

## DEVELOPING A SYSTEM OF URBAN INDICATORS FOR MEASURING QUALITY OF SPACE AND LIFE IN PULA AND ZADAR, CROATIA

Branko I. Cavrić

### Introduction

Measuring the quality of urban life has a long tradition in many parts of the world (Gahin, Paterson, 2001; Ghosh, Vale & Vale, 2006). These measurements were developed within social sciences first (Sawicki, 2002), mostly urban sociology, and then urban ecology as antecedents of interdisciplinary urban studies (McDonald & Patterson, 2007, Wong, 2002). Their specialised applications in urban planning, management and governance based on principles of sustainable development (Flood, 1997) became a recent trend. What is to be said about measuring the quality of urban life nowadays, especially when fashionable urbanism is created by influences of globalisation, or 'glocalisation' emerge as a natural response? In this dynamic performance, where both major and small key players strive to achieve their interests, urban indicators are useful "instruments" for decision making. Today, many cities, regions and countries have decided to introduce them for monitoring and measuring the progress towards sustainability and improvements of spaces and human lives.

Urban indicators are simple instruments for multidimensional measuring of the well-being or quality of life in urban settlements which include natural, built, economic, social and political sustainability dimensions. In a technical sense, urban indicators are the presentations of information that show changes and trends in the course of time. In organised and functional settings, urban indicators are usually illustrated by diagrams, maps, graphs, schemes, tables, and figures, enabling people to see the trends in the simplest and fastest way. Nevertheless, there are many forms of transforming information into comprehensive indexes using audio-visual media, graphic design, the arts, the web and similar. Laurini (2001)

especially points out the prominence of multi-media and geographical information systems (GIS), which affect the extreme processing precision, presentation and information use in urban systems and e-government applications.

Contemporary systems of sustainable urban indicators assist in giving answers to several important questions such as: *Does our city become a better or worse place for living and working? Do its plans and programmes address citizens' requirements and needs? Do they contribute to the improvement overall of the urban environment? Do they affect displacements, in what sense and to what degree?* Naturally, all these queries require the availability of a very specific type of raw data generated first from different sources and then transformed into meaningful information, and subsequently into decision making indexes and indicators.

In practice, several specific indicators are usually organised in a series or complex group, i.e. a system, in order to be used on strategic and operative levels and within the defined development objectives, whereby some of the essential indicators' functions may overlap. One option is to use indicators in order to improve **awareness** of the needs for sustainable development in a city. The other function aids **monitoring** wherein the indicators have to be selected in order to describe situations susceptible to changes. Indicators in the process of **decision-making**, are used to implement adequate development methods and compare alternatives with their various effects. When used in **development control**, they provide the information on the distance from the proclaimed objective, combining the function of measuring the sustainable development progress with functions of the necessity to take actions. And finally, indicators are exploited as **reference points** for performances testing, i.e. benchmarking. However, there is no single unitary set of indicators for urban plan monitoring and evaluation (Wong, 1995), but some most common indicators descriptors are shown in table 1.

**Table 1. Key Functions of urban planning indicators**

Function	Description	Answers the question...
Description	<ul style="list-style-type: none"> <li>• Describe condition or problems</li> <li>• Increase general understanding</li> </ul>	"What are things like?"
Simplification	<ul style="list-style-type: none"> <li>• Simplify complexity; provide a representation picture with significance extending to a larger phenomenon of interest</li> </ul>	"What's the big picture?"
Measurement	<ul style="list-style-type: none"> <li>• Measure characteristics of quality of life</li> <li>• Measure performance activities or services</li> </ul>	"How much?"
Trend identification	<ul style="list-style-type: none"> <li>• Establish baseline data</li> <li>• Identify trends or patterns</li> <li>• Show direction and improvement</li> <li>• Show disintegration and no change</li> </ul> <p>Two types:</p> <p><b>1. Past orientation.</b> Indicators are chosen in the light of their "historic trend-identification properties" (i.e. showing how dimensions of an identified phenomenon have been changing).</p> <p><b>2. Future orientation.</b> The indicator is a "forward-looking Instrument" used as a predictive forecasting device.</p>	<p>"How did we do?"</p> <p>"Where are we headed?"</p>
Clarification	<ul style="list-style-type: none"> <li>• Clarify analytical issues or long-term goals</li> <li>• Highlights areas of concern or improvement</li> </ul>	"What is most important?"
Communication	<ul style="list-style-type: none"> <li>• Translate data into terms understandable by a wide range of users</li> </ul>	"How do we explain?"
Catalyst for action	<ul style="list-style-type: none"> <li>• Stimulate public, stakeholder and political awareness, as well as Interest, and will to work towards change</li> </ul>	"What next?"

Source: Hoering and Seasons (2004)

Hence, individual cities may get a clear idea of their positions in relation to other cities in the country or at international level, i.e. they may easily compare their own comparative advantages and shortcomings on the basis of which they can take relevant measures and activities. Basically, the choice of indicator framework could be guided by different conceptual approaches depicted in Table 2 (Niemeijer and Groot 2008 and 2008a, Hoernig and Seasons 2004, Sawicki 2002, Westfall and De Villa 2001, Innes and Booher 2000). However, the actual selection depends on the study area, the scope and spatial resolution.

**Table 2. Summary of the most common indicator frameworks**

Frame work	Indicator types	Focus
Conventional	<ul style="list-style-type: none"> <li>• Economic</li> <li>• Social</li> <li>• Environmental</li> <li>• Urban metaphors</li> </ul>	<ul style="list-style-type: none"> <li>• Income, employment, production, growth, inflation</li> <li>• Social functions, conditions, interrelations, changes</li> <li>• Structure, functions and dynamics of ecosystems</li> <li>• Urban analysis and powerful-city based goals</li> </ul>
Integrative	<ul style="list-style-type: none"> <li>• Sustainability</li> <li>• Healthy Cities</li> <li>• Quality of Life</li> </ul>	<ul style="list-style-type: none"> <li>• Integrated environmental, social and economic issues</li> <li>• Public health principles</li> <li>• Assessment of individual well-being</li> </ul>
Performance and policy	<ul style="list-style-type: none"> <li>• Performance measurement</li> <li>• Benchmarks</li> <li>• Stakeholder consultation</li> <li>• Strategic planning</li> </ul>	<ul style="list-style-type: none"> <li>• Progress monitoring based on goals &amp; objectives</li> <li>• Best practices among subjects in competition</li> <li>• Conflicting views of different players in policy arena</li> <li>• Norms and policy objectives</li> </ul>
System and causal chain	<ul style="list-style-type: none"> <li>• Pressure-state-response</li> <li>• Driving force-state-response</li> <li>• Driving force-pressure-state-impact response</li> </ul>	<ul style="list-style-type: none"> <li>• Human and economic activities pressures</li> <li>• Beneficial and harmful environmental impacts</li> <li>• Emissions, state and environmental changes</li> </ul>

*Source: Cavric (2011)*

It is evident from previous reviews that urban indicators are an important tool for international, national and local benchmarking, stakeholder's communication and decision making. The need of their design and use, especially when relating to "urban" and "sustainability" issues, is becoming a worldwide trend. So extensive is the popularity of this phenomenon that a web search on the subject of indicators can yield more than 6 million hits, starting from UN agencies, the World Bank (2003) and OECD (1997) to over a thousand city portals.

