eight months in four municipalities, focusing on the collection of paper, glass, aluminium, and plastic for recycling. Collection points were set up at 10 sites – largely close to schools – and widely publicised. Municipalities organised the collection of the waste and its subsequent delivery to firms that were members of the Cyprus Recycling Association.

Through the good cooperation of most of the project partners, 400 m<sup>3</sup> of waste was collected and delivered to recycling companies, thereby saving a large part from being disposed in landfills. After the end of LIFE funding, two of the participating municipalities expanded the scheme by buying additional disposal bins and continuing the separate collection of waste.

## Awareness-raising and education

More important, however, were the effects of the project's activities on awareness-raising and education. A wide range of awareness-raising activities achieved a good participation of school children and parents. A comprehensive educational pack was developed in cooperation with the Cyprus Pedagogical Institute, and the training material was distributed to schools throughout the country.

The beneficiary presented the project at national fairs. For example, waste separation was demonstrated by the project at the Cyprus International Fair in 2000 and 2001, which was visited by an estimated 120,000 people. These efforts led to recycling being chosen the fair's 'Innovation of the year' in 2001, with special attention placed on the project's stand.

The initiative also had an impact on national policy and legislative framework. The data and experience generated by the project was used to plan implementation of the National Strategic Programme on Recycling worth €3.5 million.

Nevertheless, though the project successfully demonstrated the potential of integrated waste management in Cyprus, much work still remains to be done to establish the infrastructure, supporting national legislation and general awareness necessary to achieve major progress in the field of recycling.

A number of factors make managing household waste a significant problem in Cyprus, including: the many small communities with low-density settlement patterns cause diseconomies of scale; the absence, until recently, of legislation and fiscal incentives to recycle; the lack of know-how on the part of municipal, regional and

**Project Number:**  
LIFE99 TCY/CY/041

**Title:** Household recycling partnership

**Beneficiary:** Ministry of Agriculture, Natural Resources and Environment, Republic of Cyprus

**Total Budget:** € 261,000

**LIFE Contribution:** € 236,000

**Period:** 01-Jan-2000 to 31-Dec-2001

**Contact:** Costas Papastavros

**Email:** cpapastavros@environment.moa.gov.cy

# PlusPunten: A customer loyalty card promoting sustainable consumption

The Municipality of Rotterdam's PlusPunten pilot project introduced a 'green' customer card – the first loyalty system seeking to promote sustainable consumption.

The PlusPunten project demonstrated the effectiveness of an incentive card to reduce the environmental impact of consumption and to change people's attitudes towards environmentally responsible purchasing and disposal. The NU-Spaar-pas Card (NU card) was designed to improve the image of, and increase the demand for, green goods and services.

Those participating in the pilot project were issued with an NU card to record points for buying sustainable products and for separating their waste. Sustainable products included organic, energy-efficient and fair-trade goods; bicycles, green financial products, renewable energy, as well as rental, repaired and second-hand goods. Participants in the scheme could trade their points for sustainable products, public transport, or leisure activities around the city, such as going to the cinema.



## Smart-card technology

The system used smart-card technology. Each point of issue was equipped with a terminal with a barcode scanner, and each NU card with a barcode and a chip. It was projected that the NU system would become self-sufficient through the basic connection-fee subscriptions that participating companies paid and through the income that came from cross-selling. The system was designed, built and tested in the first period of the demonstration project, up to the beginning of May 2002. The actual trial started on May 21, 2002, when the system went live. The project team launched an intense and continuous marketing effort to increase the number of cardholders and participating shops and businesses.

Initially, points were only rewarded for buying sustainable products – one point for every euro spent. However, as only 5% of the relevant goods carried an official label identifying them as sustainable products, few shops were interested in joining the scheme. The project team therefore broadened the scheme by offering one point per euro spent on most products in participating shops, and four points per euro spent on green products. As a result, the number of participating households and businesses increased to meet initial expectations.

