



Publishable final activity report

Trends and Indicators for Monitoring the EU Thematic Strategy on Sustainable Development of Urban Environment

TISSUE

Specific Targeted Research

Programme: Integrating and Strengthening the European Research Area

Activity: Policy Support and Anticipating Scientific Technological Needs

Contract: SSP1-CT-2003-502427

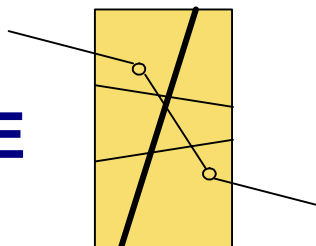
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VTT

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TISSUE



Trends and Indicators for Monitoring the EU Thematic Strategy on Sustainable Development of Urban Environment

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Objectives

Within the 6th Environment Action Programme, the Commission will develop a Thematic Strategy on the Urban Environment. The work includes the development of appropriate indicators and other monitoring tools to assess the effectiveness of the strategy. This task was taken as a premise for the 6th framework project **TISSUE**, which started in the beginning of 2004.

The main objective of the project was to define the set-up needed for a harmonised set of indicators to monitor the sustainable development of urban environment.

TISSUE belonged to the 6th framework programme area "Integrating and Strengthening the European Research Area" and to the activity "Policy Support and Anticipating Scientific Technological Needs". TISSUE collected research organisations from seven European countries. VTT was the coordinator of the project.

Participant name	Participant short name	Country
Technical Research Centre of Finland VTT	VTT	Finland
Institute of studies for the integration of systems	ISIS	Italy
Centre Scientifique et Technique du Bâtiment (French Scientific and Technical Building Institute)	CSTB	France
Econcept AG	ECONCEPT	Switzer-land
The Czech Environmental Institute	CEI	Czech Republic
the Netherlands Organisation for Applied Scientific Research	TNO	the Nether-lands
Ambiente Italia Research Institute	AMBIENTE ITALIA	Italy
The Council of European Municipalities and Regions	CEMR	Belgium
Sustainable Cities Research Institute, Northumbria University	UNN	UK
Union of the Baltic cities	UBC	
The Regional Environmental Center for Central and	REC	

Eastern Europe		
International Council for Local Environmental Initiatives	ICLEI-EUROPE	
	EUROCITIES	

The overall goal of the project was the following:

- 1) **to analyse demand and define appropriate trends** (in consultation with the Commission) which should be measured to properly determine progress towards sustainable development of the urban environment at local level;
- 2) **to carry out comparative research on existing sets of indicators** to determine whether they: i) are able to provide the information needed to monitor developments at local level on the trends identified in the first step; ii) can be used to assess trends at the EU level; iii) their implementation is viable (good balance between the indicators' ability to measure the trends and the costs of data collection and elaboration);
- 3) **to define the set-up needed for a harmonised set or subset of indicators** and for effectively utilising the information from existing indicators to build an adequate picture at EU level and identify gaps to be filled. Make recommendations for further research;
- 4) **to collect indicators and structure the indicators into a database.**

The indicators considered were urban environment indicators in use or being developed at EU level (e.g. European Common Indicators, Urban Audit), National level in the 15 EU member states and candidate countries, and at regional and/or local level in use across EU.

The objective of the project was to make recommendations about the usability and usefulness of different sets of indicators. This was assessed from the following points of view: (1) how these indicators serve for monitoring the sustainable progress and the effectiveness of undertaken actions at different levels (neighbourhood, city, local-regional, state) (2) what is the methodological level of indicators enabling the rightful comparisons, (3) what is the need of common indicators versus specific indicators which consider area-specific premises, (4) what are the needs for further development to serve for the stated needs of the Commission. When formulating recommendations, TISSUE also took into account that the acceptance and implementation readiness of the cities are among the main bottle-necks and problems for the common usage of urban environment indicators.

