

Chapter 7

Spatial Planning and Urban Development

7.1 The aim and origins of spatial planning

Spatial planning refers in short to “the methods used by the public sector to influence the distribution of resources and activities in spaces of various types and scales”. Spatial planning includes all levels of land use planning, that is urban and rural planning, regional planning, environmental planning, national spatial plans, and planning on international levels.

There are numerous definitions of spatial planning. One of the earliest comes from the *European Regional/ Spatial Planning Charter* (often called the ‘Torremolinos Charter’), adopted in 1983 by the European Conference of Ministers responsible for Regional Planning (CEMAT). It reads

Regional/spatial planning gives geographical expression to the economic, social, cultural and ecological policies of society. It is at the same time a scientific discipline, an administrative technique and a policy developed as an interdisciplinary and comprehensive approach directed towards a balanced regional development and the physical organisation of space according to an overall strategy.

This definition sets spatial planning in a broad and interdisciplinary context. Spatial planning challenges in this way the understanding of planning focusing merely on land-use planning and on blueprints. Indeed, spatial planning includes strategy building and is closely intertwined with regional and environmental policies. Even the term European spatial planning is ambiguous and probably best understood as territorial policy-making on European level.

Planning and management is one important instrument for implementing sustainable development. There are high demands and expectations on spatial planning to support the society with physical structures to make it possible for people to act and live in a more sustainable way. During the last decades there has been a growing awareness and international agreements at both UN and EU level for the protection of the environment. In addition the predictions of climate change requires activities to decrease environmental burden and at the same time adapt the physical environment to the effects of climate change. The environmental and

climate issues were first in the 1970-1980's defended mainly by environmental NGOs. Today these issues have entered into the official agendas, regulations and rules. The concept of sustainable development is often included in all official planning documents and it is uncomplicated to find cohesion at the general visionary level. On the detailed planning level, when the visions are to be concretised, it is more challenging to achieve consensus between actors with a manifold of sector interests and values.

7.2 Planning on municipal and local level

The local level is most often the key level for planning of physical structures. The planning area can be comprehensive for the entire local authority territory, as for example is obligatory in Sweden. It can also cover the entire urban territory for a city, a part of a city, a housing area or just a block. It is a local authority task to plan for the use of land and water. It can be made by a *comprehensive plan*, a general document for a larger territory. It relies on, and sometimes is requested by, the legislation of the country. A comprehensive plan is a plan for the entire area for which the local authority (most often the local authority, but in some countries regional authorities or even regional offices of state authorities) is responsible. It should identify future land use regarding e.g. building sites, transport infrastructure, agriculture, and forestry. The comprehensive plan should have a long term perspective. In most countries the comprehensive plan, in contrast to the detailed plan, is not considered law and thus is rather a policy document.

A *detailed plan* is binding document for detail land use. The detailed plan identifies the suitability of a site for development and give the exact location and character and design of buildings, infrastructure etc. The detail plan gives the formal rights and responsibilities for authorities and developers of a smaller territory. This may concern continuous development or a new single individual building. The detailed plan is accompanied by permits for the entrepreneurs to start building. The detailed plan is considered to be national and local regulation.

Detailed plans and projects are worked out only when there are public or private actors interested to make future changes in urban or rural areas. There must be enough public or private interests and funding as a driving force for the planning. That is to say that everything that happens in the future cannot be foreseen and planned in advance. The role of legislation and protection planning is one way to defend public values and common interests when private and individual interests plan for new developments.

7.3 Planning processes

Planning practice deals traditionally with how to distribute the use or protection of land and water areas. A main part of planning concerns localisation and shape of new or regenerated built up areas or infrastructure. Planning also deals with protection of valuable areas or resources as example heritage and natural environments. In later decades to these physical issues are in many cases added economic and social issues. Plans are based on, and adopted by, political bodies and worked out by professional planners. Knowledge and interests from other actors, as stakeholders and citizens, are involved in democratic planning processes.

