



Regional Development
Centre of Koper

RDA South Primorska



PRIORITY
ACTIONS
PROGRAMME



REPUBLIC OF SLOVENIA
MINISTRY OF THE
ENVIRONMENT AND
SPATIAL PLANNING

MAP CAMP Slovenia

Conception of Spatial Development of South Primorska

and the Programme of Measures of its Implementation

Phase 2 Interim Report



*Prostorsko načrtovanje,
projektiranje in varstvo
okolja Novo mesto, d.o.o.*

February 2006



Občina Piran



Občina Izola



Mestna
občina Koper



Občina
Hrpelje-Kozina



OBČINA
DIVAČA



OBČINA
SEŽANA



Občina Ilirska
Bistrica



Občina Komen

Name of task: **Conception of Spatial Development of South Primorska and the Programme of Measures for its Implementation**

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SUMMARY

The purpose of the Conception of Spatial Development of South Primorska is:

- to strengthen the sustainable spatial development of the region of South Primorska, and
- to provide a strategic spatial framework for priority investments (strategic investments) in South Primorska for the period from 2007 to 2013.

The Conception of Spatial Development thus represents a spatial complement to the Regional Development Programme of South Primorska and the National Development Programme for 2007–2013. It is a guideline for future spatial development of the region, as it provides guidance for the preparation of national and municipal spatial documents.

The key objectives to be achieved by the preparation of the Conception are:

- to determine the key advantages and weaknesses of the past spatial development on the basis of the analysis of the situation and trends;
- to establish a vision and conception of spatial development in the region;
- to formulate the regional conception of the distribution of selected activities in space while taking into account the characteristics of individual regional areas of Slovenian Istra, Kras and Brkini;
- to prepare spatial development guidelines representing the basis for strategic national and municipal planning documents;
- to define the measures for implementation of the regional conception, taking into consideration the possibilities of cooperation with the neighbouring regions in Slovenia and within the EU (Italy) and with the regions in non-member countries (Croatia).

The vision, objectives and strategy of spatial development were formulated on the basis of expert groundwork carried out in Phase 1 and 2 of the project on the preparation of the Conception of Spatial Development of South Primorska. The expert groundwork took into consideration the results of workshops within the horizontal SPSA (Systemic and Prospective Sustainability Analysis) project and special workshops organised for spatial planning stakeholders.

Prior to the determination of spatial development objectives, a framework development scenario was formulated in the abovementioned workshops in order to illustrate the consequences in the absence of strategic interventions. Later on, the scenario was supplemented by detailed analyses. The scenario of sustainable spatial development of the region was also drawn up within the framework of SPSA activities.

Subsequently, in order to prevent unsustainable solutions and to avoid negative and undesirable results, the objectives were set up and an appropriate strategy of spatial development was established.

Assessment of the compliance of the vision and the objectives of regional spatial development with the objectives of superior strategic documents, directed towards strengthening of sustainable development, was carried out. Moreover, the compliance with the objectives of the Mediterranean Strategy for Sustainable Development, the EU Sustainable Development Strategy, the Spatial Development Strategy of Slovenia and the National Environmental Protection Programme was also assessed. The spatial conception is fully in line with the Regional Development Programme of South Primorska 2007–2013 and, in fact, it is its integral part. The internal coherence of the Conception was also examined in order to assess the compliance of measures and projects with the set spatial objectives.

The Conception of Spatial Development of South Primorska was prepared on the aforesaid basis, followed by drawing up of the proposal for the programme of measures and policies for the implementation of spatial development objectives. The proposal was adjusted in the workshop organised for municipal representatives.

Finally, the assessment at the regional level was carried out of the eventual impacts of the Conception on the environment, nature, human health and cultural heritage.

The vision of spatial development of South Primorska shall read:

"Spatial development of South Primorska shall support sustainable welfare, equitable distribution and high quality of life, whilst protecting and strengthening natural, spatial and cultural goods."

The objectives of spatial development are to:

1. Increase the competitiveness of the region by

- the establishment of competitive cross-border polycentric network of settlements;
- the establishment of competitive high quality living countryside;
- better external and internal cohesion of the region.

2. Enhance the quality of life in the region by:

- strengthening of sustainable communities (urban centres);
- strengthening the identity and attractiveness of the region;
- sustainable management of natural goods.

1. INTRODUCTION

1.1 Purpose of the Conception of Spatial Development of South Primorska

The purpose of the Conception of Spatial Development of South Primorska is:

- to strengthen the sustainable spatial development of the region of South Primorska, and
- to provide a strategic spatial framework for priority investments (strategic investments) in South Primorska for the period from 2007 to 2013.

The Conception of Spatial Development thus represents a spatial complement to the Regional Development Programme of South Primorska and the National Development Programme for 2007–2013. It is a guideline for future spatial development of the region, as it provides guidance for the preparation of national and municipal spatial documents.

Spatial development and programming at regional level remain the basis for the guidance of spatial development in the region.

1.2 Objective of the Conception of Spatial Development of South Primorska

The objective of the Conception of Spatial Development is to define a long-term model of spatial development of the region, which includes the improvement of economic competitiveness of the region as well as the improvement of the quality of living, environmental protection, nature conservation and sustainable use of natural resources, integrated preservation of cultural heritage and protection against natural and other disasters, while strengthening the inter-municipal cooperation and taking into consideration the views of individuals and population groups.

The model is supposed to indicate the path of accelerated development in relation to more advanced neighbouring regions in Italy, reduction of development disparities between the various parts of the region, without compromising the satisfaction of the needs of future generations.

The key objectives to be achieved by the preparation of the Conception are:

- to determine the key advantages and weaknesses of the past spatial development on the basis of the analysis of the situation and trends;
- to establish a vision and conception of spatial development in the region;
- to formulate the regional conception of the distribution of selected activities in space while taking into account the characteristics of individual regional areas of Slovenian Istra, Kras and Brkini;
- to prepare spatial development guidelines representing the basis for strategic national and municipal planning documents;
- to define the measures for the implementation of the regional conception, taking into consideration the possibilities of cooperation with the neighbouring regions in Slovenia and within the EU (Italy in particular) and with the regions in non-member countries (Croatia in particular).

1.3 The Conception of Spatial Development of South Primorska within the CAMP Framework

The preparation of the Conception of Spatial Development of South Primorska is being carried out within the CAMP Slovenia project, as the project itself is focused mainly on spatial planning and the themes related to spatial planning. The Conception of Spatial Development of South Primorska is the main project within the CAMP. Special attention is paid to the spatial arrangements of the coastal strip, sustainable tourism development, management of protected areas and the protection of water resources.

1.4 Changes in Spatial Legislation

The Spatial Planning Act (ZUreP-1) (OG RS, No. 110/02) defines a Conception of Spatial Development as a guiding document for spatial development, which, subject to the guidelines of the Spatial Development Strategy of Slovenia and in relation to other development documents, determines spatial planning conceptions, harmonised at the national and municipal levels.

In the last proposed Spatial Planning Act (13 September 2006), a regional spatial plan has been defined as an inter-municipal spatial document for the implementation of regional development programmes under the regulations of the Promotion of Balanced Regional Development Act, which requires planning of spatial arrangements of regional significance and, therefore, the municipalities have to prepare a regional spatial plan.

1.5 The Process of Drafting the Conception

The vision, objectives and strategy of spatial development were formulated on the basis of expert groundwork carried out in Phase 1 and 2 of the project on the preparation of the Conception of Spatial Development of South Primorska. The expert groundwork took into consideration the results of workshops within the horizontal SPSA (Systemic and Prospective Sustainability Analysis) project and special workshops organised for spatial planning stakeholders.

Prior to the determination of spatial development objectives, a framework development scenario was formulated in the abovementioned workshops in order to illustrate the consequences in the absence of strategic interventions. Later on, the scenario was supplemented by detailed analyses. The scenario of sustainable spatial development of the region was also drawn up within the framework of SPSA activities.

Subsequently, in order to prevent unsustainable solutions and to avoid negative and undesirable results, the objectives were set up and an appropriate strategy of spatial development was established.

2. STRATEGIC FRAMEWORK

The key factors in formulating the Conception of Spatial Development are:

- international, national, regional and local policies and programmes;
- economic, social and environmental trends.

2.1 International, National, Regional and Local Policies and Programmes

The key international documents considered as the basis in drawing up the Conception of Spatial Development of South Primorska are:

UNEP/MAP:

- Mediterranean Strategy for Sustainable Development;
- Action Plan for the Protection of the Marine Environment and the Sustainable Development of the Coastal Areas of the Mediterranean (MAP Phase II)

European Union:

- Lisbon Strategy ([Growth and jobs - working together for Europe's future](#))
- EU Sustainable Development Strategy;
- European Spatial Development Perspective;
- Environment 2010: Our future, Our choice – The Sixth Environment Action Programme;
- Thematic Strategy on the Urban Environment.

2.1.1 In the Context of the Mediterranean Action Plan

Document Title	Objectives
Mediterranean Strategy for Sustainable Development	<p>Contribute to economic development by enhancing Mediterranean assets.</p> <p>Reduce social disparities by implementing the Millennium Development Goals and strengthening the cultural identity.</p> <p>Change unsustainable production and consumption patterns and ensure the sustainable management of natural resources.</p> <p>Improve governance at the local, national and regional levels.</p>
Action Plan for the Protection of the Marine Environment and the Sustainable Development of the Coastal Areas of the Mediterranean (MAP Phase II)	<p>Ensure sustainable management of natural marine and land resources and integrate the environment in social and economic development, and land-use policies.</p> <p>Protect the marine environment and coastal zones through prevention of pollution, and by reduction and, as far as possible, elimination of pollutant inputs, whether chronic or accidental.</p> <p>Protect nature, and protect and enhance sites and landscapes of ecological or cultural value.</p> <p>Contribute to the improvement of the quality of life.</p>

2.1.2 In the Context of the European Union

Document Title	Objectives
Lisbon Strategy	<p>Competitiveness, building on the existing assets and under-utilised potentials in the region related to the existing economic base.</p> <p>Attractiveness, building new assets for the region that can ensure an inflow of investments and skills, in particular in support of a knowledge-based economy.</p>

	<p>Liveability, ensuring cohesion and a sustainable community with a high level of quality of life and environment for the citizens and for existing as well as future activities.</p>
EU Sustainable Development Strategy	<p>Limit climate change and its costs and negative effects to society and the environment.</p> <p>Ensure that our transport systems meet society's economic, social and environmental needs whilst minimising their undesirable impacts on the economy, society and the environment.</p> <p>Promote sustainable consumption and production patterns.</p> <p>Improve management and avoid overexploitation of natural resources, recognising the value of ecosystem services.</p> <p>Promote good public health on equal conditions and improve protection against health threats</p> <p>Create a socially inclusive society by taking into account solidarity between and within generations and to secure and increase the quality of life of citizens as a precondition for lasting individual well-being.</p> <p>Actively promote sustainable development worldwide and ensure that the European Union's internal and external policies are consistent with global sustainable development and its international commitments.</p>
European Spatial Development Perspective	<p>Development of a balanced and polycentric urban system and a new urban-rural relationship:</p> <ul style="list-style-type: none"> - polycentric and balanced spatial development in the EU; - dynamic, attractive and competitive cities and urbanised regions; - indigenous development, diverse and productive rural areas; - urban-rural partnership. <p>Parity of access to infrastructure and knowledge:</p> <ul style="list-style-type: none"> - integrated approach for improved transport links and access to knowledge; - polycentric development model as a basis for better accessibility. <p>Wise management of the natural and cultural heritage:</p> <ul style="list-style-type: none"> - natural and cultural heritage as a development asset; - preservation and development of the natural heritage; - water resource management – a special challenge for spatial development; - creative Management of cultural landscapes; - creative management of the cultural heritage.