Outcomes

The main outcomes of the project are as follows:

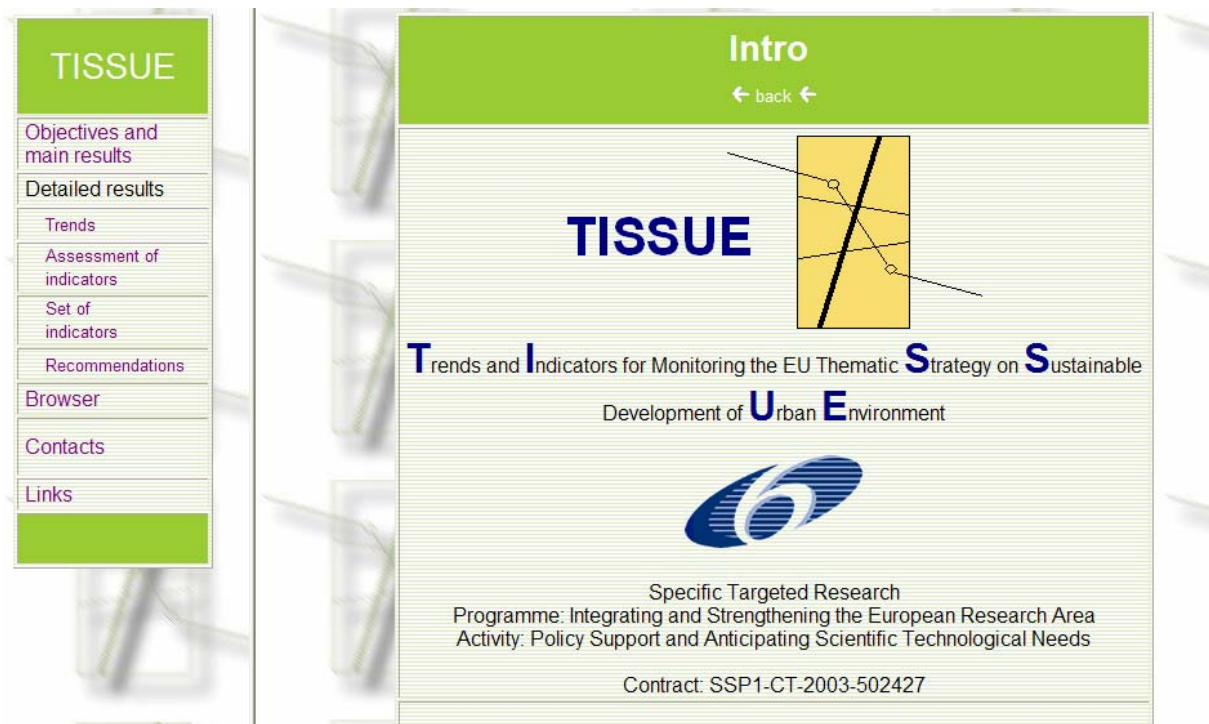
- Summary of the background and context of sustainability indicators of urban environments;
- sustainable urban trends and concerns;
- assessment of existing sets of indicators to monitor sustainable development of urban environments;

- the common set of indicators selected by the TISSUE project;
- recommendations.

All deliverables of the project can be downloaded from the **TISSUE** web page:

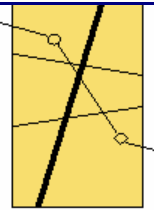
<http://cic.vtt.fi/projects/tissue/>

The TISSUE home page has the following structure:



The TISSUE web page enables the user to find the public reports of the project. In addition, the main results are presented in the TISSUE web pages. For example the indicators are presented as follows:

TISSUE



TISSUE SET OF INDICATORS

Objectives

TISSUE aimed at developing a set of indicators feasible and valid for the monitoring of sustainable development of urban environment.

Results

Harmonised framework to monitor trends towards Sustainable Development of the Urban Environment at the EU level

TISSUE CORE 1 indicators

TISSUE CORE 2 indicators

TISSUE project described the defined indicators in terms of their definitions, policy relevance and feasibility.