Basic data for the planning processes includes a prognosis on existing conditions and development of areas regarding e.g. the physical situation, buildings, vegetation, infrastructure, demography, mobility, and economic activities together with estimations of the future development.

- A rational planning process starts with
- collecting *basic planning data*,
- conducting a *planning programme with a vision*, and
- formulating *the planning goals*.

Next step is to find alternative proposals of the future development of the planning goals based on the background and interests of the actors and stakeholders. The planning process is a way to clear out different interests and values between the actors and give stakeholders and interest groups opportunities to influence, criticize or at least receive information on the future plans.

The drivers for planning are firstly public actors. These have the task to distribute land for suitable purposes, establish comprehensive built up and infrastructures, such as communications networks, green structures, schools, children and elderly care, wastewater treatment plants, or to establish protected territories. Other drivers are often public or private actors concerned and interested in various development aspects or projects. These may be buildings, housing areas, commercial centres, energy projects, industries etc. The planner needs to identify problems, and establish a platform to address conflicts of interests between actors and stakeholders, and at best allow for exchange of ideas how to address such conflicts.

In the planning process, planners are able to determine a wide range of interconnecting issues that affect an area. Each step of the process can be seen as interdependent, and may be reiterated as needed. The steps are executed in order or in parallel as best fit the purpose. While spatial planning is complex, in practice it never follows a technical rational procedure from goals to results. The planning

practice processes can then be described as a spiral where each round takes in new basic data and knowledge to reach a higher level of the planning outcome.

The final plan consists of a written document with objectives, visions and description of the plan together with attached maps and other illustrations as needed. Maps are normally available in computer format, a so-called Geographical Information System, GIS, (or on urban level, Local Information System, LIS, with very high resolution) or AutoCad. A GIS map consists of several, even a large number, of layers, each with a special kind of information, such as roads, buildings, water networks etc. Statistics of different properties of the area, which have been collected in preparatory steps, may be added to the GIS.

The planning team must first address the issues and context at stake. (For a comprehensive plan, as mentioned, this is a political issue.) These may be requests for new habitation, industrial production, areas asked to be set aside for nature protection, energy production, etc. If habitation is expanded, social services need to be included, such as schools, health services, areas for commercial services etc, and access to the area through roads. Requests for developments from private and public interests are often part and drivers the process. The local authority may have policy goals, scenarios or “visions” for the long-term development. The visioning process of a community will be discussed further below.

Data for the area to be planned typically describe environment (e.g. air pollution), traffic development, demographic trends, economic developments, social conditions, etc, but of course data should be collected regarding any relevant topic in the planning process. These data may be used as indicators as is described below. The information gathered and the stated goals are used to identify trends and make forecasts and write a first planning proposal. A typical comprehensive plan begins by giving a brief background of the current and future conditions. Following the background information are the community goals and the way in which these goals may be implemented into the community. Comprehensive plans may also contain separate sections for important issues such as transportation, housing, culture heritage, outdoor recreation etc.

Next step is to propose actions to implement the plan, projects or an entire program for each of a number of selected issues. In some areas alternative plans may be drafted, especially with regard to budget options. The programs and plans should during the entire process be communicated with other actors, stakeholders and interest groups. This may be done through exhibitions, published reports, hearings etc. The plan may as well be distributed to the most relevant stakeholders to give them opportunity to comment on the proposed plan



Figure 7.1. Gaming as way to do planning. In 2009 a group of farmers and other stakeholders in western Poland took part in a game organised by teachers and students of AGH University in Krakow as an innovative way to evaluate different way to develop the watershed. Photo: Piotr Magnuszewski.

7.4 Urban and rural planning

Planning work typically always addresses economic development and demographic trends, although these two aspects of development may be the least easy to actually plan. Aspects which may be planned in detail includes nature protection, infrastructure and buildings. In between these extremes there is e.g. school development, which is also very much “planneable”, as schools have to be made available for new groups of children. In the rural context agriculture, forestry and nature protection are among the most important to address in planning work. Still agriculture is much dependent on policy decisions.