<p>Environment 2010: Our future, Our choice – The Sixth Environment Action Programme</p>	<p>Stabilise the atmospheric concentrations of greenhouse gases at a level that will not cause unnatural variations of the earth's climate.</p> <p>Protect and restore the functioning of natural systems and halt the loss of biodiversity in the European Union and globally.</p> <p>Protect soils against erosion and pollution.</p> <p>Achieve a quality of the environment where the levels of man – made contaminants, including different types of radiation, do not give rise to significant impacts on or risks to human health.</p> <p>Ensure the consumption of renewable and non-renewable resources does not exceed the carrying capacity of the environment. To achieve a decoupling of resource use from economic growth through significantly improved resource efficiency, dematerialisation of the economy, and waste prevention.</p>
<p>Thematic Strategy on the Urban Environment</p>	<p>Contribute to a better quality of life through an integrated approach concentrating on urban areas.</p> <p>Contribute to a high level of quality of life and social well-being for citizens by providing an environment where the level of pollution does not give rise to harmful effects on human health and the environment and by encouraging sustainable urban development.</p> <p>Four priority themes:</p> <ul style="list-style-type: none"> - sustainable urban management; - sustainable urban transport; - sustainable urban construction; - sustainable urban design.

2.1.3 In the Context of National Development Documents

Document Title	Objectives
<p>Spatial Development Strategy of Slovenia</p>	<p>1 Rational and effective spatial development</p> <p>1.1 To guide activities with spatial impact so as to produce maximum positive effects towards a spatially balanced and economically efficient development, social integration, and the quality of the natural and living environment.</p> <p>1.2 To ensure rational land use and the safety of the population through appropriate planning, multipurpose use and the linking of sectors.</p> <p>1.3 To improve situations involving negative spatial development trends by taking spatial and environmental measures.</p> <p>2 Polycentric development of the network of cities, towns and other settlements</p> <p>2.1 To promote the development of urban centres with national and regional significance as the centres of regional territories.</p> <p>2.2 To encourage the functional and infrastructural integration of cities, towns and other settlements.</p> <p>2.3 To ensure the interconnection of urban settlements with their hinterland through more efficient mobility supported by public transport.</p>

3 Increased competitiveness of Slovenian towns in Europe

- 3.1 To develop regional development zones for production activities and services.
- 3.2 To effectively distribute activities in settlements, taking into consideration location-related potentials and restrictions.
- 3.3 To ensure an adequate number of various dwellings in urban settlements.

4 High-quality development and attractiveness of cities, towns and other settlements

- 4.1 Safe, socially equitable, vital, healthy and well managed towns and other settlements.
- 4.2 To ensure the quality of the living environment through the integration of cultural heritage in the planning, restructuring and revitalization of towns and other settlements.
- 4.3 To ensure the quality of the living environment through the appropriate and rational provision of infrastructure, a well-developed network of economic activities and services, and access to the public services.
- 4.4 To ensure adequate water supply for the population throughout the entire Slovenian territory.
- 4.5 To ensure the protection of people, property, cultural heritage and the environment through appropriate protection against natural and other disasters.

5 Harmonious development of areas with common spatial development characteristics

- 5.1 Harmonious development of regions.
- 5.2 Cooperation between urban and other regions along the border.
- 5.3 Harmonious development of other areas with similar or common development opportunities and/or problems (coastal and mountainous, protected and planned to be protected areas, threatened by natural processes, wider urban areas, etc.).

6 Complementarity of rural and urban area functions

- 6.1 To exploit the spatial potential of the countryside to develop varied economic activities in rural areas.
- 6.2 To complement the urban and rural functions by developing complementary activities.

7 Integration of infrastructure corridors with the European infrastructure systems

- 7.1 Improved links between the transport infrastructure networks and the European transport corridors.
- 7.2 Improved interconnection of electrical and other energy distribution networks with the networks of neighbouring countries.
- 7.3 To improve telecommunication networks by ensuring complete national coverage and the provision of links to the international telecommunication networks.

8 Prudent use of natural resources

- 8.1 Economical and multipurpose use of land and resources.
- 8.2 Appropriate land use for urbanization and the control of the enlargement of urban areas.
- 8.3 Conservation of production potential of soil for agricultural use.
- 8.4 Balanced supply with raw mineral resources.
- 8.5 To distribute activities so as to ensure balance between the possibilities of supply and the demand for water.
- 8.6 To encourage the use of renewable resources where this is environmentally acceptable.

9 Spatial development harmonized with spatial limitations

- 9.1 To steer spatial development away from areas threatened by natural and other disasters.
- 9.2 To redirect the existing activities away from areas threatened by natural and other disasters, or to improve protection against the consequences of such events.

10 Cultural diversity as the foundation of the national spatial identity

10.1 To promote the conservation and development of cultural diversity as the foundation of high quality national spatial identity, high-quality living environment, and social integration.

10.2 To ensure access to heritage sites and areas and consequently enhance their identification, educational and economic potentials, and their sustainable use.

11 Nature conservation

11.1 To encourage the conservation of biodiversity, natural values and natural processes as the essential components of a high-quality natural environment.

11.2 To ensure appropriate integration of biodiversity and natural values in natural resources and spatial management.

11.3 To establish a network of special conservation areas and protected areas.

12 Environmental protection

12.1 To integrate individual components of environmental protection in the planning of the spatial development of activities.

12.2 To ensure the provision of public utilities in existing and new plots of building land (water supply, sewage, heating and air-conditioning systems).

12.3 Rational management of municipal and other waste.

Document Title	Area	Objectives
Resolution on National Environmental Action Plan 2005-2012	Climate change	<p>8% reduction of greenhouse gas emissions in the period 2008–2012 by reference to 1986, among other things, with the achievement of the following sectoral aims:</p> <ul style="list-style-type: none"> - 12% share of renewable energy sources in total energy supply of the country by 2010; - reduction in energy intensity (for 30% by 2015 in comparison to 2000); - 2% share of bio-fuel in transport by 2005 and 5.75% by 2010; - 16% share of CHP in electricity generation by 2012; - 30% lower energy consumption in new buildings and possible reduction in energy consumption of the public sector by 15%. (Greenhouse Gas Emissions Reduction Operational Programmes)
	Nature and biodiversity	<p>Preservation of high biodiversity level and stopping the decline in biodiversity by 2010:</p> <ul style="list-style-type: none"> - maintaining or the achievement of favourable status of endangered species and habitat types; - maintaining or the achievement of favourable status (extent and quality) of species and habitat types for which areas were determined important for the preservation of biodiversity (ecologically significant areas, Natura 2000 areas, Ramsar localities); - efficient and harmonised preservation of nature in protected areas through management plans and other measures; - higher level of handling wild animal species; - ensuring sustainable use of biodiversity elements and co-natural interference with natural environment.

	Protection of natural values	<ul style="list-style-type: none"> - Maintenance of features for which the parts of nature have been defined as a natural value of a certain type and also all other features to the maximum extent; - recovery of damaged or destroyed natural values; - ensuring the use of natural values in a way that does not endanger them; - ensuring ex-situ protection of natural values which preservation in-situ is not possible.
	Quality of life	Contribute to the high level of the quality of life and social welfare of citizens by ensuring the environment in which the pollution level does not impact human health and the environment and by promotion of sustainable urban development.
	Water protection	<p>Good water status by 2015:</p> <ul style="list-style-type: none"> - achieving an improvement in the quality status of groundwater (lower content of nitrates in groundwater and all aquifers and a lower share of measurement places where the limit values are often (25% - 30%) or very often (over 50%) exceeded and the achievement of limit values of nitrates in drinking water in line with drinking water regulation; - achieving an improvement groundwater status and achieving limit values for pesticides in drinking water and drinking water sources in accordance with drinking water regulation; - reducing the risk of pesticides impacting on the environment and aquatic environment; - improve the control of the use of pesticides; - replacement of hazardous active pesticide components with less dangerous ones; - promotion of agriculture using less or no pesticides; - transparent system of monitoring and reporting on the attainment of objectives and development of appropriate indicators; - ensuring appropriate collecting and treatment of waste water; - termination or gradual elimination of emissions discharge and leakage of priority hazardous substances; - prevention of pollution or other types of loading that could impair the quantity and wholesomeness of water bodies or their parts utilised for abstraction or intended for drinking water supply or production of beverages; - preserving the quality of bathing waters and preventing pollution or other types of loading that could impact on the status of water bodies or their parts designated as bathing water areas or the wholesomeness of bathing water in bathing water areas; - maintaining the water quality in order to support the life of important species of freshwater fish; - maintaining the water quality in order to support the life and growth of marine bivalves and gastropods; - protection and preservation of marine environment.
	Water use	Ensuring sufficient volume of water intended for the supply of drinking water and establishment of instruments for setting the economic price of water.
	Water regulation	Improvement in the availability of water for use and the status of water and associated ecosystems. Decrease in flood risk.

	Air protection	<p>Achieving limit or target values in particular areas (4 areas and 2 populated areas – agglomerations) for:</p> <ul style="list-style-type: none"> - NO_x by 2010, - SO₂ and PM10 by 2005, - NO₂ and Pb by 2010, - CO by 2005, - Benzene and ozone by 2010. <p>Decrease in national emissions of SO₂, NO_x, HOS and NH₃ by 2010:</p> <ul style="list-style-type: none"> - SO₂ – from 71 kt in 2002 to 27 kt by 2010, - NO_x – from 60 kt in 2002 to 45 kt by 2010, - HOS – from 48 kt to 40 kt by 2010 (38 kt in 2002), - NH₃ – to 20 kt by 2010 (19 kt in 2002).
	Noise	<p>Definition of noise exposure levels (elaboration of strategic noise maps and planning of noise reduction measures) and public information on noise exposure.</p>
	Urban environment	<p>Establishment of a long-term, uniform and overall policy for the improvement of the quality of life in urban areas with indicators and revival of towns so that they become attractive to citizens, not detrimental to the health and ensuring high quality of life.</p>
	Waste and industrial pollution	<p>Waste management and utilisation of renewable and non-renewable natural resources, thus enabling sustainable production and consumption, reduction of environmental pollution and energy consumption so that the environment carrying capacity is not exceeded:</p> <ul style="list-style-type: none"> - direct at least 65% or more of urban waste to pre-disposal procedures and introduce material utilisation of at least 42% or more of waste (in net amount); - separate all kitchen waste and process them biologically; - process the rest of waste so that the content of total does not exceed 5%; - thermically process the waste where the limit value of 5% TOC cannot be achieved by other procedures and those organic waste where such processing is requisite; - reduce the amount of disposed biodegradable waste from 47% of total waste to 16% by 2013 or 2015, or on average 5% per year; - reduce waste generation potential and greenhouse gas emissions for 1,162 kt CO₂ equivalents by 2012; - continue the trend of reducing hazardous waste generation, namely from 5% to 10% yearly; - continue the trend of reducing hazardous waste generation, namely from 5% to 10% yearly; - improvement and rationalization of hazardous waste management by means of a more efficient utilisation of local capacities and the establishment and functioning of a network of facilities and devices, i.e. hazardous waste management centres;
	Waste	
	Hazardous waste	<ul style="list-style-type: none"> - if there is a lack of local capacities, ensure the final disposal of hazardous waste within the EU infrastructure; - achieve the collection of at least 1 kg of hazardous fractions per citizen per year during the following years within the framework of public waste management services;