Similarly to situations abroad, the cities in post-socialist Croatia are characterised by sharp disparities, contrasts and environmental degradation, particularly since the 1990s when significant socio-economic and political transformations occurred and urban Croatia found itself in the gap between the demands for faster economic development and demands for the protection of the urban landscape and natural heritage. Actually, Croatian cities today provide a live laboratory for tracing information on the quality of urban life and space in transition. Such a situation entails holistic and integral approach wherein local authorities should play the main role in resolving economic, social and spatial issues. Additionally, decentralisation of responsibilities from central to local level is carried out under influences of factors such as democratisation, demise of the centralised authoritarian system and absence of chronic financial constrains. Having accepted the capitalistic economic model the Croatian cities became emerging hubs in spreading development and environmental impacts. The capital Zagreb and its metropolitan region take the initiative, even though significant changes happened in coastal cities whose Mediterranean townscapes and hinterlands were exposed to stresses beyond sustainable carrying capacities.

With this in mind, it has been considered important to launch an urban indicators research project that aims to address emerging problems

and recommend successful a model for tracing and monitoring urban change at different spatial levels (e.g. metropolitan region, city, city district, neighbourhoods). Furthermore, the question was: which approach should be chosen? From the beginning, the idea was to create a balance between available time, technology, financial and human resources necessary for carrying out the project. It was also important to decide how to opt for a case study city whose development profile, spatial extent and urban form did not obstruct field survey efficiency, and visual and spatial foreseeability. Overall the basic motive was to test and combine the best aspects of analysed international indicators frameworks and to recommend a model suitable for the selected coastal cities of Zadar and Pula.

This initiative is especially significant in a situation when Croatia is adjusting to European administrative and governing standards. Indicators of sustainable urban development present one of the fields wherein adjustability and transparency with similar European initiatives and programmes is expected: new political arrangements, ethics and standards, new operational frameworks on the level of local authorities, methods of providing administrative services, communal strategies, promotion of local welfare, electronic administration, developing control, European dimension of urban and spatial planning and many more.

The primary objective of this chapter is to build on the results of a research report entitled: ***“Developing the System of Indicators for Sustainable Urban Development in Selected Coastal Cities of Croatia”***, which was carried out for the National Foundation for Science, High Education and Technological Development (NZZ) of the Republic of Croatia in 2009. It also summarises the author’s presentation and discussions during the XI European Urban Summer School on “Quality of Space – Quality of Life”, hold in Lisbon (2011) sponsored by the Association of European Schools of Planning (AESOP).

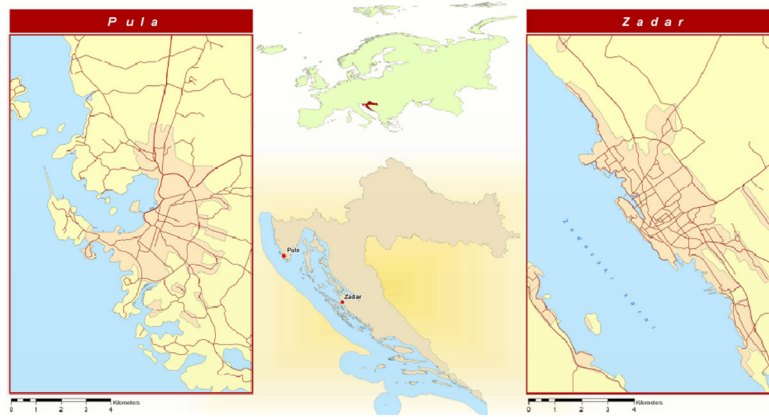
## Background to the case study cities

### *Geographic setting*

The geographical setting of both cities has always represented an important component, changing incongruently with historic, economic and administrative conditions. Unobstructed access to the sea shore, wide rural hinterland, fertile land, favourable climate and enough room for controlled urban growth are comparative advantages compared to other cities of the Croatian coast whose spatial expansion is physically limited. Owing to the influence of a recently constructed modern motorways (A1, Istrian Epsilon), and possibilities for only 15 minutes travelling from the town centre to the motorway (at city exits Zadar I and II), the traffic location is markedly advanced securing undisturbed communication towards Italy, south Adriatic and the north of the country.

For example Zadar has slightly better national and local linkages. However the advantage of Pula lies in its proximity to good quality roads heading toward Italy, Slovenia and Austria. Comparative travel time by private car towards Zagreb is almost identical (3,5 hours), but in the near future and after completion of the Istria Epsilon link this time could be shorter when travelling from Pula to the Croatian capital. The other transportation systems, especially by sea and air, are also in the process of intensive diversification and modernisation. Direct weekly connections with ferryboats to Venice and Ancona in Italy, as well as a rising number of direct and charter air flights (e.g. Ryanair, SkyEurope, Germanwings, EasyJet) show diverse possibilities for extending the tourist season and for developing integrated traffic systems.

**Figure 1 –  
Geographic setting  
of Pula and Zadar  
(B/W graphic will be  
provided)**



Source: NZZ Project GIS data base (Siljeg, Cavric, Toplek; 2009)

#### *Historic brief*

Both cities characterise a rich historic heritage which dates back to pre-ancient times. In their countryside traces from the Neolithic era were discovered, as well as numerous findings from pre- Illyrian, Illyrian, Greek and Roman periods. After the arrival of Illyrian Lilburns, the names Jadera and Jader are noted for the first time in the toponymy of these regions. In further historic developments, artefacts from the Roman epoch are especially interesting. At that time Pula and Zadar were distinctive Roman municipalities. The characteristic geometry of Roman town-planning regulations and remains of numerous artefacts are visible almost everywhere in central parts of the cities, especially on the peninsula, historical nucleuses of both cities were concentrated on the forum and around the arena. After the fall of the Roman Empire there



have been turbulent times when nature, disease, famine, and human destruction influenced the development patterns, socio-demographic change, economic and urban image of these two cities. They have been destroyed and re-built a few times. Zadar and Pula were often exposed to war raids and influences from Byzantium, Crusaders, Venice, Ottomans, Austro- Hungarian and Italy. The main marks of recent destruction came from offensive allied air attacks by the end of World War II, as well as from Zadar's shelling during recent conflict from 1991 to 1995. Only after World War II in 1947, were the cities annexed to Croatia inside former Yugoslavia, and after the 1990s patriotic warfare they became part of a newly formed Republic of Croatia.

#### *Planning and development*

The planning concept introduced in Croatia after its departure from the former federal state was supposed to bring a wind of change and to secure functioning of planning institutions at national, regional /sub-regional and local level. Although it was created to address challenges of the new political system the current planning practice shows numerous shortfalls. First, it continues a **"top down"** approach, despite the growing number of participants in the urban arena. Secondly, it does not support multidisciplinary tasks that are usually performed by formally educated planning professionals.

Unfortunately, planning education in Croatia does not operate under the AESOP umbrella and crisis in the planning field as independent trade is inevitable. All this heavily prejudiced the quality and format of the most recent planning reports and their implementation. Just a brief overview of these documents shows that they contain hardly anything from a modern planning doctrine. Inadequacy of general and specialist analysis,

application of modern GI technologies, absence of **“What If”** planning techniques and scenarios, lack of proper public participation, and outdated implementation methods are only a small fraction of critics pointed at existing plans and the planning community. As a logical consequence the spatial and master plans of Pula and Zadar pertain the same syndrome of **“inadequacy”** when addressing matters of sustainable development. Instead of their widespread acceptance by the majority of city dwellers they are more oriented towards satisfying technical formats and interests of influential individuals and groups.

