TABLE OF CONTENTS

1 INTRODUCTION

The main objectives of PROUD Project are:

- The encouragement and support of Local Authorities in developing Local Action Plans aiming at urban environment management and environmental performance improvement
- The acquisition of flexible qualifications and skills, essential for handling and managing urban sustainable development issues
- Provision of training on the way to promote urban sustainable development policies and practices, but at the same time on the reason they should care
- Contribution to the well-being of the society and the development of the social and economic coherence through the enhancement of the environmental conscience of the local authorities and the increase of their awareness on urban sustainable development issues

The PROUD project accomplishes the above objectives by undertaking the following actions:

- Asses the current situation of urban environment and develop the Environmental Performance Reviews (EPR) of the 4 new EU Member States participating in the partnership
- Develop training material of 4 main focus areas (Urban Sustainable Management, Urban Sustainable Transport, Urban Sustainable Construction and Urban Sustainable Design) and promote it to the Local Authorities through the training e-tool
- Implement pilot training to the Local Authorities of the new Member States

One of the critical deliverables of the project is the present **Guidebook for Policy Makers.** The Guidebook is structured in 3 chapters which include:

- the outcomes of the Environmental Performance Review for Cyprus, Hungary, the Czech Republic and Malta,
- the main points covered in the 4 modules (Urban Sustainable Management, Urban Sustainable Transport, Urban Sustainable Construction and Urban Sustainable Design)
- conclusions and recommendations for the development and implementation of environmental policies and Local Action Plans. In this chapter Local Agenda 21 is presented as a summary since it is considered as a main tool for the promotion of sustainable development at a local level.

This Guidebook through the experience shared by all partners, targets on providing to the users (Policy Makers) the main issues that will have to be tackled when forming their Local Action Plans taking into consideration, at the same time, the main conclusions of their EPRs.

2 ENVIRONMENTAL PERFORMANCE REVIEWS OF THE 4 NEW MEMBER STATES

2.1 Overview

The EPRs outline the current situation regarding urban environment in each of the 4 countries (Cyprus, Malta, Czech Republic and Hungary), identify the major environmental problems and highlight the cooperation and the role of the local authorities with the national governments. The goal is to provide an overall picture of the main actions undertaken from the policy makers in order to asses the level that sustainable urban environment has been developed or even to identify pendencies of the local authorities towards it.

2.2 Environmental Performance Review of Cyprus

The EPR of Cyprus initially presents the Political and Institutional framework regarding the environmental planning and sustainable development in Cyprus. Furthermore it analyses the selected priority sectors that is coastal area, urban environment and tourism and the way policy, planning and management has affected their sustainable development. Environmental management is also presented horizontally for selected focus areas such as climate change, energy, atmosphere, transport, noise, solid waste and water. Finally and overview of the main legal framework for environmental protection in Cyprus is presented.

2.2.1 Environmentally Sustainable Development in Cyprus

Cyprus contains a mixture of natural and special cultural features. Despite its partial deterioration, the quality of the environment remains quite good on the whole. However, the overall environmental situation is characterised by deficiencies in environmental management and infrastructure. In the coastal area, conflicting and competitive demands for space and megapolisation have led to artificial coasts and have taken their toll on habitats and species. Mountain areas are characterised by the collapse of the agricultural systems; abandonment; and landscapes loss. One of the greater challenges now encountered, is the rational planning and management of development, so as to satisfy basic human needs, enhance the quality of life, protect the environment, ensure the wise use of natural resources, and leave open the options of the future generations.

2.2.1.1 Sustainable Development Policy

The basic goal of the policy is to **gradually introduce the environmental dimension into all parameters of the economic and social policies**. Cyprus´ policy for

sustainable development has so far been implemented through multi annual strategic development programmes and environmental management plans, the most significant ones being the following:

- Action Plan for the Protection of the Environment (1996)
- National Programme for the Adoption of the Environmental Acquis Communautaire of the EU (2000, revised and extended in 2002)
- Strategic Development Plan (2004-2006)

2.2.1.2 New Sustainable Development Strategy

Following the conclusion of the process for the revision of the European Union's Sustainable Development Strategy (SDS) in 2006, Member States had by the end of 2007 to revise (or prepare if they do not have them) relevant national strategies. As recently approved by the Council of Ministers, Cyprus initiated the process to streamline the variety of the relevant texts into a coherent document that would be identified as the country's National Sustainable Development Strategy. This process is expected to be facilitated by the following documents:

- National Lisbon Programme of Cyprus (2005)
- Strategy for the Environment (2005)
- EU (Revised) Strategy for Sustainable Development (2006)
- Mediterranean Strategy for Sustainable Development (2006)
- Strategic Development Plan (2006)

2.2.1.3 Policy Instruments for Sustainability

The fundamental priorities of Cyprus for sustainable development are pursued through a range of instruments, briefly presented below.

- Institutional framework / Decentralization
- Legislation/ Enforcement
- Assessment of the impacts from projects, plans and programmes
- Environmental management and audit system/ Eco-label
- Integrated pollution prevention and control
- Physical planning

2.2.1.4 Major Priority Issues

The following subjects are priorities at the forefront of current public policy concerns and call for major changes in order to avoid big losses of natural capital and increased social and national risks and disparities, not to mention economic dead ends:

- Capacity building
- Climate Change/ Energy
- Use/management of resources and wastes
- Nature and biodiversity
- Environment and quality of life
- Transport

- The rural space
- The littoral

2.2.2. Analysis of selected priority sectors

A. THE COASTAL AREA

The coastal area covers approximately 23% of the total area of the country. The total length of the coastline is 772 km., out of which 404 km. in the occupied area, 72 km. within the Sovereign British Areas and 296 km. in the Government controlled area. Apart from its exceptionally rich biological diversity, the coastal area hosts much of the historical and cultural heritage of Cyprus, dating back at least 8.000 years. Many unique cultural resources are located in the coastal area such as ancient settlements, temples, tombs and theatres, harbours, churches, monasteries, castles and mosques, as well as neoclassical urban houses and fine examples of rural vernacular architecture. A large part of the urban growth over the last decade has mostly concentrated along the coast - 40% of the population lives in the coastal area - the main southern coastal cities having grown by an average of 2,7% annually and continue to grow, mainly at the expense of the rural areas. Central to this growth has been tourism whose contribution to GNP steadily increased to a current level of approximately 21%. 93% of the tourist bed capacity is located along the coast.

The coast is thus both a fragile ecological and cultural system as well as the backbone of the economy. In order to develop a strategy for integrated coastal management, a 3 – year Coastal Area Management Programme (CAMP) was initiated in 2006, incorporating activities designed to build on existing policies and the legal framework in order to develop and put in place appropriate tools for the greater and more effective integration of coastal policies.

B. THE URBAN ENVIRONMENT

Urbanization in Cyprus is characterized by a trend of constant acceleration without any signs of reversal, as no economic, social, or administrative policy has so far been effective to constrain it. A few middle sized towns dominate the economic, demographic and social development scene and generate most of the wealth. In 2004, the proportion of the population that lived in the four major urban areas made up 69,4% of the total. Nicosia, the largest town, was inhabited by 219.200 people or 42,2% of the total urban population.

Urban environmental problems have taken up many forms, with consequences for human health, the quality of life and the performance of towns. Urban sprawl is continuing, as well as urban development at a distance from the towns, in nodes in rural areas. Impacts include the knock-on need for additional infrastructure and services, the swallowing up of prime agricultural land, as well as building into agriculturally marginal but environmentally important areas. Urban transport remains a crucial and so far unsolvable problem. The almost total absence of alternative to the

private car transport modes and the spread of business activity anywhere in the towns, have resulted in very high vehicle traffic with all its associated problems.

Goals and Objectives

The current urban policy goals are:

- promoting a balanced development of the towns and their hinterland;
- achieving a sustainable urban economy;
- strengthening the capacities of local authorities to manage development.

A progressively stronger emphasis on the preservation of the environment has been characterizing subsequent revisions of Local Plans. Local Plans were prepared for all main urban agglomerations as well as a Statement of Policy for the rest of the country's mostly rural areas. CAMP Cyprus will allow the development and testing in urban settings of tools for greater and more effective policy coordination, integration and synergies, such as strategic impact appraisal, carrying capacity assessment and fiscal instruments.

C. TOURISM

Cyprus is located in the world's leading tourist region, its tourism industry being its major one in terms of employment and income. This development has been accompanied with a host of problems, such as a standardization in the supply of tourist facilities; insufficiently controlled development; adverse impacts in such sectors as noise and waste generation; and the consumption of space and the degradation of landscapes, coasts and ecosystems. The country's objectives for environmentally sustainable tourism include reducing the already occurred negative special and environmental impacts; reinforcing social cohesion; and enhancing the country's biological diversity. The following actions are deemed worth mentioning:

- **Tourism Policy**

Implementation, since 1992, of a programme for the development of agrotourism, within the framework of which financial incentives are granted to the owners of buildings of traditional architecture, for their conversion into tourist lodgings, restaurants, handicrafts workshops, thematic museums, etc. A Code of Environmental Behaviour was prepared, with principles and guidelines for the environmentally friendly management of tourist enterprises.

- **Land use planning and Environmental management**

A stronger emphasis on the preservation of the environment and the quality of the landscape in tourism development now characterizes the more recent land use plans, so that both the natural environment is protected and further enhanced and the manmade environment is aesthetically upgraded. Since 2001, environmental impact assessment studies are prepared and appropriate terms set as a necessary precondition for the permitting of major tourism related projects, such as hotels, golf courses and thematic parks.

2.2.3 Environmental Management

The Council of Ministers has overall responsibility for the formulation of environmental and sustainable development policy. Environmental policy is coordinated through the Minister of Agriculture, Natural Resources and Environment (MANRE). The Minister of the Interior and the Minister of Labour and Social Insurance also play important roles.

Within MANRE, the unit primarily responsible for environmental issues is the *Environment Service (ES*), which also plays a coordinating role both with other parts of MANRE and between MANRE and environmental institutions in other countries, advises on environmental policy and ensures the implementation of that policy. The Service has a wide remit of more specific responsibilities in fields such as environmental and strategic impact assessment; the enforcement of the laws on water pollution, waste management, nature protection, noise and GMOs; and environmental awareness and training. The ES also acts as the coordinator of one of the Environmental Inspectorates in Cyprus and is the National Focal Point for a wide range of international conventions.

Other key departments with sector specific environmental responsibilities within MANRE include, the Water Development Department; the Department of Agriculture; the Department of Fisheries and Marine; the Department of Forests; and the Department of Geological Survey.

2.2.3.1 Horizontal Issues regarding environmental protection

- **Environmental Impact Assessment**

Cyprus has ratified the Convention on Environmental Impact Assessment in a Transboundary Context in 2000 and signed its Protocol on Strategic Environmental Assessment in 2003. A law on the Environmental Impact Assessment of Plans and Programmes, transposing the relevant EU Directive was passed by Parliament in July 2005.

- **Reporting**

A wealth of data has been collected and analysed through projects financed by the EU's 'LIFE' programme, for water quality, solid waste, hazardous waste, air quality, urban indicators, habitats, noise, etc. A programme was prepared by the University of the Aegean, which advised for the establishment of a comprehensive system for the collection, evaluation, storage and dissemination of data and information on environment and sustainable development.

- **Access to Information**

Cyprus has ratified the Aarhus Convention on Access to Information, Public Participation in Decision making and Access to Justice in Environmental Matters. In 2004 a new Law on Public Access to Environmental Information came into force, based

on the requirements of the relevant EU Directive and repealing a relevant previous law passed in 2000.

- **Public Participation in Decision Making**

The awareness raising activities of NGOs are financially supported by the state, whereas all active NGOs, as well as the Federation of the Ecological and Environmental Organizations, receive an annual grant from the Government.

- **Access to Justice**

The Law on Public Access to Environmental Information includes provisions on access to justice by any person whose request for environmental information was ignored or wrongfully refused. The Laws on the Assessment of the Impacts on the Environment from Projects, from Plans and Programmes, and on Integrated Pollution Prevention and Control also incorporate provisions for access to justice.

- **Research**

There are ongoing research activities in areas related to flora and fauna identification; chemicals in waters; reuse of treated effluent; waste water treatment; marine life and oceanographic research; nutrients in the marine environment; radioisotopes in groundwater; mining waste; energy efficiency; risks of chemicals; etc. The Research Promotion Foundation was set up in 1996 and became operational in 1998, to serve as the national institute for the promotion of scientific and technological research in Cyprus. Apart from the launching of national research programmes, the Foundation is responsible for the coordination and encouragement of the participation of Cypriot institutions in the EU's relevant Framework Programmes.

- **Green Public Procurement (GPP)**

The Council of Ministers adopted an Action Plan for green public procurement aimed at assisting environmentally friendly products and services to enter the market and stimulate more sustainable production and consumption patterns.

2.2.3.2 Climate Change

Cyprus is a party to the Climate Change Convention and acceded in 1999 to the Kyoto Protocol. The country, however, has no quantified greenhouse gases emissions reduction commitments, as it is not included in Annex I of the Convention and Annex B of the Protocol, and was not an EU member when the burden sharing agreement was reached among its then 15 Member States. Efforts to place this very crucial sector under a more rational management approved by the Council of Ministers in September 2003 within the context of a Strategic Plan for the reduction of the emissions of greenhouse gases. The most significant measures are commented below.

2.2.3.3 Energy

Cyprus is heavily dependent on oil imports for its energy supply (90%). The remaining 10% is covered by imports of coal (6%) used by the cement industry and by solar energy (4%) used for heating water in the household and tertiary sector. Cyprus is one of the leading countries in the use and manufacturing of solar water heating systems.

Electricity production is thus solely based on petroleum products and absorbs on average 37,5% of the total primary energy consumption, which has been increasing at high rates.

This situation is highly undesirable as the country is highly dependent on the import of fossil fuels but also has a significant potential for renewable energy from natural sources (sun, wind) as well. It could thus derive substantial economic savings from the rational use of energy and the diversification of its energy sources whilst on the same time achieving a better energy security situation and having a substantial impact in reducing the emission of greenhouse gases.

The objectives of the country's relevant policies are to reduce the intensity of energy consumption and promote energy efficiency and enhance the potentials of renewable energy. The following new investment areas which are eligible for subsidies:
- installation of ground source heat pumps;
- biomass utilisation for electricity generation;
- installation of windmills for water pumping;
- use of wave power for electricity generation.

Other measures encouraged are the maintenance or replacement of central heating boilers; the use of high efficiency air conditioning systems, electric appliances and energy efficient light bulbs; automations in lighting; solar collectors for water heating; and rooftop photovoltaic systems connected to the electricity grid.

2.2.3.4 Transport

Transport is a major contributor to greenhouse gases emissions, as it accounts for 46% of energy consumption. Its negative contribution in Cyprus is disproportional owing to the dominance of the private vehicle and the reliance of the country's major economic sector, tourism, to air transport. So far, all efforts to enhance public transport have proven to be ineffective whereas the continuous expansion of the road network undermines such efforts. Nevertheless, the political decision for the formulation of a Public Transport Strategy has been announced and relevant proposals have been included in the country's Lisbon Programme.

2.2.3.5 Agriculture and Aforestation

The measures applied to cut ammonia emissions are better livestock feeding strategies; low – emission manure spreading and storage; low – emission animal housing systems; and measures connected to the use of mineral fertilizers, including their restriction. According to the Integrated Pollution Prevention and Control legislation, all existing large installations for the intensive rearing of poultry or pigs have to implement by October 2007 all the appropriate preventive measures against pollution and in particular through application of the Best Available Techniques (BATs) which will minimize ammonia and methane emissions.

2.2.3.6 Waste

The main measures introduced concerning the elimination of greenhouse gas emissions from the waste sector are: the recycling of paper and the reuse of the materials collected in the printing industry; and the collection and combustion of methane generated from managed disposal sites.

2.2.3.7 Atmosphere

- **Air Pollution**

The main contributor to air pollution in Cyprus is the energy sector (78,2% of total emissions), especially the transport sector. Traffic related air pollution is one of the most important problems in urban areas.

- **Ambient Air Quality**

During the last years, a bi-communal programme for the preliminary assessment of the ambient air quality in Cyprus was implemented. The results showed that the pollutants that appear in high concentrations and in some cases exceed the upper limits are Nitrogen Dioxide, Ozone, Benzene and Particulate Matter (PM10).

- **Emission Reduction Measures**

The Air Quality Objectives aiming at the protection of public health were published in the Official Gazette in 1994. Fuel specifications were adopted in accordance with the European standards thus substantially contributing to improvements in air quality. Leaded gasoline was banned. All major industrial activities, including the power plants and the cement factories, have been licensed for operation, the emission limit values set on a case-by-case basis.

- **National Allocation Plan (NAP) for Emissions Trading**

Cyprus adopted a national law on Emissions Trading for the period 2005-2007, approved by the European Commission in December 2004. A new NAP was prepared for the five year period from January 2008 to December 2012 and submitted to the European Commission in March 2007. Its approval is pending.

2.2.3.8 Protected Areas

Cyprus is characterised by unique biological diversity and high endemism. The total number of known plant species is 2.125. There are 140 endemic taxa of flora. A total of 3.859 animal species have so far been reported. Notable are the endemic Cyprus moufflon, an endemic subspecies of fox, and the wild hare. The country is also one of the eight important EU migrating routes for birds. Cyprus has enriched the relevant Annexes of the Habitats and Birds Directives of the European Union with 2 species of mammals, 6 birds, 3 reptiles, 1 invertebrate, 17 plant species and 5 types of habitats.

Measures

Cyprus places priority in protecting its biological heritage and promotes measures for the management of its habitats, species, and landscapes. The most recent laws transposing the nature related EU Directives (basically Habitats and Wild Birds), are the Law on the Protection and Management of Nature and Wild Life and the Law on the Protection and Management of Wild Birds and Game, which include sweeping provisions and opportunities for habitats and species protection. Four areas along the length of the shore (Cape Cavo Greco, Makronissos, Ranti forest and Cape of Akamas) have been characterized as Nature Protection Shores and Regions. In addition, 4 protected sites, 8 archaeological sites and 4 areas of Exceptional Natural Beauty were declared.

One Coastal/Marine Reserve (the Lara /Toxeftra), which includes the most important nesting habitats of the marine turtles Green and Loggerhead was established in 1989, managed under the Fisheries Law and Regulations. The state forests are well protected and managed in accordance with the Forests Law, under which National Forest Parks and Nature Reserves have been declared. The two coastal wetlands in Cyprus are under protection for nature conservation. A management plan for the Larnaka Salt Lake was approved by the Council of Ministers in 1997 and subsequently implemented. Under the Game and Wild Birds Law, permanent and temporary game reserves have been established around these wetlands. Environmental Information Centres have been established by the Forestry Department in the Troodos Mountain and the Athalassa peri-urban forest and a new one is being planned for the near future (Cavo Greko).

2.2.3.9 Environmental Noise

Noise constitutes a growing environmental problem in built-up areas, the principal causes being traffic by various modes and entertainment and construction activities. Under the European Acquis, environmental noise is covered by Directive 2002/49/EC, transposed into the Cyprus legislation in 2004.