*"When you will start enjoying double?".*

By far the greatest earner of points was the recycling of waste, with taking chemical waste to the disposal site earning 200 points, and other reusable items such as furniture or large household appliances worth 300 points. Results showed 86% of points came from waste separation and that people were more likely to use the waste disposal site more if they had the NU card.

The pilot scheme was considered a success, even though – due to its slow start – it did not achieve complete self-financing by the end of LIFE funding. Nevertheless, the project has shown that an innovative reward system can work in practice. As the first advanced loyalty scheme in the world that focuses on sustainability, it has a high demonstration value. The project was therefore selected one of the best LIFE-Environment projects 2004-5.

## Project Number:

LIFE00 ENV/NL/000809

**Title:** Demonstration project PlusPunten, Rotterdam

**Beneficiary:** Municipality of Rotterdam, Netherlands

**Total Budget:** € 1,786,000

**LIFE Contribution:** € 411,000

**Period:** 01-Feb-2001 to 30-Sep-2003

**Website:** [www.nuspaarpas.nl](http://www.nuspaarpas.nl)

**Contact:** Paul van Sambeek (c/o Stichting Points, Amsterdam)

**Email:** [info@points-online.nl](mailto:info@points-online.nl)



# Further successful and promising projects

The table below presents some of the numerous past and current LIFE projects focusing on the urban environment. For further information on individual projects, visit the online LIFE database at: <http://ec.europa.eu/life>. Go to the "Projects" section and click on the "Search database" button.

Start	Country	Number	Title	Comments
<b>1. Integrated environmental management</b>				
2005	Italy	LIFE05 ENV/IT/000808	IDEMS: Integration and development of environmental management systems	
2004	Denmark	LIFE04 ENV/DK/000071	Dogme 2000: A model for environmental management on the municipal level	
2004	Italy	LIFE04 ENV/IT/000526	SENOMI: Sustainable EMAS North Milan	
2004	Latvia	LIFE04 ENV/LV/000631	EMAS4NewStates: Innovative approach in EMAS II implementation in the local authorities of new member states	
2004	Russia	LIFE04 TCY/ROS/000051	InfoCoSM: Information and communication technologies to strengthen sustainable city management	
2003	Cyprus	LIFE03 TCY/CY/000019	URBANGUARD: Enabling the incorporation of urban sustainability parameters in spatial urban development	
2003	Russia	LIFE03 TCY/ROS/000068	MEEMAS: Building environmental capacity in municipal enterprises through EMAS implementation	
2002	Spain	LIFE02 ENV/E/000176	DIVERS: Information, competitiveness and sustainability in urban system	
2000	Italy	LIFE00 ENV/IT/000192	TANDEM: Promoting EMAS among local bodies in TANDEM with Local Agenda 21	Best LIFE-Environment Projects award 2004-2005
2000	Italy	LIFE00 ENV/IT/000167	MED-COASTS S-T: Strategies and tools toward sustainable tourism in Mediterranean coastal areas	
<b>2. Sustainable urban transport</b>				
2005	Italy	LIFE05 ENV/IT/000870	CEDM: Centre for eco-friendly city freight distribution	
2004	Albania	LIFE04 TCY/AL/000018	SUSTRAFFTIA: Sustainable traffic development in Tirana	
2004	Italy	LIFE04 ENV/IT/000547	FREEWAY: Reduction of greenhouse gases and air pollution through a homeostatic mobility planning	
2003	Spain	LIFE03 ENV/E/000160	URBANBAT: Integral waste management model for urban transport infrastructure	
2003	Italy	LIFE03 ENV/IT/000319	SIDDHARTHA: Smart and innovative demonstration of demand handy responsive transport application	
2002	Spain	LIFE02 ENV/E/000253	ECOBUS: Collecting used cooking oils to their recycling as bio-fuel for diesel engines	Best LIFE-Environment Projects award 2004-2005
2000	France	LIFE00 ENV/F/000640	SMILE: Sustainable mobility initiative for local environment	Best LIFE-Environment Projects award 2004-2005