	Urban waste	<ul style="list-style-type: none"> - setting up collection points for separated fractions of urban waste for every 500 inhabitants in agglomerations; - setting up collection centres for separated fractions of urban waste in every municipality as a rule, in each agglomeration with more than 8,000 inhabitants and in large agglomerations for every 80,000 inhabitants; - setting up collection points for hazardous fractions of urban waste in every agglomeration with more than 25,000 inhabitants and in larger agglomerations for every 60,000 inhabitants; - establishment of a supplementary system for the collection of separated urban waste fractions by means of mobile collection facilities; - establishment of a collection system for catering and household biodegradable kitchen waste and its biological treatment; - ensuring biological treatment of household biodegradable kitchen waste in private composting boxes and small composting plants in agglomerations with more than 10 inhabitants/ha and more than 500 inhabitants; collecting and ensuring biological treatment in more densely populated areas and larger areas;
	Landfills	Rehabilitation of urban waste landfills which will, according to regional urban waste management concepts, close by 2008 and rehabilitation of other burdens.
	Building waste	Establishment and functioning of an efficient system of building waste management (by 2008).
	End-of-life vehicles	<ul style="list-style-type: none"> - Establishment of a uniform collection system in the whole territory of Slovenia and 100% recovery of end-of-life vehicles; - achieve the reuse, processing and recycling rates (85% by the end of 2006 and 95% by the end of 2014) and elimination of old burdens; - appropriate hazardous waste management.
	End-of-life tyres	<ul style="list-style-type: none"> - Establishment of a uniform end-of-life tyres collection system in the whole territory of Slovenia; - preventing the unsuitable dumping; - ensuring at the same time various possibilities of processing and removal.
	Electrical and electronic equipment	<ul style="list-style-type: none"> - Establishment of a system for the collection of waste electrical and electronic equipment in the whole territory of Slovenia, including the upgrading of the system for the collection of separated waste fractions; - separation of hazardous waste and appropriate treatment; - collect at least 4 kg per inhabitant/year; - achieve the reuse, processing and recycling rates by 2007, namely, 50% for small household utensils and 75% for large household appliances.
	Industrial pollution	<ul style="list-style-type: none"> - Reduction of environmental pollution and energy consumption in large industrial plants; - preventing large disasters due to hazardous substances and reducing their impacts.

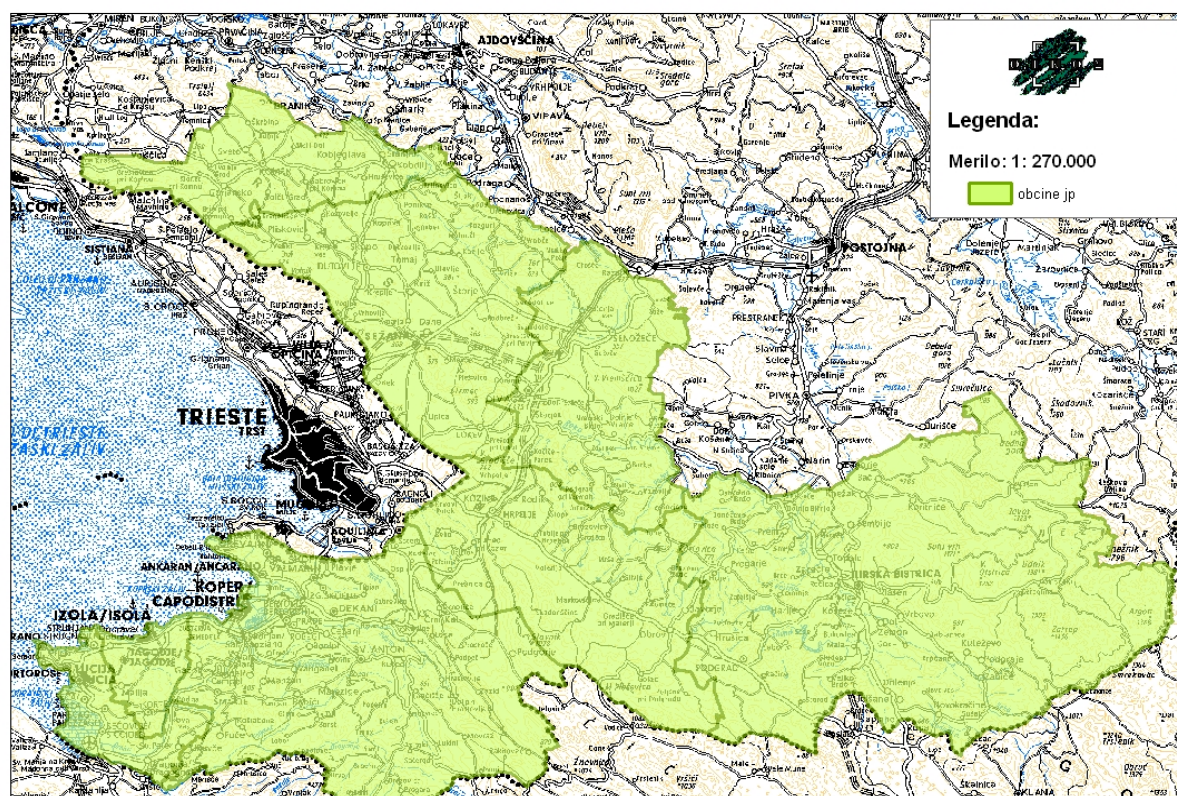
2.1.4 In the Context of South Primorska Development Documents

Document Title	Objectives
Regional Development Programme of South Primorska 2007–2013	Long-term objectives of the region
	<ol style="list-style-type: none"> 1. By the end of 2013, the region will have increased the value added per inhabitant to EUR 20,000 and thus reduce the lagging behind the neighbouring region of Friuli-Venezia Giulia in Italy. 2. By the end of 2013, the region will have established the basic environmental infrastructure for waste management, waste water treatment, water supply and sustainable mobility.
	Economy
	<ol style="list-style-type: none"> 1. Higher added value per unit of product/service. 2. Higher level of employment.
	Human resources
	<ol style="list-style-type: none"> 1. Adaptation of education and research to the needs of the economy 2. Provision of quality social services. 3. Knowledge-based society for innovativeness and sustainable development.
	Rural areas, agriculture, fisheries and forestry
	<ol style="list-style-type: none"> 1. Higher added value per unit of product/service. 2. Preserved number of population in rural areas. 3. Rural development based on sustainable agriculture, forestry and tourism.
	Environment and environmental infrastructure
	<ol style="list-style-type: none"> 1. Reduced impacts on the environment and nature. 2. Efficient public services. 3. Regional support activities. 4. Joint solving of the tasks of regional significance.

3. CHARACTERISTICS OF THE REGION

3.1 Size and Position

The region of South Primorska covers an area of 1,524 km², which is 7.5% of the Slovenian territory and its inhabitants account for 6% of the country's total population. The region comprises the municipalities of Slovenian Istria – Koper, Izola and Piran, and the municipalities of Kras and Brkini – Sežana, Divača, Hrpelje-Kozina, Komen and Ilirska Bistrica. The municipalities make up the Obalno-kraška statistical region, apart from the Municipality of Ilirska Bistrica that falls within the Notranjsko-kraška statistical region.



(Source: Eurogeographics, 2005)

The main natural characteristics of the region are the alternation of flysch and limestone landscapes, sub-Mediterranean climate and, in particular, its maritime position, which allowed for the development of tourism and transport. Namely, it is the only Slovenian region lying by the sea and with its 46 km of coast, it represents a certain "window to the world". Closely built villages are a typical settlement pattern. During the last decades, littoralization – a process of concentration of the population and economic activities on the coastal strip – is becoming an increasingly distinctive trend. The region may be divided into three parts: the coastal part or Slovenian Istra, Kras and Brkini. These areas differ from each other in their natural, social and environmental features, which will be pointed out where necessary hereafter.

3.2 Key Demographic Trends

- Population growth in the region is above the Slovenian average, which is mainly the result of extensive immigration. However, the natural growth is constantly negative, which is in no way favourable from the demographic point of view.
- The number of population increases faster in the coastal part of South Primorska than in the rear areas, which confirms the littoralization phenomenon – settlement pressure on coastal areas.
- The population of South Primorska is ageing, especially in the Kras and Brkini areas. According to the demographic forecast, the share of young people under 15 years of age will drop to 12.6% by 2014 and the share of working age population will be 70.5%, which does not imply considerable change in view of the present situation. It seems that such demographic trends will continue, while the gap between the coastal and the Kras-Brkini parts will widen.
- According to the demographic trends forecast for Obalno-kraška statistical region, it is expected that the number of population will fall, while unfavourable age structure and ageing of the population will continue. In 2002, the projections of demographic development were calculated for the period from 2001 to 2022 (Dr. Lojze Gosar: Demographic Projections for South Primorska Region). The population projection on the basis of 1999 birth rate coefficient foresees a considerable fall in the number of population, from 115,420 in 2001 to 101,423 in 2002 (index 87.9). At the 1999 birth rate coefficient, the 2001 number of population can be maintained only by constant and strong immigration. Preservation of the number of population on the basis of natural growth would be possible also at the birth rate coefficient recorded in the region in 1980. On the assumption of the 1999 birth rate coefficient and no immigration, the index of population ageing would also rise (in individual municipalities, the index ranged from 174 (Komen) and 207 (Izola)).
- According to the demographic projections for the Obalno-kraška statistical region, the trend of longer life expectancy will continue. As the values for South Primorska do not differ much, it can be expected that in various scenarios the life expectancy in 2025 will be between 85 and 85.9 years for women and between 76.6 and 78 years for men.
- The educational level of economically active population is improving and the number of students is growing constantly. The Obalno-kraška statistical region has an above average number of undergraduate students. In the period from 1991 to 2000, the share of students in the generation of 20- to 24-year olds grew the fastest (beside the Notranjsko-kraška statistical region) in this region

INDICATORS

- **Population density/km²**
- **Number of people per household**
- **Ageing index**
- **Number of students per 1,000 inhabitants**
- **Percentage of population with higher and high education**
- **Percentage of population with access to Internet**