Currently Zadar and Pula are going through the process politically defined as a post-socialist transition, or in urban terms as post-modernisation that strives to ensure a harmonious connection of all city parts in a functional manner. A contemporary planning process needs to be based on principles of sustainability, free property market, global urban economy and great environmental concern. It is also expected that the current city image as a mixture of “historic and modern” should change sensibly, balancing different stakeholders demands by way of democratic public debate, adequate level of intervention, co-ordination and land-use development control. However, at the moment a free real estate market and rigid government intervention are the only instruments applied in city urban developments. Large land tracts of mostly abandoned military and industrial districts offer a good opportunity for future residential and MXD land use developments in both cities, nevertheless only under condition that illegal construction which contributed more than 30% of the new residential growth during period 1980- 1990s, is legally curbed. If not properly planned and utilised these disconnected and dysfunctional land patches will continue to act as ideal polygons for speculations fuelling shady development deals in the absence of good qualitative and quantitative planning instruments and their applications.

The fact is that only two implementation instruments (e.g. planning, location and building permits) inherited from the previous political system are still in use in urban planning practice. Any attempt for improvement is withdrawn by powers and lobbies only concerned with the protection of their interests. In most cases they are represented by webs of political and business allies. Unfortunately, this nuisance is observable in all larger and smaller centres of the Adriatic coast such as Opatija, Rijeka, Šibenik, Split and Dubrovnik. A similar situation prevails in Zadar and Pula, which are selected as a case study cities based on their connectivity, pristine environment, heritage and more room for expansion, placing them in the category of emerging south- east European costal tourist hubs.

In such state of affairs it was important to launch the project that will devise a set of dynamic tools for monitoring and directing urban change to improve the quality of life and space for generations to come. In summary the proposed urban indicators concept is based on well balanced development and inherent complexity of the five major sustainability pillars (e.g. natural, built, social, economic, and political). It is derived through participatory GIS indicators' framework applied at the city and local community level (e.g. city quarters or neighbourhoods).

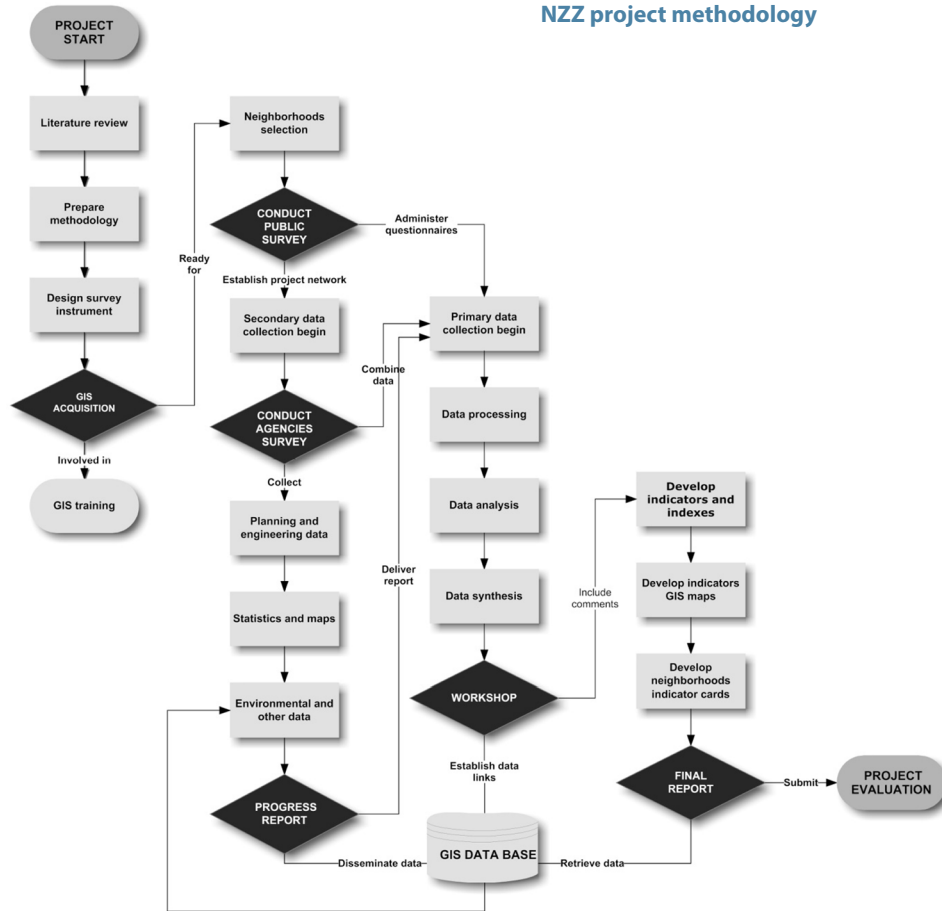
### **Methodology**

The project used various approaches to obtain information pertaining quality of life and space in the two cities. As starting point the NZZ research coordinator has developed a project chart trying to summarise methodology, anticipate all phases, identify critical steps and canvas public and GIS technology issues (Fig. 2). After intensive consultation and documentary analysis of information obtained from diverse government and city departments and agencies the NZZ team has developed the

necessary background data base about past and current planning, development and environmental concerns in both cities. Apart from the direct secondary data collection the NZZ researchers have shared project views and established relevant links with professionals from other disciplines. Through a series of introductory sessions and meetings the NZZ team has also managed to reach almost all categories of stakeholders including politicians, professionals, government officials, academics and researchers, businessmen, NGOs, local community board members and citizens.

In June 2008 and November 2008 a community survey was administered to 630 people in 21 local communities of Zadar and to 480 people in 16 local communities of Pula, with the aim to identify issues, values and opinions about present and future quality of life and space. A total of 1,110 people of different age, social and professional background responded, stating that such a survey is long overdue. The survey helped to define the issues examined in areas of the natural, built, economic, social and political environment. It also helped to set an agenda for wider public participation and involvement within the plan making and implementation process, and thus acted as a kind of new approach applicable to other Croatian cities. The survey was designed to cater for 1% of the total population of both cities, and to have the citizenry publicly expressing and assessing the importance of various aspects of quality of space, life and environment at both city and local level.

Figure 2. Highlights on the NZZ project methodology



Source: Cavric (2011)

Citizens were involved directly through dialogue with NZZ experts and survey administrators who were trained to get the best possible answers at the grass root level. In this regard the survey confirmed advantages of the scientific approach where opinions of citizens were combined with specialist knowledge of NZZ team members in areas of urban planning, sociology, geography and GIS. Similar attempts could be found in the literature showing that a mixture of empirically measured trends and public opinions gives the best results in measuring and charting public perception regarding the integral quality of urban life and environment (Revi and Dube 1999, Stenberg 2001, McMahon 2002).

Furthermore, applied methodology showed to be right, due to the fact that the “top down” approach is still domineering Croatian planning practice. Politicians and planning professionals want to plan **“for citizens instead of planning together with them”**, imposing turn-key development solutions without serious public participation and consultation of all urban actors. For that reason, the intention was to create a dialogue between local communities and institutions in charge of providing citizens’ services. The NZZ played a crucial role in bridging that gap. After saving all information in an interactive GIS database, the analytic process and formation of indicators sets within the framework of five environmental sub- systems (natural, built, economical, social and political) has materialised. As a result it was possible to come up with a variety of indicators generated at both city and community levels.

