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URBAN GUARD

Capacity building for enabling the incorporation of sustainability parameters in urban spatial development and planning policies and practices through the use of indicators in Cyprus

Project Summary

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LIFE PROGRAMME – Third Countries

PROJECT BENEFICIARY:

REPUBLIC OF CYPRUS
MINISTRY OF THE INTERIOR
DEPARTMENT OF TOWN PLANNING AND HOUSING

URBANGUARD:

Project Summary

The use of spatial sustainability indicators can play a key role in assisting planners and other planning process stakeholders to evaluate urban development issues and promote the enforcement of sustainable spatial policies in Cyprus. Moreover, Development Plans implemented according to the national planning system will in this way be more efficiently and effectively monitored, while decision-makers will be enabled to reject unsubstantiated and short-sighted demands, often based on speculation and the drive for personal gain rather than the quest of long-term sustainability and the benefit of society in general, through concrete and substantiated criteria based on urban sustainability factors.

URBANGUARD aimed to facilitate the incorporation of urban sustainability indicators into the spatial planning process in Cyprus. As a first step, appropriate sustainability indicators were selected and the mutual agreement of competent government services, local authorities and special interest organisations was secured for their successful implementation. The process continued through the creation of the necessary capabilities and system tools for the monitoring and reporting of these indicators, as well as their application within the urban policy decision-making process. The project also promoted environmental reporting as required by the EU through the implementation of the Sixth Environment Action Programme.

The URBANGUARD indicators will mainly be used by planners and authorities responsible for preparing and reviewing Development Plans, by local administrators, stakeholder organisations and other special interest groups making suggestions for plan reviews, as well as by the wider public when filing objections against published Development Plans. This will inevitably improve the tools that enable a more productive form of public participation and a higher level of governance, through which decision-makers can be held responsible for their choices.

Project activities have focused on an iterative step-by-step process outlined by the following specific objectives:

- Identifying and documenting current spatial planning policies and goals for the urban areas of Cyprus
- Identifying indicators suitable for measuring the sustainability of small towns, through the analysis of recommended indicators from the EU and international organisations and studies
- Coordinating competent government bodies to promote a mutually agreed integrated indicator scheme and establish compatible monitoring and reporting practices
- Selecting sustainability indicators appropriate for the urban areas of Cyprus through the integration of research findings, competent government body orientations and reporting requirements
- Establishing an appropriate geo-reference scale suitable for each indicator at the metropolitan, municipality, Environmental Area, urban quarter or transportation corridor level
- Obtaining agreement between competent authorities and a wide spectrum of stakeholders on a common set of indicators
- Evaluating the tools available for monitoring and reporting in order to select tools based on their suitability for the required application and ensure compatibility with EU environmental reporting requirements
- Establishing relevant monitoring and reporting tools and capabilities and developing a GIS-based spatial analysis tool
- Designing the monitoring and reporting system structure so that it can accept and process data in the chosen geo-reference scales
- Incorporating baseline land use data and other fundamental information into the system
- Implementing the system reached at through consensus through a pilot run in an appropriately selected urban area in order to evaluate both the indicators themselves and the environmental reporting process
- Documenting a methodology for the system's ongoing implementation and training stakeholders in the use, evaluation and interpretation of indicators, as well as in the application of relevant software tools
- Reporting and disseminating the project's results

The selected set of sustainability indicators attempts to address a wide range of urban development aspects, incorporating the spatial dimension of social, economic and environmental parameters. The initial list of proposed indicators was prepared and drafted after reviewing the indicators used in the EU and other international organisations as identified by the project team and having considered the indicators already employed locally. This was the starting point from which the URBANGUARD list of indicators was later developed.