3.3 Key Economic Trends

- On assumption that the values for South Primorska do not differ much from the data valid for the Obalno-kraška statistical region, it can be ascertained that the GDP exceeds the Slovenian average and that it has been rising again after a short downturn period.
- South Primorska demonstrates a strong orientation towards service sector (trade, transport, real estate, renting and business activities, tourism), as a good three-quarters of gross value added is generated by the service sector, followed in proportion by industry, building industry and agriculture.
- The rate of formal (registered) employment as also the number of jobs are growing even faster than the country's average. Employment is strengthening in the service sector (particularly in the coastal municipalities) and it can be expected that employment in service will grow faster while falling in agriculture, especially in the area of Kras and Ilirska Bistrica.
- The region of South Primorska has a below-average rate of registered unemployment and structural unemployment has also decreased a little after 2001. There is a lack especially of jobs for highly educated job seekers. The share of women among the unemployed population has fallen below the Slovenian average and is still falling. The percentage of young job seekers (up to 25 years of age) is falling at a lower pace than on average in Slovenia and the share of the unemployed of over 40 years of age is still above the average.
- The economic power of the population of South Primorska, measured by the basis for income tax per inhabitant, exceeds the Slovenian average and is growing. The amount of the gross basis for income tax per inhabitant is above the average, however the difference with the Slovenian average is tending to reduce. From 1996 to 2005, there was a constant growth of average gross salary in all municipalities of South Primorska; however, the average gross salary is still below the Slovenian average.
- There is a large disparity between the operation of companies in the municipalities of Slovenian Istra and the municipalities of Kras and Brkini. Although the business performance of companies in the Kras area are worse than the results of companies in the coastal municipalities, some indicators show that they are improving. 80% of companies operate in coastal municipalities and they employ 77% of all workers.
- The number of employees in South Primorska companies is falling for a long period of time, notably because the companies are smaller in size than on average in Slovenia. Measured according to the assets per employee, the region exceeds the Slovenian average and the companies operate with profit. In general, both the economy of operation and the economic strength of South Primorska are below the Slovenian average, which also applies to the investment activity. The region demonstrates its export orientation by an above-average share of net revenue from exports. However, the export orientation is declining in the coastal part and increasing in the rear parts. There is a trend of strong concentration of economic activities in the coastal municipalities of South Primorska, which is especially true of the Municipality of Koper.
- The investment activity of manufacturing companies in South Primorska, measured by the percentage of investment expenditure in assets, is above average if compared with the investment activity of all companies in South Primorska, but at the same time under the average of the Slovenian economy.
- Labour productivity (value added per employee) calculated for the whole South Primorska amounted to SIT 6,966,000 in 2004 and it is above the Slovenian average (6,675,000). The differences in productivity between the economic sectors and also between the municipalities are typical. The highest labour productivity has been recorded in manufacturing, while the labour productivity in catering and tourism is below the regional average. Between the municipalities, the labour productivity is highest in the Municipality of Koper and the lowest in the Municipality of Divača.
- The region is very attractive for various spatial investments. The main economic activity, which also has the greatest aspiration for land, is tourism. Positioning of new activities into the space has already been causing conflicts between various land users.
- Tourism trends:
 - highly developed and concentrated, mass tourism on the coast;
 - increasing number of tourists and overnight stays.;
 - strong but inadequately emphasized natural and landscape potentials in the area of Kras, exploited almost exclusively only in three places (Lipica, Štanjel, Škocjanske jame);

- the areas of smaller potential and the areas in the Municipality of Ilirska Bistrica, Brkini and the rear parts of Slovenian Istra with weakly or not at all developed tourism and recreational infrastructure.

INDICATORS

- **GDP per inhabitant (in EUR)**
- **Labour productivity (value added per employee in SIT 1,000)**
- **Basis for income tax per inhabitant**
- **Average gross earnings**
- **Economically active population**
- **Number of companies by municipalities**
- **Structure and number of business entities by activity**
- **Size of companies by sector**
- **Productivity by sector (value added per employee in SIT 1,000)**
- **Investment activity by sector (net investment in SIT 1,000)**
- **Tourist arrivals**
- **Number of tourist beds**
- **Number of overnight stays**
- **Occupation of accommodation facilities**
- **Average length of stay (in days)**
- **Beach area per bather (in m²)**
- **Satisfaction of the inhabitants with tourism effects**
- **Satisfaction of tourists**
- **Number of catering establishments**

3.4 Key Observations on the Use of Physical Space

3.4.1 Settlement and Urban Network

- There is a well-organised urban network on the one side and unbalanced urban system with large concentration in the area of Slovenian Istra and a lack of suitable centres in the area of the Municipality of Ilirska Bistrica.
- Various activities and infrastructural development heap up on the coastal strip of Slovenian Istra which is giving rise to an ever-greater inflow of population and the aspiration for the construction of residential and other buildings. With regard to the whole region, this part is really small in size. Other, significantly larger parts comprising the rear areas of the coast in Slovenian Istra, Kras and Brkini are confronted with many structural problems.
- Good accessibility of larger urban centres and the connection of the region with other regions (motorway), worse accessibility to further away rural areas (bad regional and local connections, poorly maintained roads).
- Developed urban centres (especially in Slovenian Istra), poor communication and cooperation between urban and rural areas.
- Depopulation areas in further away parts of Kras and Brkini.
- Growth of dispersed settlement – extension of settlements into the countryside, while there is unused space capacity within the settlements (rehabilitation of degraded urban areas, reurbanization), wasteful use of space, low population density of new settlement areas.
- Planned structuring of the use of physical space: weak intermingling of uses.
- Emergence of shopping centres with large parking lots outside town centres.
- Large public investment into road network and public utility infrastructure in peripheral areas, which on the one side facilitates rural development and on the other encourages dispersed settlement.
- Under-investment into the existing urban centres and larger settlements, which results in the decrease in the quality of life in urban centres (social stratification, environmental problems: noise,

reduced trafficability (standing traffic), removal of functions and activities to the outskirts, worse housing stock, etc.).

- Real estate in South Primorska is among the most expensive in Slovenia, its price rising constantly due to the demand for holiday homes. Demand for and the prices of real estate vary significantly between Slovenian Istra and the Kras/Brkini part. The number of building permits issued is increasing.
- Due to high prices, appropriate housing is inaccessible to the inhabitants.

INDICATORS

- % of built-up areas
- **Population density in urbanized areas (inhabitants/ha)**
- **Average plot price per m²**
- **Average real estate price per m²**
- **Number of dwellings**
- **Number of holiday homes and apartments**
- **Number of building permits issued**

3.4.2 Transport

- Due to the geographical situation and the location on the 5th European Traffic Corridor, South Primorska is affected by strong traffic flows. The present traffic infrastructure, consisting of the road network, railway network, the Port of Koper and the Airport of Sečovelje, is in general well developed.
- In the last decade, the **motorway network** was completed to a large extent and connected to Italian network; in the following period, within the framework of the National Programme for the Construction of Motorways, the area will be connected through the motorway network also with Croatia (sections Jelšane–Ilirska Bistrica–Postojna/Divača and Koper–Dragonja) and towards Trieste (Divača/Postojna–Reka). The section Koper–Izola–Lucija, where at present the traffic conditions are very critical, will also be finished.
- Passenger transport is based chiefly on the use of personal vehicles, as suggested by the number of cars per 1,000 inhabitants by which the region is ranked first in Slovenia.
- The road network is especially congested in the coastal part; during the summer period and at weekends, road congestions occur very often, as the average daily traffic (ADT) in some sections is 30,000 vehicles /day.
- The connection function of the coastal road between Koper and Izola is in conflict with other functions, such as for example functional and recreational (cyclists, pedestrians) connections.
- Parking represents a major problem in urban centres on the coast. Even outside the tourist season, the parking lots are fully occupied, while the need for parking spaces increases so much in summer that this becomes the main hindrance to the accessibility of particular places and areas.
- The environmental impacts of car traffic, such as air pollution, noise and dispersed settlement, are becoming increasingly evident.
- Despite the well-developed road network, there are still some areas in the region where the road network is underdeveloped.
- **Public passenger transport** is poorly developed and does not represent an attractive alternative; the system is not connected, transport is slow, uncomfortable and unreliable.
- In the Kras area, there is a relatively large number of regional roads, except in its southern part (Brkini and Matarsko podolje) where the central traffic route is the G1-7 main road. In addition to it, there are only two transversal roads in this area: Obrov–Prem and Obrov–Vodice. The G1-7 road connects Italy and Croatia; freight transport is rerouted to this road, which additionally contributes to its congestion, especially during the tourist season. Over-congestion of this road is disputed also with regard to the protection of water resources.
- With the expected development of the town of Ilirska Bistrica, the G1-6 main road, which is also congested with freight and passenger transport, will gain in importance. When the Jelšane– Ilirska

Bistrica–Postojna/Divača motorway section is constructed, freight transport will be rerouted to it and prohibited on the G1-6 road, so that upon the accession of Croatia to the UE this road will become particularly important as a tourist and less congested connection.

- In the northern part of the region there are mainly regional roads of 3rd class which star-like connections are at Komen and Dutovlje. Maintenance works (overlaying, discharge of meteoric water, regulation of gullies and other drainage facilities, restoration of retaining walls) are not carried out regularly, in places side road connections to main roads are dangerous, some sections are unclear and narrow, with poor technical elements. Transport infrastructure is weak also in some other parts of the region (eastern part of the Municipality of Ilirska Bistrica, which is largely covered in woods and uninhabited, and the hinterlands of Slovenian Istra).
- The traffic hubs and combined traffic terminals (Koper, Sežana, Divača, Ilirska Bistrica) are poorly developed and do not meet the present and future needs. The analysis of the traffic capacity of main and regional roads in the direction of the future motorway (Postojna/Divača–Ilirska Bistrica–Jelšane) and the Koper–Dragonja high-speed road indicates that traffic conditions are difficult and even critical as the average daily traffic (ADT) in some sections amounts to almost 30,000 vehicles/day (the section through Ilirska Bistrica – 11,000 vehicles/day).
- The existing **railway lines** no longer meet the modern transport requirements as regards higher speed, higher frequency of trains, improved reliability and predictability and higher quality of services in passenger and freight transport. Unsuitability of the present railway lines reflects also in frequent level crossings as well as their capacity and other parameters. The main railway line leading to the coast finishes in two dead ends, in town and the Port of Koper).
- **Cycling connections** in the region are also poorly arranged. Cycle paths are partly regulated in the area of Kras along the existing roads with less traffic loading. In some parts of the region cycling infrastructure is planned, particularly on the narrow coastal strip and its hinterlands and the Snežnik mountain range.
- In spite of its location on the shortest route to the centre of Europe and its logistics services, the **Port of Koper** does not offer enough to the partners from Slovenia and rear countries regarding the establishment of overseas economic links and trade flows. The role of the harbour in the development of clean, safe and efficient European transport system has not been exploited as this would require better port facilities, efficiency of harbours and quayside services and intermodal connections to inland transport networks.
- The opportunities for the development of maritime transport, especially the maritime passenger transport, are underexploited. In order to promote the public maritime passenger transport in Izola, Piran and Portorož, the present harbours should be developed and upgraded. The network of marinas, servicing arrangements and more appropriate connections of maritime infrastructure to other transport networks have not been clearly defined.
- The present passenger terminal of the Portorož Airport at Sečovelje and the airport infrastructure should be progressively upgraded, but within the existing airport limits and in accordance with the restrictions arising from the requirements of nature conservation and the protection of cultural heritage of the Sečovelje Saltpans.

INDICATORS

- **Number of cars per 1,000 inhabitants**
- **ADT in selected sections**
- **Passengers carried in public transport**
- **Harbour traffic of goods**
- **Cargo structure of the Port of Koper**
- **Goods carried by railways (traffic of goods at railway stations in t)**
- **Number of moorings in marinas**

3.4.3 Economic Public Infrastructure

Water supply

- Due to natural features of Kras and Slovenian Istra, the sources of drinking water are relatively scarce; therefore, integrated planning of drinking water resources management is requisite. The existing water resources in the Kras area are suitable, however they are exposed to pollution

because of karstic characteristics and do not ensure adequate supply of the population with drinking water. The Rižana River basin as a source of drinking water for Slovenian coastal region (in addition to the sources of the Dragonja River in Croatia) is not abundant enough and it is distinctly exposed to pollution. Therefore, additional water resources should be ensured to cover the needs of the whole region. The proposed water resource of Padež-Suhorka has a potential to meet all needs for water in the region; however, the need to guarantee drinking water supply must be harmonised with the protective restrictions regarding the preservation of the Reka River regime and the state of the Škocjanske jame environment

- Protection of water resources has been formally implemented, but there is no control over the implementation of restrictions regarding the activities in these areas. For this reason, water resources are constantly exposed to pollution. The territories of some municipalities largely comprise water protection areas, resulting in considerable limitations to spatial and economic development. The principal activity in water protection areas is agriculture which does not have enough regard to the protection requirements in water protection areas and for water resources.
- Three main water systems ensure water supply for the major part of the region, while the areas of dispersed settlement (Brkini, rear areas of Slovenian Istra) are supplied through local water distribution systems of unsuitable quality and quantity, as well as inappropriate management. There is a distinctive disparity between the water supply of central settlements and their water consumption and the water supply and consumption of other, especially hinterland areas. It is characteristic of these areas that they lack water supply networks and facilities, the cost of water supply is high and the construction and technical state of distribution systems is inadequate.
- Water consumption in Slovenian Istra is excessive, especially due to the need for water in summer because of tourism and the loss of water in pipes. The measures for reduction of water consumption are not implemented and are more the result of water shortage than planned measures. At present, water consumption is quite stabilised and water loss in pipes is less than one third (29%).