Start	Country	Number	Title	Comments
<b>3. Climate change</b>				
2005	Greece	LIFE05 ENV/GR/000235	SUSCON: Sustainable construction in public and private works through IPP approach	
2005	Spain	LIFE05 ENV/E/000333	HYDRO SOLAR 21: Building demonstration based in solar cooler and hydrogen conversor of renewable energies	
2005	UK	LIFE05 ENV/UK/000998	Integrated Greenhouses utilising sustainable design, construction and operation	
2004	France	LIFE04 ENV/FR/000331	Installation of a fuel cell in Paris	
2004	Italy	LIFE04 ENV/IT/000594	S & W: Sun and wind	
2004	Italy	LIFE04 ENV/IT/000453	ROMAPERKYOTO: Realization of Rome's action plan to achieve the Kyoto's protocol objective	
2004	Slovakia	LIFE04 ENV/SK/000797	UrbEco Footprint: Sustainable development of cities and mitigation of impacts of climate change on quality of life	
2002	Greece	LIFE02 ENV/GR/000362	MedClima: Climate Alliance for Mediterranean Cities	
2002	Austria	LIFE02 ENV/A/000285	BBMpassiv: Multifunctional administration building in passive house standard in sustainable timber construction	Best LIFE-Environment Projects award 2004-2005
2002	Latvia	LIFE02 ENV/LV/000478	ENERLAB: Energy labelling of apartment buildings	Best LIFE-Environment Projects award 2004-2005
2000		LIFE00 ENV/NL/000808	EQUATION: Demonstration and dissemination project for stimulating architects and local governments to build sustainably	Best LIFE-Environment Projects award 2004-2005
<b>4. Nature and biodiversity</b>				
2005	Italy	LIFE05 NAT/IT/000009	RAPACI LUCANI: Safeguard of the threatened raptors of the Matera Province	
2002	Finland	LIFE02 NAT/FIN/008468	Urban Natura 2000: Management of urban Natura 2000 areas in SW Finland	
2002	Italy	LIFE02 ENV/IT/000017	PATTERN: The park and the town: Eco resources network	
2002	Spain	LIFE02 ENV/E/000200	GALLECS: Land use and environmental management of the physical planning in Gallecs	
2002	UK	LIFE02 ENV/UK/000144	SMURF: Sustainable management of urban rivers and floodplains	
2000	Spain	LIFE00 ENV/E/000415	ANELLA VERDA: A proposal for sustainable territorial planning	
1999	Belgium	LIFE99 ENV/B/000650	Urban Forest: A model for local authorities to implement a policy for sustainable environmental planning in urbanised areas	
1999	Romania	LIFE99 ENV/RO/006746	ASSURE: A pilot system for urban environmental Impact assessment in relation with urban planning	
<b>5. Environment, health and the quality of life</b>				
2005	Finland	LIFE05 ENV/FIN/000539	WASTEPrevKit: Waste prevention kit for enterprises, education and households	
2005	France	LIFE05 ENV/F/000063	IDEAL 79: Ideal Deux-Sèvres: Sustainable initiatives and local alternatives towards waste prevention	
2005	Italy	LIFE05 ENV/IT/000894	ESTRUS: Enhanced and sustainable treatment for urban stormwater	
2005	Romania	LIFE05 ENV/RO/000106	AIR-AWARE: Air pollution impact surveillance and warning system for urban environment	



Start	Country	Number	Title
2004	Austria	LIFE04 ENV/AT/000006	KAPA GS: Klagenfurt's anti-PM 10 action programme
2004	Germany	LIFE04 ENV/DE/000054	UFIPOLNET: Ultra-fine particle size distributions in air pollution monitoring networks
2002	Germany	LIFE02 ENV/D/000399	HydroStyx: Optimised environmental rainwater management systems in the sphere of the environmental engineering
2002	Italy	LIFE02 ENV/IT/000018	VISP: Health impact assessment as integrated territory planning tool
2000	Hungary	LIFE00 ENV/H/000936	EHBN: Establishment and operation of a regional bio-monitoring network for the assessment of air quality
2000	Italy	LIFE00 ENV/IT/000005	ARTEMIDE: High temporal resolution urban monitoring of benzene, 1,3-butadiene and methylterbutylether and other VOCs
1999	Austria	LIFE99 ENV/A/000394	SYLVIE: Systematic noise abatement in inner city residential areas
1999	Germany	LIFE99 ENV/D/000453	EuroBionet: European network for the assessment of air quality by the use of bio-indicator plants
1999	Italy	LIFE99 ENV/IT/000131	ECOEXPLORER: Environmental control observatory: Exploration of pollution levels on the road for ecological realtime survey
1999	Italy	LIFE99 ENV/IT/000081	RESOLUTION: Development of a high spatial resolution atmospheric monitoring model to verify the actual emission