## Findings and discussion

### *Quality assessment of the Natural Environment*

The quality of the natural environment in Zadar and Pula is illustrated by using 13 indicators listed in Table 3 below. The level of assessment presented as the L - low, M - medium and the H - high shows that the majority of respondents complain about noise as one of the most prominent challenges. This is certainly due to the distribution of important traffic routes, higher concentration of people and noise producing activities (e.g. industry, port, tourism). However, the situation differs from neighbourhood to neighbourhood. Quality of air and sea water is very highly rated, but only inhabitants living closer to the seashore expressed concerns for how long good seawater quality will remain. There is also a long-standing issue of accessing the seashore in Pula where the shipping industry blocks the most attractive parts of the coast line. No one recognised a real opportunity of how to deal with this obstacle in future.

**Table 3. Indicators of the natural environment**

GENERAL ANALYSIS OF SUSTAINABLE URBAN DEVELOPMENT INDICATORS	PULA						ZADAR					
	Assessment of:						Assessment of:					
	Challenges			Opportunities			Challenges			Opportunities		
	L	M	H	L	M	H	L	M	H	L	M	H
NATURAL ENVIRONMENT												
1. Air quality		■			■		■					■
2. Drinking water quality			■		■		■				■	
3. Sea water quality			■		■		■				■	
4. Soil quality		■			■			■			■	
5. Noise impacts			■	■					■	■		
6. Open space ratio	■				■			■			■	
7. Landscape quality		■			■			■			■	
8. Human Impacts level			■		■			■			■	
9. Endangered natural species			■		■			■			■	
10. Vulnerability of prominent natural locations		■			■			■			■	
11. Exposure to natural hazards		■		■				■			■	
12. Frequency of natural hazards		■		■				■			■	
13. Existence of natural hazards early warning system			■		■				■		■	

Source: Cavric et al. (2009)



People in Zadar are in favour of good quality drinking water while in Pula they have put forward scores of complaints. Some respondents have criticised visible withdrawal of green areas and open spaces under the pressure of building activities. In addition, it has also been observed that landscape quality and biodiversity are under threat. Special attention is given to the unresolved issues of uncontrolled land fills and dumping sites, deteriorated industrial and socialist housing districts, empty military barracks, etc. Some were questioning urban infrastructure and services thresholds stating that they need to be always considered together with natural carrying capacities. High level of concern is related to natural and man-made hazards and their impacts at city and regional scale. Citizens have criticised the functioning of warning systems and the absence of disaster recovery and management plans at both city and local community level. The danger of earthquakes, fire, sea rise, tidal waves and draught were clearly highlighted as real challenges.

In summary informants in both cities still share views vis-à-vis high quality of their natural environment, stating this as a good reason for continuous human habitation and urban attractiveness. However, at the same time they have expressed their judgement that spatial distribution of tourism and different types of medium and heavy industry are major contributors to harmful environmental impacts. They consider them as a real challenge to sustainable development and insist that authorities must consider opportunities and apply all possible means to restraining prolonged environment destruction. The majority of interviewees have agreed that the integration of their cities into Mediterranean bio-diversity and its cultural complex is essential for any future environmental planning and management. It means a full use of the cities comparative advantages such as natural landscape, wide countryside belt, fresh water resources, proximity to the sea, islands, mountains, natural parks, reserves, and much

more. According to the NZZ research team these advantages could only be fully exploited through application of methods and techniques which stimulate sustainable development, secure integrated natural resource control and protection from hazards.

#### *Quality assessment of the Built Environment*

The built environment assessment captures 10 interrelated indicators portrayed in Table 4. The phenomenon of space construction and intensity of residential and commercial development were the driving force in informing people's mind-sets. More than one third of informants in both cities claim that space is overdeveloped, while two thirds describe a moderate level of land cover change. A great majority in Zadar supports detached one to two story family houses. Conversely, residents of Pula convey a positive message towards multifamily housing in mid-rise buildings. Furthermore, there is evident support in favour of the MXD land use development, safeguard of traditional architecture but also encouragement of new architectural styles and building technologies. All these appraisals are strongly linked to mentality, ethnic composition, life styles, financial abilities, and space perceptions leading to a typical image of Mediterranean urban fabric in post-socialist transition. A good motion received from the survey is that there is enough room for contemporary adjustments which do not compromise traditional and socio-economic values.

**Table 4. Indicators of the built environment**

GENERAL ANALYSIS OF SUSTAINABLE URBAN DEVELOPMENT INDICATORS	PULA						ZADAR					
	Assessment of:						Assessment of:					
	Challenges			Opportunities			Challenges			Opportunities		
	L	M	H	L	M	H	L	M	H	L	M	H
<b>BUILT ENVIRONMENT</b>												
1. Built-up areas ratio			■		■			■				■
2. Acceptability of housing types		■			■			■			■	
3. Social services coverage		■			■				■		■	
4. Social services equipment demand			■		■			■			■	
5. Physical infrastructure coverage		■			■			■				■
6. Physical infrastructure services demand		■			■			■			■	
7. Level of heritage protection			■		■				■		■	
8. Prevalent building technologies and materials		■			■				■		■	
9. Implementation of sustainable development principles			■	■					■		■	
10. Mediterranean townscape and landscape compatibility			■		■				■		■	

Source: Cavric et al. (2009)

Huge criticism is articulated against “urban villas” which are in most cases owned and constructed by new-born tycoons and land moguls. These unique urban artefacts turn out to be a real battlefield involving numerous actors and interests at the expense of commoners and prudent professionals. They create animosity and destruction of the Dalmatian social niche and affect ecological impacts/costs at the most attractive city locations.

Research findings also signify respondents’ dissatisfaction with urban services. Particular critique is made by young and old age groups indicating problems of quantity and diversity of entertaining, recreational, educational, health and care facilities. Their distribution, clustering, types, operational time and proximity do not meet demands at levels expected by concerned age cohorts. In terms of development priorities affected groups prefer urban services in the following order: **health, tourism, child care, culture, entertainment and leisure.**

A similar motion is spearheading towards urban infrastructure providers and equipment pointing out frequent black-outs and lack of capacities to maintain smooth running of utilities at reasonable costs. The highest degree of people’s frustration is with solid waste management. Regarding infrastructure upgrades a vast majority of informants prioritise the development of: **sewage systems, parking, designated bicycle routes, pedestrian paths and street lights.**

Diverse opinions were obvious when the NZZ investigators asked questions about protection levels of cultural, architectural and historic heritage related to buildings, streets, squares, plazas and archaeological sites. It was interesting to learn that people were concerned about heritage conservation and renewal in their local communities rather than in the city at large and surrounding neighbourhoods.

This demonstrates citizens' awareness about the importance of heritage in urban branding and marketing which usually starts from the doorsteps.

Moreover the NZZ questionnaire has indicated the importance of sustainable development as guiding principle for any future urban planning and management. In this regard respondents have highlighted numerous negative practices which they hope will not affect the well-being of their cities and local communities or impact quality of life and space. They have critically assessed current practices which trigger urban sprawl, litoralisation (e.g. cementing of the shoreline), proliferation of weekend house settlements, leapfrog development, spontaneous urbanisation, illegal construction, polluting discharges, uncontrolled dumping of building rubble, and much more. In addition, some respondents have industriously highlighted several other issues, including cognitive image, skyline limits and incorporation of city townscapes into the wider regional landscapes and biodiversity contexts. Special attention is given to the fact that people wish to conduct their daily affairs in the built environment which allows closer social contacts; pedestrian orientation; rhythm and sensitivity to smells, sounds and flavours; and observation of dominant green and blue colours. Unfortunately, the global and local dynamics are not in favour of this type of sensitivity which has existed in this part of the world for centuries.