Treatment of waste water

- Only a small part of the region – big settlements on the coast and larger settlements in the hinterland - is provided with regulated sewage network terminating with waste water treatment plant. The highest level of connection to sewage network is in the coastal areas, and the lowest in the Kras area. The rest of waste water is discharged through unregulated individual systems or through the systems that do not end in waste water treatment plant.
- Unregulated discharge of waste water is one of the main reasons for environmental pollution which is especially evident in Kras due to its natural characteristics, and in the coastal area because of direct pollution of the coastal sea. Due to dispersed settlement, the systems are separated and the level of treatment at waste water treatment plant is low. The cost of public utility infrastructure in these areas is much higher than normal. Individual systems are inadequate and not registered, so that the real level of pollution cannot be assessed.
- The entire region of South Primorska is defined as a very vulnerable area and, therefore, more stringent criteria apply to equipping the agglomerations with waste water treatment systems. The extent of equipment of agglomerations with more than 10,000 PE with adequate sewage systems is quite large, while at present the suitability of facilities is low. Small agglomerations (from 2,000 PE to 10,000 PE) are fairly well equipped with treatment plants; however, the inadequate sewage systems remain a problem.
- The municipalities have adopted operative programmes for waste water treatment, but their consistent implementation is questionable due to the lack of financial resources.

Energy supply

- The situation with energy supply in the region is satisfactory (electric energy, in particular), but a disturbing fact is that there is no comprehensive energy concept for the region or its parts, with the result that the basis for efficient energy use is not defined and development plans elaborated to impose strategic decisions and action programmes.
- Supply with electric energy is adequate, as important (international) high voltage electrical transmission lines cross the region. The region is thus connected to Slovenian electrical power system through Divača distribution transformer station while at the same time it is connected to Italian and Croatian high voltage electrical power network. As regards the supply of settlements,

only small hamlets in remote areas have low-level supply, while large settlements are adequately supplied through the electric energy distribution network.

- The region is still not provided with gas network although some settlements have local gas networks (liquefied petroleum gas), which will be eventually connected to long-distance gas network.
- The facilities for storage of the security stock of oil products, which are located in the wider area of the Port of Koper, ensure a relative independence in the supply with this kind of energy.
- Renewable energy sources, particularly solar energy, which could represent a significant source of energy in the coastal area, are unused and there are no pilot projects in this field. Other alternative sources are less prospective, as they are related to exceptional spatial conflict (wind power plants) or may have a relatively low potential (geothermic sources, small power plants and wood biomass).

Telecommunication

- The main telecommunication (TC) network is well developed and it represents a skeleton TC network. The long-distance network is connected to the national network of Telekom Slovenia and to the optical connection of Slovenian Railways, power transmission networks and motorway network. The network of telephone switchboards and post offices is well developed and it covers the whole territory of the region, although the regional centres are better equipped than the hinterland due to the dispersed settlement.
- Large settlements have a regulated telecommunication system, especially as regards cable television network and Internet connection services.
- Mobile telecommunication network covers almost the entire region and it ensures an adequate accessibility to telecommunication connections.
- The signal of RTV Slovenia is adequate in most parts of the region; the reception is limited in remote and scattered settlements due to the natural conditions.

Waste management

- The waste management is not fully resolved in the region and it represents one of the largest pollution sources. In general, the landfills sites are unsuitably located, technically inadequate (unsealed, not degasified, subject to inundation, within reach of groundwater, etc.) and all of them are mostly filled up. At present, all municipalities dispose of the waste at reconstructed landfills which will be full in some years or at landfills in the process of rehabilitation or the increase of capacity.
- All inhabitants of the region are involved in waste disposal. The system of separate waste collection has been introduced in all municipalities but, according to the information obtained, it is not particularly successful. Due to irregular data collection, it is difficult to talk about the trends in the quantity of collected urban waste.
- All municipalities in the region acceded to GOJUP South Primorska that was preparing a regional project covering the landfills for surplus waste in the Municipality of Sežana; however, the local community did not support the project and consequently the initiative was adopted to find another location for a common regional landfill.

INDICATORS

- **Water consumption per person per day**
- **% of households connected to public water supply network**
- **% of households connected to sewage network**
- **Volume of collected urban waste**
- **% of recycled waste**

3.4.4 Landscape

Landscape

- In major part of South Primorska, the man-made environment is an important element of regional identity, which is especially evident in the areas of exceptional landscape and in the areas of

complex protection of cultural heritage. In addition to the areas of national identity, stated already in the Spatial Development Strategy of Slovenia (Lipica, Škocjanske jame, a part of Brkini and Matarsko podolje, a part of Bržanija and Movraška dolina; Prem and Suhorje, Kras, the area of Strunjan, Šavrini) and outstanding landscapes, there are some other significant areas defined as the areas of regional identity – Snežnik, Slavnik, Vremščica and the Kras Edge. Most of these areas are known also for exceptional natural qualities and the landscape areas of special quality in South Primorska are:

- the sea and the seacoast with characteristic reliefs (e.g. cliffs) and settlement (town centres),
 - distinctive settlement patterns (architecture and urbanism of villages and town centres in Kras and Slovenian Istra),
 - natural elements of classical Kras (characteristic relief and microrelief with shallow soil, sinkholes, surface rocks and thermophile plants (Škocjanske jame, Kras Edge, Vrtača pod Čebulovico) and riparian landscape (the Dragonja River valley),
 - man-made environment (coherence of settlement with natural spatial structure of Kras and Slovenian Istra (Koštabona, Krkavče, Padna, Rožar pri Tinjanu, Šavrini, Prem, Suhorje, Strunjan, Črni Kal–Hrastovlje, Marija Snežna–Podgorski Kras), distinctive structure of wine-growing areas (Sveto pri Komnu, Dutovlje, Tomaj) and fruit-growing areas in Brkini and Slovenian Istra, a part of Matarsko podolje; saltpans, Lipica, Izola amphitheatre,
 - contiguous forest land (Snežnik, Slavnik) and the areas of Vremščica and Kras Edge.
- Landscape changes result from the construction of large infrastructure facilities (Slovenian Istra and especially the coastal area – transport and tourist infrastructure such as motorways, marinas, harbours) and settlement (increasing building density in the coastal area – tourist settlements and dispersed building of housing and holiday facilities and auxiliary facilities), as well as the result of the abandonment of agricultural land use manifesting in overgrowing of cultivated land in the whole region and particularly in Kras and Slovenian Istra.
 - Great pressure on the space, which may result in changed landscape structure and its identity features, manifests itself through new construction projects (apartments and holiday homes, economic and service activities, infrastructure facilities and transport networks – the coastal road, high-speed railway, the Port of Koper), the construction of wind power plants in the areas of Kras and Ilirska Bistrica (Volovja reber, Kokoška, Vremščica, etc.). Other significant development initiatives, which may affect the landscape features, are the arrangement of golf courses (especially in the Kras area – Lipica, Divača and near the coast) and the construction of water reservoirs (e.g. Padež).
 - In this connection, it should be emphasised that there are many large areas of nature preservation in the region and the same applies also to the cultural heritage protection areas and water protection areas, all of which may reduce the economic development of so far insufficiently developed parts of the region, which should be avoided by the introduction of appropriate measures and mechanisms, in particular on national and regional levels.

Tourism and leisure activities

- Due to favourable climate, geostrategic position, natural and cultural values as well as the already established tourist infrastructure, the entire region has great potentials for the development of tourism and leisure activities.
- With the exception of the narrow coastal strip and some important tourist points in Kras (Štanjel, Škocjanske jame, Lipica) these potentials are underused. This applies especially to a large part of Slovenian Istra and the area of Ilirska Bistrica, but also Kras; the reasons for such situation are, in addition to poor organisation and inadequate intersectoral cooperation, unsuitable transport connections and defective management of tourist infrastructure and leisure activities.
- Owing to the attractiveness of the sea and the coast and the exceptional spatial constraints (short coastline), the coastal strip is affected by evidently excessive and increasing pressure of guests, which brings about also the need for the arrangement of tourist and holiday facilities. The problems are arising also with regard to public infrastructure, the level of water pollution and the overpopulation of the coast; such trends are already reducing the natural potentials of the coastal part of the region. There is no integrated spatial planning concept, which manifests in unsuitable arrangements and land use and poor exploitation of existing potentials (e.g., saltpans, Palace Hotel), New tourist investments (hotels, marinas) are planned almost exclusively on the coastal strip, while there is a lack of complementary tourist infrastructure (e.g., integrated and regulated coastal footpath, higher level of beach regulation).

- In other parts of the region the natural conditions are not used adequately for the purposes of tourism and recreation, e.g. for golf courses – favourable position, existence of cultural heritage and outstanding natural features (Kras Edge), lack of camps for transit visitors (mobile homes, tents). Advantage is not taken of the fact that a significant part of the region boasts with well preserved traditional man-made environment (e.g., vineyards, orchards) which together with natural values (classical karstic features, Kras Edge, forests, mountain ranges, plateaus) and agriculture represents a high-quality environment for farm tourism and excursion programmes. The potentials for health and youth tourism are also not exploited. Under-utilisation of the existing potentials manifests in the unsuitable state of potentially elite tourist facilities (e.g. Palace Hotel, Lipica, Štanjel) as well as in unregulated tourist routes (wine, fruit, tracking, educational, cycling), which are not integrated in a closed circuit network.
- The opportunities of cross-border and interregional cooperation in the development of tourist offer and marketing of classical karstic features (in Italy and Slovenia) and the sea (Croatia) are also underused.

Agriculture

- In the past, agriculture was the most important economic activity in South Primorska; however, it has lost in significance in most part of the region. In spite of the amelioration of agricultural land in the second half of the 20th century, small plot structure still prevails in the region. Such structure, together with some characteristic forms of production (vineyards, orchards, etc.) creates in some places a man-made environment of exceptional quality, but on the other hand offers poor economic prospects. Good agricultural areas of larger continuous plots are rare, while in many places market-oriented agriculture changes the man-made environment directly due to the measures designed to increase production (enlargement of plots, land improvement, etc.) or indirectly because of the abandonment of farming, which leads to the overgrowing of cultivated land. The loss of agricultural function, as the most important factor in the countryside, and the breakdown of agricultural land results in changed living conditions as well as the settlement morphology and the appearance of man-made environment.
- The classification of land often does not correspond to the actual situation in the field and this may consequently prevent rational urban development.
- Modern approaches to food production (integrated production, ecological agriculture), directed towards sustainable development and the exploitation of special natural conditions (soil, climate, relief), are increasingly gaining importance in the region. Considering the natural structure and climatic situation, the conditions in various parts of the region are suitable for different kinds of farming which development would be reasonable also in the future: wine-growing (Kras, Slovenian Istra), fruit-growing (Brkini, Slovenian Istra), livestock production (Kras – cattle and horse breeding, Slovenian Istra – sheep breeding) and vegetable cultivation or horticulture (Slovenian Istra near the coast). Nevertheless, the region's numerous potentials for agricultural production and other forms of gainful activity remain underexploited (e.g., possibilities for sheep breeding in Slovenian Istra and Kras, vegetable growing, various types of ecological production).
- In Kras and Slovenian Istra, especially on the coastal strip, there is an explicit need for irrigation of agricultural land; the planned water storage at Padež will provide water also for this purpose.
- The analysis of the possibility of agricultural development shows that there are great opportunities for further development of agriculture in South Primorska in conjunction with tourism and recreation and indirectly also with the protection of cultural and natural heritage (farm tourism, thematic paths, educational tourism, renewal of village centres and individual characteristic architectural features, etc.). New development possibilities are opening up for agriculture in nature preservation areas in relation to the compensation for the loss of income due to restrictions (ecological production, consideration of the dynamics of natural processes, etc.).
- The problems of placing greenhouse facilities in physical space.