2.2.3.10 Solid Waste Management

The sustainable management of wastes is the sector with the most challenges. High standards of living, rising numbers of tourists and the absence of any dedicated policy

aimed at decoupling economic growth from waste generation has let to a constant increase in the generation of waste, the per capita municipal waste generated in 2005 being 730 kg, one of the highest in Europe. Domestic solid waste management is the responsibility of local authorities. Their competences for the collection, transport, disposal and treatment of domestic solid waste have been well established and clarified through the Law on Community Administration (No. 86(I)/1999).

Comprehensive legislation covering all issues relevant to the regulation of the proper management of waste and the licensing of landfills was enacted during 2002-2003. The country´s Waste Management Strategy, adopted by the Council of Ministers in April 2004, covers all waste streams, that is, municipal, industrial hazardous or non-hazardous, end-of-life vehicles, used tyres, construction waste, used batteries, electronic waste, PCBs, used oils, agricultural waste, medical waste.

With regards to environmental infrastructure, the policy adopted and implemented provides, as appropriate, for mechanical sorting, organic treatment, thermal treatment, 4 regional landfills, 1 hazardous waste treatment unit and landfill, 1 used tyres recycling centre, a number of inert waste landfill/ asbestos landfills, possibly 1 unit for the treatment of batteries, as well as for the closure and rehabilitation of dozens of current waste disposal sites.

2.2.3.11 Water Protection

Water is a particularly precious resource in Cyprus. Water protection therefore features high in Cyprus´ environmental policy. Frequent and prolonged droughts periodically cause serious problems to the country. In addition to the more than 100 dams build through the decades, a seawater desalination programme was initiated in order to eliminate dependency on rainfall and satisfy the increasing water demands. The first desalination plant became operational at Dhekelia in 1997. A second plant built near the Larnaka Airport, commenced operation in 2001. The desalination programme envisages the construction of another two plants, at Limassol and Paphos.

- **Drinking water**

All sources of water supplied for domestic use are regularly monitored for their chemical and bacteriological characteristics in accordance with relevant legislation. Detailed results for the years 2004 and 2005 have established the very good quality of the drinking water.

- **Surface Waters**

A country wide network of monitoring stations provides data for the assessment of the quality parameters for all major water bodies, sampling being carried out twice a year for a wide range of quality parameters, including some dangerous substances.

- **Groundwater**

The most common water quality problem in Cyprus is the intrusion of seawater caused by over extraction. Actually the major aquifers in the coastal zone, e.g. Kokkinochoria, Kiti-Perivolia, Akrotiri, Morfou, have been abandoned because of this phenomenon. In accordance with a relevant EU Directive, Nitrate Vulnerable Zones were designated which extent approximately 460 Km^2.

- **Coastal waters**

The degree of pollution and the quality of seawaters are continuously monitored through a number of monitoring and research programmes and projects. By comparing the results with the limit values (Quality Objectives), where such limits do exist, only in two occasions these limits were found to be exceeded. They both concern the same location, a seasonal torrent in Limassol District, where hexachlorobutadiene and hexachlorobenzene were found to be above the limit.

- **Bathing Waters**

Almost the whole of Cyprus coastal waters is used for bathing and recreational activities. The quality of the bathing waters is excellent as indicated by the fact that in 2006, 49 Blue Flag Awards were awarded to the beaches in Cyprus.

2.2.3.12 Urban Waste Water Treatment

There is a very extensive programme in place for central sewage systems and waste treatment plants and the reuse of treated effluent. Nicosia and all coastal towns and main tourist centres of the island have constructed central sewer systems and are now in the process of completing them to cover the whole of the agglomerations.

A large number of private biological treatment stations, around 400 of them, have been installed in hotels and other tourist facilities, whereas other biological units have been set up in refugee settlements, hospitals and military camps. As regards to rural areas, central sewerage systems have been constructed in a number of villages and more such systems are under implementation. However, the use of septic tanks in coastal areas that have yet to be connected to a central sewer system or in mountainous rural settlements may result in the release of nutrients to waters.

Cyprus was granted a transitional period, until 2012, to meet all the requirements of Directive 91/271/EEC on Urban Wastewater, that is to serve all communities with a population equivalent of more than 2.000 inhabitants, with sewerage networks and sewage treatment. The programme for centralized sewerage schemes and sewage treatment plants is already producing treated effluent of high quality. The policy is to use such effluent to irrigate agricultural crops, green spaces and sports grounds. Standards have been adopted for its use, as well as a relevant code of conduct.

2.3 Environmental Performance Review of Hungary

The EPR of Hungary outlines the Legal, Political and Institutional framework regarding the environmental planning and sustainable development in Hungary. It presents the environmental current situation on several focus areas (water, atmosphere, energy, waste) and management issues. Furthermore the main meeting or/and actions taken within the framework of international and national cooperation. Finally, a series of successful case studies regarding sustainable development in Hungary are presented.

2.3.1 Legal, Political and Institutional Framework

The first crucial steps of Hungarian environmental legislation began as small legal norms in the 1960s. This legislation was written to accompany regulations related to other fields and economic activities. In the middle of the 1970s significant efforts and important steps were made to establish a more complex environmental law, institutional system and governing bodies.
The evidential results were the creation of the first Hungarian Environmental Act, adopted in 1976, and the establishment of an institutional system (National Environmental and Nature Conservation Council, National Environmental and Nature Conservation Office and the basic environmental observation, information processing and research analysing systems and institutes). During the 1980s much less attention was given to environmental matters.

The next impulse toward environmental matters was given by different influences from the economic and political scene during the early 1990s. In spite of that environmental legislation has suffered an essential delay. The reasons were the lack of environmental policy, excessive economic interests, a lack of public acts taken towards environment protection and relative neglect environmentalist policy at the first years of the developing market economy.

In 1987, the ministry responsible for environmental protection was formed. It has been reshaped several times since then. In fact, the entire environmental administrative structure has been in constant change during the last decade, and this too has undermined the effectiveness of enforcement.

The new perspectives of becoming an OECD and an EU member in the mid-1990s awakened certain environmental interests for Hungary, concluding that these steps could not be put off any longer. The result of these premises was the adoption of the 1995 Act relating to General Rules of Environmental Protection. A more intense legislation period began with a more or less new system of environmental regulation established. For the first five-year stage of the transition period the Hungarian Government adopted a comprehensive law harmonisation programme.

Between 1990 and 2006 the Hungarian government accepted 119 different acts, legislations, resolutions and statutory rules connected to environment protection.

The most important legal Acts issued by the Hungarian Parliament having significance for the environment are the following:

- Act XX of 1949 on the Constitution of the Republic of Hungary, Last amendment: 1995
- Act VII of 1961 relating to Forest Management and Hunting, Last amendment: 1994
- Act III of 1964 relating to Construction, Last amendment: 1991
- Act I of 1980 relating to Nuclear Energy, Last amendment: 1987
- Act No. 65/1990 on Local Governments
- Act LV of 1994 relating to Arable Land
- Act XLVIII of 1993 relating to Mining, Last amendment: 1993
- Act LIII of 1995 relating to General Rules of Environmental Protection (AGREP)
- Act LVI of 1995 relating to Environmental Product Charges and Environmental Product Charges on Certain Products
- Act LVII of 1995 relating to Water Management
- Act LIII. of 1996 on Nature Conservation
- Act. XXI of 1996 on Regional Development & Regional Planning
- Act Housing and Construction (1997)
- Act XLIII of 2000 on Waste Management

Ministries responsible for environmental protection were formed and reshaped several times:

- 1988-1990 Ministry for the Environment and Water Management
- 1990-1998 Ministry for Environment and Regional Policy
- 1998-2002 Ministry of Environment
- 2002 - Ministry of Environment and Water

The governmental structure is divided according to different environmental components and the supervision of the individual environmental fields in Hungary is also divided. Therefore, a profound integration of environmental policy and legislation is very important. At the same time - within the government – the actual Ministry in charge is responsible for the overall strategy of environmental policy and legislation. The Ministry of Environment and Water co-operates with other ministries and is responsible for monitoring environmental issues and executing the government's environmental policy through the activities of various offices and regional organisms.

2.3.2 Environmental Management

New EU member states' experiences show that environment is a very complex sector to handle. Special attention should be paid to effective inter-ministerial co-ordination and collaboration with regional and local authorities. Municipalities have recently been given a much larger mandate than under the former communist system. Many community services such as water supply and municipal waste disposal became the sole

responsibility of municipalities. Municipalities are responsible for controlling the disposal of waste on their territory, maintaining households' waste water plants, managing nature preservation and developing their own environmental protection programs.

2.3.2.1 Project management

In Hungary, from the smallest villages to the capital have basically the same responsibilities for providing environmental infrastructure. Therefore Hungary is one of the European countries which has prepared a municipal debt adjustment (bankruptcy).
During the 90's many of them were broken-down and today many of them suffer from the lack of financing and the lack of smooth management and maintenance.

Competences:

-Local development
-Urban planning
-Protection of the environment
-Housing
-Public transport
-Social services
- Primary schools
-Maintenance of roads, public areas, cemeteries, sewerage
-Water resources
-Fire services
- Culture

2.3.2.2 Municipal Environmental Protection Program

The law obligates municipalities to prepare their Municipal Environmental Protection Program. The programme must draft municipality duties such as public services or other services. It has to define the methodology and standard of the services. The programme can not adjust and can not contradict the National Environmental Programme. The preparation of the programme must materialize both at the settlement and county level.

2.3.2.3 Local Environmental Action Plans

Environmental action plans carried out by local governments most frequently address the following environmental segments:

- water pollution
- solid waste
- air pollution
- river pollution
- drinking water

- household waste

2.3.2.4 Municipal Environmental Protection Program

The law obligates municipalities to prepare their Municipal Environmental Protection Program. The programme must draft municipality duties such as public services or other services. It has to define the methodology and standard of the services. The programme can not adjust and can not contradict the National Environmental Programme. The preparation of the programme must materialize both at the settlement and county level.

2.3.3 Environment Condition

Environmental technologies in Hungary were improved since the 2004 accession to the EU due to the Strict environmental conditions of the EU's environmental acquis. The Hungarian Ministry of Environment and Water estimates $15-$25 billion worth of environmental investment to meet EU standards.

Water/wastewater - Hungary has instituted a program to improve water quality by minimizing the chemical and mineral content by 2009.

Renewable Energy: Due to climate-change, environmental requirements and market trends Hungary has targeted a realistic increase of its renewable energy (heat and electricity) use. The country intends to increase renewable energy generation from 3.6% in 2003 to 7.2% by 2010, and increase electricity use from renewable sources from 0.5% to 3.6% in the same period. Hungary has established six wind farms with total energy generation capacity and in 2002 developed one of the largest biomass-to-energy generation plants in Europe.
(See case studies at Chapter 7)

Air Pollution: Air pollution has significantly been reduced by the closing of the ineffective factories of the Soviet era. Supposedly it appeared again as an environmental problem with the rise of Hungarian living standards and, particularly, the mass purchase of automobiles. Investments must be made to reduce air pollution for Hungary to meet its commitments under the Kyoto Protocol.
The following chart represents the reducing tendency of the most important air polluters in Hungary since 1980. The second chart represents heavy-metal emission in Hungary between 1993-2000.

Environmental technologies: Hungary has limited domestic production capacity to meet its commitments for environmental improvement and protection. There is a fairly large market for the import of new environmental technologies. The adaptation of new environmental technologies in many cases is directly promoted through the government.

2.3.4 International Cooperation

Many foreign companies control Hungary's environmental market. Environmental manufacturers and management firms from Germany, France and Italy are the major competitors. Firms from Austria, the Netherlands, the United Kingdom and the United States also have operations in Hungary.

International treaty mandates have a limited impact at the local level. EU and international obligations such as the Kyoto Protocol on greenhouse gases also affect local governments to the extent that they own or have regulatory control over emitters and other sources of pollution. 95% of Hungarian local governments, of which have fewer than 10,000 residents, play a limited role in enforcing these international obligations by modernizing energy consuming facilities, lighting systems, building controls etc. in assets that are owned or operated by the municipalities.
Municipalities that issue construction permits have to follow national guidelines that they cannot amend unless it is for aesthetic or historical preservation reasons. Again greenhouse gas reduction as a policy will not be carried out at the municipal level.
In many Hungarian settlements, especially the smaller ones, cooperation with other municipalities were restricted to town-twinning cooperations. Development or encouragement needs to be done to develop international proposals with other municipalities in Europe.

2.3.5 National Cooperation with Local and Regional Authorities

Local governments

Local level: more than 3100 municipalities, communes, towns, towns with county rank, capital district municipalities and the capital. The **body of representatives** is the legislative board of the municipality, composed of members elected by direct universal suffrage. This board is responsible for the management and control of the municipality. Its decisions are presented in the form of resolutions and decrees. The head of the body of representatives' is a **Mayor** elected for a four-year term. The **Notary** is appointed by the body of representatives. The notary prepares and supports the work of the body of representatives and the mayor, and executes their decisions.
(The capital city, Budapest is organised in two levels: the "capital local government" and 23 districts.)
(See municipality competences at Chapter 2.)
County: 19 + Budapest. The county provides public service tasks that municipalities are unable to provide. However, on the basis of the principle of subsidiary, county local authorities are not allowed to handle tasks that communes and towns wish to keep control of. The county local government and the municipal local government are of equal rights, there is no hierarchy between them.

Competences

-Secondary schools

-Cultural infrastructures (libraries, museums)
-Maintenance of retirement homes and hospitals
-Land development
- Tourism

Regions: The 7 administrative regions were created in 1999 in order to be congruent with EU statistical regions. The regions are administrated by Regional Development Council, composed by central and local government's representatives.

A positive dialog between national, regional and local authorities is an essential basis for developing and managing programmes, strategies and projects.
There are certain pre-conditions at the national level to successfully develop and implement projects. In some cases municipalities have to hire costly experts in different areas in order to plan and realise a project. In these cases the government or regional authority should provide the municipality with assistance.

The national level should focus on:

- programming – being aware it is congruent with national legislation
- creating relevant legislative framework
- identifying of projects
- development and management of project pipelines – required considerable administrative capacity
- project prioritization
- identification and mobilization of funding sources
- monitoring or implementation results

The local level should focus on:

- designing and implementing relevant projects – compliance with legislation
- identification of needs
- concept development
- project preparation
- identifying and attracting sources of finance
- effective and efficient project implementation and management

2.3.6 Cooperation of Local Authorities with local SME's and other stakeholders

Public Private Partnership in Hungary
In Hungary, the public and private sectors are no longer one. Like other post-socialist states, Hungary took the first steps towards creating a democratic administrative system and moved from a centrally planned economy towards a market economy (Jenei, 2000).

The PPP programme targets the biggest infrastructural investments, for example motorways, sport centres, prisons, schools etc. and greases the skids for inland and foreigner investors.

In Hungary, PPP is an instrument of the government to reduce the expenditures of the state and the deficit of the budget. Despite this, it is not a well-functioning programme yet; in most of the cases the implementation of a PPP project may cost two times more than a simple public investment. To solve this problem the parliament should supervise legal regulations.

The municipality financial base also changed considerably. Due to the increasing deficit caused by vanishing state subsidies and privatisation, municipalities have been forced to involve the private sector in their investments. The biggest challenge of the coming years is whether municipalities will be able to meet the requirements set by the private sector and whether the state can speed up the reforms that are still needed to make municipalities creditworthy.

In 2007, a series of conference began promoting partnership between SME and local-authority or micro-region leaders. The events will focus on the following topics:

- Second National Development Plan (2007-2013) in a municipality and SME perspective;
- Available supporting structures to reach and manage EU Funds
- Efficient operations and modern investments

2.3.7 Successful case studies

1. Sustainable Urban Management Waste Recycle	The regional municipal solid waste management system of South Balaton and the Sió Valley
2. Sustainable Urban Construction Eco-Construction Use of environment friendly technology	Bio diesel plant in Hodmezovasarhely
3. Sustainable Urban Construction Eco-Construction Use of environment friendly technology for the production of electricity	Biomass heating system for the village Pornoapati (West Hungary) following an Austrian example
4. Sustainable Urban Design Rivers, lakes and coastlines protection and management	Cleaning and renewing polder and rain-water channels and banks in a settlement

2.4 Environmental Performance Review of Czech Republic

The EPR of Czech Republic outlines the Legal, Political and Institutional framework regarding the sustainable development in Czech Republic. It also presents the environmental current situation on several fields (waste, water, energy,) and the key issues on the economic and social development of the country, thus covering the three main pillars of the concept of Sustainability. Finally, a series of successful case studies regarding sustainable development in Czech Republic is presented.

2.4.1 Legal Framework

Legal framework with respect to the environment, environmental protection and sustainable development does not distinguish between urban and rural areas and addresses them as such without distinction.

2.4.1.1 Environmental Policy

In 2004 the Government of the CR adopted the State Environmental Policy of the Czech Republic 2004 - 2010 (SEP CR)[1] which defines the basic framework for long-term and medium-term orientation of the development of the environmental dimension of sustainable development in the Czech Republic. This document is an umbrella document with respect to all the other conceptual environmental materials related to the environment (e.g. policies regarding the individual components of the environment).

The priority areas of the SEP CR in compliance with the 6th Environment Action Programme of the European Community focus predominantly on tackling the existing and newly emerging environmental challenges in the following areas:

- Protection of nature, landscape and biological diversity
- Sustainable use of natural resources, protection of waters and flood protection, optimization of material flows and waste management
- Reducing the environmental load originating from human activities, improving environmental standards for the quality of human life
- Protection of climate system of the Earth and reduction of long-range transport of air pollution.

2.4.1.2 Strategy for Sustainable Development

The Strategy for Sustainable Development of the Czech Republic[2] was adopted by the CR in 2004. It represents a framework for the elaboration of conceptual materials (sectoral policy, action programmes and the like). It is the starting point for strategic decision-making within individual sectors and also inter-sectoral co-operation as well as collaboration with interest groups. The strategy defines the main (strategic) objectives, aims and instruments. They are defined in such a way to limit to a maximum degree the imbalance in mutual relations between the economic,

[1] http://www.cenia.cz/web/www/web-pub2.nsf/$pid/MZPMSFHDHD3O (in English)
http://www.cenia.cz/web/www/web-pub2.nsf/$pid/MZPMSFHDHER2
[2] http://www.cenia.cz/web/www/web-pub2.nsf/$pid/MZPMSFHDHBNA

environmental and social pillars of sustainability. They aim at safeguarding the maximum attainable quality of life for the contemporary generation and at the creation of prerequisites for the quality life for future generations.

2.4.1.3 Agenda 21

The Local Agenda 21 (LA21) is a programme of particular municipalities, towns and regions which introduces the principles of sustainable development into practice, while taking into account the local issues. It is drawn up with the participation of and in co-operation with the citizens and local organisations. It aims at the ensuring of high quality of life and environment in the place concerned for long time ahead.
The Local Agenda 21 is implemented at a number of places in the Czech Republic. In some cases it is pursued in the form of a coherent process, while in other cases the municipalities and towns are in the early stages of implementing individual activities only.