Definitions show suggested metrics of the indicator, data from which it is compiled and compilation methodology.

Policy relevance of the indicator point out the relevance of the indicator in particular with the Thematic Strategy of Urban Environment.

Consensus and feasibility illustrate to what extent there is a general consensus about the adoption of the indicator and how feasible is the implementation of the indicator.

By chosen the 'TISSUE CORE 1 INDICATORS' the user of the home page finds the text that presents the definition, policy relevance and feasibility of each indicator.

Results

TISSUE developed a proposal for a set of sustainable urban indicators. The development of indicators was based on the analyses of sustainable urban development related concerns and trends; and the assessment of existing sets of indicators on European, national and local level.

The indicators are divided in the following thematic groups:

- Urban Transport Indicators
- Urban Design Indicators
- Urban Construction Indicators
- Urban Management Indicators
- Urban Energy Indicators
- Urban Greenhouse Gases Indicators
- Urban Air Quality Indicators
- Urban Noise Indicators
- Urban Waste Indicators
- Urban Water Indicators
- Urban Biodiversity Indicators

Each indicator is described in terms of definition and measurement, policy relevance and consensus and feasibility:

- Definition and measurement, showing the suggested definition, metrics of the indicator, data from which it is compiled and compilation methodology.
- Policy relevance of the indicator, in relation to urban sustainable development and in particular to the Thematic Strategy of Urban Environment.
- Consensus and feasibility, which illustrate to what extent there is a general consensus on the adoption of the indicator, as it emerges in particular from being adopted in practice by several cities, and how far the concrete application of the indicator to the generality of European cities seems feasible.

The indicators chosen are recommended for a “harmonised” application throughout Europe. However, a gradual approach is suggested, by defining two categories according to the relevance of the indicator for monitoring purposes in the short-term - CORE 1 indicators - or in the medium-long term - CORE 2 indicators -, when more advanced indicators could become feasible (thanks to technological, organisational or cultural innovations) and useful for a more sophisticated monitoring of Urban Environment.

In practice CORE 1 indicators are relevant for the TSUE monitoring purpose and would be readily feasible, with a reasonable effort of the institutions concerned with the collection of data and compilation of the indicators.

CORE 2 indicators are equally relevant for the TSUE, and even in some case more advanced indicators, but they are still not easily applicable due to shortcomings in data availability or other practical aspects. In any case, the setting up of a list of CORE 2 indicators alongside the more immediate CORE 1 list is considered a good way of influencing the data gathering of cities and towns in the future.

TISSUE CORE 1 indicators.

Sustainable Urban Transport	Passenger transport demand Modal split (share of trips) Pedestrian infrastructure and Bicycle infrastructure Traffic safety
Sustainable Urban Design	Resident population density Brownfields vs. greenfield development Accessibility to open areas Accessibility to PT stops
Sustainable Urban Construction	Energy consumption of buildings Share of sustainability-classified buildings Construction and demolition waste
Sustainable Urban Management	Adoption of environmental management systems Share of certified enterprises and public agencies Citizen satisfaction with the state of the environment
Sustainable Urban Environment	Water consumption Compliance with drinking water standards Compliance with urban waste water standards Air quality; Number of days with exceeding PM10 and O3 Air quality; Annual average concentration of NO2

	Share of population exposed to excessive noise Municipal solid waste generation, Municipal waste separately collected, Municipal solid waste treatment Green house gases emissions
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TISSUE CORE 2 indicators.