Forestry

- A large part of the region is covered in woods and forests. The amount of woodlands is increasing due to the abandonment of farming on less favourable land areas. A particularly evident process is the overgrowing of Kras with pine forests resulting in nonindigenous stands in the central part of the region (Kras, Brkini and Slovenian Istra). In the outermost eastern part of the region, the

forests are completely different in appearance as vast beech, fir and mixed forests cover wide areas of Snežnik and Javornik massifs.

- As in the rest of Slovenia, sustainable management of forests has been practiced also in this region.
- It is an important issue that this area is subject to a great fire hazard due to dry and hot sub-Mediterranean climate in combination with degraded sites and the vegetation adapted to both. Traffic corridors, in particular the railway, contribute additionally to the fire hazard.

Extraction of mineral resources

- The supply of the region with technical and natural stone is satisfactory (exploitation areas) and the region has significant potentials in long-term supply of mineral resources (exploitation and research areas for technical and natural stone, flysch and clay). Except for the required rehabilitation of abandoned open mining sites or their parts there are no larger problems with the supply of mineral resources in the region.
- The coastal part of South Primorska is of interest as regards the natural stone especially because of the deposits of grey flysch sandstone. Investment initiatives have arisen in the Municipality of Koper for the exploitation at a number of sites (exploitation of natural stone and rehabilitation or agro-amelioration of delineated deposit sites of flysch sandstone). There are significant clay accumulations to the south of Ilirska Bistrica. In Kras, there is an explicit need for long-term extraction of natural stone for the renewal of cultural heritage buildings.
- Salt production remains important as a specific activity of the coastal area.

INDICATORS

- **Land-use structure**
- **% of cultivated land**
- **Size of nature protection areas (landscape and regional parks in km²)**
- **Number of actively managed areas**
- **Size of protected areas of cultural heritage (areas of complex protection of cultural heritage in km²), number of cultural heritage buildings and areas**
- **Size structure of farms**

3.5 Key observations on the Environment

- A sign of climate change is rising of the sea level along the Slovenian coast, estimated at 1 mm/year. In the next hundred years, greater risk may be expected and more frequent flooding of low-lying parts of coastal towns (Koper, Izola, Piran), particularly where flooding has already been occurring repeatedly every year.
- In the light of expected intensification of maritime transport and nautical tourism, an increasing trend in the content of hydrocarbons in sea sediments can be expected.
- Pollution of the sea with waste waters will continue until the construction of sewage network and waste water treatment plants.
- The situation of water quantity at characteristic flow rates of rivers with direct outflow into the Adriatic Sea indicates that medium flows are falling most markedly; however, the maximum flows are also decreasing. The present conditions point to a reduction of the available water in the region. Additional problems in the provision of adequate quantity of water may result from the change in flow timing observed in the past years, as the periods of high flow in watercourses with rain and rain-snow regimes move to the winter time, while the periods of low flow in summer time are getting longer, thus increasing the risk of long droughts.
- The level of water pollution is especially high in the coastal part due to the high settlement density (residential buildings, holiday and tourist facilities, economic zones) and infrastructure (the Port of Koper, marinas). Most watercourses in the region are not polluted; however, the downstream sections of the Dragonja, Rižana and Reka fall within a lower quality class, which is the result dense settlement and inadequate management of waste water as well as the traffic infrastructure. There is a very clear trend of improving biological and chemical parameters (with the exception of nitrates) in hydrographic basins of Adriatic rivers.

- Pollution of drinking water sources with bacteria can be expected until the construction of sewage network and waste water treatment plants. A high content of heavy metals was determined in sediments of karst springs.
- There is poor flood prevention in some parts of the region in consequence of inadequate regulation of certain torrential streams. In order to secure prevention against high water on agricultural land, regulation was carried out of some watercourses and retention basins built in the past (Mola, Klivnik, Pivol and Triban, and Vanganel Lake in Slovenian Istra).
- With regard to the climatologists' forecasts and the trends in the past decade, droughts can be expected more frequently in the area of South Primorska.
- South Primorska falls within the air pollution level II. Periodically, the permissible values are exceeded, especially as regards the pollutants such as nitrogen oxide (NO₂), particles (PM10) and ozone (O₃). The main air pollution sources are industry, traffic and furnaces. The problem of pollution by ozone and NO_x is becoming increasingly acute and it can be expected that pollution will increase due to local sources (traffic) as well as cross-border pollution.
- Traffic is the main source of noise, burdening especially urban and tourist centres.
- In general, biotic diversity is reducing, as a rule due to ever increasing pressures on species and their habitats.
- On the national scale, fire risk to the environment is exceptionally high in the Kras forest management area. The largest forest areas are destroyed by fire just in this area.
- Slovenian Istra is among the Slovenian regions with the lowest earthquake hazard.

INDICATORS

- **Quality of sea water (trophic index)**
- **Concentration of nitrates and phosphates in coastal waters**
- **Quality of bathing water**
- **Length of natural coast**
- **Number of protected habitats and species**

3.6 Spatial Development of South Primorska without Strategic Action

Potential impacts of the continuation of present development trends by spatial planning segments:

SETTLEMENT (demography, urban network):

- large proportion of old people, reduction in the share of economically active population;
- concentration of activities and population in Slovenian Istra, especially on the coastal strip and partly also in the hilly part of Slovenia Istra;
- migration of the rich to coastal towns (further increase in land and real estate prices) and consequently, reduced accessibility of housing for the young with lower incomes, the purchasing power of the population lags behind the real estate prices;
- further depopulation of the Slovenian Istra hinterland, Kras and the areas in the Municipality of Ilirska Bistrica, urban decay and destruction of architectural heritage, further changes in the use and intended purpose of buildings, transformation of rural settlements into secondary homes;
- continued dispersed building, resulting in increased traffic pressures and poor public utility infrastructure;
- competition between the municipalities with regard to the development of central activities;
- no cooperation between the municipalities and no cross-border cooperation (Trieste, Rijeka);
- + reurbanization of coastal town centres, improved living conditions, renewal of housing stock; however, further moving of service activities from town centres to the suburbs;
- + the coastal towns (conurbation) of Koper, Izola and Piran will not develop intensively as the most important regional centres;
- + improved educational level of the population.

ECONOMY:

- continued concentration of activities in the coastal part of Slovenian Istra; the areas of Kras and Brkini lack jobs and the potential for the development of new economic activities which further increases the development disparities in the region;
- transport infrastructure does not meet the needs of the economy;
- high development and concentration, mass tourism on the coast;
- unused economic zones as a result of unsuitable spatial distribution, inadequate equipment, accessibility and weak entrepreneurial potential;
- orientation to tourism, catering, care services for the old in tourist centres of Slovenian Istra, characterised by low labour productivity;
- + in the areas of Kras, Brkini and Ilirska Bistrica, development will occur of various forms of tourism and recreation in natural environment, the areas of natural values and eco-tourism, but the suppliers will remain unlinked and consequently not visible;
- + accelerated development of the Port of Koper into the leading port of the Northern Adriatic;
- + growth of employment rate, income, and investment in service activities.

TRANSPORT.

- worse condition of regional and local roads and, consequently, reduced accessibility to rural settlements;
- orientation to road transport, further growth of traffic flows, resulting in high burdening of the coastal towns and the coastal strip;
- growth of freight transport;
- sustainable mobility modes will become an unattractive alternative;
- no connection between different transport networks;
- + modernisation of the railway and construction of the second line between Divača and Koper will be carried out; however, there is a risk that the infrastructure will not be fully utilised and that rerouting of cargo to railways will not succeed completely;
- + highly developed road transport infrastructure (motorway), which will follow the fast economic development of the region, especially on the coastal strip;
- + maritime transport will be carried out primarily in the Port of Koper and the newly built passenger terminal;
- + Portorož Airport will become an important passenger terminal for medium passenger and business airplanes.

INFRASTRUCTURE:

- poor exploitation of renewable energy sources (solar, wind and wood biomass);
- in the field of waste management, the agreement on the construction of the 1st order regional centre will not be reached and waste management will continue on local level (in centres of 3rd order);
- + the Padež-Suhorka water source will ensure adequate supply of drinking water for the whole population in the region; other sources which provide water for the existing water supply systems (the source of the Rižana River, Gradole, Brestovica, Nanos water sources, Bistrica spring) remain in use, but the protection regimes in water protection areas are not implemented consistently;
- + treatment of urban and industrial waste waters will be adequately regulated and in accordance with stringent criteria applied to vulnerable areas.

LAND USE:

- the process of agricultural land overgrowing will take place especially in the areas of Kras and Brkini;
- intensive agricultural production (e.g., vegetables in greenhouses) will be carried out only on economically justifiable areas (best land, near to markets);
- the first areas of agricultural land make rational development of activities impossible;
- great pressure is asserted to meet the needs of tourism and holiday capacities in the coastal area;
- reducing of green space in urban and surrounding areas;
- + numerous and large areas intended for the preservation of nature and the protection of cultural heritage, but which are not managed and protected actively, great pressures on these areas due to the still prevailing opinion that that are merely constraints and not development opportunities,
- + the Padež-Suhorka water source will ensure enough water for irrigation of agricultural land;

- + increase of agricultural land included in ecological production.

ENVIRONMENT:

- the problem of air pollution remains, especially with especially with nitrogen oxide (NO₂), particles (PM10) and ozone (O₃) mainly due to traffic and cross-border pollution;
- increased flood risk in the coastal area resulting from the rising of the sea level and due to inadequate flood prevention measures taken on watercourses;
- overburdening with noise in residential and tourist areas;
- increased burdening of the environment with light;
- further reducing of biotic diversity;
- deterioration in the quality of the sea due to increased maritime traffic;
- more frequent occurrence of agricultural droughts;
- + Improvement in the quality of the sea, surface and underground waters as a result of appropriate waste water management.

4. VISION, OBJECTIVES AND STRATEGY OF SPATIAL DEVELOPMENT OF SOUTH PRIMORSKA

The Conception of Spatial Development of South Primorska sets out common strategic directions, which on the one hand support the implementation of the key objectives and projects of the Regional Development Programme of South Primorska 2007–2013, the Spatial Development Strategy of Slovenia and the Spatial Order of Slovenia and on the other hand, steers municipal activities affecting the competitiveness of the region, the quality of living and the environmental protection as the basic elements of sustainable development. In addition, the Conception of Spatial Development notifies the national development stakeholders about the fundamental interests of the region and the international financial programmes participating financially in the implementation of key regional projects.

The Conception of Spatial Development stems from the fact that South Primorska is a diverse area as regards its socio-economic, natural, cultural and environmental features (Slovenian Istra, Kras, the area of Ilirska Bistrica). Diversity implies differing needs and potentials for the development of particular places and areas of the region.