#### *Quality assessment of the Economic Environment*

The dialogue between citizens and the NZZ interviewers has validated the hypothesis that political changes in the early 1990s instigated simultaneous reaction in the economic sphere on macro and micro levels. For years suppressed and centrally controlled prospect for private initiative and economic transparency has finally surfaced, marking the start of a competitive game unprecedented in recent Croatian economic history.

Historically, small craft and ship industry provided the economic base of both cities. Since then, there has been a shift from the more traditional industries towards commercial business fuelled by improved technologies, as well as global and regional networks. Private initiative coupled with legislative amendments and less political intervention (especially in the medium and small enterprises) contributed to faster economic growth and diversification. However, in that process, similarly to other transitional countries, there emerged unavoidable structural, technological and some time illegal challenges. Political, nepotistic and even mafia type cliques enabled some individuals and groups to achieve favourable positions and monopoly within a geographically limited market (Cavric, 2011). Only recently, as a result of adoption of legal obligations in the process of complying with EU regulations some more positive shifts occurred (Bosch, 2002). Meanwhile the global crisis emerged, although for years it was believed that it would not be possible in Croatia.

Respondents confirmed that transition was painful, especially affecting former socialist industrial giants like Tito, Uljanik, Maraska and many more. Some of them went into liquidation through auction mechanisms with many employees starting to roam the streets and triggering potential social arrests. Since buildings and technical equipment of these companies occupies significant land areas, the above transformation caused spatial and ecological implications which are noted in the NZZ assessment. As a logical consequence, our field reporters aimed to find out about people's views on the current economic situation. Their task is recorded in Table 5.

**Table5. Indicators of the economic environment**

GENERAL ANALYSIS OF SUSTAINABLE URBAN DEVELOPMENT INDICATORS	PULA						ZADAR						
	Assessment of:						Assessment of:						
	Challenges			Opportunities			Challenges			Opportunities			
	L	M	H	L	M	H	L	M	H	L	M	H	
<b>ECONOMIC ENVIRONMENT</b>													
1. Fraction of people working in local community firms		■				■	■					■	
2. Quality of life improvement by proximity to working place		■				■		■				■	
3. Number of firms in local community		■			■		■					■	
4. Influence of local firms on neighbourhood life	■				■		■					■	
5. Dominant economic activities		■			■			■				■	
6. Activities that foster fastest economic growth			■		■			■				■	
7. Average salary			■	■			■				■		
8. Income-expenditure ratio of average 4 member family		■			■				■			■	
9. Influence of mushrooming shopping centres			■		■				■				■
10. Current economic situation			■	■					■			■	

Source: Cavric et al. (2009)

In a situation with job irregularities many skilful individuals devised different survival strategies. One of them is to work from home or in small businesses nearby. This helps cutting the cost of transport and allows working family men to spend more quality time at home without compromising their professional life. Still today there is a small percentage of local inhabitants who support this model in which the work place needs to be close to home and to important urban services. Unfortunately, planners who were for years preaching this concept in theory never progressed with its practical applications in making provision for small and middle size compatible firms to locate within housing estates and residential neighbourhoods. Although some efforts are made, particularly with the IT oriented companies it is still quite unusual in the Croatian post-socialist city to recognise spatial and economic alliance between residents and entrepreneurs.

Some respondents are behaving very NIMBY (not in my backyard) and are not supportive towards businesses located in their local community. They argue that companies do not contribute enough to the local social, environmental and urban development projects that could improve citizens' well being and add extra value to physical space. They also feel that companies need to have closer ties with local community boards when dealing with people's living and working conditions in their neighbourhoods. However, others see location of businesses as a great opportunity for economic and spatial diversification. The assessment further reveals that there is a lot of sympathy for employment in tertiary and quarterly economic sectors, especially by younger and middle age groups. Young people also speak positively about mushrooming shopping centres which present a new urban decor in post-socialist city. Older demographic cohorts prefer jobs in primary and secondary activities which are not exposed to frequent technology modifications. In terms of the most admired economic choices people have underlined lucrative



trades such as urban and rural tourism, IT, entertainment, real estate industry, transport, restaurants and catering, production of wine and olives and sale of fuel.

Interviewees were not enthusiastic of disclosing information about the structure and source of their monthly and annual incomes. The vast majority of informants stated that falls within average Croatian salary bracket amounted to between 400-700 Euros monthly. Only a small fraction earns between 1300- 2000 Euros per month. When asked to enlist additional revenues from part time employment or “grey economy” sources they have adamantly refused to provide more details. It is very evocative that almost everyone complains about low wages which are not sufficient to sustain their living standard. However, some observable manifestations like possession of flashy cars, designer labelled clothing, gatherings in restaurants, beaches and other popular places during working or late hours convey a different message. The only conclusion that could be drawn is that there is still quite a number of people living above their means or being capable to generate extra returns. Probably the circumstances of liberal capitalism are encouraging for some while rather gloomy for others.

In summary, the economic situation in both cities is not rosy due to multiple external and local factors leading to prolonged recession, unemployment, debt crisis and introduction of austerity measures. An increased number of repossession cases speaks on the subject of the decline of property and the private car market. But still, compared to Pula the city of Zadar has advantages especially with regard to the area of Gaženica which is expected to develop into a regional MXD water front. If this happens in the foreseeable future Zadar will have a great opportunity to enrich its urban economic matrix. When speaking about Pula the only

way forward is to exonerate collapsing industries. Although this is not an easy task and a socially and politically very unpopular assignment, economic planners will have no other choice than to embark on taking this “hot potato” by their own hands.

#### *Quality assessment of the Social Environment*

The social pictures of Pula and Zadar are composed of colourful and miscellaneous cultural, religious, ethnic, linguistic and human manifestations. All these pieces are well crafted into the distinctive ethos of Istria and Dalmatia and subsequently melted into the prevailing urban mosaic of the post-socialist city. Without any doubt such moral fibre passed historic tests and is a good guarantor for time to come. Among the many indicators shown in Table 6 below, interviewees highlighted accumulated social synergy as one of the leading reasons to settle and reside in the local community.

Impacts and levels of neighbourliness have contributed to comfortable living in a physical setting with many domestic symbols such as favourite cafés, bars, meeting corners, grocery shops, food kiosks, pizzerias, mini-soccer playgrounds, parks and piazzas, neighbour’s children noise, hanging laundry, and much more. This is the reason why some interviewees declared that closeness to family, friends, and neighbours of similar social background could be important when moving through cognitive avenues of their own locality. Unfortunately, some informants in Zadar expressed fear and phobia against certain individuals and groups which include drug addicts, homosexuals, refugees, urban poor, single mothers, invalids, and members of some ethnic groups (e.g. Serbs, Gypsies). The situation in Pula is apparently tolerant since social communication and culture of dialogue are very advanced. Nevertheless, local hostility where some people might have problems is annoying, particularly during the tourist season when

both cities are over spilled with guests from all over the world.