An indicator shortlist was then sent to all stakeholders in Cyprus for a first round of comments, while this list was further discussed at a stakeholder workshop carried out in August 2005. The list was also discussed in a series of internal meetings within the beneficiary organisation, which provided important feedback and guidance to the project team. The main stakeholder organisations include:

- The Union of Cyprus Municipalities[1] and the Union of Cyprus Communities,[2] the main umbrella organisations representing local authorities
- The 17 Municipalities located within the four functional urban areas of Cyprus (urban agglomerations of Nicosia, Limassol, Larnaca and Paphos)
- The Ministry of the Interior
- The Ministry of Commerce, Industry and Tourism
- The Cyprus Tourism Organisation, a statutory body responsible for national tourism policy
- The Department of Lands and Surveys, competent for geo-spatial information
- The Statistical Service,[3] competent for statistical information
- The Environment Service,[4] competent for environmental policy
- The Departments of Public Works, Antiquities, Water Development, Forests, Geological Survey and Labour Inspection, competent for various thematic and sectoral policies affecting spatial planning issues
- The Cyprus Federation of Ecological and Environmental Organisations,[5] an umbrella organisation collectively representing environmental interest groups for purposes of public consultation

[1] http://www.ucm.org.cy.ws011.alentus.com/eng/index.aspx
[2] http://www.ekk.org.cy/english/index.shtm
[3] http://www.mof.gov.cy/mof/cystat/statistics.nsf/index_en/index_en?OpenDocument
[4] http://www.moa.gov.cy/moa/agriculture.nsf/environment_en/environment_en?OpenDocument

- The Cyprus Scientific and Technical Chamber and the Cyprus Association of Town Planners, organisations representing spatial planning professionals

The final list of indicators tested in the pilot phase is the result of the review of all lists drafted using international, EU and national pools of indicators. It is based on consultations carried out with the local stakeholders, as well as urban policy areas over which Planning Authorities have competency through Development Plans. These thematic policy areas are:

- Residential development
- Commercial and office development
- Industrial and workshop development
- Tourism development
- Transport and utility infrastructure
- Health, education and community services
- Sport and recreation
- Heritage and culture
- Environment and landscape

Indicators were therefore grouped in compatible policy areas. The main goals, as expressed in statutory Development Plans, on which the formulation of these policies is based are:

- Viable and efficient distribution of land uses
- Sustainable use of natural resources and improvement in the quality of the environment
- Urban containment, compact development, action against sprawl
- Sustainable mobility and accessibility, adequate provision of amenities and infrastructure
- Protection and sustainable management of cultural heritage and historic neighbourhoods
- Revitalisation of urban centres and reinforcement of their role as focal points of urban agglomerations
- Social integration and cohesion
- Economic viability of urban development
- Urban cohesion
- Mixed use development (integration of compatible uses)

[5] http://www.oikologiafeeo.org/

- Protection of the quality of life
- Sustainable tourism development

The above goals played a key role in the selection of the final list of the URBANGUARD indicators and the elaboration of each indicator's methodology sheet.

The indicators can be further categorised into two sets. The first one comprises basic indicators whose main role is to provide information utilised in evaluating other indicators; for example, indicator 1 (GDP) is used to evaluate indicator 77 (heritage restoration expenditure per capita). The second one is a core set comprising indicators related directly to the national spatial planning policy, such as those concerning housing, transportation, natural and cultural heritage conservation as well as the various development types. Covering the spectrum of areas over which the final users are legally competent, these *key spatial development indicators* will constitute the main set to be used in monitoring and assessing policy sustainability.

In order to assess each indicator, corresponding data collection and processing guidelines have been prepared and elaborated in methodology sheets. Each sheet includes information on the indicator's code number, full title, policy area addressed, sustainability principles covered, definition, data collection methodology, units of measurement, collection level, frequency of measurement, sources of information etc. The data collection process and its results were recorded in metadata forms, which aim to provide information for current and future users regarding the sources, accuracy, credibility, validity and value of the selected data. The metadata stored in these forms also serves as a record in the database search system, which has also been developed as part of the GIS tool so that users can locate data sets of interest.

To facilitate the monitoring and assessment of these indicators, a GIS-based tool has been developed. This tool is based on a customised Microsoft Access database tool designed in accordance with the calculation methods specified in the methodology sheets. The database is coupled with ArcGIS, a Geographic Information Systems software package by ESRI.