The urban areas are growing all over the globe hosting approximately 50% of the population. Urban areas are complex systems of buildings integrated with infrastructure. That is the main reason why most planning activities are made within the urban areas. Urban – that is city and town – planning is an integration of the disciplines of land use planning and transport planning, to explore a very wide range of aspects of the built and social environments of urbanizations. Urban planning is a synergy of the disciplines of urban planning, architecture and landscape architecture. Another key role of urban planning is urban renewal, and re-generation of inner cities with changing use of buildings and areas, as for example new development of brownfields.

The quality of public spaces, urban man-made landscapes and architecture and urban development plays an important role in the living conditions of the urban populations. These so-called soft locational factors are important for attracting knowledge industry, businesses, a qualified and creative workforce, and

for tourism. Therefore, the interaction of architecture, infrastructure planning and urban planning must be increased in order to create attractive, user-oriented public spaces and achieve a high standard in terms of the living environment. Urban development is the sum of all the cultural, economic, technological, social and ecological aspects influencing the quality and process of planning and construction. Urban development and regeneration include preservation of architectural heritage. Historical buildings, public spaces, green structure and their urban and architectural value are of great importance.

The urban green structure includes parks, gardens, avenue trees, wild green nature, and cemeteries. Nature and other green areas in a town or village are important for its social well-being, for its ecology, air and water, as well as for making a city attractive. Green areas in cities and towns are connected to each other and generate entirety – a green structure – independent of ownership or maintenance. They are also important parts of a city's building history, identity and character. A green structure functions as lungs and kidneys for the urban areas while it contributes to urban biodiversity, preserves a good local climate, good air environment and provides space for ecological ways to clean storm water. Green areas also give possibilities for leisure and various out-door activities, as they provide informal meeting places, arenas for concerts, theatre, exhibitions, manifestations etc.

7.5 Urban policies of Uzbekistan

The effective development of a city as an industrial centre, requires an advanced infrastructure. The city needs first of all a stable supply of water, gas and electricity, management of wastewater and efficient urban transport. Also it is necessary to note, that the migration creates additional loading on all municipal economy.

All economic reforms in Uzbekistan for twenty-four years of independence, and in particular for last ten years, are based on strategy of transition from agrarian-industrial to industrial-agrarian state. The Program of the accelerated modernization consisting in stimulation industrial-innovation development, increase of export opportunities and reduction of import, growth of the incomes and increase of well-being of the population. The industrial development will raise demand for a labour, and because of this will increase internal migration in cities. Taking into account these factors, the Program is closely related with urban processes in the country.

Thus, the development of cities, as centres of industrialization, on the basis of consolidation of opportunities of the state, business and science have become

an important part of the politics of economic and political modernization of the country, and also social transformation of the society.

Problems of socio economic *development* of Uzbekistan are in many respects related with tasks in the *General circuit of moving in the territory of the Republic of Uzbekistan*, concretizing and deepening them. This *General circuit of moving* is developed in the performance of the order of government of the Republic with attraction of the interested ministries and departments, and the active participation of experts. It constitutes the basic document combining a multitude of information on the basis of which a deeper analysis of all systems of life-support is made and the practical recommendations for realization of state politics of moving and urban on long-term prospect are given.

The effective use of the *General circuit of moving* requires that the results are supported by the regional and urban long-term strategy/programs of socio economic development.

Recently in practice of development of city-planning documents the system of interrelated of strategic socio economic planning of regions and urban development with long-term forecasting by horizon reflecting a special-purpose designation of concrete territory is applied. Therefore in the general plans of recent years the strategy of long-term development of cities is reflected, the conducting branches of manufactures connected to specificity of regions are shown. This situation is aggravated also by that under the order of Government of the country the general plans of all cities and urban settlements are developed.