Interesting results are also revealed when inquiring levels of satisfaction with social contacts, gatherings and projects which affect spatial, environmental and social improvements. Most popular gathering places are cafes, rarely libraries and museums. In addition reports has been made about people's behaviour in a family and public places. More positive references on kindness, diligence, helpfulness, friendship and neighbourliness were recorded in Pula, while descriptors in Zadar were concentrated on characteristics such as influence, economic and political power, hard work, politeness and culture. Some respondents expressed bad opinions about inhabitants of other city quarters assigning negative characteristics like arrogance, laziness, criminal behaviour, etc.

**Table 6. Indicators of the social environment**

GENERAL ANALYSIS OF SUSTAINABLE URBAN DEVELOPMENT INDICATORS	PULA						ZADAR					
	Assessment of:			Assessment of:			Assessment of:			Assessment of:		
	Challenges		Opportunities	Challenges		Opportunities	Challenges		Opportunities	Challenges		Opportunities
	L	M	H	L	M	H	L	M	H	L	M	H
<b>SOCIAL ENVIRONMENT</b>												
1. Social reasons for settling and residing in community		■			■		■				■	
2. Level of neighbourliness		■			■			■		■		
3. Level of social exclusion and inclusion		■			■				■	■		
4. Dominant group in development of social atmosphere	■				■			■			■	
5. Level of happiness and spatial location of social contacts		■			■			■			■	
6. Existence and level of negative behaviours		■			■			■		■		
7. Existence and level of positive behaviours		■			■			■			■	
8. Locational and spatial preferences for leisure time		■		■			■					■
9. Social preferences for leisure time		■			■			■			■	
10. Social organising		■				■			■	■		

Source: Cavric et al. (2009)

The importance of social context has been confirmed by indications on how the inhabitants like to utilise their free and leisure time. The vast majority of them spend their spare moments in open areas of the local community, sunbathing and swimming on the beach, walking by the sea promenade (e.g. riva), or simply enjoying a cup of espresso. During these endeavours in most cases they prefer closeness to friends or family members. The amount of time being at home or outside differs and depends on seasonal weather, but on average at least 6-8 months per year are suitable for going out. Simply speaking they appreciate rewards provided by mother nature and the specific Mediterranean way of life.

The most recent development which tailors the social arena is organising people around NGOs, clubs and citizen associations aiming to improve awareness about all important aspects of urban life. These forums become an excellent place for exchange of ideas and positive criticism through open debate. Public meetings, workshops, discussion groups, surveys, displays and exhibitions are the most common tools of bringing more people on board. With this type of involvement participants feel that their role as educated and loyal citizens is fulfilled.

#### *Quality assessment of the Political Environment*

The fact that they can freely express their opinions about their city and urban governance caught the attention of interviewed citizens. Seeing that Croatian society is highly politicised (e.g. one Croat 3 parties), interviewees gladly expressed opinions about the cities' political establishment and its impacts on urban development. The majority of them verified that regardless of the political affiliation the ambition of local government officials and their cronies was always to achieve their individual and group benefits first. Priority in protection of the public interest is clearly

substituted with aspiration of fulfilling personal gains, as well as the interests of ruling parties.

Interviewees criticised limited professional expertise of the present city administration (dominated by a single party) in the area of urban planning and development. This fact could be easily proven by a simple analysis of the professional qualifications of employees in the planning sector where there are no officers with formal qualifications in urban planning, urban governance and management. Most of the work and decision making is done in simplified and voluntary manner. This state of affairs caused numerous city projects to be unaccomplished or behind schedule. It is obvious that existing governing and management bodies and administrative clerks in both cities have difficulties, especially when requested to run public affairs in multifunctional and multitasking manner. The citizens object that the current establishment cannot perform competently without necessary modernisation and continuous education which would create ethical and state-of-the-art professionals able to make responsible decisions and to provide the highest quality control in serving the city and its citizens. It is important to acknowledge the presence of the major of the City of Pula during one of the workshops organised by the NZZ research team and their collaborators from the University of Juraj Dobrila, Department of Economics and Tourism. It was noticed that the Major and a couple of city officials were present throughout and even after the workshop trying to contribute to a lively academic and public dialogue. Unfortunately, city officials were ignorant about happenings during the workshop in Zadar. The results of indicators analysis of the political environment show a high level of discontent and distrust towards public institutions, government and management. Some political challenges and opportunities currently shaping the city's political landscape are summarized in Table 7.

**Table 7. Indicators of Political Environment**

GENERAL ANALYSIS OF SUSTAINABLE URBAN DEVELOPMENT INDICATORS	PULA						ZADAR					
	Assessment of:						Assessment of:					
	Challenges			Opportunities			Challenges			Opportunities		
	L	M	H	L	M	H	L	M	H	L	M	H
<b>POLITICAL ENVIRONMENT</b>												
1. Activity of local community boards		■			■			■			■	
2. Joint citizen and local boards driven projects			■		■				■		■	
3. Acceptance of citizens opinions in public participation		■			■				■	■		
4. Opportunities for public participation		■			■				■	■		
5. Negative practices in urban development process		■			■			■			■	
6. Negative practices by key stakeholders			■	■					■	■		
7. Key stakeholders interference in urban development		■			■				■	■		
8. Acceptance of EU standards by authorities in their work		■			■				■		■	
9. Level of attainment of city administration		■			■			■		■		
10. Level of efficiency of city administration			■		■				■	■		

Source: Cavric et al. (2009)

Alongside the critiques addressing the level of professionalism of the city administration there are pessimistic opinions on the system of decision making about quality of life. When asked to spell out at least five joint projects in the area of spatial and environmental planning which resulted from the united action of citizens and neighbourhood officials in recent times, most interviewees did not have any answer. They explained that in fact citizens do not even participate in united decision making with local government, or that for the past few years there were no such programmes, or that they possibly existed but interviewees were not aware of their presence. In any case, there exists unevenness in perception of spatial and environmental planning congruently with requirements of sustainable development. In reality there is an absolute absence of citizens' involvement in the scrutiny of planning projects. The possibility of participating in public discussions does not exist, and if it does the level of involvement is very low. Furthermore, the NZZ field survey team has examined citizens' views about the preparation and implementation of spatial plans, environmental impact assessments, and different social and physical infrastructure projects. Unfortunately, their answers confirmed expert knowledge about this very common disease, whereby the role of the public is extremely passive or sometimes curtailed by local politicians and their allies.

The NZZ research has also anticipated the need to answer questions with regards to negative phenomena such as corruption and bribery, nepotism and racketeering. Almost three-quarters of the citizens confirmed that such practices are very common in contraposition to the country's legal and social security systems. Interviewees conveyed that personal interests of local leaders are frequently above public interest. Because of that the question is in whose interest are decisions regarding spatial planning and urban development made; in other words, who loses and who gains



with these decisions. Interviewees think that in such processes state and local politicians, corrupted professionals, tycoons, and to some extent even individuals with criminal records are involved. They stress that major actors of change can be found amongst influential Croatian politicians and ministers who originate from both cities and their surroundings, some experts, domestic and foreign investors, and religious groups. About one-third of citizens considered that those actors have high influence, while the remainder believed that their influence could be marked as medium or low but still existing.

Citizens were especially concerned about the bad practice of public insight where quite often plans and projects are presented too late to the public, and this research agrees with this perspective. About a quarter of the citizens considered that local politicians and administration under the umbrella of the City Council still struggle in promoting the EU standards of good governance. Also, a vast majority of those interviewed think that efficiency, working habits, the speed and inefficiency of city administration could be described as unacceptable. According to those interviewed, the lengthy administrative procedures influence efficiency of investments. Good examples of this situation are planning (location) and building permits which can be obtained only if the applicant is ready to provide some financial incentive (i.e., money under the table) or favour.

