

## CASE STUDY:

Urban space / zoning

**SECTOR:** Transport

**COUNTRY:** Austria

Urban space quality depends on the proportion of built environment and open space. In particular land use and the accessibility to open and green areas, are important components in urban life quality, as is the balance and maintenance of the towns' natural environment. The rapid development of cities, increasing back and forth commuting from the adjacent urbanised areas added to unbalanced situations.

There are various functions covered by **natural potentials**, for example "urban green" plays an important climatic role (air circulation, humidity balance, temperature balance) and has mitigation / compensation functions on air pollutants. Green wedges allow the penetration/exchange with the surrounding natural environment. Other aspects would cover changes in the water balance due to surface sealing influencing the water recharge and supply in cities.

The way spatial functions are organised in a town affect urban life dynamics and the relations between space and environmental pressure it generates. So there is a very particular relation between the natural potential in urbanised areas and the organisation of space organised through current urban planning practice. At present, separation tendencies are widely spread. More often the city centre is losing its resident population and is collecting more and more commuters, where suburban development is matched by a trend towards functional separation.

## From existing zones towards new spatial arrangements

Open space holds a high potential in many respects, both for urban development and being a green reserve in build up areas. There is high pressure on those areas and its sound development is a delicate task, nevertheless an important question turns up: *What kind of development would give rise to problems?*

Zoning of urbanised spaces with its natural resources and the remaining environmental potential with a view to ease the pressure on the environment and providing opportunities to guide developments in a sustainable way.

The organisation of space, efficient flow management and environmental quality control are the starting points for any considerations on the sustainable town. These aspects can be effectively dealt with through integrated planning and assessment procedures. Sound urban planning affords rethinking of the "land" according to its functions, cycles and relations.

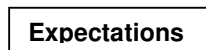
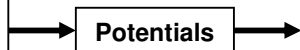
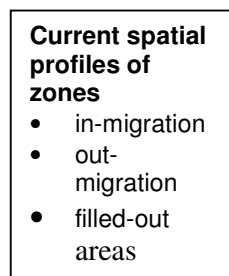
But first and foremost our attention should be focused on the evaluating the "potential of zones", what is there or what is to be set up according to an integrated planning approach. In order to achieve zoning by environmental conditions we need to cope with the current urban situation, which in most cases is already organised by functions. However, are these zones and functions sustainable?

Previous experiences linked to the application of environmental assessments on specific plans call for further investigations, comparative controls and validations. Available know-how as a valuable source need to be regarded and verified in order to

develop strategic actions that have the potential to improve the environmental situation in urbanised areas. Since quality is fundamental when making reviews and forecasts for an development scenario, appropriate measures and operative instruments should be screened and eventually re-designed to achieve necessary validation. The complexity of the urban system is apparent and the local scale is very appropriate to tackle specific problems which undoubtedly relate and exchange with its surroundings.

### Objectives and benefits

A major aim will be a characterization of different zones according to their current “profile” with a view to development potentials and expectations in those new zones. The „scale“ of strategic issues will include and address local situations primarily and mark out the “spatial units” (zones) over which impacts are investigated.



New forms of co-operation arrangements will be evaluated, with respect to land management, settlement placing, transportation and resource development. It would also imply going from land zoning by functions to zoning by environmental conditions, fully rethinking the territory according to functions, cycles and relationships.

Another objective is to provide suggestions for more sustainable

relationships / interactions, an evaluation of the potential and the limitations for urbanised areas is intended. Examples for such interactions include amongst others:

- Increasing open space      ⇨ leisure
- Healthy environment      ⇨ attractive
- for developments of different kinds
- New infrastructure      ⇨ traffic development
- New homes      ⇨ public transport

The potential for future development options will receive central attention herein, therefore processes and follow-up activities that add to the current potential are very interesting for discussion.

### Decision making

Being aware of the fact that a sustainable and integrated planning has to go beyond current practices and laws, working towards a new “action potential” of certain concerned areas will focus the attention of future activities. Issues of relevance such as urban fringe improvements, green

infrastructure maintenance, traffic improvement or energy savings will be placed in the forefront of activities.

Regarding SD of the urban suburban areas some major issues must be brought together in environmental planning and policy making. Adapted forms of control and monitoring should be implemented to support interdependent work and planning with an eye on conservation on resources and natural potentials of regarded areas. This will bridge to cross-cutting issues through setting new priorities in governance, public participation and early evaluation of planned developments.

To pursue new approaches in sustainable practice through specific measures in selected main topics, a reflection on problems in strategic planning (e.g. administration) and the public's attitude in policies and programmes is required. People's notion on certain topics are different, therefore it will be needed to select and pinpoint the main implications for planning and development options which are of public interest and bring them in a joint context.