The proposal of a vision and long-term objectives of spatial development is worked out on the basis of key development trends and spatial planning projection, without strategic action. The spatial development strategy, under the working title “Sustainable Strategy of Spatial Development” has been formulated for the achievement of the set objectives.

4.1 Vision

“The spatial development of South Primorska supports sustainable welfare, equitable distribution of benefits and high quality of life while protecting and strengthening natural, spatial and cultural property.”

4.2 Objectives of Spatial Development

1. To increase the competitiveness of the region

- Establishment of competitive cross-border polycentric network of settlements
- Establishment of competitive rural areas with a high quality of life
- Improved internal and external interaction of the region

2. To improve the quality of life in the region

- Strengthening of sustainable communities (towns)
- Strengthening the identity and attractiveness of the region
- Sustainable management of natural resources

4.3 Sustainable Spatial Development Strategy

The strategy of sustainable spatial development is based on the cooperation between the municipalities, the State and other partners, and on cross-border cooperation in the following priority areas: promotion of regional development, spatial positioning of regionally significant functions and management of protected areas and natural resources. Partnership will play the key role and it will be established on the basis of the Promotion of Balanced Regional Development Act (Regional Council, Regional Development Council, thematic partnerships).

The most important instruments of sustainable development strategy will be as follows:

- economic and regulative municipal instruments: the need should be emphasised for the harmonisation of these two instruments on the regional level in order to achieve specific objectives as well as the development of instruments and the use of all intrinsic potentials;
- harmonised municipal spatial and land policies on the regional level, representing a guaranty of protection of spatially related natural and cultural property and at the same time an instrument for fostering the competitiveness of the region, resulting in development and generation of additional financial resources on the local level;
- partnership between public and private sectors as a promising instrument of sustainable spatial development because it involves many areas where public and private interests meet;
- transparent functioning and public participation in order to timely settlement of conflicts and to motivate the largest possible number of stakeholders on the regional level;
- preliminary evaluations and assessments (such as feasibility studies, cost-benefit analyses, strategic environmental impact assessment, assessment of environmental carrying capacity, etc.) to ensure the compliance with sustainable development, efficient and effective implementation of programmes laid down and timely solving of conflicts;
- cooperation and coordination between municipalities, between municipalities and the State, cooperation with the EU institutions and cooperation and integration with neighbouring regions (notwithstanding the national borders) in the field of project financing and to exchange experience.

5. APPENDIX – ANALYSIS OF SPATIAL VULNERABILITY AND ATTRACTIVENESS

5.1 Vulnerability Analysis

The Vulnerability Analysis has been made to serve as supporting expert groundwork in preparation of the CSD of South Primorska. The analysis of vulnerability is a tool intended to ensure the consideration of environmental protection aspects in the preparation of spatial planning documents of the region and individual municipalities, and has as such been increasingly gaining ground in Slovenia over the last years. The formal basis and the demand for preparation of vulnerability analysis are laid down in the Spatial Order of Slovenia (OG RS, No. 122/04). The fundamental goal of the vulnerability analysis is the formulation of strong, professionally reasoned starting points for the preparation of spatial documents or for deciding on spatial development, which should contribute towards a coherent realization of development and protection goals.

As agreed with the contracting entities and the representatives of municipalities at the workshop on 8 March 2005, the spatial vulnerability analysis of South Primorska is oriented towards the examination of spatial vulnerability arising from economic activities, holiday houses, golf courts and outdoor recreation. As the identification of golf course sites is of high interest at the present time, a golf attractiveness model is added to the vulnerability analysis.

The method and scope of the vulnerability analysis, which has, under the new legislation, become an important element of expert groundwork for ensuring environmental protection goals in spatial planning documents, are only tentatively defined in the Spatial Order of Slovenia (OG RS, No. 122/04). For this reason, a method of approach was chosen, which had already proven to be quite efficient in the preparation of the Spatial Vulnerability Study for the Spatial Development Strategy of Slovenia and also in some other studies of this type, prepared for some Slovenian municipalities or their parts. The method comprises the definition of vulnerability models and the calculation and graphical presentation of spatial vulnerability for the most important development activities.

After obtaining the data base, which we created in the cooperation with the Ministry of the Environment and Spatial Planning (MESP), the working material was drawn up in February 2005 – models and vulnerability maps for all four activities (economic activities, holiday houses, golf courts and outdoor recreation). We wanted to check the adequacy of models and vulnerability maps at the workshop with the presence of the representatives of municipalities and experts who are faced with environmental protection issues in their work (nature preservation, protection of open space as a natural resource, and protection of the quality of living) in the area of South Primorska. Therefore, the working material of the vulnerability analysis was forwarded to all municipalities and both contracting entities (RDC Koper and MESP) as the basis for discussion at the workshop on 25 April 2005. The comments made at the workshop and later, until the conclusion of the 2nd phase report preparation, were studied and taken into consideration by analogy and the corrections of models and vulnerability maps were made accordingly. A technical error in the indication of the vulnerability levels of salt pans and the Škocjanski zatok was eliminated, spatial vulnerability models for economic activities were corrected, and the existing tourist points were taken into consideration in determining the attractiveness of space for golf.

Method of approach:

Vulnerability characterisation is carried out through the procedure of data overlapping and the calculation of vulnerability levels in individual spatial units (cells of 25 m x 25 m). A value (estimate) is ascribed to each mapped spatial feature (category); the value should then be added to the integrated vulnerability map (Environmental Vulnerability Study for the Spatial Plan (EVSSP) – Draft Vulnerability Models for Each Activity Separately, Synthetic Section, 1997, p. 20).

The following scale was drawn up for estimating the potential spatial impacts of activities:

- 1 = no or negligible impact
- 2 = moderate impact

- 3 = significant impact
- 4 = highly significant impact
- 5 = impermissible impact – exceeding the threshold

In the procedure of vulnerability characterisation, the data used and estimated are integrated by means of matrix method, by the maximum rule, which means that the highest value in the combination of estimates is transferred into the final result. When considering the nature's vulnerability due to various activities, the populated areas are defined as invulnerable and their estimate prevails in the pooling of estimates.

The final vulnerability is determined by pooling the final results of the nature's vulnerability models, the vulnerability of open space as a natural resource, and the vulnerability of residential environment. The pooling is conducted on the principle of maximum value.

The results of the vulnerability study are shown in maps prepared in a digital form, namely in geo-coded .bmp and .grd (ProVal) formats.

Content of the Spatial Vulnerability Study of South Primorska

In line with the established practice, the vulnerability study covers the activities assumed to be introduced in the planning area. The analysis of the situation, problems and development possibilities in the field of spatial planning indicates that it is prudent to make a vulnerability study for South Primorska for four activities, namely:

- spatial vulnerability due to economic activities,
- spatial vulnerability due to summer houses,
- spatial vulnerability due to outdoor recreation, and
- spatial vulnerability due to golf courts.

Platform for spatial vulnerability study:

In defining the spatial vulnerability, we ensue from three aspects of environmental protection, which are environmental protection in terms of its originality or the preservation of nature, protection of natural resources, and protection of the human residential environment. For easier implementation and understanding of the results, the vulnerability model is composed of sub-models for each individual activity – the vulnerability model of nature (because of its complexity, this model is described by individual environmental components, but the model is common), the vulnerability model of open space as a natural resource, and the vulnerability model of residential quality.

Each sub-model is composed on the basis of available data and on the basis of impact assessment of each activity on individual spatial components. Each data is evaluated – the vulnerability level or the extent of impact of a particular activity on the considered environmental component, is adjusted to it.

a) Nature Vulnerability Model

The nature vulnerability model derives from the assumption that each task, which indirectly or directly changes the natural forms of the geophysical environment, water, atmosphere and biosphere, indicates a negative influence on nature. The vulnerability level of each environmental component depends on natural preservation, rarity and exceptionality of the component, sensitivity to interventions according to the regeneration and carrying capacities of the component, and on the size and character of the intervention.

The nature vulnerability models for individual activities include data on natural values, ecologically important areas, Natura 2000 special protection areas, and protected nature areas for identifying the complexity and the qualities of nature. In evaluation, remoteness zones are added to the point phenomena, which are identified as natural values or ecologically important areas. Construction of facilities or implementation of activities, which may influence the more valuable natural phenomena, is not desirable in the direct vicinity of these phenomena. The vulnerability of these areas descends with

their remoteness from the phenomena. Bearing in mind the quality and the duration of man/nature interaction, the extent of activity impacts on landscape and regional parks is determined in compliance with the derogation of activity development from the existing state/form of an individual activity implementation and their influence on the change of landscape patterns.

The model comprises also the information on forest areas, as forests represent the largest ecosystem composed of vegetation and animal associations. Activities or interventions, which result in change or elimination of the surface cover, have significant influence on the forest because this means the changing of the forest vegetation due to change of complex biosphere characteristics. The most vulnerable are protective forests and forest with special purpose, and forests with underlined ecological functions.

In addition to natural resources, steep slopes are also included in nature vulnerability models to demonstrate the vulnerability of geosphere. The necessary changes of the relief are greater when an activity needs a larger closed adjusted surface. All steeper areas need to be flattened, banked up or in some other way redesigned (e.g. terraces) if we wish to build on them. That is the reason why the steepest areas are the most vulnerable ones. Steep slopes may define also the absence of human activity and by that a potentially bigger natural preservation.

In order to identify the vulnerability of hydrosphere, the model includes also the data on watercourses and the areas liable to erosion and flood. Individual activities influence watercourses in different ways; their potential impacts are usually shown in the need for the regulation of watercourses and, in particular, in the contamination of watercourses.

Spatial vulnerability in erosion areas depends on the level of anti-erosion measures, which need to be taken into consideration at spatial intervention, and on the size of interventions for ensuring suitable land for the implementation of individual activities. Most vulnerable are the areas where strict anti-erosion protection is necessary and the areas where the centres of erosion occur.

Flood protective measures are necessary in flood areas in case of the development of different activities in these areas. This means the changing of natural conditions in the area. Spatial vulnerability in flood areas depends on the frequency of floods.

The nature vulnerability models include also the data on altitudes. We can define the absence of human activity and by that a potentially bigger natural preservation with altitudes, similarly as for steep slopes. With higher altitudes, harder and consequently more vulnerable ecological conditions appear – both for plants and animals. In models, the vulnerability rises with altitudes.

In the case of nature vulnerability, the populated areas are defined as invulnerable.

b) Vulnerability model of open space as a natural resource

The vulnerability model of open space as a natural resource is built on the assumption that spatial interventions may cause changes in the relief and the surface cover and therefore reduce the potential for other kinds of physical use of space. The vulnerability model of space as a natural resource is built in a way that all potential uses of space are represented, which the addressed activity or intervention may significantly impair.

The vulnerability models of space as a natural resource are presented with data on agricultural areas, forest areas, water resources protection areas, and mineral sites.

Individual activities influence the potentials of agricultural areas mainly through the change of land use at the construction of facilities, which results in a direct destruction of agricultural areas or temporary limitation of land use. Functioning of facilities or their emission of substances into the environment constitutes a potential possibility of land pollution. Areas with the highest growing potential are the most vulnerable ones.

Within the framework of space as a natural resource we only address the production functions of a forest, which include the production of timber and other forest goods, and the hunting function. Forest

production functions are affected primarily by interventions, which are connected with the elimination of the surface cover. The vulnerability of forests as a natural resource increases with the size of the growing stock or with the importance of forest production functions.