### **GIS based indicators model**

Complexity and an enormous amount of raw data have required a strong technological background, and well trained and motivated staff able to handle demanding tasks of data selection, collection, processing, presentation and dissemination. In addition to managing the research project, the NZZ team has many technical, financial, publishing,

conferencing, facilitating, moderating, field work and other duties. Immediately after familiarising themselves with the project goals and objectives young researchers have embarked on intensive GIS training. The NZZ project coordinator was blessed to lead a group of very talented young academics who managed to acquire working GIS knowledge in a few weeks. Additionally, the decision of the project coordinator to acquire the latest full ArcGIS 9.2 technology while the team members attended GIS training, was wise for saving time and money, and allowing everyone to embark on duties instantly. Considering financial and time limitations, lack of experience and the large number of young researchers involved, the expected work load of the NZZ team was gigantic. A huge collection of more than 100,000 digital records for both cities was prepared and inserted into the GIS data base during several months of intensive work. As the final result the proposed GIS data base indicator model was developed to cater for users at both city and local community level. The results at city level are presented in the form of digital and hard-copy maps which allow on-line queries, browsing and printing of 29 different indicators and classified in five groups (e.g. natural, built, economic, social and political environment). An example of the general GIS Indicator's map is shown in Figure 3.

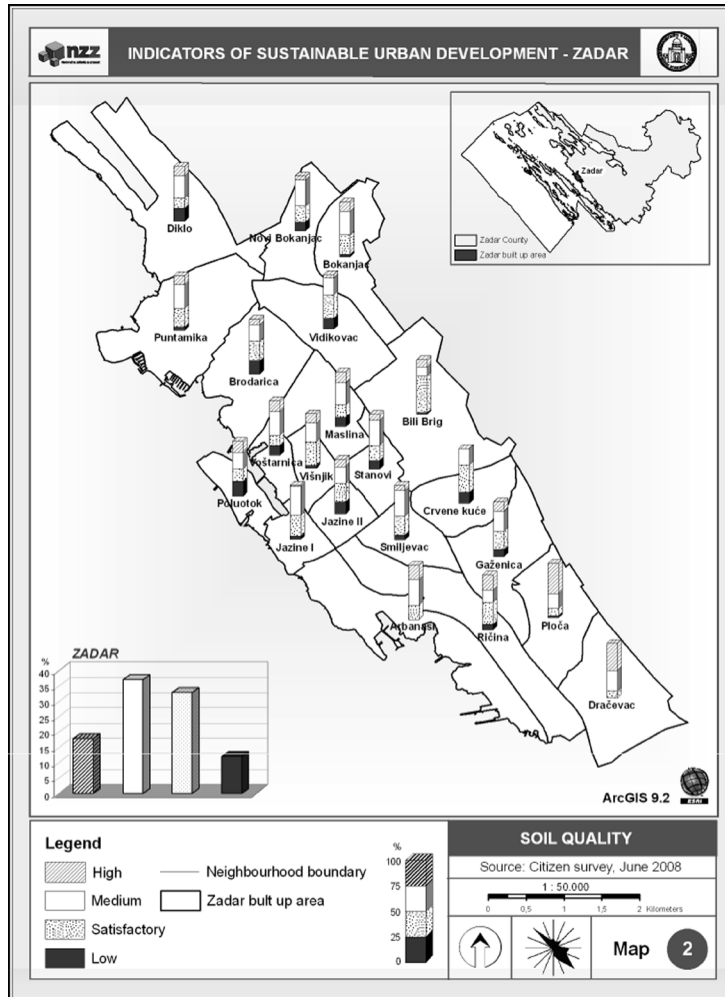
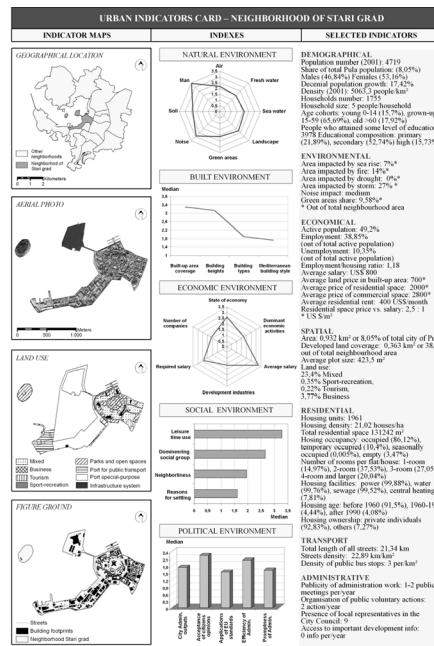


Figure 3. Example of selected indicators city map -Zadar

Source: NZZ Project GIS data base (Siljeg, Cavric, Toplek; 2009)

More detailed visualisation is given in Figure 4 in the form of a local community identity card (ID), which offers a comprehensive set of indicators, indexes and information in the five areas of sustainable development. The design of these cards is very diverse due to differences in human cognitive abilities and perception. Some citizens prefer maps and graphs, while others are more comfortable with alpha-numerical insights. Researchers have also made efforts in experimenting with additional audio-visuals (music, voice, sound, photo, video), thinking about people with disabilities. There was a suggestion to install a GIS kiosk in every neighbourhood akin to ATM machines where everyone can browse important tips on different aspects of city and local community life.

**Figure 4. Example of local community (neighbourhood) urban indicators ID card (Pula)**



Source: NZZ Project GIS data base (Siljeg, Cavric, Toplek; 2009)

## Concluding remarks and recommendations

The results of the NZZ project are in many ways challenging because they are breaking new ground in a relatively new area of research in the Republic of Croatia. This is the first interdisciplinary and comprehensive effort in the country trying to encompass complex issues of urban sustainability in the specific conditions of the post-socialist and coastal city. The research teams have applied a variety of methods manoeuvring within limited human, budgetary and technology frameworks. However, integration neighbourhood aspirations at city level and sensitising the dialogue between the community and experts presents an innovative approach to urban indicators studies. This implies that the indicators toolbox may be useful for urban development control and monitoring on a regular annual basis. Without any doubt it could help urban administrators and governors to make wise decisions about priorities for action in a participatory atmosphere where all stakeholders should have their say.

The study opened a question about development of a standardised urban indicators set. A preliminary indicators check-list has been tested only in six neighbourhoods. It is expected to apply an improved model for other cities along the coast and the interior of Istria, Primorje and Dalmatia.

Concerning the basic content of SUDI indicators cluster the aim was to: (1) make output results available to urban managers, professionals, and ordinary citizens, (2) develop indicators that can be comparable and applicable to other Croatian cities; (3) present all results in easily understandable graphical, textual and tabulated form; (4) have accessible indicators that can speak for all interested parties (public, government officials, scientist and individuals; (5) design a reasonable number of indicators which can be reviewed and comparable on an annual basis; (6) secure that different spheres of urban life could be measured and

compared via different types of indicators; and lastly (7) cluster indicators within main urban problems groups and priorities in order to find the best solutions in tackling problems and critical situations.