Legal framework related to the urban environment consists of the following acts:

- Generally Binding Rules of Law
  - Act N. 388/1991 Coll., on State Environmental Fund of the Czech Republic
  - Act N. 17/1992 Coll., on environment
  - Act N. 123/1998 Coll., on the right to information on environment

- Water Resource Management
  - Act N. 305/2000 Coll., Fuse plug levees
  - Act N. 254/2001 Coll., Water Act
  - Act N. 274/2001 Coll., Act on Water Supply and Sewer System

- Air Protection
  - Act N. 86/2002 Coll., Act on air protection
  - Act N. 695/2004 Coll., on conditions of trading in permits of greenhouse gases emissions

- Environment and Countryside Protection
  - Act N. 114/1992 Coll., on environment and countryside protection
  - Act N. 115/2000 Coll., on administration of damage compensations caused by selected specially protected animals

- Waste Management
  - Act N. 185/2001 Coll., on wastes
  - Act N. 477/2001 Coll., on wrappage

- Environment Impact Assessment
  - Act N. 100/2001 Coll., on environment impact assessment

- Chemical Substances Treatment

- Act N. 356/2003 Coll., on chemical substances and chemical instruments

- Genetically Modified Organisms and Products Treatment
  - Act N. 78/2004 Coll., on genetically modified organisms and products treatment

- Major Accidents Prevention
  - Act N. 59/2006 Coll., on prevention of major accidents caused by selected dangerous chemical substances and chemical instruments

- Integrated Pollution Prevention
  - Act N. 76/2002 Coll., on integrated prevention and pollution reducing

2.4.2 Political and Institutional Framework

2.4.2.1 Governmental organizations

- Ministry of Environment (www.env.cz)
- Agency for Nature Conservation and Landscape Protection of the CR (www.nature.cz)
- The Czech Environmental Inspectorate (www.cizp.cz)
- The State Environmental Fund of the Czech Republic (www.sfzp.cz)

2.4.2.2 Self-government

- **Regions and Municipalities**

Regional and local authorities also deal with the environmental matters. To this purpose they establish environment departments and commissions.

Such commissions serve as an initiative and advisory body to the Council (the executive body made up of representatives). With respect to the environment, the commission initiates or elaborates background materials for draft environmental decrees and submits proposals for the improvement of environment. It also issues opinions on the urban environmental policy, waste management policy drawn up by the municipality, discusses and issues opinions on investment and other plans relating to the environment, issues opinions on the applications for the provision of funds with regard to the environment, discusses complaints submitted and initiatives raised by citizens, issues opinions on them and suggests solutions thereof.

- **Municipalities Cooperation**

In case of co-operation of municipalities within the unions and associations of municipalities, working groups are also set up addressing the above mentioned matters. E.g. the Union of Towns and Municipalities of the Czech Republic[3] established the Environment Commission dealing with the environmental and nature

[3] www.smocr.cz

protection legislation related to towns and municipalities. This Commission is represented on the Board of the State Environmental

2.4.2.3 Non-governmental/ Non-profit organizations (NGOs)

Ecological and environmental NGOs (together with NGOs addressing with social issues) are playing the pivotal role in non-profit sector now, just like they did prior to 1989.

- Czech Union for Nature Conservation (www.csop.cz)
- Greenpeace (www.greenpeace.cz)
- Children of the Earth (www.detizeme.cz)
- Arnika (www.arnika.org)
- Friends of the Earth Czech Republic (the RAINBOW Movement) (www.hnutiduha.cz)
- The League of Ecological Alternatives (www.lea.ecn.cz)
- Healthy Cities of the Czech Republic
- Environmental Law Service (www.els.cz)
- The Brontosaurus Movement (www.brontosaurus.cz)

2.4.3 International Cooperation

International cooperation was established a long time ago. Many Czech towns are involved in town twinning projects with towns abroad within which they exchange their experience gained in a number of fields (e.g. transport, unemployment, troublesome youth, culture, tourism etc).

2.4.4 Environmental Management

- **Waste**

Production of hazardous waste:

- Total production of hazardous waste in the recent five years is situated on the level of 2,4 to 3,9 mil. tons. From the total 50 % of hazardous waste was produced in industry.
- The volume of the hazardous waste sorted out of the common municipal waste is lower than 1 % of the total production and this shows the low efficiency of the separate collection system of the hazardous elements sorted out of the common municipal waste,
- Compared with the hazardous waste production EU member states in the Czech Republic there is a bad situation, the Czech Republic produces 3-4 times more of the hazardous waste than the EU states.

o *Recycling systems*

Waste in the Czech Republic is recycled, however it fails to achieve the rate attained in the neighbouring advanced countries. In the Czech Republic only approximately 7% of its waste is recycled, compared to 50% in Austria.

- *Waste management*

The authors state that in the Czech Republic the desired hierarchy of waste management fails to be respected since the waste disposal rate exceeds its use. In the market economy environment no competitiveness of products made of waste is guaranteed. Separate collection of waste is not satisfactory either. Area of specific concern is the hazardous waste, biologically- degradable wastes, returnable products, to a certain degree also the municipal waste and the like. The prevention of waste generation has not been efficiently implemented, the waste disposal, especially the landfilling, predominates over the use and recycling of waste. Future investments into new facilities for the waste use and recycling will be necessary and the existing facilities will have to be extended and upgraded.

- **Water**

- *Drinking Water Supply and Water Consumption in the CR*

Since 1989 the water consumption in the CR has been on a decline. In 2004 the daily per capita water consumption amounted to 211 litres, which represents a drop by 47.4 % compared to the year 1989, when the specific consumption of produced water was 401 litres per capita per day. The specific household water consumption in 2004 equalled 102 litres per capita per day.

- *Sewerage System and Wastewater Treatment in the CR*

In 2004 a total of 817.5 million cubic metres of wastewater (including precipitation water) was treated which represents an increase by 4.26 % compared to 2003, when a total of 782.7 million cubic metres of wastewater was treated. In 2004 by a total of 8.2 million cubic metres less of wastewater was discharged into the public sewerage system, i.e. a total of 545.9 million cubic meters of wastewater was discharged.

- *Public Water-Supply System in the CR*

Share of population connected to the public water-supply system has been growing since 1991. At that time 84 % of population was supplied with water from public water-supply system, while in 2004 this share increased 7.8% to 91.8% of population.

- *Connection to Public Sewerage System in the CR*

In 2004 a total of 78.8% of population of the CR lived in households connected to public sewerage system which is by 6.8 % more than in 1991, when it was 72 %. The highest share of population connected to the public sewerage system in 2004 was reported by the capital of Prague (99.5%), while the lowest share was reported by the Central Bohemian Region (61.6 %).

- *Drinking Water Quality Monitoring*

Drinking water quality in public water-supply system is monitored by the "System of monitoring the population health status in relation to the environment". Since 1993 regular evaluations have been provided by the Ministry of Health in accordance with the Resolution No 369/1991 of the Government of the CR. Since the end of 2003 the monitoring system has been introduced in 32 areas, namely the capital city of Prague, capitals of the region and selected former district towns. Starting from 2004 the drinking water quality monitoring has been implemented in public water-supply system throughout the entire territory of the CR. In 2004 almost 3,800 supplied areas were

monitored, of which 3,000 areas are small areas distributing water to fewer than one thousand inhabitants.

- **Energy**
  - *Minimizing energy consumption use of other alternative resources purchase of energy saving appliances (bulbs) thermal isolation*
  - *Use of solar energy – solar panels*

Solar panels are predominantly used for water heating, to a lesser degree for heating of apartments or swimming pool water heating.

  - *Use of hydroenergy potential – small hydroelectric power stations*

In spite of the fact that the use of heat pumps and solar energy has been on an ascending trend, the renewable source predominantly used in households remains to be the biomass fuel, mostly wood and wood waste. In 2005 the share of gross production of electricity from renewable energy sources equalled 4.5% of domestic gross electricity consumption. For the Czech Republic the national indicative target for the share of electricity from renewable sources is set for 8 % for 2010. The share of gross production of renewable electricity amounted to 3.8% of the overall national gross electricity generation.

  - *Reducing the ecological impacts of energy production*

Significant environmental improvement, when open landscape is not burdened with waste and emissions, is the result of over 50 billion of investments of ČEZ a.s., the largest electricity producer in the CR. Their responsible approach to environment is testified to by cutting the emissions of fly ash by 97 %, emissions of sulphur dioxide by 93 %, nitrogen oxides by 60 % and carbon monoxide by 80 %. Almost 90 % of by-products no longer belong to the category of waste, but they may be further used.

2.4.5 Economic and Social Interface

2.4.5.1 Economic

a. Structure of economy

Currently the Czech Republic ranks among the states with fairly stable economy. GDP (15,700 USD per capita - 2004) has consistently been on an increase, the highest increment after 1989 being reported in 1995. In spite of the growing importance of services the share of industry in GDP creation remains to be significant. Substantial expenditure on gross fixed capital creates a potential opportunity for positive development of economy in the years to come. The economy of the Czech Republic is very open, with a major share of foreign trade.

Among the various sectors of the economy the percentage share of the services sector in the total GDP is the highest. It was 58.8 as in the year 2004. The agriculture sector has lost its relative importance in the recent years.

b. Public finance

Public finance situation is unsustainable in the long-term perspective because of the growing debt of the CR. The government debt which is the dominant component of the

public debt (representing 89.9 %) as of 31 December 2003 accounted for 20.5 % GDP (CZK 493.2 billion). the Current account deficit amounted to 6.2 % GDP (2003). The municipalities' debts also exhibited significant dynamics.
Public finance reform is a must.

Data indicate that the growing deficits are brought about by higher spendings, namely due to the rules for determination of a number of various allowances and transfers and substantial growth of costs needed for government activities. It is therefore not the result of long-term structural policies, such as pension system reform, or efforts aimed at the enhancement of future competitiveness of our economy through investments into infrastructure, education, science and research and other areas. Continuation of this trend would lead to additional indebtedness or our country and slow but guaranteed increase in budgetary expenditure by interest expenses.

The current situation of public finance is the outcome of violation of budgetary rules, lack of transparency, inefficiency and corruption. The volume of public expenditure exceeds CZK 1,300 billion annually, while it is not always clear what the funds are spent on and where they leak. The fundamental rules governing the preparation, approval process and subsequent control over the compliance with obligations laid down in the State Budget Act have been consistently violated. The failure to comply with the binding spending limits and deadlines for the state budget development constitutes yet another serious misconduct.

c. Labour

The general year-to-year unemployment rate fell by 0.8 percentage point down to 7.1 %, which was the record low, achieved in the past four years. The number of unemployed amounted to 364.9 thousand (of whom 200.5 thousand were women). The prevailing majority of the unemployed (68.5 %) are graduates from secondary schools without GCE and those with basic education.
On a long-term basis the highest unemployment rate is in the following regions: Ústí nad Labem Region, Moravian-Silesian Region (structurally affected regions, with major focus on brown coal mining and metallurgy in the past and related environmental issues (surface mines – moonscape), industry restructuring, high unemployment rate). On a long-term basis the lowest unemployment rate: Prague

2.4.5.2 Society

With respect to the sustainability the strengths of the CR social system may be considered to be the following:
- High economic activity of population.
- Established mechanism of active employment policy.
- Advanced social system.
- Widespread network of state as well as non-state social care establishments.
- Advanced health care system and state-of-the-art technology in a number of health care establishments

2.4.6 International Cooperation

International cooperation was established a long time ago. Many Czech towns are involved in town twinning projects with towns abroad within which they exchange their experience gained in a number of fields (e.g. transport, unemployment, troublesome youth, culture, tourism etc). The Union of Towns and Municipalities of the Czech Republic represents an umbrella institution for both the foreign and national cooperation. Through the intermediary of this institution the towns may establish partnerships with towns abroad.

2.4.7 National Cooperation with Local and Regional Authorities

Cooperation of towns, municipalities and regions in the Czech Republic has become a fundamental component of the administration of public property. Due to the high degree of fragmentation (of the total number of municipalities small municipalities with up to 1,000 inhabitants prevail, covering more than 2/3 of the state territory with only approximately 1/5 of the total population) municipalities have recognised the benefits of joining forces and tackling their common problems together. Such way of addressing problem areas is more effective and consistent than an individual approach taken by each municipality separately and enables municipalities to implement such projects the demand and significance of which would be beyond the individual municipalities. The unions the municipalities also enjoy stronger negotiating position when dealing with regional and state authorities.

2.4.8 Cooperation of Local Authorities with SME's and other stakeholders

Co-operation of local authorities with SMEs in areas related with sustainable development has not as yet reached the same level as in Western Europe. A buzz word in this context is the mutual communication which so far has not materialised. The co-operation between local authorities takes place predominantly in technical, transport infrastructure and construction of buildings areas.

2.4.9 Successful Case Studies

1.Case study of the town of Krnov[4]

Basic Information on the Project

Actors: Local government, NGO

Funding: Local government, National government, European Union, Other

Topics: Air-quality, energy, environmental education, information and public participation, land use and – planning, sewage and waste water, solid waste, water

Objectives: Improve access to information, improve environmental efficiency, increase non-motorised mobility, increase public awareness

Instruments: Integrated planning approach, local government structure / organisation, new environmental institutions / institutional reorganisation, new environmental policies and regulations, public participation

[4] (The case study was adopted from: http://www.eaue.de/winuwd/151.HTM)

Abstract

A programme for local environmental action was conceived for Krnov to mitigate environmental problems created in previous times. The 1989-1991 Eco Plan, developed by the Czech Union for Nature Protection (CUNP) reported on the environmental condition of air, water, soil, green spaces, natural resources, waste and urban development. Environmental considerations were addressed in the context of socio-economic activities - industry, agriculture, transport, energy, recreation and human health. Proposals were shaped for the improvement of the urban environment and quality of life. In Krnov, an educational campaign was launched, based on the Eco Plan to make citizens, town and business representatives sensitive to local environmental problems and the proposals for environmental action.

The key initiative taken by the Krnov town council in support of the Eco Plan was the creation of a new Environmental and Building department which oversees and directs actions addressing a wide-range of environmental issues in Krnov. The department sets policy and defines action for environmental protection in the areas of waste management, air pollution, transport and energy. It approves new construction and oversees general town planning. It is authorised to control local industry's impact on air and water quality and waste of energy. It collaborates with public interest groups and citizens on education and local initiatives and has established an environmental information data base. The department is accountable to the town council and the general public, and has frequent consultations with both.

2.Case study of the pilot project 'community composting in urban settlement' in the town of Chrudim[5]

Basic Information on the Project

Actors: NGOs - Ekocentrum PALETA, pob. Chrudim; Ekodomov; local government
Funding: Local government (grant), NGO
Total: 30 000 Kč
Topics: ecological processing of separated biological waste
Objectives: biological waste separation

Abstract

The pilot project of composting – biologic waste separation – was successfully tried and tested on the basis of a community approach in one of the Chrudim's housing estates. Within this project a model composter (composting bin) was used designed to be used by ten families. The project was presented to other towns and municipalities in the region. The total budget amounted to CZK 30,000.

[5] (The case study was adopted from: http://www.dobrapraxe.cz/index.shtml?apc=j1941688p)

3.Case study of the ecological audits in the schools and school organisations of the town of Vsetín[6]

Basic Information on the Project

Actors: Local government

Funding: Local government – wage costs incurred in relation to performance of tasks

Topics: ecological education

Objectives: increase of level of ecological education

Abstract

The first ecological audit conducted in 2002 carried out an analysis of the status of ecological thinking and behaviour and energy management in the schools and school establishments. In 2004 another audit followed inspecting the measures proposed in 2002. The outcomes confirmed the efficiency of the audit which contributed to better implementation of ecological principles in everyday school life and educational process.

4.Case study of the capital of Prague[7]

Basic Information on the Project

Actors: Local government

Funding: Local government, Other

Topics: Mobility and transport

Objectives: Increase non-motorised mobility, increase use of public transport, reduce car mobility

Abstract

Between the years 1992-1996, a new system for restricting and reorganising parking was introduced in the centre of Prague. This system was based on market principles, and an area of 3 sq. km in the city centre was set aside to provide about 9,000 parking places. Provision was made for vehicles to be parked for varying duration, i.e. short term (< 2 hours), medium-term (> 2 but < 6 hours), both types for visitors (public), and reserved parking for local residents and institutions accessible only with a parking card. At the end of the first four months, some positive results emerged, namely that some new parking spaces were created, which allow restriction of the traffic and improvement of the air quality. Other benefits are more opportunities for pedestrians to walk freely in the area and convenience for those who need to park there. Sufficient revenues were raised to afford economic independence in the area where the parking lots are situated, and to carry out further control and maintenance of the road network. A new "Law on Roads" came about in 1997, and subsequently municipal decrees were issued.

The project and the policy implementation can be considered as best practice because:

- an innovative approach was implemented using a market-based parking organisation with a private operator;

[6] (The case study was adopted from: http://www.dobrapraxe.cz/index.shtml?apc=j946426p)

[7] (The case study was adopted from: http://www.eaue.de/winuwd/152.HTM)

- as a result of the project, changes in the legal and regulatory system came about;
- the number of the cars parked in the city centre was efficiently regulated and reduced.

5.Case study of the barrier free urban mass transporation in the town of Hodonín[8]

Basic Information on the Project

Actors: Local government, transportation provider, NGOs

Funding: Local government, EU funds

Total: 26 855 718 Kč; 6,7mil Kč (town of Hodonín), 20 mil prostředky EU (ERDF)

Topics: urban mass transportation

Abstract

The objective to make the town accessible to everybody without exception has been implemented since 2000 through various sub-projects. The "Development of Transport Services in the Region – Barrier Free Urban Public Transport in Hodonín" project is focused on the development of public services. It aims at removing barriers and enhancing the mobility of all the citizens and visitors of the town through barrier free urban public transport. An integral part of the project is also an assistance service for handicapped citizens. The total investment under the project amounts to almost CZK 27 million.

6.Example of low-energy low-cost house in the city of Brno-Žebětín[9]

The low-energy house was designed so that the energy requirements of its operation equal approximately 20kWh/(m^2.a) and it matches the local architecture. The house is constructed using materials and technologies available at the Czech market and at a price close to that of a regular family house of the same size and with the same amenities. This house should test the main principles of cost-effective low-energy constructions.

7.Case study of the regeneration of panel houses urban settlement in the town of Kopřivnice[10]

Basic Information on the Project

Actors: Local government, Centrum pro komunitní práci

Funding: Local government, Support from Ministry of Regional Development

Total: 11 mil. Kč, 1st etapa: 6,5mil Kč(state support 4,6 mil Kč)

Topics: Parking, green areas, leisure time areas

Objectives: Increase number of parking places with subsequent arrangement of green and leisure time areas

[8] (The case study was adopted from: http://www.dobrapraxe.cz/index.shtml?apc=j1910234p)

[9] (The case study was adopted from: http://www.veronica.cz/dokumenty/pasivni_dum.pdf - page 24-25)

[10] (The case study was adopted from: http://www.dobrapraxe.cz/index.shtml?apc=j946678p)

Abstract

The regeneration of the prefabricated housing estate was necessary due to non-functional and outdated infrastructure dating back to 1970s. The public survey confirmed that it was especially lack of parking spaces that presented a challenge, and therefore the first stage of the project aims at increasing the number of parking places. The following stages shall deal concentrate on public greenery and areas for leisure time activities.