#### 6. Sustainable use of natural resources

2005	Portugal	LIFE05 ENV/P/000369	OIL PRODIESEL: Integrated waste management system for the reuse of frying oils to produce biodiesel for municipalities
2004	Spain	LIFE04 ENV/ES/000263	BIOSOIL: Compost bioremediation technology for the reclamation and sustainable urban management of brownfields
2002	Spain	LIFE02 ENV/E/000183	DROPAWATER: Durable regions on peripheral areas for water reduction
2002	UK	LIFE00 ENV/UK/000908	REALISE: Reuse enterprise and local initiatives for sustainable economies
2000		LIFE00 ENV/NL/000787	DROP-WISE: Disconnection roofs, places and streets within the inner city area
1999	Finland	LIFE99 ENV/FIN/000216	VITAL VAASA: Pilot framework and action programme for revitalisation of the water cycle in an urban
1999	Spain	LIFE99 ENV/E/000371	AhorraPapel: Zaragoza saves paper ... and trees

#### <http://ec.europa.eu/life>

The LIFE programme's online database features all LIFE projects since 1992, including 158 LIFE-Environment projects specifically addressing urban issues. Many of the LIFE-Nature and LIFE-Third Country projects registered are also relevant to the urban environment. Search the database by year, country or keyword, to find information and contact details of successful projects and good practices relevant to your work.

#### <http://www.eukn.org>

The European Urban Knowledge Network is a European initiative in which 15 EU Member States, EURO CITIES, the URBACT Programme and the European Commission participate. Its website is a portal to information on the Member States' urban policy initiatives, practices and research. Launched in October 2005, the site's database on urban good practices and research already includes over a dozen LIFE projects.

#### <http://urbact.eu>

URBACT is a Community Initiative Programme facilitating the networking between cities from all Member States. The programme is primarily concerned with urban areas characterised by a high level of unemployment, crime and poverty, as well as by the insufficient presence of public services. Its website contains projects and documents on 13 urban themes.

# List of available LIFE publications

**A number of LIFE publications are available on the LIFE website:**

**Best LIFE-Environment Projects 2004-2005** (2005, 44 pp. – ISBN 92-79-00889-7)  
<http://ec.europa.eu/environment/life/infoproducts/bestlifeenv/bestenv.pdf>

**Exchanging good practices on managing Natura 2000 sites** (2006, 2 pp.)  
[http://ec.europa.eu/environment/life/infoproducts/natbest\\_leaflet.pdf](http://ec.europa.eu/environment/life/infoproducts/natbest_leaflet.pdf)

**Integrated management of Natura 2000 sites** (2005, 48 pp. – ISBN 92-79-00388-7)  
[http://ec.europa.eu/environment/life/infoproducts/managingnatura\\_highres.pdf](http://ec.europa.eu/environment/life/infoproducts/managingnatura_highres.pdf)

**LIFE-Environment Projects 2005 compilation** (2005, 97 pp. – ISBN 92-79-00104-3)  
[http://ec.europa.eu/environment/life/infoproducts/lifeenvcompilation\\_05\\_lowres.pdf](http://ec.europa.eu/environment/life/infoproducts/lifeenvcompilation_05_lowres.pdf)

**LIFE-Nature Projects 2005 compilation** (2005, 55 pp. – ISBN 92-79-00102-7)  
[http://ec.europa.eu/environment/life/infoproducts/lifenatcompilation\\_05\\_lowres.pdf](http://ec.europa.eu/environment/life/infoproducts/lifenatcompilation_05_lowres.pdf)