The realization of purposeful urban strategy of the country assumes perfection of the existing approaches to management of cities and planning by urban development, at which the system of priorities of development is precisely reflected in the technical project on designing and to be defined by the documents of a strategic type.

The used strategy of support of the regions – leaders and activation of development of their industrial potential within the framework of urban politics and industrial-innovation development, pursues the purpose of transformation them in leaders of development of all country, so also they would lead less developed areas. It will allow appreciably to prevent differentiation of territorial development of the country and to ensure its macroeconomic stability.

Besides applied is the strategy, at which alongside with realization of the concept of cities as “poles of growth” (or “frame units” – according to *General circuit of moving*) and regions – leaders, the program of stimulation of development of small cities and urban settlements is necessary, especially in those places, where there is a basic migration of the village population. In these settlements la-

bour-consuming manufacture should be develop with the purpose of maintenance of workplaces for the village inhabitants.

7.6 The city-planning code of Uzbekistan

Urban planning and development in Uzbekistan is adjusted on the basis of the city-planning code of the Republic of Uzbekistan, which is by the Law of Republic of Uzbekistan authorized 04.04.2002 353-II [3]. In this code the participants are determined and the procedures of city-planning are considered. The code contains chapters devoted to objects and the subjects of town-planning activities, powers of state bodies in the field of town-planning, and structures of the town-planning documentation. In the code the information about state town-planning cadastre, the development of the territory of the Republic and use of territories of the occupied items and suburban zones are defined.

The code differentiates the powers of the different bodies of state authority of the Republic, and the bodies of local self-management in the field of town-planning, including the accomplishment of territory of the occupied places.

The powers of the bodies of state authorities in the field of town-planning concern:

- Preparation and statement of the documents of territorial planning;
- Documentation and plan of the territories for accommodation of objects of capital construction of state importance in cases stipulated by the Code;
- Establishment of the procedure of state building supervision and organization of scientific – methodical maintenance of such supervision;
- Realization of state building supervision in cases stipulated by the Code; The powers of bodies of state authority of the subjects of Republic of Uzbekistan in the field of town-planning activity concern:
- Preparation and statement of the documents of territorial planning of Republic Karakalpakstan and viloyats;
- Documentation and plan of the territories for accommodation of objects of capital construction of regional importance in cases stipulated by the Code;
- The regional specifications of town-planning design etc. The powers of bodies of local self-management of settlements in the field of town-planning activity concern:
- Preparation and statement of the documents of territorial planning of settlements;
- Statement of the local specifications of town-planning designing of settlements;
- Statement of rules of land tenure and building of settlements;

- Statement prepared on the basis of the documents of territorial planning of settlements of the documentation on a lay-out of territory, except for cases stipulated by the Code;
- Distribution of the sanctions on construction, sanctions to input of objects in operation at realization of construction, reconstruction, overhaul of objects of capital construction located in territories of settlements etc.

Thus, the questions of a complex accomplishment are decided at all stages of town-planning and architectural – building designing and are realized in complete conformity with the developed projects. The basic ideas of a complex accomplishment are defined by the projects of a detailed lay-out of inhabited territories, and specific decisions, volumes, cost are in the projects of building of separate inhabited complexes. General principle of formation of inhabited territories is the maintenance of the maximal convenience to the population in satisfaction of its welfare and household needs at rational use of resources and urban grounds. This principle is realized by formation of inhabited complexes of a different territorial level.

Within the framework of the city-planning code the general plans are formed. A General plan is in a general sense a design document, on the basis of which is carried out a planning, building, reconstruction and other kinds of town-planning development of territories. The basic part of the general plan is a scale image received by a method of graphic imposing of the drawing of projected object on the topographical, engineer-topographical or photographic plan of territory. Thus the objects of design include the area with the separate architectural structure, and territory of the whole city or area.

The general plan is the scientifically proved perspective plan of development of city (with reference to old city – its reconstruction and further development) or any other settlement. According to the city-planning code of Uzbekistan is one of the basic documents of territorial planning.