Sustainable Urban Transport	Freight transport demand Modal split (share of kms) Quality of public transport
Sustainable Urban Design	Consumption of land Accessibility to basic services Population and jobs density Jobs / housing ratio
Sustainable Urban Construction	Poor quality housing Soil sealing
Sustainable Urban Management	Citizens' engagement with environmental and sustainability oriented activities Adoption of integrated urban plans (environment, transport, land use) Legal framework for active public participation
Sustainable Urban Environment	Air quality; Population weighted exposure to PM10 and O3 Renewable energy consumption Intensity of energy use in transport Urban biodiversity

Recommendations

The recommendations of the project for the future work are as follows:

1. Development of a more comprehensive approach by
 - deepening the role and importance of socio-economic and cultural indicators,
 - responding to the needs of different tasks of local authorities
 - responding to the needs of target setting and responsive way of working.
2. Development of the feasibility of the TISSUE CORE 2 indicators by
 - improving the availability of the necessary information
 - developing common methods for surveys, measurements and assessments.
3. Improving the comparability of the measured results and proceeding towards a weighted set of TISSUE indicators
4. Development of appropriate tools and methods for monitoring and target setting.

5. Development of urban sustainability indicators for the needs of risk management.

Dissemination and use of results

The TISSUE project was designed with an aim to have close contacts to all stakeholders in different level (EU, national, regional and local) and to understand and take into account the premises and expectations in order to ensure the good exploitation of the results. The dissemination of the results took place during the whole duration of the project. The main route for disseminating the results was the contacts with the organisations representing cities and local municipalities.

The Confederation of Municipalities and Regions had the main role of representing the local end-users. CEMR commented the results from the view-point of the needs of local municipalities. In addition, the project included a 'CITY TEAM', which consisted of the following members that represent local authorities:

- UBC (The Union of Baltic cities)
- ICLEI (International Council for Local Environmental Initiatives)
- EUROCITIES
- REC (Regional Environmental Center for Central and Western Europe)
- CEMR (Council of European Municipalities and Regions). CEMR will have the responsibility of leading the CITY TEAM.

Working in the TISSUE workshops was introduced and catalysed with help of the presentations by the TISSUE partners. CEMR together with the project coordinator took care of the change of information between the city team and the project research team. The working was interactive in such a way that the city team had the task of pointing out problems and challenges for the project research group and commenting the project intermediate results. The project research group was active in invoking discussion, introducing the results and responding for the comments.

Some of the partners also set up national teams, which included representatives of cities and the environmental authorities. The dissemination of the results also took place with help of close contacts of the project partners with local actors.

The work of the TISSUE project was presented in the Aalborg +10 Conference in Denmark. This was the fourth European Conference on Sustainable Cities and Towns. Aalborg+10 Conference took place in Aalborg in June 2004. Carlo Sessa presented the paper "Trends and Indicators for Monitoring the EU Thematic Strategy on Sustainable Development of Urban Environment - TISSUE", which prepared by Carlo Sessa ISIS and Tarja Häkkinen VTT.

The TISSUE home page will be the main route with help of which the project will aim at raising public participation and awareness.

The TISSUE home page introduces the main results of the project. The final report - as well as the other public reports - of the project is available through links. In addition, the TISSUE browser enables the user to search indicators according to a given outline or with help of free

text. The TISSUE homepage introduces the CORE 1 and CORE 2 indicators in detail by defining the indicators and measuring methods.

The long-term effect on the public participation and awareness is connected to the development of Thematic Strategy on the Urban Environment. The role of the indicators depends on the formulations of the Strategy.

TISSUE also considered the needs of education with regard to urban sustainability indicators. When working out the project conclusions, summaries and recommendations, the text was written in such a way that it can be made use of within education. The final report introduces the main developments and thus links the TISSUE results with earlier results and explains the reasons for the choices made by the TISSUE project with regard to the sustainability indicators of urban environments.

After the project the TISSUE partners will aim at raising public awareness in the basic level by introducing the project results in relevant conferences and workshops that will be arranged outside the project both in national as well as European and international scale. These conferences include for example the 4th international Sustainable Building Conference, which will take place in Japan on the 27th - 29th of September 2005.

The work of the project is continued by the 6th Framework Programme project STATUS. STATUS has used the TISSUE indicators as the basis of the work in the development of sustainability targets for European cities.