**LIFE-Third Countries Projects 2005 compilation** (2005, 19 pp. – ISBN 92-79-00103-5)  
[http://ec.europa.eu/environment/life/infoproducts/lifetcycompilation\\_05\\_lowres.pdf](http://ec.europa.eu/environment/life/infoproducts/lifetcycompilation_05_lowres.pdf)

**LIFE-Environment 1992 – 2004 “Demonstrating excellence in environmental innovation”** (2005, 124 pp. – ISBN 92-894-7699-3 – ISSN 1725-5619)  
[http://ec.europa.eu/environment/life/infoproducts/bilanlife/lifeenv1992\\_2004\\_en.pdf](http://ec.europa.eu/environment/life/infoproducts/bilanlife/lifeenv1992_2004_en.pdf)

**LIFE, Natura 2000 and the military** (2005 – 86 pp. – ISBN 92-894-9213-9 – ISSN 1725-5619)  
[http://ec.europa.eu/environment/life/infoproducts/lifeandmilitary\\_en.pdf](http://ec.europa.eu/environment/life/infoproducts/lifeandmilitary_en.pdf)

**LIFE for birds – 25 years of the Birds Directive: the contribution of LIFE-Nature projects** (2004 – 48 pp. – ISBN 92-894-7452-1 – ISSN 1725-5619)  
[http://ec.europa.eu/environment/life/infoproducts/lifeforbirds\\_en.pdf](http://ec.europa.eu/environment/life/infoproducts/lifeforbirds_en.pdf)

**The air we breathe – LIFE and the European Union clean air policy** (2004 – 32 pp. – ISBN 92-894-7899-3 – ISSN 1725-5619)  
[http://ec.europa.eu/environment/life/infoproducts/focusair/lifeair\\_hr\\_en.pdf](http://ec.europa.eu/environment/life/infoproducts/focusair/lifeair_hr_en.pdf)

**LIFE-Nature: communicating with stakeholders and the general public – Best practice examples for Natura 2000** (2004 – 72 pp. – ISBN 92-894-7898-5 – ISSN 1725-5619)  
[http://ec.europa.eu/environment/life/infoproducts/naturecommunicating\\_lowres\\_en.pdf](http://ec.europa.eu/environment/life/infoproducts/naturecommunicating_lowres_en.pdf)

**A cleaner, greener Europe – LIFE and the European Union waste policy** (2004 – 28 pp. – ISBN 92-894-6018-0 – ISSN 1725-5619)  
[http://ec.europa.eu/environment/life/infoproducts/lifewaste\\_en.pdf](http://ec.europa.eu/environment/life/infoproducts/lifewaste_en.pdf)

**Alien species and nature conservation in the EU – The role of the LIFE program** (2004 – 56 pp. – ISBN 92-894-6022-9 – ISSN 1725-5619)  
[http://ec.europa.eu/environment/life/infoproducts/alienspecies\\_en.pdf](http://ec.europa.eu/environment/life/infoproducts/alienspecies_en.pdf)

**Industrial pollution, European solutions: clean technologies – LIFE and the Directive on integrated pollution prevention and control (IPPC Directive)** (2003 – 32 pp. – ISBN 92-894-6020-2 – ISSN 1725-5619)  
[http://ec.europa.eu/environment/life/infoproducts/cleantechnologies\\_en.pdf](http://ec.europa.eu/environment/life/infoproducts/cleantechnologies_en.pdf)

**LIFE and agri-environment supporting Natura 2000 – Experience from the LIFE programme** (2003 – 72 pp. – ISBN 92-894-6023-7 – ISSN N° 1725-5619)  
[http://ec.europa.eu/environment/life/infoproducts/agrienvironmentreport\\_en.pdf](http://ec.europa.eu/environment/life/infoproducts/agrienvironmentreport_en.pdf)