Terms of realization of the general plan are stipulated in the special document – plan of realization of the general plan accepted not later than 3 months from the date of the statement appropriate genplan, and make, as a rule, about 20 years.

Any general plan contains the analytical block and block of the design offer. Each of them, in turn, includes graphic materials submitted as maps (circuits), and text part. Among the obligatory circuits in structure of genplan by the city-planning code are stipulated:

- the circuit of objects electro-, heat, gas- and water supply of the population in borders of city;
- the circuit of highways of general usage, bridges and other transport engineering structures in borders of the occupied items;
- the circuit of use of territory of municipal education with display of borders of grounds of various categories, other information on use of the appropriate territory;
- the circuit of borders of territories of objects of a cultural heritage;
- the circuit of borders of zones with the special conditions of use of territories;
- the circuit of borders of territories subject to risk of occurrence of extreme situations natural and technogenetic character;
- the circuit of borders of zones of negative influence of objects of capital construction of local importance in case of accommodation of such objects;
- the circuit of planned borders of functional zones with display of parameters of planned development of such zones;
- the circuits with display of zones of planned accommodation of objects of capital construction of local importance;
- maps (circuit) of planned borders of territories, the documentation on which lay-out is subject to development in the prime order;
- the circuit of existing and planned borders of grounds of an industry, power, transport, communication.

The general plans of cities and settlements in various countries are various under the name, structure, functions and legal status. The reconstruction, building and development of territories of a number of large cities conducts without any uniform document on planning and zoning of territory. As well as in many countries of West, general plan as the legal document carries recommendatory character, that is not a source of the town-planning right.

The intensive urban process in Uzbekistan is conducted with high birth rates and both high share of children and teenagers in structure of the population. The main urban reason is the industrialization of economy. The feature of urbanization in Uzbekistan is, that the growth of the urban population goes basically at the expense of large cities. The state politics since the first years of independence consists in wide and address support of the village population (giving land to village families for their own need, maintenance of high rates of construction of water networks on a village, gas supply of the villages). Due to structural transformations on a village the favourable conditions of development peasant and farms are created.

7.7 Sustainable development in planning and management

To plan for more sustainability of a city or a region is a complex issue. The processes can either be seen as a systematic process based on environmental scientific knowledge or a communicative process between actors and stakeholders involved in the planning. Here it will be treated as a systems approach to manage sustainability dimensions in planning processes or as a way to assess plans. Only few planning projects have been carried out systematically with regard to sustainable development.

An example of a national level project is the Japan for Sustainability (JFS) project, published in 2007. It was carried out over a two year period by a group of university researchers, interest organisations (NGO) and some companies. No authority, neither on state nor on local level, was part of the group. The report is interesting since all the typical stages are included and a result calculated. Sustainable development processes for municipalities, companies or other organisations have also been reported but most often with a less complete or systematic approach. Even if there is no scientifically established method of how to conduct a complete planning process using sustainability principles, there is enough experience, that one may safely say that a best practice has been established. Alan Atkisson's ISIS may be the best way tried out in several cities, companies and other organisations. ISIS stands for

Indicators Measurement and Assessment of Sustainability & Related Performance
Systems Understanding Linkages, Dynamics, and Leverage Points
Innovation Creating and Diffusing Change: Using a Cultural Systems Approach
Strategy Commitment to Integrated Implementation and Follow-Through

It is possible to describe most planning processes using a 6 (or 9 in some versions) step procedure, consisting of the following.

1. Agree on *what is sustainable development* (the concept) among those concerned. This phase should at best also include awareness of the importance of systems thinking and the awareness of limits, since these are fundamental for understanding sustainability.
2. Agree on a *framework* to be used to describe and work with the “system” (the city, area or society to be planned). There are several such frameworks; the classical – ecological, economic, and social – is seldom sufficient for a planning project.
3. Agree on a *vision* for the area in a future time, such as 20-50 years ahead.
4. Decide on a number of parameters to be followed, *indicators*, to measure and monitor sustainability.