These are actually key elements of using a system suggested by NZZ project. This type of system, in comparison to existing ones, does not put a limit on data and information availability; it serves as a source from which an urban type of information can be obtained, as well as the possibility of incorporating data sets from all interested parties: citizens, experts, councils, non-governmental organisations, societies, investors, etc. It is also compatible with the National Spatial Data Infrastructure – NSDI initiatives. The NSDI supports GIS applications where there is no spatial data redundancy and where the reduction of spatial data cost is evitable. In practice this signifies great savings and more efficient operability of urban systems. However, in order to implement a suggested SUDI model in practice it is advisable to improve professional and administrative capacities in both case study cities.

From the NZZ research it is apparent that indicators are tools of change, learning and propaganda as their existence, absence and prominence affect the behaviour of all actors in post-socialist cities. In that context proposed indicators may serve as effective tools for monitoring urban development progress congruently to the formulated objectives. At the same time, they could help taking corrective measures along the road and under circumstances when a city evolves in an undesirable direction. Simultaneously, they indicate how far the fulfilment of proclaimed objectives is in respect to the present stage of urban development in both cities, as well as what the deviations from the planned course are. Should there be any initiatives for preventive actions the indicators of sustainable urban development may contribute to the improvement of policies and

strategies, plans, programmes and projects. They may greatly improve implementation efficiency and the decision-making apparatus resolving important complex issues of the city's social, economic, constructed and natural systems.

The proposed indicators model and its sub-sets are the foundation for more objective decision making, which unfortunately still does not exist in Croatia as it is reduced to a technocratic "top-down" approach where citizens lack stronger influence. The model suggests a systematic and sustainable mechanism of regular collection, analysis and monitoring of indicators about urban trends, with the intention to correct negative phenomena and processes, and to conduct further city development exclusively on sustainable foundations. It also offers an initial cluster of individual indicators grouped into domains (categories) which can change, adapt and advance over time. Based on that it is always possible to enhance aiming at the creation of: (1) healthy, safe and nonexclusive local communities; (2) dynamic and perspective local economies with special emphasis on a revival of coastal "blue and green economies"; (3) sustainable natural and built environment; (4) culturally enriched and spirited local communities; (5) democratic and engaged communities.

### Literature

Bosch, P. (2002) The European Environment Agency focuses on EU-policy in its approach to sustainable development indicators. *Statistical Journal of the United Nations ECE* 19, IOS Press, 5-18

Cavric, B. (2011): Integrating Tourism into Sustainable Urban Development: Indicators from a Croatian Coastal Community, in Sirgy, et. Al. (Eds.)

(2011) *Community Quality of Life Indicators – Case Studies V*, 1st Edition, Springer, Netherland, 219-265

Cavric, B. et al (2009) Izgradnja sustava indikatora održivog urbanog razvoja za izabrane primorske gradove Hrvatske – Završno Izvješće (Developing the System of Indicators for Sustainable Urban Development in selected coastal cities of Croatia),

Flood, J. (1997) Urban and Housing Indicators, *Urban Studies*, Vol. 34, No. 10, 1635-1665

Gahin, R., Paterson, C. (2001) Community indicators: Past, Present and Future, *National Civic Review*, vol.90, no.4, 347-361

Ghosh, S. Vale, R., Vale, B. (2006) Indications from Sustainability Indicators, *Journal of Urban Design*, Vol.11. No. 2, 263-275

Hoernig, H., Seasons, M. (2004) Monitoring of Indicators in Local and Regional Planning Practice: Concepts and Issues, *Planning, Practice and Research*, Vol. 19, No. 1, 81-99

OECD (1997) *Better Understanding Our Cities: The Role of Urban Indicators*. Organization for Economic Cooperation and Development. Paris

Innes, J., Booher, D. (2000) Indicators for Sustainable Communities: A Strategy Building on Complexity Theory and Distributed Intelligence, *Planning Theory and Practice*, Vol. 1, No. 2, 173-186

Laurini, R. (2001) *Information Systems for Urban Planning – A hypermedia co-operative approach*.

Taylor & Francis. New York.

McDonald, W.G., Patterson, G.M., (2007) Bridging the divide in urban sustainability: from human exemptionalism to the new ecological paradigm, *Urban Ecosystems*, 10: 169-192

McMahon, S.K. (2002) The development of quality of life indicators – a case study from the City of Bristol, UK. *Ecological Indicators* 2, 177-185.

Niemeijer, D., Groot R.S. (2008) Framing environmental indicators: moving from causal chains to causal networks, *Environment, Development and Sustainability*, 10, 89-106



Niemeijer, D., Groot R.S. (2008a) Framing environmental indicators: moving from causal chains to causal networks, *Ecological Indicators*, 8, 14-25

OECD (1997) *Better Understanding Our Cities: The Role of Urban Indicators*. Organization for Economic Cooperation and Development. Paris

Revvi, A., Dube, M. (1999) Indicators for urban environmental services in Lucknow – process and methods, *Environment & Urbanization*, Vol. 11, No.3, 227-245

Sawicki, D. (2002) Improving Community Indicator Systems: Injecting More Social Science into the Folk Movement, *Planning Theory and Practice*, Vol. 3, No.1, 13-32

Šiljeg, A. Cavric, B., Toplek, S. (2009) NZZ Project GIS data base.

Spreng, D., Wils, A. (1996) *Indicators of Sustainability: Indicators in various Scientific Disciplines*, Paper written in support of the Multidimensional approaches to Sustainability: The Framing Project proposed to the Alliance for Global Sustainability.

Stenberg, J. (2001) *Bridging gaps – sustainable development and local democracy processes*, Gothenburg.

Stuart, D. (1972) *Urban Indicators: Their role in planning*, Planning Advisory Service – PAS, No. 281, 1-21

Westfall, M.S., De Villa, V.A. eds. (2001) *Urban Indicators for managing Cities*, Asian Development Bank, Manila, Philippines.

Wong, C. (1995) Developing quantitative indicators for urban and regional policy analysis, in R. Hambleton and H. Thomas (eds) *Urban Policy Evaluation: Challenge and Change*, Paul Chapman Publishing, London, pp. 111-122.

Wong, C. (2002) Developing Indicators to Inform Local Economic Development in England, *Urban Studies*, Vol. 39, No. 10, 1833-1863.

World Bank (2003) *World Development Indicators*. Washington DC: World Bank

For their practical work, the summer school students were allocated two sites, in need of urban transformation in the context of declining local authority funding. The purpose of the design projects was to generate creative solutions to revitalise a commuter suburb of Lisbon (Arroya-Odivelas) and a coastal village (Sintra – Praia das Macas) with summer tourism. The background to these projects was the acknowledgement that the public sector was no longer in a position to fund urban regeneration. The students were expected to produce alternative planning approaches with new stakeholders and funding opportunities.

Analysis of traditional high street and proposals for transformation within contemporary constraints.

One background study towards the summer school design tasks consisted of an analysis of the decline of traditional high streets. It was expected to assist students in rethinking the declining public realm in their study areas which amounts to a generic planning problem in many parts of the world, and in particular in Europe.

Traditionally, it was the task of the public sector to invest in infrastructure renewal, including traffic management, traffic calming, parking, pedestrianisation, street furniture, street lighting, and signage. The public realm was usually owned by the public sector which was responsible for its maintenance, improvement and provision of safe communal facilities, such as play areas or sitting out spaces. When trying to combat the decline of high streets, the public sector offered shop keepings incentives to keep their businesses there. More recently, public authorities also got involved in marketing their urban assets to attract and retain users and investors. However, since the latest economic crisis public funds were shrinking and no longer available for any activities other than basic services. In areas with low income populations whose spending powers were shrinking even