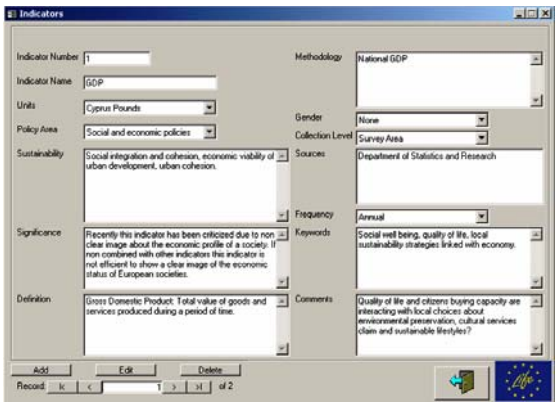

Fig. 1: Digitised Methodology Sheet

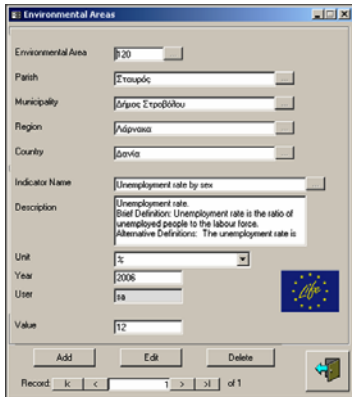

Fig. 2: Access Database sample

The main functions of the GIS tool include:

- Importing geospatial data via the ArcGIS interface
- Importing indicator values, methodology sheet text and metadata through the database entry interface
- Evaluating and analysing indicator data
- Graphically displaying spatially distributed indicator data
- Facilitating report preparation in the form of maps, tables and text

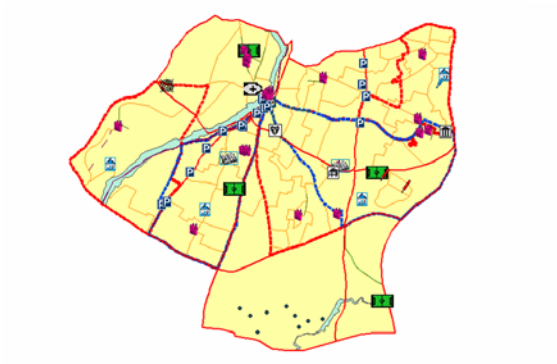

Fig. 3: GIS-generated thematic data map

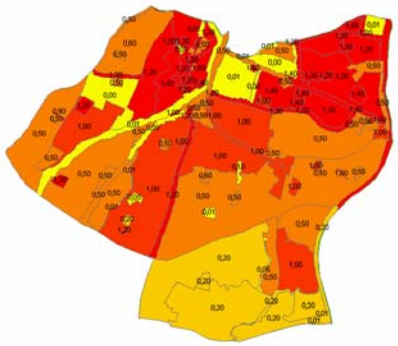

Fig. 4: GIS-generated spatial data map

The GIS system developed is a complete tool that can simultaneously calculate the value and spatial distribution of all indicators included. The tool comprises a series of basic data to which indicator-specific data are overlaid in order to provide spatially distributed information related to the selected indicators. For the successful implementation of the tool, the following geographic and demographic data of the area under study is required:

- *Environmental Area* (EA) boundaries, as designated by published Development Plans and used by CYSTAT

- *Survey Area* boundaries, as designated by CYSTAT; these are generally subdivisions of each EA
- Ring area boundaries, as defined by the URBANGUARD project through roughly concentric rings coinciding with major traffic arteries around the centre of each urban agglomeration
- Administrative boundaries of local authorities
- Land uses as designated by published Development Plans
- Building densities as designated by Development Plans
- Development boundaries, designated by Development Plans
- Road networks as designated by Development Plans
- Population distribution, derived from census
- Household distribution, derived from census
- Cadastral maps, provided by the DLS