2.5 Environmental Performance Review of Malta

The EPR of Malta firstly, outlines the Legal, Political and Institutional framework regarding the sustainable development in Malta. It also presents the environmental management strategic directions on several fields (air quality, biodiversity, waste, land use, water, energy) and the key strategic initiatives taken by the Government in order to foster sustainable development.

2.5.1 In general

The National Commission for Sustainable Development (NCSD) is the institutional catalyst responsible under the Maltese Environmental Protection Act (Act XX of 2001, Cap 435) with the main remit to advocate national sustainable development across all sectors, to review progress in the achievement of such sustainable development and to build consensus on action needed to achieve further progress.

In December 2002, the Commission appointed a task force to oversee the preparation of a Sustainable Development Strategy for Malta, consisting of an overarching vision and principles, listing the aspirations of government, civil society and the private sector in this regard, and outlining methods of implementation, taking into account Malta's capacities and constraints.

In addition, the Malta statement at the World Summit on Sustainable Development at Johannesburg identifies the existing priority areas for sustainable development, on which ongoing projects are focused: protecting marine and coastal areas of Northwest Malta, implementing the solid waste management strategy, the regeneration of Valletta and the development of a sustainable transport system.

2.5.2 Legal, Political and Institutional Framework

Malta is a signatory of the UN/ECE Aarhus Convention on access to information, public participation in decision-making and access to justice in environmental matters, and following accession to the EU, was obliged to adopt Directive 90/313 on Freedom of Access to Information on the Environment.

Within the Maltese legislative framework, there are various degrees of public consultation, and different mechanisms for implementation, ranging from information provision and consultation, to partnerships with more delegated power and citizen control.

There are also ethical considerations relating to science and technology, since these have major impacts on sustainability. It is important that scientific and technological developments have, as their central aim, improvement in the quality of life of current generations, without compromising that of future ones.

The political dimension of sustainable development relates to the need for strong political commitment, from all layers of authority, including the government and local authorities.

It is therefore important that those in authority recognize the benefits of sustainable development and take steps to promote it. The National Commission for Sustainable Development is a useful instrument towards this end.

The political dimension is also relevant because the process of sustainable development requires consensus-building regarding the ways in which natural and economic resources are to be utilised. The process also involves subsidiarity – a principle associated with decentralization of power and the provision of an enabling environment, including material assistance to the decentralised units, to achieve sustainable development objectives.

In addition to the local scenario, there are economic aspects of sustainable development, connected with trade and aid, which have clear regional and international mutual interest dimensions. There are many international and regional arrangements for co-ordination and co-operation including the United Nations, the European Union and the Mediterranean Commission for Sustainable Development, within which Malta operates at the international and regional level. These have developed and promulgated their own sustainable development strategies and plans, and member countries have an obligation to abide by the commitments which they undertake within such organisations.

2.5.3 Environmental Management

In 1998, the *State of the Environment Report for Malta* (SoER) produced the first comprehensive review of the main concerns regarding quality of the environment. This review was subsequently updated in 2002, 2005 and 2006. Moreover, in 2002 the Government of Malta compiled and submitted the *Malta National Report to the World Summit on Sustainable Development*. This report reviewed Malta's progress in implementing sustainable development and includes a synopsis of the main issues of environmental quality as reviewed by the SoER (2002). The main environmental challenges that emerge from these assessments relate to air quality, use of resources, water, nature and biodiversity, wastes, marine and coastal environments, land use, transport, and the natural and technological risks associated with these matters.

- **Air Quality**

The main strategic directions with regard to the improvement of air quality are:

- Improve efficiency in electricity generation.
- Put in place an integrated approach to promote energy efficiency and conservation at the user end.

- Promote the adoption of new technologies, including mandating use of catalytic converters, to affect significant cut-backs in vehicle emissions.
- Direct the construction industry to improve design for thermal efficiency and to adopt energy saving measures prior to being granted development permission.

- **Renewable Resources and Greenhouse Emissions**

The main strategic directions with regard to resources and emissions of greenhouse gases are:

- Put in place a policy for rapid introduction of renewable energy sources.
- Take steps to continue reducing greenhouse gas emissions – this will at the same time enable Malta to fulfil its commitments under the "UN Framework Convention on Climate Change".
- Set up funding for research to improve knowledge on local materials and conditions in building and in the use of renewable energy sources.

- **Fresh Water**

The main strategic directions with regard to fresh water are:

- Safeguard the quality of fresh water resources so as to protect human health, and satisfy the requirements for human use (including agricultural and industrial usage).
- Allow the natural biodiversity of fresh water eco-systems and habitats to be sustained and to flourish, and put in place an effective emergency programme to protect such habitats.
- Modernise and rehabilitate the distribution network to cater for increased blending of groundwater with nitrate-free desalinated water in storage reservoirs before reaching the consumer.
- Identify, monitor and protect high status sites and to introduce catchment management, in line with the EU Water Framework Directive, covering all surface waters.
- Designate the entire Maltese Islands as a nitrate vulnerable zone in order to protect the quality of groundwater.
- Encourage further water conservation measures, including the use of cisterns, and further enforce regulatory measures with regard to illegal abstraction.
- Optimise the use of second class water.

- **Nature and Biodiversity**

The main strategic directions with regard to nature and biodiversity are:

- Monitor and legally protect all rare and/or threatened endemic species, and other locally occurring species of international importance, and take active measures for their conservation.
- Designate habitats (in particular marine areas) based on sound scientific information, to protect these habitats from incompatible development and to manage them.

- Fulfil all obligations under existing international environmental treaties concerning biodiversity and equip local agencies responsible for implementing these treaties with the necessary resources, personnel and administrative machinery to enforce legislation.
- Set up a nature warden service and introduce or increase fines for infringement of particular regulations, so as to provide an effective deterrent.
- Adopt an official policy on the introduction of genetically modified organisms.
- Promote and fund research to gain a better understanding of local biodiversity, including the establishment and funding of a national inventory/database of biodiversity.
- Devise schemes to improve awareness on local biodiversity.

- **Wastes**

The main strategic directions with regard to nature and biodiversity are:

- Encourage waste prevention, minimization, reuse and recycling.
- Close all non-controlled landfills and establish new controlled landfills and treatment plants for hazardous and non-hazardous wastes.
- Close all non-compliant incinerators, upgrade incineration plant for abattoir waste and replace incineration plants in hospitals by non-burn technology.
- Introduce economic instruments, such as deposit refund schemes, conductive to improved waste management practices.
- Develop facilities for the separate collection of wastes by Local Councils.
- Strengthen deterrence with regard to illegal tipping.
- Upgrade the present sewerage system to decrease to a minimum the present rates of failure of some coastal pumping stations as well as Malta's major sewage outfall at Wied Ghammieq.

- **Marine and Coastal Environment**

The main strategic directions with regard to coastal and marine environment are:

- Rigorously monitor the quality of coastal and marine waters and protect them from pollution so as to render them safe to human health, to satisfy the requirements for human use and to allow the natural biodiversity of marine eco-systems and habitats to be sustained as well as to flourish.
- Take steps to improve information regarding the state of the marine environment, and assign more resources to allow for more extensive monitoring programmes.
- Develop a comprehensive plan addressing coastal zone management.
- Strengthen and extend a system of marine conservation areas.
- Enhance capacity-building within government agencies, including management and enforcement personnel.

- **Land Use**

The main strategic directions with regard to land use are:

- Promote renewal incentives to make the best use of the existing urban fabric and reverse the decline particularly in historic cores, specifically through

strategic economic and social planning addressing the physical, economic, social and environmental issues in an integrated manner, whilst encouraging the use of vacant property.

- Protect the open countryside from uses which can be more appropriately located in the urban areas and adopt codes of practice for good agricultural practice.
- Maintain and improve the heritage of the build environment and historic resources.
- Manage the built environment so as to ensure the best possible quality of life, with minimal risks to human health and the fostering of cultural and social identity of our settlements.
- Promote stewardship of the rural, urban, coastal and marine environment and channel urban development into existing development areas.
- Revitalise existing town centres, making them more viable, improving efficiency of use of industrial areas, and upgrading the quality of other employment areas.
- Ensure closer integration of transport and land use planning so as to increase the use and efficiency of public transport rather than increased reliance on the private car.
- Promote higher residential densities and mixed uses close to existing town centres and public transport routes to reduce need for travel.
- Require the construction industry to adopt measures for sustainable use of stone and resources and reduce noise and dust pollution impacts on residential amenity.
- Devise methods so that tourism development should fully respect the environmental capital and sustain it.

- **Promoting a Sustainable Transport System**

The main strategic directions with regard to transport are:

- Devise methods to reduce over-dependence on private car use and the need to travel and to encourage more use of public transport.
- Promote efficient use of parking, introducing maximum parking standards for new developments, especially in employment areas.
- Enhance enforcement and use the latest technology and appropriate penalties to ensure that offenders do not hinder the strategy.

- **Natural and Technological Risks**

The main strategic directions with regard to environmental and technological risks are:

- Promote awareness that a major oil spill incident in Malta's territorial waters would have dramatic short and medium term repercussions on Malta's economy.
- Fully implement the National Marine Pollution Contingency Plan.
- Put in place further efforts to ensure that the operations of the Civil Protection Department fully compliment those of the Armed Forces, the Malta Police and the relevant environmental authorities.

2.5.4 Fostering Sustainable Communities

The social dimension of Sustainable Development is being tackled through the following strategic initiatives.

- The fostering of awareness of the benefits of intra-generational and intergenerational equity.
- The promotion of Social Cohesion through a progressive employment and welfare policy.
- The strengthening of Public Health by ensuring sustainability of the public health services provision in a situation of both higher demand as well as overall increasing health care costs, with a focus in primary health care.
- Providing education for Sustainable Development and promoting a mentality favouring a change in values towards more sustainable lifestyles.
- Promoting stakeholder and Major Group participation in Decision-Making.
- Raising Public Awareness through education, communication and information dissemination.

2.5.5 Cross-Cutting Strategic Issues

At a strategic level, sustainable development can be influenced by a number of related issues, and these are being tackled as follows.

- Integrated Planning; the preparation of an integrated spatial development plan to take forward the Sustainable Development Strategy and identify the roles and responsibilities of the various sectors in this regard.

- Monitoring; the construction, on an ongoing basis, of a set of sustainability indicators, in close liaison with the National Statistics Office, to cater for Malta's specific needs and at the same time to satisfy the international and regional reporting obligations of Malta.

- Promoting Use of Economic Instruments; encouraging further use of economic instruments, such as charges, taxes, subsidies, grants, rebates, deposit refund schemes, and performance bonds, to promote sustainable development in Malta.

- Enforcement; introduction of modern approaches for effective decision-making, legislation and policy, including firm but fair enforcement mechanisms, and regularly review and revise such approaches to ensure that they are effective and efficient.

- International and Regional Cooperation; signing and ratifying conventions and regional environmental agreements; promoting public awareness about Malta's obligations with regard to international legal instruments and agreements; contributing aid and technical assistance to the developing world.

2.5.6 Improving Environmental Performance

The main focus is on the agriculture, transport, energy, and tourism sectors. The goals can be achieved by:

- the formulation of Codes of Good Agricultural Practice;
- conservation of biodiversity on farmland;
- adoption of environmentally-friendly field management practices and techniques;
- implementation of proper waste management systems;
- minimisation of risks of soil erosion;
- ensuring proper use and application of fertilisers and pesticides;
- conservation of diverse rural landscapes and maintenance of wildlife corridors;
- phasing out of unleaded fuel;
- introduction of bio-diesel;
- ensuring that all vehicles and buses entering Malta meet EU standards;
- introduction of a park and ride system for the Valletta/Floriana area
- preparation of a draft Integrated Transport Strategy;
- the phasing out of the use of coal, and switching to low-sulphur fuels;
- launching of an Eco-Certification scheme for hotels;
- the promotion of rural tourism.

2.5.7 Private-Public sector collaboration

The main strategic directions regarding private-public collaborative schemes are:

- Devise schemes that enable the public sector to utilize the entrepreneurial and innovative skills of the private sector in implementing the sustainable development strategy.
- Put in place arrangements to promote and reward responsible entrepreneurship.

2.6 Critical Review

From the above presentation of the main points of the 4 ERPs certain elements that present the prevailing situation in the environmental sector should be highlighted per examined country :

a) Regarding Cyprus, it seems that there are no specific severe environmental problems and the current ecological footprint of Cyprus is considerable small. However, Cyprus is experiencing a period of economic acceleration and its footprint is expected to grow fast if the proper measures are not implemented. Therefore, focus should be given on launching a strategy on sustainable development with the centre of attention being paid on environmental management in order to contribute to further development that satisfies not only the human needs but considers the natural resources of the island as well.

b) Hungary has experienced high degradation of the environmental conditions mainly due to the heavy industries operating during the socialist era. It seems however that nowadays, the main sites of ecological degradation have been recovered whereas newer technology has replaced the old and energy consuming machinery. However lately, new challenges have appeared due to the increased economic and social needs, making traffic congestion and atmospheric pollution two of the main environmental problems that need to be faced up and solved. With the invaluable help of EU funds, currently available to Hungary, policy makers need to focus on instruments that will confront with the above mentioned problems. There is also a need of establishing an integrated strategy based on bottom–up approach that will mobilise public participation in a system towards sustainable development.

c) Czech Republic notices significant improvements on the environmental conditions, compared to late 80's, a success that was achieved not only through the proper legal framework introduced by the government but the great support of the general public. Therefore after having experienced the positive effects, it is important to further promote the public participation not only in the implementation of the measures but the decision making as well. It is believed that urban sustainable development has reached a level almost similar to western countries.

d) Malta's most significant environmental problems include inadequate water supply, deforestation, and the preservation of its wildlife. It becomes clear that initially Malta needs to at least confront with the above mentioned problems by establishing mechanisms targeted on those. Additionally the National Strategy for Sustainable Development needs to keep being enriched and updated by issues that arise and need to be considered in order to always address the economic, social and ecological needs.

3 TRAINING MATERIAL

3.1 Overview

In the framework of the Proud project training material was developed targeting at 4 main focus areas :

- Urban Sustainable Management,
- Urban Sustainable Transport,
- Urban Sustainable Construction and
- Urban Sustainable Design

The training material was promoted to the Local Authorities through the training e-tool that was also developed through the Proud project.
In the following chapters the main points of the training material per focus area is presented.

3.2 Sustainable Urban Management

The importance of promoting and cultivating environmental awareness and consciousness is increasing year after year. The number of environmental problems is growing, leading to significant implications for human health, the wider environment, and climate change. This is especially true in urban areas, where 80% of the European Union's population now lives. Europe's cities and towns have become engines of modern society, centres of economic, political, social and cultural activity, and magnets that attract the rural poor, as well as places where environmental problems most affect the quality of life of large demographic concentrations. In the face of this rapid growth, public services like water supply, sewerage disposal and power generation have been hard pressed to keep pace with demand. In this context, sustainable urban management is imperative for building a "biopolis," a healthy living environment for Europe's urban citizens.

How urban land is developed, affects the demand for transportation and the provision of transportation facilities changes how the land is used. Real progress toward sustainable urban management cannot be made without addressing this connection. Designing communities so that the demand for transport is less, discouraging urban sprawl, and supporting more compact communities where people can move more easily from home to work, to shopping, etc., is essential in achieving liveable cities with enhanced quality of life for all citizens.

Culture is an essential element of a sustainable city. The environment is affected by our culture, which is, in turn, shaped by the environment. "Bio-culture" represents a conscious effort to reach this interdependence. Aesthetic values, music, science, the arts, politics, and economics, can all come together in the struggle for a better quality of life. Bio-culture in the city can provide the needed momentum and life-supporting

policies to contribute to the more efficient implementation of sustainable urban management.

Cities that adopt a programme of sustainable management with the ultimate goal of zero emissions will reap many benefits, both now and in the future. They will become more attractive, healthful and liveable places, wildlife will return, and the cleansing of pollutants from the air and the absorption of carbon by trees will provide long-term benefits for both humans and wildlife. Restoring nature and culture to the city would be a great step toward the creation of a true "biopolis."

The objectives of the module on Sustainable Urban Management, developed by the Biopolitics International Organisation within the framework of the European "Promoting Urban Sustainable Development in Local Authorities," are therefore to:

- Raise awareness of the key principles of sustainable urban management
- Present urban management issues from the scope of the environment, the economy, and society
- Stress the links that exist between sustainable urban management and the improvement of the environmental performance and quality of urban areas
- Set out the nature of the challenges, what action has been taken at the European level, and ideas for addressing the challenges identified

3.2.1 Environmental Management

3.2.1.1 Land Management

The way in which urban land is utilised can have a significant impact on the environment. In today's cities, land is utilised in a very concentrated manner, while land on the outskirts of cities is typically developed in a more spread out and lower density pattern more demanding of land for housing, commerce and transport with environmental repercussions. Natural habitats are destroyed, and pollution from road congestion increases. Industrial activities in metropolitan areas further aggravate deteriorating environmental quality, and often leave behind unsightly and polluted tracts of land and buildings when they close or move elsewhere. Changing lifestyles and incoming migrants drive the need for more housing, while favourable economic conditions and an upward trend in personal affluence lead to lower residential densities and increased demand for first and second homes.

As the trend toward increasing urbanisation continues, governments must support environmentally sound land use policies and initiatives that promote sustainable cities. Urban land use has to be developed in a way that is both sensitive to human needs and minimises negative environmental impacts. Integrating environmental dimensions from the earliest stages of the planning process can greatly contribute to the sustainability of urban areas. There are numerous tools at the disposal of urban planners. Higher density development, better public transport infrastructure, support for non-

motorised transport through the provision of walking and cycling networks, flexible zoning, and brownfield restoration are some of the land use practices available to help preserve the carrying capacity of the urban environment.

3.2.1.2 Urban Ecology

Today's model of urban expansion can be characterised as inadequately managed urban sprawl. It has not occurred in the absence of public oversight, but the instruments available to manage it have not effectively controlled its growth, nor prevented adverse consequences to air quality, water quality, biodiversity and natural resources from extending well beyond the areas in which they occur. This is oftentimes due to conflicting goals and objectives between levels or departments of government. Fundamentally, the conflict can often be reduced to one of economic growth versus environmental protection.

This business as usual model of development should be replaced by a more biocentric, proactive approach based on growth management and sustainable development that minimises negative environmental effects. The basic aim of sustainable urban management is to reduce the ecological costs of today's activities so that natural resources are able to renew themselves and remain available for future generations. Researchers and policy makers in the European Union are developing creative and innovative ways to address the environmental and ecological consequences of urbanisation. Greenroof technology, urban microfarms, and terracing are some of the ways in which cities can reduce habitat destruction, conserve natural resources, and create cleaner and more enjoyable urban communities.