5. Decide on which parts of the society or system to address, and in a process of innovation, find ways to improve these and *design a number of projects*.
6. *Run projects* often over a period of some 2-3 years. The whole process is then reiterated for continuous improvement.

The six steps may be carried out in a different order (e.g. some starts with the indicators). Additional steps not listed above include agreements, especially on the political level, but also with citizens. After the six steps the process and the results are evaluated. Most often this leads to a reconsideration of each step in the process including the definition of sustainability, the vision, the indicators and finally what to address to improve sustainability, that is, what projects to run in a following round.

7.8 Sustainable development in practice

To work in practice with sustainable development it is basic to

1. Understand systems in general
2. Understand sustainability in general
3. Distinguish between “development” and “growth” in goal-setting, that is, understand the physical limits of the system.

It is easy to find several hundred definitions of sustainability in the literature, all of which are somehow related to the situation in which they were developed. However a group which intends to work in a multi-year planning activity needs to develop their own understanding. The Brundtland Commission concern for next generation (intra-generational equity) is often included, and the inter-generational equity (fair distribution of resources) also. It is also possible to have simple versions, such as “Create welfare within existing resources”, but they tend to be less useful in practical work.

To increase sustainability of a region or a city one needs to know towards what goals one is heading. *Goals* should be realistic and possible to reach during the planning period. The goals are discussed and set up mostly in the planning process. *Prognosis* are quantitative predictions of probable future development. *Scenarios* are based on values and interpretations of a future development and a way to outline a future filled with a manifold of uncertainties.

Scenario technique is a way to create images of the future. A scenario is a systematic prescription of a future situation and of a possible development from the situation today forwards to the prescribed situation. Scenarios are often giving a

simplified image of the whole and of the connections between different sectors in the society, with contribution from many knowledge fields. To present various possibilities of development often alternative scenarios are worked out. Scenario technique is a method of forecasting.

Visioning is an important part of the process. The plan or the vision may be exhibited to the public and discussed broadly; the vision, just as a plan, does not have legal status but rather is a policy document. A vision is evaluated using a number of sustainability goals. Visions normally are restricted to a few areas of special interest for sustainability. A case is the city of Göteborg, the second largest city in Sweden, whose vision included five areas

1. Sun city (energy)
2. Urban structure (includes green areas)
3. Transport (traffic infrastructure, public transport)
4. Food (e.g. includes health and wellbeing)
5. Recycling (includes waste management)

The Global Community Initiative, GCI, have a long experience from visioning procedures. They always include the community as broadly as possible in the process, e.g. results available as the process continues, through exhibitions, in campaigns, or in festivities. Especially in an US context, where the local authorities are less strong than in Europe, it is important to have support from many stakeholders, including the private sector. The experience is that people often get enthusiastic about discussions on the long term future of their community, and that differences in opinions become less strong when it deals with a very long term perspective.

To work with sustainability management is to work with a system (the society and its land). For this purpose a good and useful systems description, called *framework*, is needed. The classical system description – ecological, social and economic aspects or dimensions – is much used but not so good for practical work, although it has been adopted by the business world as "the triple bottom line".

A more developed framework for sustainability includes Atkisson's compass (See Figure 7.2.) with N (North) Nature (the ecological or environmental aspects) S (South) Society (the society part of the rather diffuse "social" aspect) E (East) Economy (the economic aspects) W (West) Wellbeing (the human part of the social aspect). The Compass makes the rather unclear "social" dimension a little less unclear.