### **How to deliver changes to the various levels in decision making and stakeholders**

The regional level need to be considered with its objectives and potential support towards the local level whereas, the local level is asked to present actions for local sustainable development with a view on regional activities and views.

The objective in this respect would be to provide support for local administration in order to take the lead and to inform on environmental issues and sustainable future development options. Since all the above issues and objectives require intensive work, well establishes information resources, both about the current state and the key elements which have been chosen to deal with, are required.

- **Objectives will include:**

New approaches for planning, recognising the various ideas and desires of local stakeholders within different zones.

Rethinking private public relations, thinking of new forms of business involvement.

Making use of existing structures and looking for necessary and reasonable links between different decision levels.

### **Linking levels in decision making**

Integrated planning includes a number of intertwined chosen **sectoral issues**. In this respect the screening and scooping of main topics and sectors will lead to a new arrangement of tasks and assessment procedures.

Within this context, the strategic planning will deal with possible alternatives, outlined in the planning phase:

1. Reviewing the congruence of the changes to be expected by development and the performance of the planning bodies
2. Reviewing the main environmental flows passing through the area, in-migration zones and out-migration zones as well as filled out zones, verifying the changes due to the introduction of the resource cycle into the overall balance
3. Reviewing incremental data on the state of the environment from the time of general plan approval to date; checking forecast evolution scenarios and possible corrective feedback

On the basis of the current situation, suggestions for new forms of strategic environmental planning will be confronted to traditional planning processes.

Against this background, it is possible, to start a process aimed at:

- drawing a picture of the state of the environment, based on information provided by impact studies on specific plans and programmes
- suggesting new techniques and procedures, in both the public administration and the entities

involved, based on actual innovation capabilities.

### **Involving stakeholders**

The integration of various stakeholders raises the question - what do we have to expect when inviting different interest groups?

When bringing in the many different ideas of the people, the scientific and the non-scientific spheres will collide. It would be necessary to shape these broad aspects into a workable frame, regarding uncertain starting conditions because of “NIMBY-representatives” and the “no-action or no-development representatives”, or interest groups which are misguided because of unpopular measures and development options.

Being aware of these circumstances it will need a flexible and open framework that gives space for

- Changing the focus on relevant issues
- Changing the way of public involvement
- Changing the scale and pace of development in order to make solutions look like a bit more realistic and manageable. When talking about development, a rethinking or redefinition of issues of real importance and placing as much emphasis on quality as on quantity.

At that point it is important to step forward and hold out prospects for those who are concerned – either its prospects in success or improvement of their situation. Therefore, in order to get interest and support as well as more understanding on joint SD, tangible results and success for the planning body and for groups of stakeholders are

needed. Results and success-stories relate directly to applied or practical examples that regard space round us – focusing on existing structures of the built environment and the development-potential of existing space.

### **What could be promising mechanisms to change established behaviour in planning and decision making?**

Improvements in the decision making processes rely on practical information, measures and mechanisms for better judgement. Another step forward is to raise knowledge on particular local issues, as for example the environmental potential of certain zones in order to characterise vulnerable dimensions and focus on sustainable solutions and development scenarios.

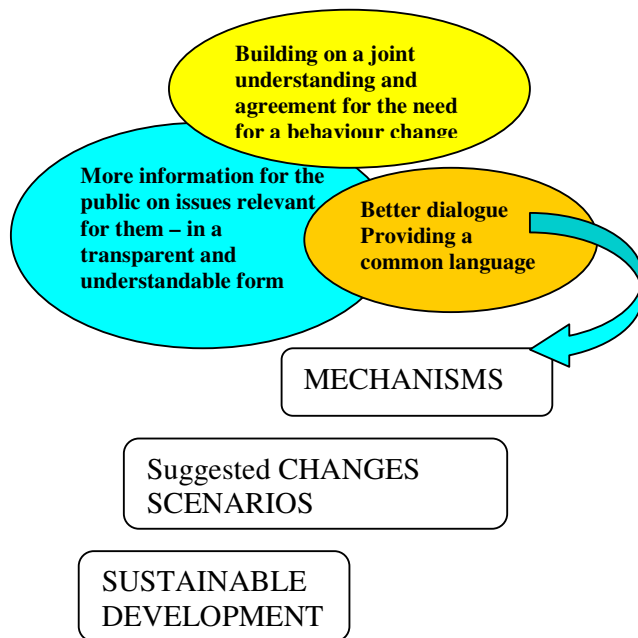
The introduction of environmental assessment procedures for certain plans or programmes, aims at optimising environmental quality in respective thematic areas and improving processes that lead to significant results and good practice.

