

Other than these „objective“ changes, new spatial processes are also determined by changing awareness and relations to the natural/physical environment. „People vote with their feet“ and even in the most urbanised country, Great Britain, public opinion surveys constantly find, that many people would like to live in the countryside (72 % in 1994). The reasons are rather stereotype (Gallup, 1989), but their effectiveness cannot be denied. Other than more or less emotional reasons, an explanation which is in fact completely pragmatic is: greater spatial mobility (car ownership) has caused an exodus in the direction of clean air, spaciousness and living in small communities.

Because of the many changes, which are still intensifying, it has become clear that the countryside cannot be tied only to agriculture, although it is also true, that it is an important activity and will remain so for quite some time. The question that is gaining in importance is, can we monitor and direct development of the countryside within classical disciplinary limits and institutions, despite the changing functions of the space.

The project Comprehensive development of the countryside (Kovačič, 1995) especially because of its weak teoretical framework hasn't recognised and of course predicted (Ingleharts') post-modern shift, that can offer, even to the Slovenian countryside, a wide spectre of development possibilities.

Instead, it produced rather naïve and nostalgic retrospections of development, fed by pre-modern mythological „authentic communities“ and because of such alignment cannot promise much development possibilities. The example is concrete and quite convincing evidence of the „intermediate“ state of the Slovenian society, i.e. wavering between modernism and traditionalism, thus still inspiring and allowing even „professional“ failings into pre-modern nostalgic mythology.

The fact that the research was created following initiative by the Ministry for Agriculture undoubtedly also demands attention, especially since such a vision of „comprehensive development of the countryside“ was used as the basic national strategy for development of agriculture and the countryside. Even on this basis we can confirm caution in probable over optimistic predictions of possible post-modernist shifts in Slovenia. The shift will commence when these nostalgic retrospections will become good hearted common sense folklore and not one of the milestones of the future national development strategy.

Doc. Dr. Drago Kos, Sociologist, Faculty of Social Sciences, University of Ljubljana

For sources and literature see page 38

Mojca ŠAŠEK DIVJAK

The Indicators of Urban Development Following Principles of Sustainability

1. Introduction

Settlement policies (or the direction of urban planning process) are closely connected to social-economic development politics. The developments in place reflect the consequences of development decisions in all areas of life and work. For this purpose all questions with regard to spatial planning should be solved comprehensively, in connection with economic and social development, and take into consideration natural potentials and limitations, observing the principles for sustainable balanced development. This means harmonisation of economic and social development tendencies paralleled by the protection and improvement of the environment. It requires the joining of nature protection with economic and other policies and with decision making in all areas of activities. Concerning settlement policies, the sustainable viewpoint is extremely important, as the activities that are connected with settlement processes are the cause of the biggest changes and burdens on the environment.

When dealing with the advancement and execution of these policies we come across many problems and contradictions that need solving. The term sustainable development itself contains the contradiction, as it combines both the development and the protection viewpoint. We've ascertained that the sustainable balance won't be reached, if we don't reach higher economic and social dynamics in urban and rural areas alike (offer employment possibilities, economic development, social care) and also better nature conservation, including the conservation of cultural and natural heritage. It is not always easy to link both goals.

The contradictions we meet in the advancement of sustainable planning are as follows:

- market mechanisms (with consideration of only short term profits) work against planning, in particular against the sustainable orientation
- local actions are not always in accordance with national goals
- sectional work organisation can work against inter-sectional activity
- residents have opposing requirements that on one side include the spatial decision making influence and on the other they are users; the so-called paradox of the user against the citizen
- interests of the community are in opposition with the individual interests (known symptom at the problematic objects, i.e. not in my back yard) etc.

The challenge of sustainable development in the long run requires big changes in our thinking and behaviour, in social life and in the economy. Because of the rapid changes in the environment and accumulation of other economic and social problems we have to act as quickly as possible and reorganise. Apart from the development of firm mid and long-term principles we can gain a lot in the short-term by

making smaller moves in the right direction. Successful execution of these principles depends mainly on the ability to connect and form partnerships at all government levels, in the private sector, professional institutions, non-governmental organisations, in the wider society and also on the active role played by the local community. **Continuous monitoring and evaluation of the policy results, the situation and direction of development are important for correct decision making.** We have decided on sustainability as the goal and we need to know how to measure it. For this purpose we first need to decide on the basic parameters of sustainable development and establish a system of indicators for measuring.