**LIFE for Natura 2000 – 10 years implementing the regulation** (2003 – 108 pp. – ISBN 92-894-4337-5)  
[http://ec.europa.eu/environment/life/infoproducts/lifepournatura2000\\_en.pdf](http://ec.europa.eu/environment/life/infoproducts/lifepournatura2000_en.pdf)

**A sustainable approach for the environment – LIFE and the Community Eco-Management and Audit Scheme (EMAS)** (2003 – 32 pp. – ISBN 92-894-0543-0)  
[http://ec.europa.eu/environment/life/infoproducts/emas\\_en.pdf](http://ec.europa.eu/environment/life/infoproducts/emas_en.pdf)

**Water, an essential resource – LIFE and the new European water policy** (2002 – 28 pp. – ISBN 92-894-0538-4)  
[http://ec.europa.eu/environment/life/infoproducts/water\\_en.pdf](http://ec.europa.eu/environment/life/infoproducts/water_en.pdf)

**The financial instrument for the Environment** (2002, 6 pp)  
[http://ec.europa.eu/environment/life/life/life\\_en.pdf](http://ec.europa.eu/environment/life/life/life_en.pdf)

**LIFE Environment in Action. 56 new success stories for Europe's environment** (2001 – 131 pp. – ISBN 92-894-0272-5)  
[http://ec.europa.eu/environment/life/infoproducts/successstories2001\\_en.pdf](http://ec.europa.eu/environment/life/infoproducts/successstories2001_en.pdf)

**Name** LIFE ("L'Instrument Financier pour l'Environnement" / The financial instrument for the environment)

**Type of intervention** co-financing of actions in favour of the environment in the twenty-five Member States of the European Union, in the candidate countries who are associated to LIFE and in certain third countries bordering the Mediterranean and the Baltic Sea.

LIFE is made up of three thematic components: "LIFE-Nature", "LIFE-Environment" and "LIFE-Third countries".

### Objectives

- > with a view to sustainable development in the European Union, contribute to the drawing up, implementation and updating of Community policy and legislation in the area of the environment;
- > explore new solutions to environmental problems on a Community scale.

**Beneficiaries** any natural or legal person, provided that the projects financed meet the following general criteria:

- > they are of Community interest and make a significant contribution to the general objectives;
- > they are carried out by technically and financially sound participants;
- > they are feasible in terms of technical proposals, timetable, budget and value for money.

### Types of project

- > Eligible for LIFE-Environment are innovative pilot and demonstration projects which bring environment-related and sustainable development considerations together in land management, which promote sustainable water and waste management or which minimise the environmental impact of economic activities, products and services. LIFE-Environment also finances preparatory projects aiming at the development or updating of Community environmental actions, instruments, legislation or policies.
- > Eligible for LIFE-Nature are nature conservation projects which contribute to maintaining or restoring natural habitats and/or populations of species in a favourable state of conservation within the meaning of the "Birds" (79/409/EEC) and "Habitats" (92/43/EEC) Community Directives and which contribute to the establishment of the European network of protected areas – NATURA 2000. LIFE-Nature also finances "co-op" projects aiming to develop the exchange of experiences between projects.
- > Eligible for LIFE-Third countries are projects which contribute to the establishment of capacities and administrative structures needed in the environmental sector and in the development of environmental policy and action programmes in some countries bordering the Mediterranean and the Baltic Sea.

**Implementation** National authorities in the Member States or third countries send the Commission the proposals of projects to be co-financed (for LIFE-Environment preparatory projects, the applicants send their proposals directly to the Commission). The Commission sets the date for sending the proposals annually. It monitors the projects financed and supports the dissemination of their results. Accompanying measures enable the projects to be monitored on the ground.

**Period covered (LIFE III)** 2000-2006.

**Funds from the Community** approximately EUR 638 million for 2000-2004 and EUR 317 million for 2005-2006.

### Contact

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LIFE Unit – BU-9 02/1 – 200 rue de la Loi – B-1049 Brussels – Fax: +32 2 292 17 87  
Internet: <http://ec.europa.eu/environment/life>

European Commission

**Life Focus / LIFE in the City – Innovative solutions for Europe's urban environment**

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