#### **• Aims**

- to re-fashion planning design and give space for improvement and compensation measures.
- to evaluate potential impacts of planned activities of a plans
- to provide scenarios and forecasts so that they become inherent elements of the plan's feasibility conditions
- developing strategic procedures that have to be shaped according to the given situation and respective topics

Selected issues in this respect might include

- preliminary screening of the most significant impacts
- regarding environmental components regulated by law
- searching for the best possible solution, studying mitigations and forecasting residual impacts.



### Scale of action

The development of sectoral analysis calls for the definition of an appropriate scale of in-depth investigations. Against this background, measures need to be related to various scales, depending on the respective subjects.

To this end, contents would have to refer to:

- available information / data and expected changes thereof
- entities involved and their objectives
- chosen reference scenarios to which it applies

### **From applied plans and programmes to integrated environmental planning**

Environmental assessment applied to plans, like the SEA, therefore, intends to become an effective support tool for managing urban changes and contribute to the advancement and enhancement of the skills needed to deal positively with the new urban issues. Hence, at present urban development has to deal with new laws, strong economic forces, policies, cultural heritage and public opinion that, more or less openly, allow or require a much more mature planning management of the environment. ***Learning from good practice and transferring these results to the strategic planning level*** is a promising task to do.

The application of integrated environmental assessments on plans and programmes bears an effective operational approach for improving strategic planning practice in urbanised environments.

Such assessments deal with “concepts” and therefore refer to a set of objectives, principles and policies that relate to developments which are incorporated in proposed programmes.

Certainly, the use of the term and the meaning of policy, programme and plan varies in each country. But what is important is, that they contain a certain structure or set the structure for another programme. That means that links between different planning levels need to be considered, for example area based programmes cover various activities in a given area, such as urban land-use plans, development plans, traffic management etc., and the conceptual design of assessment approaches have to react on that.

The main difference to normal “environmental impact assessments” (EIA) is that strategic assessments proactively anticipate on planned

developments. This is also due to the fact that EIAs take place when the strategic part is already done. *The establishment of an integrated planning approach means that environmental and sustainable criteria are integrated right from the beginning and through out the planning phase.*

Summarizing the above, it's reasonable to assume that building on good practice would add to and contain big improvements for any further strategic planning activities, setting sustainable targets and relevant measures. Consequently,

- environmental and sustainable criteria could therefore be incorporated in the objectives
- environmental and sustainable benchmarks could be set by which the effects of planned developments are tested
- impacts of programmes could be tested whether they suit or meet environmental and sustainable objectives

#### Sustainability criteria

Development plans have to regard sustainability criteria and be brought into decisions on the appropriate scale and right location. Urban planning and related activities depend on defined objectives for each subject (traffic volumes, spatial development, energy consumption or economic development) in order to provide an orientation and framework for data acquisition, involved parties and the choice of measurements. General sustainability criteria need to be addressed to establish a target / value system against that more concrete assessments and procedures can be implemented.

Examples for sustainability criteria

- Biodiversity - is biodiversity affected by development plans
- Valuable space in urban areas - recognition of appealing living and working space
- Sustainable development - How far is SD and traffic development regarded

Coming down to a more concrete level, for example to indicators, sets of measures or the neighbourhood, it is important to regard the right level of detail to keep up with demands:

- Data availability
- Transparency
- To guarantee a long-term monitoring
- To go for comparability – benchmarking
- Keeping viability of the process

#### Setting objectives and targets

The kind of targets to be set, depends strongly on the framework of the overall targets. For instance, a framework against which a programme's efficacy can be judged. This could be national or international targets or objectives. Such objectives could include and relate to the achievement of environmental standards, legal requirements or international agreements.

In order to gather an appropriate array of objectives that would suit many a situations and catch most of the people's interest, we could choose from several sources:

Either they are gathered from open discussion with the authorities and the public, or collected from good practice examples, or they might be generated according to their importance or urgency, or they are assembled when looking about the linkages between topics and between programmes.

crucial ones that influence decision-making.

### Alternatives

Suggesting different alternatives of future development in urbanised areas allows the decision maker to choose between the best option, meaning which suggested programme achieves lowest costs and/or greatest environmental benefit. Another option would be, to choose the most suitable alternative to fit together contradictory objectives. That seems quite relevant since the people's notion about future development contrasts oftentimes with the planners intentions.

Also a combination of development alternatives might be considerable or, it might be helpful to analyse just the most extreme ones from all foregoing alternatives, to view the widest possible impacts.