3.2.1.3 Water Management

A supply of readily accessible, clean, fresh water is essential is a vital resource in urban areas. Early settlements located near water sources had ample supply for consumption and waste removal. However, as populations grew and industry developed, cities had to find more advanced ways of meeting their water needs. Today, water and sanitation are among the first public infrastructure systems provided in urban areas. Therefore, the need to protect the urban environment must include more innovative and durable strategies to manage the consumption of water, and the treatment and disposal of wastewater to avert the risk of supply disruptions in future years.

Given the complexity of the issue and the common property of water, proposed strategies to implement water saving and wastewater reduction/reuse should involve the public. Policies adapted to local situations and stakeholder concerns within the broader issue of sustainability enables water management approaches to be developed within local constraints and realities, and thus tailored to meet the real needs of the population being served. Within this context, reducing urban water consumption, wastewater treatment technologies, wastewater reduction strategies, water recycling, and sludge reuse are some of the issues explored in the management of Europe's water resources.

3.2.1.4 Waste Management

Economic growth over the last century has been matched by increases in the amount of solid wastes that society produces. Current predictions indicate a doubling of the generation of certain wastes by 2025, while municipal waste in the EU is projected to increase 25% by 2020. In this context, the environmental and socio-economic impacts of waste management can be significant and wide-ranging, making proper waste management central to sustainable development. The goal of urban solid waste management is to collect, treat and dispose of solid wastes in an environmentally and socially satisfactory manner using the most economical means available.

The task of providing solid waste management services usually lies with local authorities, and the predominant option is to dispose of municipal waste at a landfills. Incineration is another option, though not until recently has there been an increase in the incineration of municipal waste. Current consumption patterns, along with business and economic activities, constantly increase the amount of solid waste being produced by cities, making it imperative to find sustainable management solutions for urban waste. Waste minimisation and recycling can be incorporated into planning and decision-making for more sustainable urban waste management practices.

3.2.1.5 Alternative Energy

Energy drives the engine of urbanisation. However, such traditional energy sources as oil, coal and natural gas are hampered by political, environmental, and economic issues. As the world continues to urbanise, however, the demand for energy from emerging countries will grow, adding to global consumption. The development of efficient and sustainable energy practices is therefore essential to ensure sustainable cities, and to avert further environmental degradation and global warming.

Conscientious energy management must focus on reducing non-renewable energy consumption, increasing renewable energy production, and increasing energy efficiency. At present, the percentage of energy derived from renewable sources is very small in relation to demand. Urban planners have options available, which can reduce dependency on non-renewables, including: geothermal, hydropower, wave, tidal, ocean thermal conversion, wind, solar, and biomass.

3.2.1.6 Mobility and Transport

Transport is an indispensable component of modern society, providing for the rapid and easy movement of people and goods over distances to facilitate both trade and individual freedom of travel. However, the transport sector incurs major direct and indirect costs to society in terms of energy consumption, air pollution, noise, destruction of natural areas and habitats and global warming. Some of these costs are borne by individuals, but many of them accrue to society as a whole.

The concept of sustainable transportation is a reaction to these undesirable impacts. It is imperative that urban transport systems become more sustainable and less destructive. The issue has to be addressed in a comprehensive manner, taking into

account physical, economic and social impacts and devising new strategies for sustainable urban communities that include traffic calming measures, small towns bypasses, high capacity/low impact transit modes in urban centres, and limitations on private auto use.

3.2.2 Economy

3.2.2.1 Capacity Building for Sustainable Development

Underlying all the elements of sustainable urban development is the need for competent institutions and personnel to carry out the policies. A fundamental goal of capacity building is to improve a country's ability to evaluate and address the crucial questions related to policy choices and options, based on an understanding of needs, as well as environmental potentials and limits. It entails the mobilisation and orientation of all of the applicable resources of a country including human, scientific, technological, organisational, and institutional.

Building capacity occurs on many levels, extending from the individual, community, and implementing institutions, to the nation itself. The fundamental objective of capacity building at the individual level is to assist people in attaining the skills needed to change their future for the better through education and training. It is based on the concept that without human resources development, most interventions would not be effective. Capacity building at the community level entails working with local organisations in defining local priorities, needs and objectives. At the institutional level, it involves organisational development and training of staff. All of these elements come together at the national level, where they are incorporated into the needs of projects and programmes.

3.2.2.2 Economy and Finance

Sustainable development requires not only extensive project planning but also financial planning, without which most projects would be left under- or unfunded to achieve the goals set forth by policy. Over the past decades, the European Union has become a leading innovator in ways to ensure that its projects are actualised and advanced. This has occurred in large part because of international and national recognition that policy makers, private enterprise, and the public at large must work together to bring about real and sustainable change. To this end, public and private sponsorship of sustainable projects have become the mainstay of efforts to move Europe's cities towards a truly sustainable landscape of urban living and innovation.

Several mechanisms contribute guidance and financial support to the sustainable development of Europe's cities. The EU's financing mechanism for environmental protection and nature conservation projects, LIFE+, is a co-financing strategy with other public and private funding sources. The European Investment Bank is Europe's central tool for financing sustainable development and environmental protection projects, particularly in urban development. The Eco-Management and Audit Scheme

is a guidance tool to companies and industries to manage their environmental impact while remaining competitive. And city managers can conduct audits pertaining to the development of public spaces. Such mechanisms help shift policy priorities away from short-term financial gains towards long-term investment in the well being of the community and sustainable urban development.

3.2.2.3 Employment Creation

Cities are areas of enhanced economic growth and opportunity. Urban areas have always created jobs, and attracted and trained talented and energetic individuals. From their origins as trading facilities to their emergence as centres of resource development and manufacturing, cities are the loci of economic activity for the majority of the world's population who migrate there in search of employment and a better life. Some bring skills with them, but many do not. Because of this, cities have always struggled with balancing the needs of residents with the needs of the economy, especially during periods of economic downturn.

Employment is one of the most important stabilising factors for social development and environmental sustainability. It generates revenue to develop and implement sustainable projects. By contrast, underemployment and unemployment represent dynamic problems for city managers, due primarily to the complexity of market mechanisms and demands on social protection systems. As such, they can be devastating problems, especially among youth and women where it tends to run higher. Yet entry and re-entry into the work force is not an easy proposition. Personal problems may cause individuals to leave employment or create circumstances in which productivity declines. To address this issue, many policies have evolved to enable persons to find and keep employment, including income support, benefits-in-kind, career counselling, employment fairs, etc. Taken together, these policies make up an important part of the modern welfare system throughout Europe.

3.2.2.4 Education

Education is a universal right, which all nations in the world must strive to ensure and promote. This duty falls heavily on cities, as the returns to education are vital for the survival of urban areas. Higher educational attainment correlates with greater productivity and innovation, leading to the increased capability of communities to sustain themselves. Conversely, lack of education increases the incidence of poverty, crime and unemployment, depressing positive social and economic activity. Barriers to education come in many forms, some overt and others manifest in the system of formal and informal rules and mores of a society. These barriers entail denial to traditional modes of education such as access to classroom participation or school registration, as well as to newer forms of learning tools such as the internet and information technology.
To ensure that all members of society have equal access to education, city managers must continuously monitor, evaluate and re-evaluate practices and devise innovative ways to incorporate new dimensions into educational policies that emphasise self-sustainability and integrates cultural differences. Changing demographics across the

world and the rise of the information age create enormous fiscal and ethical strains on administrations; however these strains should be viewed as opportunities to devise new approaches and strategies. The information economy can expand access to learning programmes by utilizing information and communications technology products and skills to develop innovative educational networks.

3.2.3 Social Welfare

3.2.3.1 Demographic Factors

A thorough understanding of the demographic factors of a society is essential for the development of sound urban policy. The characteristics of a population are constantly changing in response to evolving social, political and economic forces. In Europe today, populations are becoming older, with implications for the provision of health care and social welfare services. A large inflow of migrants is changing the profile of cities, introducing cultural diversity and social issues. The unequal treatment of women in the workforce is another issue that policy makers are grappling with. Each of these factors has policy implications as it interrelates with other segments of society.

3.2.3.2 Security

No issue is as endemic to urban environments as the need for security and crime prevention. Efforts to combat the adverse effects of criminal behaviour must be addressed with a systematic, evidence-based approach. By analysing and adapting strategies from across the EU and the world, cities will find new and innovative approaches to curbing the incidence and prevalence of crime. Due to the extension of interactions amongst European cities in the new century, authorities must maintain clear, open, trusting lines of communication not only at the regional and domestic level, but also at the international level. Higher rates of crime and deviant behaviour tend to be found when trust of policing agencies is lower. Communities and law enforcement officials need to be able to identify with each other in the areas being served.

Three basic questions inherent in security and crime prevention are: 1) Who are the victims?); 2) Who are the perpetrators?; and 3) Whose duty is it to protect the security of the community and how?. While there are no clear-cut answers. focusing on strict definitions is not sufficient to mitigate behaviour. Crime can be so embedded in the social fabric of communities that it is accepted and even rationalised, leading to the disintegration of community bonds, social order and security. While crime can in part be solved with direct preventative measures such as the use of video surveillance and security officers, these measures must be in concert with a response from urban managers that addresses broader environmental issues. These issues include poverty, unemployment, ethnic and cultural interaction, educational deficits, social exclusion, distrust of institutions, and improvements in the physical environment which can restore a sense of pride in urban areas.

3.2.3.3 Urban Health

The protection of public health is central to the management of sustainable urban communities. Good public health allows for full participation in the social, economic and recreational opportunities found in cities, and as such is directly related to a community's productivity, social cohesion, economic prosperity and overall happiness. If urban planners, decision makers and managers hope to improve overall public health conditions to comply with sustainable development goals, they will have to take into account these broader issues which affect the lives of all urban residents. These include demographic trends, the emergence of new diseases and retrenchment of old illnesses, environmental degradation, the concentration of human activities and lifestyle patterns. Demographic factors, for instance, include an aging population with associated late-life illnesses, while economic factors concern the escalating costs of health care. Environmental factors related to urban health include air, water and noise pollution – all by-products of modern urban life. Urban managers have a broad range of tools available to reduce the health impacts of environmental pollution on city populations.

3.2.3.4 Accessibility for Special Needs

The goal of accessible cities is to eliminate obstacles in the movement, transportation, education and employment of people with special needs. In this context, accessibility means facilities or amenities that are unobstructed and safe, and can be accessed by anyone in a self-sufficient manner, including people with special needs. Accessible cities is not restricted to infrastructure, however, but applies to all activities in which any person may participate. Such cities inspire the creation of an accessible municipal network in which infrastructure, facilities and equal opportunities can accommodate and benefit all citizens with equal ease and safety.

The role of local administration in guaranteeing accessibility for people with special needs is vital. There are a number of tools available to improve infrastructure and eliminate barriers, many at little extra cost. For instance, clearing sidewalks and using contrasting colours on signage facilitates movement for the visually impaired, while the application of universal design and accessibility standards gives an opportunity to all people with special needs to live and participate fully in a friendly and safe environment.

3.2.3.5 Income

Guaranteeing a minimum level of income requires massive resource mobilisation and logical planning. European cities have benefited immensely from the adoption of liberal welfare state policies, and have become the hallmark of social economic design across the world. These policies require considerable administrative capabilities. Local officials and institutions stand at the front line of interaction between those who need and those who have financial resources. Thus, national policy must be understood at the street level to be effectively implemented.

The two major ways to secure financial resources are through formal and informal transfers. Informal transfers are those transactions not under the regulation or legislation of governments, such as between family members. Employment is regarded as a formal transfer in which an individual provides his or her labour in return for wages regulated at basic minimum levels. Government institutions also provide formal transfers through income support programmes, generally funded through taxation. Some of these measures can have unintended consequences for the very persons they are designed to aid and others as well. Therefore, city planners and policy makers must pay significant attention to how such policies affect communities, and use innovative management tools when any economic restructuring is implemented.

3.2.3.6 Gender Justice

European cities, in general, have an excellent record regarding gender inclusion in economic, social and political life. There remains, however, some degree of under-representation of women both across these issues and regions. Women do not share the same level of influence in political, economic or social agendas as their male counterparts for various reasons, though women in urban areas are more likely to be employed than those in rural areas. Nevertheless, an increase in opportunities for women across the labour market will be beneficial to all, provided that policy makers address the implications of increasing participation rates for women in responsible, sustainable ways.

Mainstreaming women in employment policies is important for urban areas not only to utilise the maximum potential of their labour force, but also to equalise the relationship between the genders. Such policies should promote standardised pay schedules for corresponding positions to eliminate wage discrepancies. In addition, the promotion of entrepreneurial activities amongst women can create jobs for the surrounding community, empower women, and dissolve any negative stereotypes regarding woman-run enterprises. Such initiatives would also serve to increase personal skills and capacity amongst women. Education and vocational training programmes for women can be an important pathway out of unemployment and poverty as well and help reduce inequities between genders.

3.2.3.7 Social Integration

Integration has become an important part of policy and planning throughout an expanding Europe, and particularly in urban areas. Cities must be especially attuned to the need to integrate various social groups into community life due to the intensity of contact between both individuals and groups, the density of urban centres, and the logistical and financial difficulties entailed in the management and delivery of public services in large populations. Those at risk of social exclusion, and hence in need of responsive integration strategies, include people with special needs, the elderly, homeless persons, refugees, migrants, youth, and ethnic minorities. Access to public and private services, social resources, economic and civic participation, crime and the living environment are some of the dimensions that need to be addressed by urban

planners to create sustainable urban environments that are inclusive of all its inhabitants.

3.3 Sustainable Urban Construction

The construction, use and demolition of buildings involves a considerable environmental impact on our surroundings in the form of climate change, depletion of raw materials, pollution and the generation of waste. Meeting the challenge of making construction sustainable, means reducing the consumption of resources and at the same time increasing the reuse of waste and the healthiness of buildings and their surroundings. In order to make significant lasting changes it is necessary to maintain minimum comfort levels, so that users perceive them as positive measures.

The production process extracts materials from the environment and transforms them into products which, once consumed to meet the needs they supply, are returned to the environment as waste. These materials may be the steel in the structure, the gas for the heating or the water used for cleaning. They all end up as waste, in the form of scrap metal, CO_2 or dirty water. Some of this waste is easily returnable to the production process, such as steel and concrete, which are relatively easy to recycle for similar functions. Others, such as gas emissions, remain practically uncontrolled and ultimately produce far-reaching environmental impacts, such as climate change or acid rain.

These impacts not only affect our environment; they can also directly affect our health. The use of various materials such as PCBs or creosote, used for their good technical properties, can seriously affect people's health, normally increasing the possibility of cancer. There are also illnesses caused by the location of a building, in the event of having built on a site affected by strong radon radiations from the soil, or due to lack of maintenance of the installations. This latter case is known as sick building syndrome, the consequences of which tend to be irritations and a general feeling of unwellness.

3.3.1 The main points of sustainable construction training material

The best strategy for reducing the consumption of resources is to reduce demand, but it is also possible to make better use of the renewable resources we have at our disposal. The best way to reduce energy consumption is, then, a judicious combination of reduced demand and solar collection, whether active (thermal or photovoltaic panels) or passive (direct gain or air current control). A similar strategy can be implemented to reduce water consumption, reducing demand by means of responsible use and specific apparatus such as dual-flush toilets, at the same time obtaining new water resources by using rainwater or reusing grey water.

A key factor in architecture is integration into the setting. Integration has to be more than aesthetic; it has to take into account nearby buildings and obstacles, orientation, temperatures, humidity, solar radiation and vegetation. These factors, among others, have a direct influence on the amount of resources that buildings consume. For example, if a building in a hot climate receives a lot of solar radiation in

the afternoon, it must have good solar protection in the west façade to prevent overheating, otherwise it will need to consume a large amount of energy for air-conditioning.

Integration into the surroundings, in a more general sense, also includes the correct choice of the materials used to construct buildings. For materials to be considered sustainable, various factors must be taken into account, such as their being locally sourced and plentiful, long-lasting and easy to recover once they have become waste. This last factor is particularly important if we consider that, one day, most construction materials will be provided by recovered waste, since natural resources are diminishing daily. Most of the waste from the demolition or deconstruction of buildings is inert, which favours recycling, but the lack of regulations about recycled materials gives rise to a reticence to use them on the part of technical specialists. Normally, recycled waste ceramics or concrete are used for non-structural functions such as the sub-base of roads. Others such as timber and steel can often be reused without having to undergo a recycling process.

To promote the best buildings and construction products it is necessary to establish award mechanisms, thereby distinguishing them from the rest, so that users can easily and reliably recognise them. Energy certification takes the form of a certificate that shows quantitative information about energy expenditure, making energy consumption one factor more to bear in mind when deciding to buy or rent a dwelling. There is also ecological labelling, such as the Eco-label, which guarantees that the product bearing it complies with a series of minimum environmental requisites.

Sustainability in construction also requires a more global approach to the issue that covers the territory and the city. The preservation of traditional architecture and the revitalization of rundown districts are necessary actions to promote social cohesion in the city, at the same time reducing the construction of new buildings and infrastructures, thereby lessening the consumption of resources. Ecological, economic and social parameters must be integrated into urban development to create sustainable cities. Compact cities occupy small territories and bring together residential, work and leisure spaces in the same areas, allowing far greater energy efficiency than urban sprawl, where long journeys are required to carry out the various everyday tasks due to their geographical, functional and social dispersion. It is important to remember, however, that it is a challenge to achieve a suitable balance between the different uses.

Green spaces, which are vital for healthy surroundings and to encourage social relations, must be plentiful but not excessive, otherwise the city would cease to be compact. The vegetation should comprise local species that require less maintenance and water. It is also necessary to bear in mind the design of the irrigation network, ensuring it is as efficient as possible in its use of water, employing techniques such as the drip system, careful sprinkling or specialized watering programmes.

Pollution and energy-use in cities depend to a large extent on the type of transport infrastructures. It is important to encourage residents to make maximum use of public transport and bicycles, and to promote journeys on foot. A good public transport system and special bicycle and pedestrian lanes allow them to leave the car at home and enjoy their urban surroundings more. In cases where it is difficult to dispense with cars, services such as car-sharing can be implemented, allowing more people to travel in fewer cars. It is also important to preserve natural corridors between the city's surroundings and internal green spaces for residents to enjoy, at the same time ensuring ecological continuity.

The acceptance of sustainable urban development calls for citizen participation. Dialogue between resident associations and government agencies is vital to achieving a lasting sustainable community, avoiding development that does not work due to citizen opposition. Participation has to start at the design phase, by considering the community's different viewpoints.