2. Definition of the term 'sustainable balanced development of the city'

Various definitions of the term 'sustainable balanced development' exist. We can't expect to have a unique and final definition as the development requirements are continuously changing. The World Commission for Environment and Development defines sustainable development as (WCED 1987): „**Sustainable development is development that fulfils current needs without endangering the possibility for future generations fulfilling theirs**“. This definition was later updated to read (IUNC 1991): „**Sustainable development is a tendency to improve the quality of life so we can live in the framework of the supporting ecosystems capacities**“.

When talking about sustainable development we need to consider various levels of dealing with it: global, continental, national, regional, city and local. At all levels there is a need to observe and measure the situation and changes that are created and evaluate, if the development goes in the direction of sustainability or the opposite.

Urban areas have a crucial influence on sustainable balanced development; they're continuously growing and changing the image of the Earth with densely populated parts, industrial areas and extensive transport and road networks. Activities in the city have a negative influence on the environment i.e. air, soil, water, waste, audio and visual pollution. These problems indirectly affect the human habitat, people's health and quality of life. Within the city organism we wish to gain environmental, social and economic balance, so-called **internal sustainable balance**. We have to consider the **influence on the city** from the surroundings and the **outgoing city influence**, on the countryside hinterland and the region.

Sustainable city development means that the city together with the surrounding countryside (gravitational area, region) achieves ecological and social-economic balance. The urban system that has not achieved this balance has fallen into crisis and this reflects the negative consequences of our industrial-technological society. The term sustainable embraces the care for natural sources and environment, and also cultural and human demands. The social balance (for example influence of unemployment), human and culturally rich environment and psychological satisfaction are also important. All listed parameters together present sustainable city development, that is a **composite** of the individual balances.

3. System of indicators for measuring sustainability in urban areas

The system of indicators that was suggested in the doctorate thesis (Sašek 1997) for the measuring of sustainability in urban areas is supported by research. The selection has been upgraded and partly changed and the directions are given considering the European Charter on Cities and Towns (EC 1994). The first set includes 9 environmental indicators selected on the basis of the Dutch model (Adriaanse 1993). The second set gathers, partly changed and added socio-economic indicators on the basis of a study by The European Foundation from Dublin (Mega 1995). The third set comprises physical space indicators and has taken into consideration the research of the Department for Urban Planning from Amsterdam (de Knecht 1995) and the Department for development and planning at the University in Aalborg (Marling 1995). The fourth set includes urban design indicators that took into consideration the design principles based on the work of Kevin Lynch (Lynch 1981) for the plan of San Francisco (Shirvani 1985). These have also been widened and changed.

For holistic observation that is demanded by sustainable development, it was necessary to join various areas and fragmented knowledge. To put this system into practice requires interdisciplinary work, co-operation of professionals from various areas where all contribute their own data and adjust them to suit the others.

The shaping of indicators and the system for evaluation of sustainable development depends on the level of invested work, situation, spatial processes and problems, urban planning politics and **goals** to be reached, and with the new requirements and demands it has to be changed and updated. Each set could have new indicators added or some of them could be divided into more individual ones. The shaping of indicators can never be final, this is an **on-going process**, closely dependant on actual needs. That's why the established system was designed with flexibility in mind, to incorporate the changes.

Whilst evaluating the meaning of individual indicators I tried to establish a balanced evaluation on the city level. Individual indicators have different meanings depending on the level; city level, quarter, neighbourhood (local level) and for this purpose we introduce various evaluations for the individual levels.

Sustainability indicators should show in which areas the city acts in a positive or negative direction with regards to the goals. The final result is the collective index of sustainability giving the elaborate grade. The system of indicators, like urban sustainable strategies, consists of four groups: environment, social-economic, physical space and urban planning-design. The final result is the collective sustainability index that gives the overall grade.