Another frame was developed in the Baltic University Urban Forum project. In the project it was concluded that for local authorities sustainability is best made operational as resource management, and five resources were defined

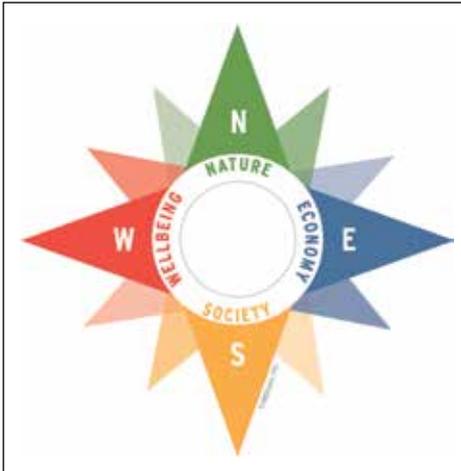


Figure 7.2. The Sustainability Compass is a tool for orienting people to sustainability. The Compass helps you bring people together around a common understanding of sustainability, and a shared vision for getting there. It also helps you monitor progress along the way. N is for all of our natural ecological systems, ecosystem health, nature conservation and resources. E is for the human systems that convert nature’s resources into food, shelter, ideas, technologies, industries, services, money and jobs. S is for the institutions, organizations, cultures, norms, and social conditions that make up our collective life as human beings. W is for our individual health, happiness, and quality of life. .

1. Material resources – all material flows in the municipality, water, energy and waste
2. Urban space resources – all area to be planned in the municipality
3. Human resources – all inhabitants in the municipality
4. Societal resources – the city administration and all its services, institutions
5. Economic resources – companies and all other economic units

It is noted that these resources are not exchangeable and they are all limited. Sustainable development is here understood as *proper management of limited resources!*

Regardless of the frame used at some level each aspect of the system has to be allocated to one of the parts, partly in an arbitrary way. The resource system or frame allows this to be done in a slightly more systematic and inclusive way.

7.9 Sustainability indicators and project management

It is essential to have adequate information on current developments and trends for the system in question. This information is given by so-called *indicators*. Choice of indicators is a serious question, as much effort is invested in following the indicators. They thus need to be important and meaningful, and relate to the vision.

There is no end to the number of indicators one may find. It is instructive to look at the economic pages in a daily newspaper; it is filled with hundreds of fig-

ures, all of which may be called economic indicators. Similarly one may compare to a medical diagnosis, which again may have many different figures, depending on the medical problem. Some are general, like body temperature, while others are special. In the same way a sustainability planning team needs to ask what indicators they need.

Typically a set of environmental, economic, and welfare measures are used. A typical European municipality has some 60 indicators in common use.

The indicators are related to the framework chosen. Thus, if the three dimensional (environmental, economic and social) system is chosen, one needs indicators for each of these. If the Compass is used, there will be four classes of indicators, and if the Urban Forum resource management system is used there will be five sets of indicators. The Japan for Sustainability project, which used the Compass, reported 5 basic indicators for each of the four directions of the Compass. Each of these had 10 datasets to be calculated. That is the whole project used 20 indicators and 200 datasets.

Indices are composed of several component indicators. Some indices are well established. Ecological footprints (consisting of six indicators) are monitored according to an established method, and there is an understanding what the sustainability value is (1.8 gha/cap). For social aspect of SD the human development index (three indicators are combined) is used; an acceptable level of that is, according to the United Nations, 0.8.

It is important that the indicators are measured over a time period. Then a trend is given and one sees how it is changing. Some indicators which rely on standard measures, such as many environmental and economic data, are often available over a long time. Others need to be either constructed from historical data or monitored in a new project.

It is essential that the “sustainability values” of the indicators are available. This is the value that the indicator would have in a sustainable society, that is, in the vision. The discussions needed to do this are typically very useful to deepen the understanding of what sustainability is and what one needs to do to achieve it. Of course, it should be added, that the values given are provisional. They will be reconsidered at least each management cycle.

The final goal is to implement the sustainability plan. This corresponds to the implementation of a spatial plan and one need to follow the legal process required. Nevertheless there is some specific characteristics typical for the sustainability process.