3.4 Sustainable Urban Design

3.4.1 Background and Policy Context

The environmental performance of Europe's towns and cities vary considerably[11], and many local authorities are not tackling their environmental problems systematically. The Commission's Green Paper[12], "Towards a thematic strategy on the urban environment", explains the importance of sustainable urban management at the local level and how the 1992 Earth Summit created the Local Agenda 21 (LA21) initiative in recognition of the particular role in helping to achieve sustainable development that is played by municipalities. Europe is the world leader in LA21 with over 5,000 municipalities committed to the process[13]. The LASALA project[14], involving over 250 local authorities across Europe, has reported that, when implemented, the LA21 process has been extremely effective in securing changes in attitudes, understanding and practice at the local level, including a better implementation of environmental legislation.

Unfortunately, the take up of LA21 across Europe is very uneven and there is evidence that its implementation is starting to falter even in the countries where it has been most enthusiastically supported. Those LA 21 processes that do exist also vary widely in their scope and level of ambition, with little monitoring of the effectiveness of their implementation. Unfortunately, only a few Member States have institutionalised the LA 21 approach in law to overcome some of these shortcomings (of which Denmark and the UK are examples).

The Commission's Green Paper concludes that,

"**A stronger framework at the European level is therefore necessary to revitalise and generalize the environmental management of Europe's largest towns and cities.**"

The Impact Assessment to Commission's Green Paper[15] quotes a 2003 expert working group[16] on sustainable urban management that identified the most important issues preventing the adoption of an integrated approach at the local level. The key issues hindering the delivery of integrated environmental management at the local level were cited as:

[1] Reported study results for ecological footprints collated by Best Foot Forward (www.bestfootforward.com). The more sustainable the city, the smaller the ecological footprint per citizen

[12] COM(2004)60 final: Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions: Towards a thematic strategy on the urban environment

[13] Second Local Agenda 21 Survey (ICLEI) 2002

[14] Local Authorities' Self Assessment of Local Agenda 21 (LASALA) project. http://www.iclei.org/europe/LASALA/

[15] SEC(2006) 16: COMMISSION STAFF WORKING DOCUMENT *Annex to the* COMMUNICATION FROM THE COMMISSION TO THE COUNCIL AND THE UROPEAN PARLIAMENT on Thematic Strategy on the Urban Environment: Impact Assessment: COM(2005) 718 final.

[16] http://www.europa.eu.int/comm/environment/urban/sustainable_urban_management.htm; The expert working group was established to provide input to the Communication "Towards a Thematic Strategy on the Urban Environment" COM(2004)60

- **Insufficient cooperation beyond administrative boundaries:** many projects require cooperation beyond the boundary of a single local authority. This is particularly true where traffic enters the city from the surrounding region and also where an urban area is comprised of several local authorities (e.g. Athens, Brussels and London).
- **Insufficient horizontal cooperation across different policies ("silo thinking"):** the development of policies in isolation prevents links and efficiencies from being identified and risks developing solutions that work against other policies.
- **Development via short-term and isolated practices:** the lack of a long-term strategic vision can make integration difficult since no guiding principles are established for all decisions and policies to follow.
- **Insufficient vertical cooperation between different administrative levels**: authorities need to coordinate their activities to effectively address the environmental problems highlighted."
- **Insufficient public participation**: public involvement in decisions affecting the local environment helps deliver effective solutions and gain public support.

Most of these factors point to a lack of "joined up thinking" on the environment and the way in which environmental policies are implemented, which Member States are now beginning to address. But the last issue concerning public participation, hits at the degree of transparency and public accountability in planning and design processes and has far wider implications. Whilst it is recognised that transparency and public accountability can be costly (because they can increase the time taken for the finalisation of a project design and its subsequent acceptance through the planning process), best practice tells us that successful project outcomes are increasingly dependent upon it. Philosophically there is also much to be gained from involving the local community in large developments that are likely to reshape the way that they live their lives. A typical example is the Hulme project from the UK where the local community helped to shape the way that a large residential zone was developed from an area of economic decline and depravation into an award winning mixed housing area[17].

Whilst there would seem to be no single approach that can be adopted to the problems of transparency in decision making, or to the making of information readily available to the public, the Aarhus Convention[18] places now an obligation under EU law for Member States to do so in matters concerning the environment (and therefore by implication for matters concerning sustainable urban development). This Convention establishes a number of rights of the public (individuals and their associations) with

[17] See for example, Hulme, ten years on: Draft final report to Manchester City Council, June 2002. The SURF centre, University of Salford. Downloadable from the pages of the SURF group on the site of the University of Salford, http://www.salford.ac.uk

[18] The United Nations Economic Commission for Europe (UNECE) Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters. Adopted 25 June 1998 in the Danish city of Aarhus (Århus) at the Fourth Ministerial Conference as part of the "Environment for Europe" process, entering into force on 30 October 2001. See for example Europa website at, http://ec.europa.eu/environment/aarhus/#what#what

regard to the environment. The Convention provides for:

- the right of everyone to receive environmental information that is held by public authorities ("access to environmental information"). This can include information on the state of the environment, but also on policies or measures taken, or on the state of human health and safety where this can be affected by the state of the environment. Applicants are entitled to obtain this information within one month of the request and without having to say why they require it. In addition, public authorities are obliged, under the Convention, to actively disseminate environmental information in their possession;
- the right to participate in environmental decision-making. Arrangements are to be made by public authorities to enable the public affected and environmental non-governmental organisations to comment on, for example, proposals for projects affecting the environment, or plans and programmes relating to the environment, these comments to be taken into due account in decision-making, and information to be provided on the final decisions and the reasons for it ("public participation in environmental decision-making");
- the right to review procedures to challenge public decisions that have been made without respecting the two aforementioned rights or environmental law in general ("access to justice").

The Aarhus Convention has been implemented in EU law since 17 February 2005 and is defined in several EC documents[19].

The provisions of the Aarhus Regulations are in addition, to those provisions for public participation in environmental decision-making that are found in a number of other environmental directives, such as Directive 2001/42/EC of 27 June 2001[20] on the assessment of certain plans and programmes on the environment and Directive 2000/60/EC of 23 October 2000[21] establishing a framework for Community action in the field of water policy.

The "Aarhus Regulations" apply to all government bodies, public agencies, institutions, and administrations including those established by, or on the basis of the EC Treaty. These organisations now need to adapt their internal procedures and practice to the

[19] Decision 2005/370/EC, 17 February 2005, Directive 2003/4/EC of the European Parliament and of the Council of 28 January 2003 on public access to environmental information and repealing Council Directive 90/313/EEC, Guidance document for member States' reporting under Article 9 of Directive 2003/4, Directive 2003/35/EC of the European Parliament and of the Council of 26 May 2003 providing for public participation in respect of the drawing up of certain plans and programmes relating to the environment and amending with regard to public participation and access to justice Council Directives 85/337/EEC and 96/61/EC, Regulation (EC) N° 1367/2006 of the European Parliament and of the Council on the application of the provisions of the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters to Community institutions and bodies (OJ L 264, 25.9.2006, p.13) entered into force on 28 September 2006 and became of application on 17 July 2007

[20] DIRECTIVE 2001/42/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 June 2001, on the assessment of the effects of certain plans and programmes on the environment

[21] Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community

action in the field of water policy (OJ L 327, 22.12.2000, p. 1)

provisions of the Regulation. This brings us back full circle to the conclusions of the 2003 expert working group[22] on sustainable urban management:

- **Insufficient cooperation beyond administrative boundaries**
- **Insufficient horizontal cooperation across different policies ("silo thinking**
- **Development via short-term and isolated practices**
- **Insufficient vertical cooperation between different administrative levels**
- **Insufficient public participation**

3.4.2 Main issues of the training material on urban design

The training material provided on urban design focus and analyses the following subjects:

1. Sustainable land use, which includes issues dealing with the following :
   - Land use planning
   - Conservation of land
   - Mixed development and appropriate density
   - Relation of urban to rural surrounding
   - Green areas and national biotopes
   - Existence of playgrounds and public spaces
   - Application of integrated and eco systems approaches
2. Sustainable transport infrastructure, which includes issues dealing with the following :
   - Transportation infrastructure
   - Pedestrian areas
   - Encouraging cycling and access to the bike paths network
3. Sustainable cultural heritage and history, which includes issues dealing with the following :
   - Threats to the protection of heritage
   - Sustaining cultural heritage in the face of change
4. Sustaining green space and biodiversity which includes issues dealing with the following :
   - Sustaining the ecological character of an area
   - Green spaces in the municipal area

[22] http://www.europa.eu.int/comm/environment/urban/sustainable_urban_management.htm; The expert working group was established to provide input to the Communication "Towards a Thematic Strategy on the Urban Environment" COM(2004)60

- Inhabitants opinion about green areas
- Municipal environmental activities
- Inhabitants environmental activities
- Rivers, lakes and coastline protection and management

5. Mobilising society to implement a sustainable agenda
6. Resources at the EU and national level

3.4.3 Policy making issues

The challenge for policy makers is to enable the development of sustainable urban areas by tackling these critical issues directly. This briefing note presents an overview of the options that are available and the agreement that will be needed within the Member States and their administrations to facilitate sustainable urban developments.

Briefing for Policy Makers on Issues Affecting the Design of Sustainable Urban Developments

Involving Citizens in Shaping Their Future

The techniques and best practice for involving stakeholders and the wider public in local planning issues have grown from two sources. The first source of best practice has evolved from the provision of specific local amenities such as parks, playgrounds and leisure facilities. These projects have traditionally been successful in mobilising the views of the local community and business interests into workable end solutions with a minimum of fuss and bureaucracy. However the scope of such projects is often limited and the benefits and negative impacts of such schemes is highly localised.

On the other hand we have the consultation processes associated with major developments of regional or national strategic importance such as new power stations, waste processing facilities and transportation infrastructure. For these projects the benefits of the schemes are felt by a widespread community but the negative impacts are usually felt in specific locations. These processes tend to be highly bureaucratic, often including some form of formal public enquiry, since the outcome needs to clearly demonstrate that the best possible solution in the wider public interest has been adopted and that all possible concerns and interests have been taken into account.

The relative scale of these consultation processes varies greatly, and neither is really applicable to the design of a sustainable urban Community. We therefore need to start from the techniques and processes that have proven cost effective for small, local projects and evolve them in a measured way to ensure that they can address all of the concerns and interests associated with such a scheme in a cost effective manner.

One working example that seems to be displaying some success is in Austen, Texas, USA[23]. Here the Local Authority has policies and procedures for the implementation of sustainable communities and provides a way in which individual local communities can opt into or out of the process.

A new initiative financed by the Commission, Susta-Info provides concerted action at the European level on many issues concerning the way in which sustainable urban developments can be planned, implemented and managed. It includes access to information on many approaches that are being pioneered across Europe to engage citizens in decision making concerning the planning and design of their towns and cities. Whilst there is no universally agreed form that these measures should take, the current Best Practice is reflected in the measures adopted by the Swedish City of Växjö.

In order to see how these measures might be fine-tuned for other towns and cities it is necessary to understand how citizens can be motivated to take part in the taking of decisions that affect them. A recent report prepared for the UK Government summarises the complex issues that affect the way in which citizens can be motivated to participate in all aspects of governance[24]. Whilst this report was prepared for the UK Government, and there are cultural differences across the EU in the attitudes of citizens to these matters, the report does cover all of the issues that need to be addressed and could be a useful starting point in developing policy on a Europe-wide basis.

Sustainable land use

Around 80% of the European Union's population lives in cities and towns. Urban areas are, therefore, the places in which environmental problems most affect the day-to-day life of Europe's citizens. Unattractive cities are less able to secure investment and skilled workers[25]. Furthermore, bad urban environments can cause poor health for their citizens, and the dependence on the private car as a consequence of urban sprawl excludes some citizens from goods and services that are not accessible by other means.

The negative effects of urban sprawl are not just confined to economic or transportation issues.

1. Sprawl spoils the countryside, and is seen as ruining the rural economy and idyll, and as such it is part of a long-standing anti-suburban view that will always persist.
2. Sprawl is a more costly overall form of urban development due to the spreading out of infrastructure (utilities and related services). Wasteful commuting through loss of time due to length of journeys and congestion, increased

[23] See Planning Office website at http://www.ci.austin.tx.us/planning/

[24] "Supporting effective citizenship at local authority level. Background research for good practice guidelines. 'Promoting Effective Citizenship and Community Empowerment'." Downloadable from, http://www.communities.gov.uk.

[25] Communication from the Commission of 5 July 2005 - Cohesion Policy in Support of Growth and Jobs - Community Strategic Guidelines, 2007-2013. [COM(2005) 299 final

household spending on transport, lack of an alternative choice in transport due to the absence of public transport, loss of agricultural land, and the loss of environmentally fragile lands which include disturbance to local ecologies, all incur greater long term costs.

3. Sprawl can also contribute to problems within our social structure. Sprawl benefits those who can pay in that it tends to segregate residential development according to income. This tends to exacerbate social and ethnic divisions. The lack of social interaction in suburban areas means that those who cannot travel long distances, the very young and the very old for example, are unable to live effectively in such areas. The dominant types of sprawl are for middle and upper income families with children who have the requisite mobility and life style to enable them to function. Large segments of urban society are thus excluded from living in such areas. In general, social facilities are less well developed in lower density suburbs but at the same time, the life styles of those who reside in such communities tend to be more uniform and routine than those who are single or older. The kinds of suburbs resulting from sprawl are often portrayed as soulless with no community or identity.

Developing Sustainable Communities

The environmental footprints of our cities are growing. Table 1, below, shows the relative footprints of a number of European cities. Experts argue that the best way to combat the growth of these footprints is to adopt an approach termed MILU (Multifunctional Intensive Land Use) or "Smart Growth". In these approaches combinations of local land uses are designed to offer residents, workers and visitors high quality services and a pleasant local environment. Properly implemented such planning policies reduce car travel thereby lowering congestion resulting in less wasted time commuting. They also lead to better air quality, more space for green areas and water, leading to better health and more social interaction. Intensive use of the land within the city also spares greenfield sites on the outskirts. However, not all land use combinations are technically possible, or desirable from a safety or health point of view. Many legal, administrative, financial and construction complications can also be associated with this approach.

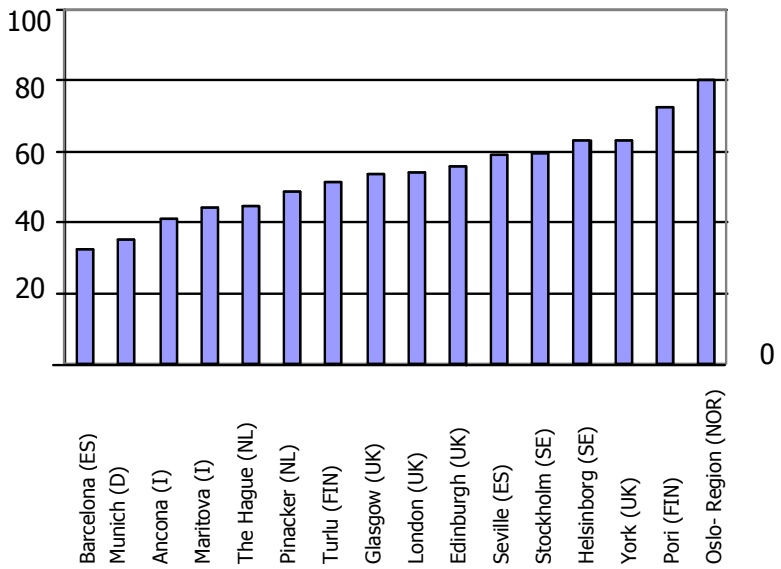

Table 1 – Ecological Footprints of Selected European Towns and Cities

From the point of view of designing successful communities, recent research shows that mixed income communities which successfully integrate different housing types, sizes and tenures in areas with good links to the surrounding urban fabric and which provide access to the full range of services, facilities and jobs are likely to be more sustainable in the longer term. A good practice guide has been prepared on behalf of the Joseph Rowntree Foundation in the UK and is available free of charge26. Careful attention needs to be paid to the initiation and planning of new housing to ensure that local needs and housing market conditions are fully assessed and delivered on the basis of a clear vision. This is no easy task since the creation of sustainable communities requires the long-term collaboration of a number of public and private agencies, the establishment of integrated systems of management and a delivery process which fully engages with existing and future residents. AS discussed above such joined up thinking has yet to exist in most European towns and cities.

Of course successful mixed development also requires the integration of work places, services, and public amenities. The most obvious work places and services that can be easily integrated into a mixed development are shops, entertainment, recreational, and local health care facilities. However, the work opportunities presented in these work places and services are unlikely to fulfil the needs of the local community. Attention will therefore also need to be given to integrating other forms of commercial activity and industry into these communities. This will also include any opportunities for tourism that can arise from the exploitation of local cultural

[26] Nick Bailey, Anna Haworth, Tony Manzi, Primali Paranagamage and Marion Roberts Creating and sustaining mixed income communities A good practice guide: Communications Department, Joseph Rowntree Foundation, The Homestead, 40 Water End, York YO30 6WP. Tel: 01904 615905. Email: info@jrf.org.uk

heritage. A by-product of protecting local cultural heritage is the provision of opportunities for businesses based on traditional crafts and skills to be successful.

One of the most important factors to consider is that there are mechanisms (and/or facilities) to enable buildings to adapt, or to be easily redeveloped, for new uses as the community evolves. This will ensure that entrepreneurs can continue to innovate and provide new businesses opportunities and services.

It is recognised that the most difficult urban areas to regenerate are the so-called "brown-field" sites due to the presence of toxic pollutants following their earlier industrial use. Whilst there is little argument that the use of brownfield sites is desirable, there is no clear agreement as to whether the cost of removing the pollutants on them should be paid for by local government or by the developer. If the costs are met developers then it follows that the uses proposed for the land will have high returns and that this may therefore mitigate against mixed, or optimal uses for the land. The successful redevelopment of brownfield sites is increasingly becoming a matter of public-private partnership and are often included as part of some wider initiative (for example the redevelopment of large areas of East London for the 2012 Olympics).

The Multifunctional Intensive Land Use Network[27] website has examples of how brownfield sites can be redeveloped. The European Commission is also funding some pilot studies exploring new ways of carrying out and planning for the redevelopment of large brownfield areas through its Interreg Programme. In addition, CABERNET[28] is a concerted action across 21 European countries with the aim to facilitate the development of new sustainable solutions for the rehabilitation of urban brownfields.

Counting Hidden Costs

Increasingly there are pressures on politicians to levy so called green taxes to recover the hidden costs of our lifestyles and thereby generate more resources to protect our environment and to discourage environmentally damaging lifestyle practices. Hidden costs (often referred to as intangible costs by accountants, and increasingly referred to as externalities) are notoriously difficult to quantify. For example fuel cycle hidden costs include damage to the natural and built environment, such as effects of air pollution on health, buildings, crops, forests and global warming; occupational disease and accidents; and reduced amenity from visual intrusion of plant and emissions of noise. Quantifying these costs is by no means straightforward, but nevertheless essential if we are to fairly assess the relative impacts and benefits of competing planning strategies.