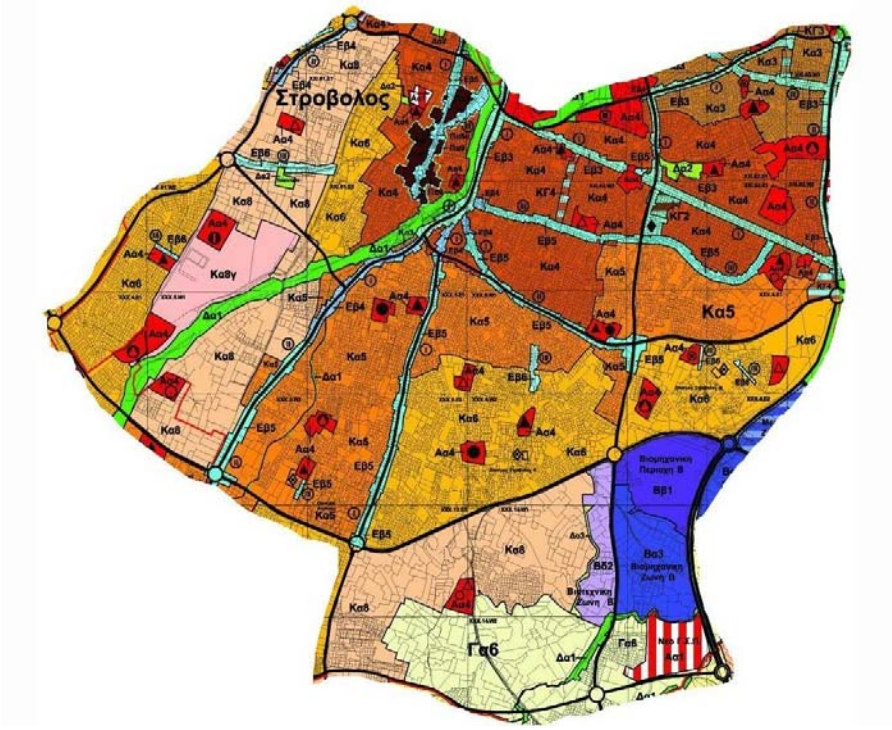

Fig. 5: The Pilot Area extracted from the *Nicosia Local Plan*

Subsequent to selecting the indicators, a study area was defined for the pilot run of the system, in order to assess its monitoring and reporting capabilities as well as to properly evaluate the indicators and tools chosen. The pilot study area was selected of in September 2005, as shown in Figure 5. It is located in the Municipality of Strovolos and

consists of nine Environmental Areas that host a population of about 50,000. This particular area was chosen because it satisfied a number of relevant criteria that would allow the evaluation of the indicators. In particular, this area:

- Is large enough for its analysis to produce meaningful results
- Includes a wide spectrum of land uses and all land use types described in the criteria (a protected historic core and fluvial ecosystem/ green belt, significant traffic arteries and areas with traffic management projects, extensive areas designated for commercial and industrial uses, well established neighbourhoods and new residential areas that are still under development, areas outside development boundaries at the urban agglomeration fringe etc.)
- Comprises or borders on several major transportation corridors with varying problems ranging from noise and congestion to mixed incompatible uses
- Planning data are available at sufficient detail in digital format

The project aimed at the widest application of the indicator system and GIS tool in the spatial planning decision-making process. The dissemination strategy therefore sought to dispense information and expertise to the widest possible range of stakeholders. The dissemination plan included several awareness raising and training events. These aimed to prepare potential users in:

- Becoming familiar with the concept of sustainability with regard to spatial planning and the territorial aspects of urban development
- Understanding the nature and use of indicators
- Reading and applying methodology sheets and metadata forms
- Evaluating and interpreting indicator information
- Entering data, viewing maps and results, and exporting reports from the URBANGUARD GIS tool

In addition, informative material was prepared for dissemination to interested stakeholders and the general public, while the URBANGUARD website, already created in basic form,[6] will continue to be upgraded and updated, providing an access point with relevant details to interested parties worldwide. Finally, a closing conference

[6] http://www.moi.gov.cy/moi/urbanguard/urbanguard.nsf/

was held in December 2006, where stakeholders and planning professionals, environmentalists and decision-makers were invited to learn about the project, its achievements and the GIS tool.