Indicators are often used in so-called *back casting*. Here the values for the present and the future vision are plotted and the track “from future to present” is

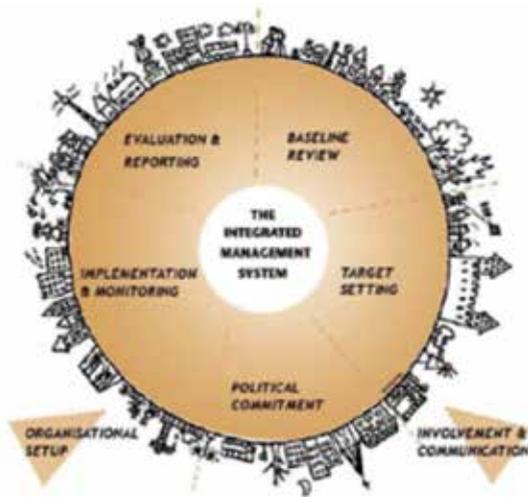


Figure 7.3 The MUE25 cycle is a variant of the classical Deming cycle (Plan-Do-Check-Act) It was used in the Managing Urban Europe project (MUE25) for Sustainable Urban Development. The model is equally useful for managing sustainable rural development. (Source: <http://www.localmanagement.eu/index.php/mue25:introduction>).

indicated by a line. This process allows us to establish intermediary goals for a specific year in the future, typically three years ahead, e.g. in energy use, traffic change etc. Back casting has been used in air pollution work and reaching the Kyoto protocol for reducing emissions of greenhouse gases.

A creative way to address what to do is to ask for the best “levers” in the system. What needs to be changed to get many more beneficial changes as a consequence? This is where system thinking is needed. For example improving public transport will also reduce air pollution if private car use decreases. In the more advanced versions of systems analysis computer models are used, but one gets very far by just drawing the systems and all interdependences on a piece of paper. This forms the basis of a strategy for changing the system and to spur innovations, that is, creative solutions for what to do.

There are many interesting ways to make the planning work interesting and more inclusive. One is to play games on a system which is designed according to the area to be planned. A more theoretical method is to model the system in question and calculate different scenarios. Modelling science today allows considerable detailed studies with environmental, economic and social parameters to be followed into long term future.

In order to successfully implement the projects one needs to have support from all the concerned levels in the society. Some projects, e.g. the Managing

Urban Europe 25 (MUE25), focused on this aspect. They defined a *management cycle* consisting of five steps

1. Baseline review (present value of indicators)
2. Target setting (the visioning process)
3. Political commitment
4. Implementation and monitoring (project work, and following the indicators)
5. Evaluation and reporting

The MUE25 cycle is a variant of the classical Deming cycle (Plan-Do-Check-Act), but includes specifically political commitment. It should also be added that the way to work is very similar to the environmental management systems, EMS, already adopted by hundreds of thousands of companies and quite many authorities.

The projects are implemented typically over a 3 year period. Then a new turn starts with review of vision, indicators, targets etc. Continuous monitoring and adaptation is needed and in particular the indicators need to be monitored.

Chapter 7 Sources:

Sections 7.1-7.4 and sections 7.7-7.9 Kristina L Nilsson and Lars Rydén Chapter 18 Spatial Planning and Management in Ecosystem Health & Sustainable Agriculture, Book 3 Rural Development and Land Use (Editors: L. Rydén and I. Karlsson, eds).

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pp 205-206 (Section 7.1), pp 208-209 (Section 7.2), pp 213-215 (Section 7.3), pp 215-216 (Section 7.4), and pp 220-224 (Sections 7.7, 7.8 and 7.9).

Section 7.5-7.6 Rustam Eshnijazov and Rifkat Gimush based on Градостроительный кодекс Республики Узбекистан . “Народное слово”, N 95 (2917), 7 мая 2002 г. City-planning code of the Republic of Uzbekistan, Magazin: “Narodnoe slovo” N95 (2917), 7/05/2002