The concept of identifying the hidden costs is already being enshrined in legislation such as the Commission's White Paper on Growth, Competition and Employment and in the European Commission's White Paper, on Energy policy[29]. Under European Law, policy analysts are required to take account of environmental aspects in their decision

[27] See MILU net website at http://www.milu.net/

[28] See web site at www.cabernet.org.uk

[29] 'An Energy Policy for the European Union' (COM(95)682, final, January 96).

making and to undertake cost-benefit analysis of available options. A Communication from the Commission to the Council of the European Parliament30 also requires specific action for "'improving the methodology and enlarging the scope of monetary valuation of environmental damage".

Policy makers therefore urgently need to finance research and development into new accounting practices and estimating systems for the assessment and quantification of hidden costs in decisions concerning sustainability and the environment. Research at the EU level needs to focus on the development of coherent frameworks and generic tools, whilst research at the local level should focus on the fine-tuning of these frameworks and tools to local communities.

Using Greenery for Maximum Benefit

It has been accepted for many years that the planting of large plants and trees can help to mitigate the levels of air pollutants in urban areas31. Recent research has shown how plants and green-spaces can be used not only to manage air quality, but also groundwater status32 and other factors including humidity, air circulation and the water resorption capacity of local the vegetation and soils33. The planting of reed beds has also been successfully used to clean up polluted waters from industrial estates34.

More recently some authors describe the use of plants and trees to control environmental factors around buildings thereby reducing their energy audits35. An increased use of this technology where appropriate will not only save energy but will also improve the all round quality of the local environment. The added advantage is that such technology need not be expensive and can provide a highly visible mechanism for the engagement of Citizens in the management of their environment.

There is also considerable scope for citizens to become involved in the protection of the environment by cultivating their garden spaces in a manner sympathetic with the local environment and in a way that can help our wildlife. This means measures such as: the use of drought resistant plants in arid areas, placing nesting boxes in trees to encourage small bird species, disposing of garden wastes responsibly, avoiding the use of pesticides, collecting rainwater for irrigation wherever possible, and have unstructured corners or areas where wild plant species can establish. This would require substantial education and a significant shift in the way that people view their gardens and the way in which they are used. It is worth noting that the City of Vaxjo

---

30 Commission to the Council of the European Parliament on Directions for the EU on Environmental Indicators and Green National Accounting- The Integration of Environmental and Economic Information Systems: (COM(94)670, final, 21.12.94)

31 See for example, TREE TRAPS: AN EFFECTIVE FILTER FOR AIR POLLUTANTS, downloadable from http://www.sussex.ac.uk/press_office/media/media12.html

32 See for example, An Overview of Water Sensitive Urban Design Practices in Australia, downloadable from http://www.iwaponline.com/wpt/001/0018/0010018.pdf

33 See for example Integrated runnoff management in urban areas with and without sewer systems downloadable from www.iwahq.org/.../1st%20international%20rwh%20workshop/7-%20Heiko%20Diestel.doc

34 Case study Reedbed filters industrial estate pollution, downloadable from, www.environment-agency.gov.uk/commondata/acrobat/casestudypollution_1514715.pdf

35 See for example, Bio-architecture, by Fabio Bertrand Elsa, downloadable from http://www.mybestlife.com/eng_bio/Bio-Architecture/Urban_vegetation.htm

in Sweden has a charter[36] setting down the way it expects its citizens to protect and conserve the environment and the support, services and assistance that the Citizens can expect from the municipality in return.

Environmental Management at the Municipal Level

A Commission Staff Working Document[37] states that the percentage of Europe's largest urban areas that use a formalised management system to administer some aspects of their urban environment is estimated at between 12% and 33%. This is a disappointingly low number since it has been shown that environmental management systems can be used to achieve significant benefits in a study of local authorities[38]. The results of this survey are shown in Table 2 below.

Largest Benefits to Authority Environmental Management Plan	**% reporting large and medium benefit**	**% reporting small or no benefit**
Raised staff awareness of environmental issues	86	10
Improved coordination between different departments in the authority	81	14
Improvements in the planning of environmental issues	76	19
Improvements in the management of environmental issues	76	19
Improved reputation of authority	62	34
Raised political profile of environment issues	57	34
Raised profile for the authority	53	43
Improved coordination between the city authority and other authorities	39	58

(Note: entries may not add to 100% - 'benefits unknown' excluded)

Table 2: Benefits of introducing Environmental Management Plans

In terms of the environment in the city, benefits were reported in many areas. For instance, 90% of authorities reported improvements in the rates of recycling; 74% reported reductions in greenhouse gas emissions; 67% reported improvements in the quality of freshwater and 63% reported improvements in air quality and noise (see the report for the full list). Several management systems can be used in this way and examples include EMAS, ISO 14001, and eco-budget. Approximately 170 European local authorities are EMAS registered with nearly 60 using EMAS to manage at least

[36] See City website at http://www.vaxjo.se/default.aspx?id=1630

[37] SEC(2006) 16:COMMISSION STAFF WORKING DOCUMENT, *Annex to the* COMMUNICATION FROM THE COMMISSION TO THE COUNCIL AND THE EUROPEAN PARLIAMENT on Thematic Strategy on the Urban Environment: Impact Assessment. {COM(2005) 718 final}

[38] The report summarising the results of the survey and the desk study research is available at www.europa.eu.int/comm/environment/urban/impact_assessment.htm

one aspect of the urban environment such as air quality. Many of these local authorities are in urban areas smaller than 100,000 inhabitants.

The estimated average total cost for a local authority to set up, implement and secure initial certification of a management system is between 160k€ and 222k€. This estimate is based on data from a limited number of local authorities and includes any costs for consultants. In addition to these costs, external organisations (mainly public sector) often participate in establishing a management system, for instance to comment on objectives. The average total cost to these organisations is between 2,5k€ and 3,8k€. These estimates are broadly comparable with results from other studies.

Way Ahead

In order to facilitate the design and implementation of sustainable urban communities and lifestyles, policy makers throughout Europe (at local, national and EU levels) need to address the following issues and put mechanisms and procedures in place reflecting best practice concerning:

- Better Communication between Local Authorities and Investors for a more Sustainable Development
- Better Enforcement of Existing Legislation
- Introduction of Differentiated Fees and Taxes for Utilities such as Waste, Waste Water etc
- Facilitate research into methods of assessing and quantifying the hidden costs of lifestyles and planning practices
- Facilitate Cooperation and Coordination in Urban Planning with Respect to Smaller Towns and Rural Areas
- Support town networks and the exchanges of experiences, best practices and technologies[39]
- Develop and share tools and practices for Brownfield Reuse

[39] For example, European Urban Knowledge Network (EUKN): http://www.eukn.org/eukn/, Red de Ciudades: http://www.redciudadesclima.es/index.php?lang=en, Energycities: http://www.energie-cites.org, Council of European Municipalities and Regions (CEMR), Eurocities: http://www.eurocities.org/, The International Council for Local Environmental Initiatives: http://www.iclei.org/ , The European Commission's DG – Environment (Sustainable Cities): http://ec.europa.eu/environment/urban/home_en.htm, Council of European Municipalities and Regions: http://www.ccre.org/ , Communities Knowledge, Sharing and Collaboration Worldwide: http://topics.developmentgateway.org/urban?goo=16, Susta-Info: www.susta-info.net

3.5 Sustainable Urban Transport

The question of how to enhance mobility while at the same time reducing congestion, accidents and pollution is a common challenge to all major cities in Europe. Cities themselves are usually in the best position to find the right answer to this question that takes into account their specific circumstances. More than anyone else, city dwellers directly experience the negative effects of their own mobility and may be open to innovative solutions for creating sustainable mobility.

But at the same time, urban transport policy is of increasing importance for the EU. Efficient and effective urban transport can significantly contribute to achieving objectives in a wide range of policy domains for which the EU has an established competence. The success of policies and policy objectives that have been agreed at EU level, for example on efficiency of the EU transport system, socio-economic objectives, energy dependency, or climate change, partly depends on actions taken by national, regional and local authorities.

Existing EU legislation, for example on public service obligations in public transport, air quality and noise and vehicles standards, does have a direct impact on the transport policies of Europe's cities. EU policy and financial programmes for regional development and research provide significant resources for the renewal and innovation of urban transport infrastructures, technologies and services in many European cities.

At their meeting on April 4-5, 2001, the European Union's Ministers of Transport adopted a definition for what constitutes sustainable transport. The definition adopted by the Minister's of Transport states that a sustainable transport system is one that:

- Allows the basic access and development needs of individuals, companies and societies to be met safely and in a manner consistent with human and ecosystem health, and promises equity within and between successive generations;
- Is affordable, operates fairly and efficiently, offers choice of transport mode, and supports a competitive economy, as well as balanced regional development;
- Limits emissions and waste within the planet's ability to absorb them, uses renewable resources at or below their rates of generation, and, uses non-renewable resources at or below the rates of development of renewable substitutes while minimizing the impact on land and the generation of noise.

A Working Group on Sustainable Urban Transport had been set-up by the European Union's Expert Group on the Urban Environment to contribute to the preparation and definition of the Thematic Strategy on the Urban Environment as outlined in the 6th Environment Action Programme of the European Union. The objectives of the Working Group were to:

- Define the role the EU can and needs to play in order to promote sustainable urban mobility throughout the European Union.
- To propose specific measures and actions that can be taken at a European level (by the EU) to realize the above goal of sustainable urban transport.

The trends in urban transport described in the draft final report of the above mentioned Working Group are grouped under headings, namely trends in:

- Urban development (Sub-urbanisation, Urban density, Spatial structure, location of activities, Urban nodes in a global network)
- Transport (Car ownership, Car use, Public transport, Non-motorised transport, Freight shipments in urban areas (growth of light commercial vehicles)
- Congestion
- Environment and health (Air and noise pollution, Safety, Health)
- Administrative and institutional

The main objectives of the present module are to provide a general overview, definitions, policies, examples of implementation on three topics related to Sustainable Urban Transport, namely:

- Reduction of traffic
- Traffic management (maintenance and building of transport infrastructure)
- Mobility management (influencing mobility patterns)

3.5.1 Reduction of traffic

3.5.1.1 Integrated Urban Planning

Smart Growth (a new trend for integrated urban planning, also called New Community Design), is a general term for policies that integrate transportation and land use decisions, for example by encouraging more compact, mixed-use development within existing urban areas, and discouraging dispersed, automobile dependent development at the urban fringe. Smart Growth can help create more accessible land use patterns, improve transport options, create more viable and easy-to-live-in communities, reduce public service costs and achieve other land use objectives. Smart Growth is an alternative to urban sprawl.

Smart Growth does not eliminate automobile travel, but it can significantly reduce per capita automobile travel compared with sprawled development patterns, through specific mechanisms described below.

- Clustering of population and employment, which increases accessibility (e.g., proximity to employment, shops and schools), and travel choice (better transit, ridesharing, and better pedestrian facilities).

- Land use mix, such as commercial and public services located within or adjacent to residential areas, which increases access and travel choice.
- Parking management and parking pricing can reduce automobile travel, encourage use of alternative modes, and reduce the amount of land paved for parking facilities, creating accessible and pedestrian-friendly landscape.
- Traffic calming and other measures that reduce automobile traffic speeds, which reduce driving and improve conditions for walking, cycling and transit use.
- A more connected street network improves access.
- More attractive, safer streets, and pedestrian-oriented land use, encourages non-motorized travel.
- An effective transit system tends to reduce per capita automobile travel, particularly when integrated with supportive land use (high-density development with good pedestrian access within half-kilometer of transit stations).
- Other transportation demand management strategies can be incorporated into Smart Growth, including commute trip reduction, school and campus trip reduction, car-sharing and road pricing, to further reduce per capita vehicle travel.

Although individual strategies may have modest travel effects, typically reducing total vehicle traffic by just a few percentage points, their impacts are cumulative and synergetic. A comprehensive planning program using cost-effective strategies (i.e., strategies that are fully justified for their direct economic and consumer benefits) can reduce total per capita automobile travel by 20-40% compared with conventional, automobile-dependent land use patterns and transportation policies.

3.5.1.2 Promotion of Car-Pooling

HOV Priority refers to strategies that give priority to High Occupant Vehicles (also called Rideshare Vehicles), including transit buses, vanpools and carpools. Priority bus service is sometimes called Bus Rapid Transit. HOV Priority is a major component of many regional Transportation Demand Management programs. Two, three or four occupants (indicated as 2+, 3+ or 4+) may be required to be considered an HOV, depending on circumstances.

HOV priority measures can be justified as a more efficient and equitable allocation of road space (travelers who share a vehicle and therefore impose less congestion on other road users, are rewarded by bearing less congestion delay), an efficient use of road capacity (they can carry more people than a general use lane), and as an incentive to shift to more efficient modes. HOV lanes usually carry fewer vehicles than other lanes but they often carry more people. Evaluation also depends on whether the HOV facility uses an existing highway lane or is new capacity, and whether the alternative to HOV lanes would be no additional capacity, additional general use lane, or an additional transit lane. HOV lanes often take years to reach their full potential, since they affect long-term decisions such as where consumers live or choose to work.

Benefits include increased travel speeds and reliability for HOV passengers. This increases Transportation Options by allowing travelers to choose between driving alone in congestion and bypassing congestion in an HOV. HOV Priority measures can increase transit service efficiency by increased ridership per vehicle-hour and reduced fuel consumption per vehicle-mile. For example, an HOV Priority system that increases average travel speeds on a particular transit route from 25 to 20 minutes increases maximum carrying capacity and revenue per bus-hour by 20%.

3.5.1.3 Traffic-Cost Transparency

The following Table summarizes appropriate pricing methods and how fees should be calculated for various transportation costs.

Appropriate Pricing of Various Transport Costs

Cost	Pricing Method	How Calculated
Congestion	Time and location based fee.	Price to reduce traffic volume to optimum flow.
Roadway costs	Weight-distance fee.	Cost allocation applied to all roadway costs, including traffic services and rent and taxes on roadway land.
Accidents	Time- and location-based fees or distance-based fees.	Current insurance premiums prorated by annual mileage, increased to account for uncompensated accident costs.
Parking	Charge users directly for parking using time and location based fees.	Fees set to recover parking facility costs and maintain 85% maximum occupancy during peak periods.
Pollution Emissions	Time and location based fees (if possible) or distance-based fee.	A vehicle's emission rate (such as grams per mile) times regional pollution unit costs (such as cents per gram).
Fuel externalities	Fuel tax	External costs of producing, importing and consuming fuel, including greenhouse gas emissions.
General taxes	General sales and property taxes.	General taxes should be applied in addition to any special vehicle and fuel taxes and fees.

3.5.1.4 Use of Modern Communication Technology to Reduce Trips

The use of modern communication technology to reduce trips includes various programs and activities that substitute physical travel with telecommunications

(telephone, fax, email, websites, video connections, etc.). Specific examples are listed below.

- Telework includes telecommuting, employees with mobile work (e.g., sales staff or field workers who rely heavily on telecommunications), and people who are self-employed and able to work from a home office due to efficient communications.
- Telecommuting refers to salaried employees who are allowed to work from home or another location (such as a neighborhood telework office) in order to reduce commute travel. Telecommuting is often preformed on a part-time basis, with employees working from home one or two days a week. It can also be used on a temporary basis, for example, while an employee is working on a particular project or when they are ill.
- Distance Learning refers to use of telecommunications by teachers and students as a substitute for physical meetings. Some colleges and universities offer distance-learning classes and degrees. Others use distance learning for special projects.
- Tele-Shopping (Internet Shopping) refers to use of telecommunications to facilitate retail purchases and avoid physical visit to a store.
- Tele-Banking (Internet Banking) refers to use of telecommunications to perform banking and bill payment transactions.
- Electronic Government refers to use of telecommunications by government agencies to provide services that would otherwise require visiting a government office.
- Internet Business-to-Business (B2B) refers to Internet interactions between businesses, such as bidding, sales and planning. These are implemented primarily for competitive and efficiency purposes (e.g. to identify the lowest bid for a good or service), but it can also reduce the need for physical meetings between staff.

3.5.2 Traffic Management (maintenance and building of traffic infrastructure)

3.5.2.1 Road Network Design

There is a need to bring about a transformation in the quality of streets. This requires a fundamental culture change in the way streets are designed and adopted, including a more collaborative approach between the design professions and other stakeholders. People need to think creatively about their various roles in the process of delivering streets, breaking away from standardised, prescriptive, risk-averse methods to create high-quality places (Department for Transport, 2007).

The principles of inclusive design: places people at the heart of the design process; acknowledges diversity and difference; offers choice where a single solution cannot accommodate all users; provides for flexibility in use; and provides buildings and environments that are convenient and enjoyable to use for everyone.

3.5.2.2 Optimization of Urban Traffic Flow

Traffic management technologies have been developed primarily in Europe, in view to counter traffic related problems which are broadly travel delays, parking problems and safety problems. The causes of these problems have been tackled through technology intervention of various levels. The causes of delays are demand and supply gap, inefficient signaling systems, Incidents on the roads, scarcity of infrastructure, inefficient passenger information systems and delays due to tolls. The main technology solutions that have been developed around the world include the following:

- Car pooling
- Park & Ride systems,
- Odd even auto restrictions
- Staggering of office hours
- Congestion pricing
- Introduction of better mass transport systems
- Efficient bus systems with priority lanes/signals
- Intelligent Community Vehicle System
- Automatic ticketing systems
- Improvements on the signalling system (installation of detectors on intersections, counting the number of vehicles that queue at any intersection arm
- Use of incident and congestion detection systems
- Passenger/driver information systems
- Information systems at bus stands that inform the commuter about the bus routes, time of the next bus arrival, fare structure etc.
- Variable message signs in multiple locations giving the real time parking status of all the adjoining parking spaces.
- Automatic parking ticketing systems

3.5.2.3 Improving Public Transport

This section concentrates on bus-based public transport as this is the most likely mode to be used for serving residential areas. Bus routes and stops should form key elements of the walkable neighbourhood. Designers and local authorities should try to ensure that development densities will be high enough to support a good level of service without long-term subsidy.

Bus priority measures may be appropriate within developments to give more direct routeing or to assist buses in avoiding streets where delays could occur. The presence and arrangement of on-street parking, and the manner of its provision, will affect width requirements. It is essential to consider the sitting of public transport stops and related pedestrian desire lines at an early stage of design. Except from improving buses, there are many other public transport means that have been implemented and

improved, such as the Mass Rapid Transit concepts, the Automated People Mover Systems, the TramTrain.