- What are the demands and planning needs

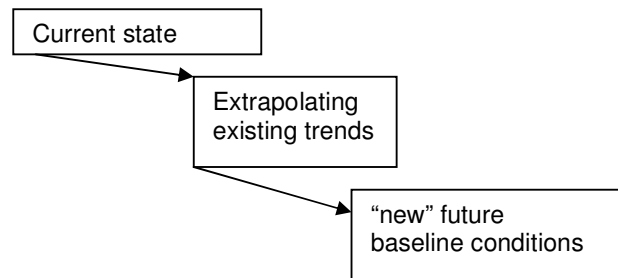
Any alternative should be "realistic" in the sense that it would mirror comparable situations from other countries as good as possible. The approaches should be transparent, comprehensible and address common goals and problems.

In this respect the key environmental issues that have an impact on decision making will be addressed. This procedural step is relevant, as the coherence of intended measures and possible outcomes will throw a light on the complexity of interrelated topics and processes. That is simply because there are more impacts to be expected and more alternatives to be considered at this strategic planning level. Eventually, the range of potential impacts need to be reduced, to the very

### Describing the Baseline Environment

The aim of this step is to describe the current situation against which expected impacts can be assessed. This means environmental problems are identified, future impacts are addressed - with and without the planned developments, resulting in a description of a possible future baseline. The selection of strong indicators is an important part in that stage, where indicators are linked to the key-environmental issues. It will depend strongly on the available information how „deep“ the baseline evaluation will be and certainly on the spatial scale.

Within the stage of the base-line identification it is also helpful to create „scenarios“ that describe the current state, by extrapolating the existing trends or a range of future baseline conditions.



Within that task the identification of specific key-issues, for example thematic overlaps will appear.

### Environmental Indicators

Environmental indicators are helpful tools in surveying the current environmental situation (e.g. the environmental base-line) as well as future trends, predicting impacts or comparing alternatives.

Indicators can be based on specific objectives from programmes, on environmental regulations or on existing monitoring programmes, they provide qualitative and quantitative information as well as information on different spatial scales and allow considerations of alternatives.

Regardless to what indicators are tied, they should lead to base-line description, prediction of impacts and monitoring impacts and yield results that are clear, transparent and useful for decision makers.

### Predicting impacts

A main focus is to determine the type and magnitude of impacts on the base-line environment. The range of impacts is likely to be greater in the first place, as a greater variety of development options is considered at the beginning.

This evaluation should be directly linked to the key issues identified during the scoping stage as well as related to the environmental conditions of the possibly affected areas. Within that stage the assessment will point out indirect and cumulative impacts.

Several **methods and techniques** are helpful to predict impacts:

- Checklists

They simply show whether the PPP has an impact or not. In addition they provide information if the impact is positive or negative or about its magnitude.

- Compatibility or Consistency Assessment

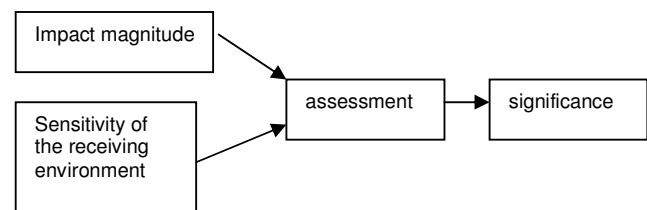
Tests if the various parts of the PPP are consistent or not.

- Scenario analysis

The prediction of potential impacts contains a certain level of uncertainty. Nevertheless, to make up with that fact, it will be necessary to state clearly the range of uncertainty and link predictions to certain scenarios that reflect future events and conditions, or referring to worst case scenarios - following the idea „being on the save side“.

### Evaluating Impacts and Comparing Alternatives

This procedural step comprises an assessment of the magnitude and type of impact, and whether if this impact is significant. Incorporated is also an evaluation, if the impacts are in line with the set objectives. Testing the significance could be seen as drawn in the figure below:



Sensitivity of the receiving environment is a crucial thing in here, as it will vary according to the use of the area. E.g. changing land use over time, traffic increase etc.

Within that frame it might be helpful to oppose overlapping developments to evaluate one with another. This clarifies the relative importance of various objectives and supports transparency.

### Proposing measures and “next steps”

One can assume that any planned development wants to minimise negative effects on the environment

and at the same time tries to find a way to balance the social, economic and environmental situation. Due to the complexity of situations in urban developments mitigation measures for improvement are in demand (e.g. avoidance, reduction, compensation). An innovation in this respect would be to do that at an very early stage in the planning or decision making process.