- **First set: Environmental indicators**
 - global climate
 - air quality
 - rain acidity
 - pollution of the eco-system
 - urban mobility
 - waste management

- energy consumption
 - water consumption
 - indicators of interference (noise, smells, etc)
 - other
- **Second set: Social-economic indicators**
(based on indicators from The European Foundation, Dublin, partly changed and updated):
 - social equity
 - legality
 - accommodation conditions
 - urban security
 - economic and social balance (for example: income, age)
 - citizen participation (in city management)
 - other
 - **Third set: Indicators of physical space**
 - the urban substance situation
(age of buildings, state of preservation, facilities, etc)
 - urban infrastructure
(roads, sewage, water, electricity, gas, telephone ...)
 - size and quality of the open area (squares, streets, embankments ...)
 - green areas (size, quality and accessibility)
 - equipment of centres
 - distance from the centres
 - other
 - **Fourth set: The urban planning-design indicators for the city:**
 - urban standard and pattern for reaching the human environment: taking into account size, height of a building in relation to its surroundings, proportion of mass, aesthetic dimensions,
 - harmony (compatibility) of objects and places with regards to topography and between themselves,
 - perceptual aspects of orientation (concept of streets, objects placing and relation of their masses, visual openness, views)
 - accessibility, clarity of orientation and access distance in particular for pedestrian
 - activity, suitability of activities, variety of programs, street life and life on the square (shops, bars, walking, passageways)
 - variety of urban areas, identity and individuality in the shaping of individual urban structures and places
 - appearance and proportion of open spaces to built-up areas
 - variety of architectural elements in the identification sense, visual and symbolic abundance (style, composition, standard)
 - pedestrian areas: design and equipment (design of squares, streets, greenery, urban equipment)
 - aesthetic environmental qualities: architectural character, visually pleasing details
 - other

I have separately defined the individual indicators and described the measuring methods. The summary table is followed by the evaluation, points and weight coefficients that were taken into consideration for individual indicators or for the whole group.

The EKO computer programme intended for working out and showing the influence of important factors on the sustainable urban indicators in a given space, was additionally manipu-

lated for this project. The structure was created hierarchically and with the whole system of tree indicators. Ljubljana, as shown in an example of the detailed dealing with space and the data used, was actual and also the hypothetical.

4. Monitoring the situation in Slovenia

In Slovenia there is a lot of available data collected by various institutions but most of the sustainable development data hasn't been used or collected systematically and therefore cannot be used for comparison. Firstly the creation of a suitable national digital database, for monitoring the situation and urbanisation, is required in Slovenia. The database should be accessible to all who work in urban and spatial planning and also to the wider public.

In my research I tried to define the term sustainable city development that is used incorrectly in various discussions and sometimes as the old fashioned and alternative name for environmental protection, though in reality it comprise of wider facts about the quality of the city environment and life within it. The system of indicators with the computer supported EKO model, for which the supporting basis are given in the research would, with future development and suitable databases, offer situation evaluation and urban planning interventions with regards to sustainability. That's why it offers support for decision making and checking the spatial interventions at different levels. Certainly each place and city need to be analysed with regards to their regional and local characteristics and the model should be adapted to the place and time. Continuous monitoring of the activities and the conditions of the environment, sources of its endangerment and trends in urban development, that form the basis for decision making, are becoming one of the main developmental-existential tasks for future decades.

Mojca Šašek Divjak, PhD Architecture, The Urban Planning Institute of the Republic of Slovenia, Biro 71

Illustrations

Picture 1: Observation of settlements in the framework of the eco-system with all incoming and outgoing of material and energy (Source: UWE/LGMB 1995, 13)

Picture 2: Schematic portrayal of the four groups of parameters of urban sustainability strategies: environmental, social-economic, physical space and urban planning-design.

Picture 3: The group of parameters forming the urban environment.

Picture 4: The groups of indicators of sustainability together show the index of sustainability.

Picture 5: Components of the individual indicators: An example of the global climatic indicator

Picture 6: Part of a revision table on urban planning-design indicators

Picture 7: Detailed dealing with space: North part of Ljubljana city - total sustainability index. Grey or black columns show the positive or negative value of the indicator, white columns show its standardised value (an estimate)

For bibliography and sources see page 44