Mass rapid transit, is a passenger transportation service, usually local in scope, which is available to any person who pays a prescribed fare. It usually operates on specific fixed tracks or with separated and exclusive use of potential common track, according to established schedules along designated routes or lines with specific stops, although Bus Rapid Transit and trams sometimes operate in mixed traffic. It is designed to move large numbers of people at one time. Examples include Bus Rapid Transit, heavy rail transit, and light rail transit:

- Heavy rail transit system is a transit system using trains of high-performance, electrically powered rail cars operating in exclusive rights-of-way, usually without grade crossings, with high platform stations.
- Light Rail Transit (LRT) system is a metropolitan electric railway system characterised by its ability to operate single cars or short trains along exclusive rights-of-way at ground level, aerial structures, in subways, or occasionally in streets, and to board and discharge passengers at track or car floor level. LRT systems include tramways, though a major difference is that trams often operate without an exclusive right-of-way, in mixed traffic.
- Metro is the most common international term for subway, heavy rail transit, though it is also commonly applied to elevated heavy rail systems, referring to urban grade-separated heavy rail systems. They are the most expensive form of MRT per square kilometre, but have the highest theoretical capacity.
- Commuter rail systems or suburban rail is the portion of passenger railroad operations that carries passengers within urban areas, or between urban areas and their suburbs, but differs from Metros and LRT in that the passenger cars generally are heavier, the average trip lengths are usually longer, and the operations are carried out over tracks that are part of the railroad system in the area.
- Bus Rapid Transit typically involves busway corridors on segregated lanes - either at-grade or grade separated — and modernised bus technology. However, apart from segregated busways BRT systems also commonly include: Rapid boarding and alighting; Efficient fare collection; Comfortable shelters and stations; Clean bus technologies; Modal integration; Sophisticated marketing identity; Excellence in customer service.
- Bus lane (or priority bus lane) is a highway or street reserved primarily for buses, either all day or during specified periods. It may be used by other traffic under certain circumstances, such as while making a turn, or by taxis, bicycles, or high occupancy vehicles.
- Busway is a special roadway designed for exclusive use by buses. It may be constructed at, above, or below grade and may be located in separate rights-of-way or within highway corridors. Some form of busway system is a feature of many Bus Rapid Transit systems. Busways are becoming increasingly common in such English cities as Leeds, London, Reading, and Ispwich.

3.5.2.4 Improving Non-Motorized Transportation Infrastructure

There are many reasons to plan for non-motorized transportation. Walking, cycling, jogging and skating are increasingly popular for transport and leisure. Safe and convenient non-motorized travel provides many benefits, including reduced traffic congestion, user savings, road and parking facility savings, economic development and a better environment.

3.5.3 Mobility Management (influencing mobility patterns)

3.5.3.1 Improving Public Transport

Improving public transport includes various strategies that give discretionary travelers (those who have the option of driving) reasons to choose transit. These include:

- Improve transit service, including more service, faster service and more comfortable service.
- Reduce fares and offer discounts (such as lower rates for off-peak travel times, or for certain groups).
- More convenient fare structures and payment systems using electronic "smart cards."
- Commute trip reduction programs, commuter financial incentives, and other transportation demand management programs that encourage use of alternative transportation modes.
- Improve rider information and marketing programs.
- Park & Ride facilities and promotion programs (Rodier and Shaheen, 2006).
- Create a Multi-Modal Access Guide, which includes maps, schedules, contact numbers, and other information on how to reach a particular destination by public transit.
- Parking and Road pricing can provide financial incentives for transit use.

3.5.3.2 Development of Transport Alternatives

Fewer cars on the streets mean less pollution, less traffic, less stress or in short, better quality in urban life, for the benefit of all. The general objectives when developing transport alternatives must include: increasing walking and cycling, facilitating the use of transport resources with lower pollution emissions, reducing dependency on the car, improving integration between walking, cycling and other modes of transport, including people with restricted mobility.

In order to influence mobility patterns and shift users from driving to alternative modes, a lot of strategies may be implemented: walking and cycling promotion; commuter financial incentives; congestion pricing; distance-based pricing; fuel taxes; high occupant vehicle priority (car-pooling); parking pricing; pay-as-you-drive

insurance; road pricing; road space reallocation; speed reductions; public transport improvement; vehicle use restrictions; etc.

3.5.3.3 Management of Parking Lots

Every vehicle trip requires parking at its destination, so parking facilities are an integrated component of the roadway system. Parking is one of the first experiences that people have when traveling to a destination. Convenient and affordable parking are considered a sign of welcome. Parking that is difficult to find, inadequate, inconvenient or expensive will frustrate users and can contribute to spillover parking problems in other areas. As a result, inadequate parking supply can create problems to both users and nonusers.

However, excessive parking can also create problems. Parking facilities are expensive to construct, imposing financial costs on developers, building users and governments. In addition, parking facilities impose environmental costs, contradict community development objectives for more livable and walkable communities, and abundant, free parking tends to increase driving and discourage use of alternative modes

This chapter presents management strategies and various solutions that can be applied in order to result in more efficient use of parking resources. Parking Management supports and is supported by most other Transportation Demand Management strategies and includes many Parking Solutions, as described subsequent.

- Increase Parking Supply
- Use Existing Parking Capacity More Efficiently
- Address Variable Demand
- Reduce Parking Demand
- Respond to Spillover Impacts
- Management and Design

Best practices for Parking Management are described below.

- Develop a comprehensive parking plan that identifies parking resources, problems, objectives, programs and management strategies. Periodically review parking issues and modify plans and practices as appropriate.
- Develop a program to collect information on parking supply, demand, costs and prices, and if possible incorporate it into a GIS database that integrates with other mapping and planning data systems.
- Consider a wide range of possible solutions to parking problems. Give equal consideration to strategies that encourage more efficient use of existing parking as strategies that increase parking supply.
- Develop a comprehensive framework for evaluating parking solutions that accounts for direct and indirect impacts, and strategic transportation and land use objectives.

- Rather than identifying a single solution to parking problems, develop combinations of solutions and use contingency planning. For example, identify strategies to implement first and additional strategies to apply if needed.
- Apply low-cost solutions that encourage more efficient use of existing parking supply. These include user information on parking availability and price, shared parking, regulations to prioritize use of the most desirable parking spaces, and pedestrian improvements to expand the geographic range of parking that serves a destination.
- Apply pricing strategies to manage parking demand, recover parking facility costs and raise revenues for transportation programs. Use efficient pricing methods that minimize user inconvenience and transaction costs.
- Integrate parking management with TDM and Smart Growth planning.
- Use Transportation Management Associations to provide parking and transportation management services to users, and to provide parking brokerage services to businesses.
- Develop overflow and spillover parking problems.
- Use up-to-date design standards that make parking facilities safer and more convenient to users, and more attractive and less environmentally harmful to a community.

3.5.3.4 Education on Transport Matters

Education of pedestrians, cyclists and motorists is essential for non-motorists' safety and mobility. Increased non-motorized transportation can help achieve transportation demand management objectives, and provides other community benefits including improved public health, and local economic development. There are a number of strategies to help encourage and promote walking and bicycling to support these objectives. A number of types of programs can be implemented:

- In-schools, pedestrian and cycling classes can be integrated with school trip management programs (reducing child auto travel to, and traffic around schools), personal safety and fitness, and physical education programs.
- Adult cycling skills classes, may be taught at recreational facilities, or provided through local traffic safety associations.
- Public education campaigns targeting motorists, cyclists, and pedestrians covering cyclists and pedestrians rights and safety skills.
- Transportation demand management programs, such as parking cash out (giving commuters who don't drive to work the cash equivalent of parking subsidies provided to drivers), which provide financial incentives to use travel alternatives such as walking and cycling.
- Parks, recreational programs, or non-profit groups can sponsor walking and cycling events and activities, particularly on trails and cycling routes.
- Tourist promotion materials can highlight walking and cycling.
- Special bicycle events can raise the profile of cycling in the community and offer commuters an opportunity to try cycling.

4 CONCLUSIONS AND RECOMMENDATIONS

This chapter focuses to the assistance in the development and implementation of environmental policies and Local Action Plans in the implementation areas of the PROUD Project.

The EPRs tackle with issues concerning the main environmental priority sectors per country and emphasize in the active involvement of local authorities for the confrontation of environmental issues. In this framework, the main conclusions deriving from the EPRs of the 4 countries are presented. Furthermore, the initiative Local Agenda 21 is also presented since it is considered a policy framework necessary for the local authorities.

4.1 Conclusions and recommendations from the 4 EPRs

A. CYPRUS

Cyprus has demonstrated remarkable economic growth since independence, through the shifting from an agricultural to an urban (mainly tourism and services oriented) economy. These changes have resulted in pressures on the environmental, natural and cultural resources. The global 'ecological footprint' of Cyprus may be small but it is growing. Cyprus is at a crossroads and is facing new challenges as far as sustainable development is concerned. The political decision to join the EU as well as the international obligations of the country presuppose a commitment to safeguard a better balance between human aspirations and long term environmental concerns.

A considerable progress has been made over the last decade towards putting in place a credible system of environmental management and in taking appropriate action in many fields. However, the environmental problems will remain rooted in the socio-economic structure of the country, as long as the diversity of underlying natural, social, political, cultural and economic factors that precipitated the interlocking environmental problems continue to be present.

There is also a pressing need to drastically address the external factors that continue to undermine the quest for sustainability. In particular, Cyprus should aim to reconcile competitiveness, growth, and environmental protection; secure synergies between programmes and processes; ensure appropriate technical and financial support; and demonstrate empathy to the aspirations of those less fortunate, by incorporating equity considerations in regional policies.

Positive ingredients for success are the support of sustainability issues by all political parties; a transparent and pluralistic democratic system; the representative nature of local authorities; the active intervention of civil society; and the gradual realization by the private sector that there is no inherent contradiction between economic development and the protection of the environment.

B. HUNGARY

During the socialist era, several environmental problems developed in Hungary. Pollution came from mining, chemical industry, industries using outdated technologies. Most of these technologies were using high quantities of energy.

In the 1990's economic restructuring and the start of the market economy brought positive changes in the country. Structural changes and industrial decline affected the heavily polluting sectors causing positive environmental changes.

Large-scale productions of socialist industries were replaced rapidly by cost-effective environment-friendly technologies. The economy was changing and reduced use of energy has been observed since then. Air pollution also decreased especially the emission of ozone-depleting substances such as sulphur-dioxide, nitrogen-oxides and greenhouse gases. The quality of surface water has also improved. Households connected to a waste-water compilation and sewer system increased radically especially in small villages, between 1990 and 2004.

However, these aforementioned changes are not enough for environmental sustainability. **New challenges and new problems are appearing related to new economic and social needs. Now the more crucial problem is motor traffic air pollution and highway congestion.**

EU accession has so far brought positive influences regulating environmental pollution and enforcing environmental measures among other social or economical policies. Important European and other international funds have become available to Hungarian municipalities. Since financial support is available, it is time for the municipalities to mobilise their resources and enforce necessary changes.

C. CZECH REPUBLIC

The urban sustainable development in the Czech Republic advances. This sentence we can use in evaluating of the process of the urban sustainable development. Based in the changing economic, social and ecological environment advances both from the quantitative and qualitative point of view. The progress of the urban sustainable development in the Czech Republic is not as far as in the western countries but it approaches. It will be a long way to get on such level but things are moving.

Almost all ecological parameters were significantly improved in the Czech Republic after 1989. It has been done with the noted support of the general public which demanded immediate improvement of then catastrophic situation of the environment. The effective environment protection system was introduced which was based on the advanced European legislation and it came off to mobilize considerable resources from the public and private sources. Especially the extensive reduction of noxious airborne and water releases is mainly the result of the end of pipe technologies installation which in principle does not change the actual technical processes and represents basically the economical burden.

In place of expensive environment protection measures at the end of technological processes, the resolution based on the sustainable development strategy must come and bear double profit: economical and also ecological contribution. New ecologically profitable technologic processes must respect economical and in particular social needs.

The other important thing is to promote public discussion on the topic and convince the state bodies to receive the sustainable principles as a fundamental part of their functioning and decision making.

D. MALTA

The National Strategy for Sustainable Development is not a static process, but a long-term process which incorporates appropriate review mechanisms.
The transposition and implementation of the EU environmental acquis has improved the integration of environmental issues in other policy areas, particularly with respect to the use of natural resources.

On the basis of the findings emerging from the State of the Environment Report, the following priorities for action are identified:

- Focusing on environmental impacts that have a serious effect on human health;
- Protecting renewable natural resources;
- Promoting eco-efficient economic growth by decoupling growth from material resource use and waste generation;
- Promoting formal and community-based environmental education;
- Drawing on public environmental concern to gain support for public and private initiatives;
- Improving the knowledge base to support the development of environmental policy;
- Levering finance to fund environmental improvements across government and the private sector;
- Better coordination between government ministries and agencies to improve the coherence and effectiveness of policy;
- Improving capacity for implementation and enforcement;

Setting up a multi-actor process to develop a government-led environmental action plan to coordinate the activities of the principal players and identify investment priorities and short and medium term objectives and targets in the environmental fields.

4.2 Local Agenda 21. The way towards Sustainable Development

4.2.1. The context

If not the whole implementation of a local Agenda 21 Plan, at least the process towards it, is believed to be the way of promoting sustainable development at a local level. Thus, the main steps will be presented in this chapter in order for policy makers to consider them while forming the proper framework. This requires the integration of planning and action across economic, social and environmental spheres. Key elements are full community participation, assessment of current conditions, target setting for achieving specific goals, monitoring and reporting.

The Local Agenda 21 concept was formulated and launched by the International Council for Local Environmental Initiatives (ICLEI) in 1991 as a framework for local governments worldwide to engage in implementing the outcomes of the United Nations Conference on Environment and Development (UNCED). ICLEI, along with partner national and international local government associations and organizations (LGOs), championed the Local Agenda 21 concept during the 1991-1992 UNCED preparatory process. These efforts led to the integration of the Local Agenda 21 concept in the main outcome of UNCED, Agenda 21.

Following UNCED, local governments, national and international LGOs, and international bodies and UN agencies entered a period of experimentation with the implementation of the Local Agenda 21 concept. The lead actors in these efforts were the local governments themselves which worked, often with the support of their national municipal associations, to develop the Local Agenda 21 planning approaches appropriate to their circumstances.

While the elements and factors identified by the above process are being continually updated and revised by local practitioners, five key elements have been defined for Local Agenda 21 planning. These are:

1. Multi-sectoral engagement in the planning process through a local stakeholders group which serves as the coordination and policy body for preparing a long-term sustainable development action plan.
2. Consultation with community groups, NGOs, business, churches, government agencies, professional groups and unions in order to create a shared vision and to identify proposals and priorities for action.
3. Participatory assessment of local social, economic and environmental conditions and needs.
4. Participatory target-setting through negotiations among key stakeholders in order to achieve the vision and goals set forth in the action plan.
5. Monitoring and reporting procedures, including local indicators, to track progress and to allow participants to hold each other accountable to the action plan.

Local Agenda 21 (LA21), as developed and proposed by ICLEI, was officially endorsed by the 1992 Rio Earth Summit through Agenda 21. This initiative led to the single largest movement of local governments toward a common goal. More than 6,400 local governments in 113 countries worldwide responded to the goals of Agenda 21 by developing and implementing "local" Agendas 21.

Local Action 21 is the next phase of LA21, encouraging and supporting a shift from planning to implementation – a move from "agenda" to "action." At the 2002 Johannesburg World Summit, Local Action 21 was discussed and launched by ICLEI, hundreds of local government delegates, and many international partner agencies. Local Action 21 will support local governments in addressing some of the key barriers to local sustainability: poverty; injustice, conflict, and insecurity; unhealthy environments; and vulnerability to extreme events.

Policy Makers and stakeholders should become acquainted with the lessons learnt from other governments that have already applied the strategy of Local Agenda 21 and formed their local Action Plan towards sustainable Development. In Europe, more than 5,000 local governments are actively pursuing LA21 processes in their communities.

4.2.2. Successful Case studies

A. Norway

Local governments in Norway received state grants so that they could appoint coordinators for environmental affairs. The resulting network of environmental coordinators in each municipality provided a good base from which to begin the LA21 initiatives.

In 1996 and 1997, the national government developed a White Paper that emphasized that sustainable development must be based on three perspectives:

- an ecological perspective that deals with maintaining nature's production capacity,
- a generational perspective that deals with a more equitable distribution of goods between generations,
- a welfare perspective that deals with equitable distribution of goods around the globe today.

The paper stated that the national government would encourage every municipality to begin their own LA21 initiatives, and integrate LA21 concepts and activities into their municipal master plans and planning and budgeting processes.

A conference was organised in Fredrikstad in February 1998, bringing together more than 700 representatives from the central and local government and NGOs. The event gave participants more details on their roles and opportunities in the LA21 effort.

Local governments were asked to endorse the Fredrikstad Declaration, which committed them to mobilize their residents, NGOs and other social partners to play an active part in LA21 processes, and to establish suitable meeting places and networks. This conference and the declaration provided the impetus needed to get LA21 going in Norway.

Most of the work was to be done locally, with each municipality deciding what issues to tackle first depending on their local conditions and challenges. To support this work, the counties worked together to develop a regional network of LA21 nodes.

Results

By the fall of 2000, more than half of Norway's municipalities and all 19 counties had endorsed the Fredrikstad Declaration. In a 2000 survey, 70% of municipalities claimed to be carrying on some kind of LA21 activity. However, the level of effort within each municipality varies considerably, with 40% having started some kind of project.

A more recent survey showed that 80% of the municipalities plan to continue their LA21 work, either at the same level (60%) or at an intensified level (20%).

B. United Kingdom

The United Kingdom (UK) Local Agenda 21 National Campaign was established in 1993 by the UK's five local authority associations—the Association of District Councils, the Association of County Councils, the Association of Metro Authorities, the Confederation of Scottish Local Authorities and the Association of Local Authorities in Northern Ireland. The establishment of the Campaign followed the participation of these associations in the UK's national delegation to UNCED. Since then, the Campaign has recruited more than 60% of the UK's local authorities to commit to a Local Agenda 21 planning process.

The first step in the creation of the Campaign was the establishment of a Steering Committee, made up of senior local elected officials, to govern the Campaign's activities. The Steering Committee recruited the Local Government Management Board (LGMB)—a technical agency of the local authority associations—to serve as the Campaign secretariat. Recognizing the multi-sector and partnership-building approach to Local Agenda 21, the voluntary membership of the Steering Group was soon broadened to include senior representatives of environmental NGOs, the business sector, women's groups, the educational sector, academia, and trade unions.

The Steering Group defined the substantive elements of Local Agenda 21 in the UK context, recognizing the need to implement these elements differently according to local circumstances:

- Managing and improving municipal environmental performance
- Integrating sustainable development into municipal policies and activities

☞ focus on the internal operations of local authorities

- Awareness-raising and education
- Public consultation and participation
- Partnership-building

☞ focus on the local community

- Measuring, monitoring and reporting on progress towards sustainability

The Campaign then developed manuals, tools, pilot projects and seminars to assist local authorities to take action in each of these areas. Moreover, the Campaign published a Step-by-Step Guide to Local Agenda 21 and a variety of guidance documents on specific aspects of Local Agenda 21 planning, such as greening economic development. A monthly newsletter was also published and a national database on Local Agenda 21 has been established.

Results

In summary, through the UK Local Agenda 21 Campaign the UK local authority associations have quickly and voluntarily made Local Agenda 21 a part of everyday business for the majority of UK local authorities. The high rate of success in such a short period of time can be explained by the importance of national municipal associations, the role of the Steering Group members and their respective networks in influencing local authorities, and the readiness of the local authorities themselves to take a leadership role in sustainable development.

Source: ICLEI (1996) in Gilbert et al, Making Cities Work: The Role of Local Authorities in the Urban Environment, Earthscan Publications, London.