Activities, which result in emissions, influence mainly the water resources. Pollution may be so severe that it destroys the water resource. The vulnerability of water resources depends on the flow rate and water quality. The higher the flow rate and the cleaner the water, the more vulnerable is the water source. Water protection areas are established for the purpose of protecting water resources from pollution or other forms of burdening, which could impact the wholesomeness of waters or its quantity assigned to water resources, which are used or are designed for public drinking water supply. According to the protection level of an individual water resource, the water protection areas are divided internally to areas with different protection levels. The activities, which could endanger the quantity or quality status of water resources may be limited or prohibited. The vulnerability of water resources in water protection areas relies on their protection level.

Activities in the areas of minerals extraction or potential areas of minerals extraction have an impact in particular if they bring about changes in land use, especially if interventions in the matrix rock are necessary. The consequences of such impacts may be temporary limitation of potential minerals extraction, removal of the matrix rock, and in the worst case, the destruction of mineral sites. Considering that it is not possible to determine the availability of mineral types in the area or their frequency of occurrence from the available data, the same vulnerability is assigned to all identified areas.

c) Vulnerability model of residential quality

The vulnerability model of residential quality for each activity is built on the assumption that the implementation of an activity will cause disturbances in the residential environment, mainly as regards the pollution and the changes in landscape features.

The pollution of hydrosphere and biosphere is included in the identification of vulnerability of natural elements of the environment in the vulnerability models of nature and space as a natural resource.

The vulnerability of residential qualities is in the part, which addresses the atmosphere and the not-noisy environment, conditional to the closeness of settlements. Residential qualities are all the more vulnerable the closer to interventions, which cause these influences, are carried out.

In the vulnerability model of residential quality – landscape features – the areas of quality landscape structure are defined as more vulnerable. Several types of interventions impact the landscape features – changes in relief, surface cover and, in particular, the occurrence of facilities in physical space. The vulnerability of landscape features depends on the cultural value of areas and on other social values. The higher the cultural or social value of an area all the more vulnerable it is. The model assumes that vulnerability declines with the remoteness from populated areas and that is greater in areas with high cultural qualities.

The data on cultural heritage, exceptional landscapes and forest areas with special social functions are included in the vulnerability model of residential quality for the evaluation of landscape features.

The vulnerability of the atmosphere and the protection of settlements against noise arising from the implementation of individual activities are presented by the information on settlements, taking into account also the remoteness zones. The width of these zones depends on the nature of an intervention and the extent of the impact an intervention may have on the atmosphere.

5.1.1 Spatial Vulnerability Model Due to Economic Activities

The model is built on the assumption that it is reasonable, within the framework of impacts of economic activities on the environment, to examine the impacts resulting from the construction of industrial, trade and other facilities necessary for the development of economic activities and also those caused during their operational phase. Extensive land developments such as the removal of surface cover, changing the relief, interventions in aquatic and riparian environments occur during the construction phase. All activities regarding construction are accompanied by noise pollution caused by the machinery. Operation of these facilities, i.e. implementation of economic activities, influences mainly the quality of environmental elements. The facilities with manipulation surfaces, which are normally extensive physical structures occupying a large space, also have impact on the potentials for the use of natural resources.

In general, negative impacts of economic activities on the environment are similar to those caused by human settlement, but are usually spatially wider and more extensive already during the construction and especially in the operational phase.

Table 9: Nature vulnerability model due to economic activities

DATA	CATEGORIES	ESTIMATE
Valuable natural features		
	Valuable natural feature – area	5
	Valuable natural feature – point, monument	5
	up to 50 m from the valuable natural feature – point, monument	4
	50 – 100 m from the valuable natural feature – point, monument	3
	100 – 250 m from the valuable natural feature – point, monument	2
Ecologically important areas		
	Ecologically important areas	3
	Ecologically important areas – caves	5
	250 m remoteness zone from the ecologically important areas – caves	5
	Bear area	2
	Sea and the riparian zone	4
Natura 2000 special protection areas		
	Natura 2000 special protection areas	4
Protected nature areas		
	Natural monument	5
	Nature reserve	5

	Monument of man-made natural heritage	5
	Landscape park	3
	Regional park	3
Forest		
	Forest with special ecological functions of level 1	3
	Forest with special ecological functions of levels 2 and 3	2
	Protective forest	5
	Forest reserve	5
Erosion areas		
	Strict anti-erosion protection	5
	Areas where more demanding anti-erosion measures are necessary	4
	Areas where normal anti-erosion measures are necessary	2
Erosion centres		
	Erosion centres with a 250 m zone	4
Flood areas		
	Frequent floods	5
	Rare floods	4
Coastal zone		
	0 – 100 m from the sea	5
	100 – 250 m from the sea	4
	250 – 500 m from the sea	3
	500 – 1000 m from the sea	2
Water courses		
	Watercourse	3
Quality of water courses		
	Natural watercourses, partially natural watercourses, environment-friendly regulated watercourses	5
	Technically regulated watercourses, partially rigidly regulated watercourses, rigidly regulated	3

	watercourses	
Altitudes		
	0 – 400 m (plains and valleys)	1
	400 – 600 m (sub-mountainous zone)	2
	600 – 1000 m (mountainous zone)	3
	above 1000 m (high mountainous zone)	4
Steep slopes		
	0 – 5 %	1
	5 – 15 %	2
	15 – 30 %	3
	30 – 45 %	4
	Over 45 %	5
Settlements		
	Settlements	1

Table 10: Spatial vulnerability model due to economic activity

DATA	CATEGORIES	ESTIMATE
Potentials for agricultural land		
	Land not suitable for agriculture	1
	Land little suitable for agriculture	2
	Land semi suitable for agriculture	3
	Land suitable for agriculture	4
	Land very suitable for agriculture	5
Forest		
	Forest with special production functions of level 1	3
	Forest with special production functions of levels 2 and 3	2
Water source protection areas		
	Catchment areas with a 100 m zone	5
	Level I water source protection area	5
	Level II water source protection area	4

	Level III water source protection area	3
Mineral sites		
	Mineral sites with a 100 m zone	3
The sea		
	The sea	4

Table 11: Residential quality vulnerability model due to economic activity

DATA	CATEGORIES	ESTIMATE
Remoteness from settlements		
	Settlement	3
	0 - 100 m	2
Cultural heritage objects		
	CH object with a 50 m zone	5
	Area of 50 m around CH object	4
Cultural heritage areas		
	Cultural heritage area	4
Exceptional landscapes		
	Exceptional landscapes	5
Forest		
	Forest with special social functions of level 1	3
	Forest with special social functions of level 2	2
The sea		
	The sea	4
Coastal zone		
	0 – 100 m from the sea	5
	100 – 250 m from the sea	3
	250 – 500 m from the sea	2

5.1.2 Spatial Vulnerability Due to Holiday Houses

The model is built on the assumption that the impacts of construction and the use of holiday houses have impact on the space, similarly as settlement (placement of settlements in space, both in functional and design senses). In the area of South Primorska, the development of new holiday settlements is not foreseen, but some new neighbourhoods are expected to be created in the outskirts of the existing building lands and a larger number of smaller gap fillings in the existing human settlements and on its edges, but mainly the change in the use of the existing housings. In this model, only the environmental impacts caused by the spread and density of the existing settlements and dispersed settlement are addressed.

Holiday houses impact the environment in the construction phase and after completion of construction. Land preparation interventions comprising the removal of surface cover, changing the relief, interventions in aquatic and riparian waterside environments occur in the construction phase. All activities related to construction are accompanied by noise pollution, which is caused by the machinery. After completion of construction, the impacts of holiday houses are limited mainly to the pollution of waters and the changes in visible qualities of the physical space, which also influences the physical space as a natural resource.

Table 12: Nature vulnerability model due to holiday houses

DATA	CATEGORIES	ESTIMATE
Valuable natural features		
	Valuable natural feature – area	4
	Valuable natural feature – point, monument	5
	up to 50 m from the valuable natural feature – point, monument	3
	50 – 100 m from the valuable natural feature – point, monument	2
Ecologically important areas		
	Ecologically important areas	2
	Ecologically important areas – caves	4
	100 m remoteness zone from the ecologically important areas – caves	3
Natura 2000 special protection areas		
	Natura 2000 special protection areas	3
Protected nature areas		
	Natural monument	5
	Nature reserve	5
	Monument of man-made nature	4
	Landscape park	3

	Regional park	3
Forest		
	Forest with special ecological functions of level 1	3
	Forest with special ecological functions on level 2 and 3	2
	Protective forest	5
	Forest reserve	5
Erosion areas		
	Strict anti-erosion protection	4
	Areas where more demanding anti-erosion measures are necessary	3
	Areas where normal anti-erosion measures are necessary	2
Erosion centres		
	Erosion centres with a 250 m zone	4
Flood areas		
	Frequent floods	5
	Rare floods	4
Coastal zone		
	0 – 100 m from the sea	5
	100 – 250 m from the sea	3
	250 – 500 m from the sea	2
Watercourses		
	Watercourse	4
Quality of watercourses		
	Natural watercourses, partially natural watercourses, environment regulated water courses	4
	Technically regulated water courses, partially rigidly regulated watercourses, rigidly regulated watercourses	3
Altitudes		
	0 – 400 m (plains and valleys)	1

	400 – 600 m (sub-mountainous zone)	2
	600 – 1000 m (mountainous zone)	3
	above 1000 m (high mountainous zone)	4
Steep slopes		
	0 – 5 %	1
	5 – 15 %	2
	15 – 30 %	3
	30 – 45 %	4
	Over 45 %	4
Settlements		
	Settlements	1

Table 13: Spatial vulnerability model due to holiday houses

DATA	CATEGORIES	ESTIMATE
Potentials for agricultural land		
	Land not suitable for agriculture	1
	Land little suitable for agriculture	1
	Land semi suitable for agriculture	2
	Land suitable for agriculture	3
	Land very suitable for agriculture	4
Forest		
	Forest with special production functions of level 1	3
	Forest with special production functions of levels 2 and 3	2
Water source protection areas		
	Catchment areas with a 100 m zone	5
	Level I water source protection area	4
	Level II water sources protection area	3
	Level III water sources protection area	2

Mineral sites		
	Mineral sites with a 100 m zone	2

Table 14: Residential quality vulnerability model due to holiday houses

DATA	CATEGORIES	ESTIMATE
Remoteness from settlements		
	0 – 100 m from a settlement (outskirt settlements)	2
Cultural heritage objects		
	CH object with a 50 m zone	5
	Area of 50 m around a CH object	2
Cultural heritage areas		
	Cultural heritage area	3
Exceptional landscapes		
	Exceptional landscapes	3
Forest		
	Forest with special social functions of level 1	2
Coastal zone		
	0 – 100 m from the sea	5
	100 – 250 m from the sea	3
	250 – 500 m from the sea	2

5.1.3 Spatial Vulnerability Due to Outdoor Recreation

The model is built on the assumption that recreation is a leisure-time activity, which takes place outside the home and is mainly or just partially intended for recovering human psychical and physical strength. Besides sports activities, these are also other activities for relaxation, rest and recovery of physical and mental strength.¹ Due to the reduction of working hours and increased mobility of the population, a growing interest in relaxation and recreation may be expected in the future, which will result in the increased demand for space. Already now, we can speak about a trend of quantitative growth in the development of recreation (a relative proportion of people involved in recreation is growing and the recreational migrations are increasing) and the quality development (numerous and

¹ Jeršič M., Zasnova športa v prostoru - projekt št. 3: Proučitev rekreacijskih navad za potrebe prostorskega planiranja, Inštitut za geografijo, oktober 1995

various recreational activities, demand for larger recreational areas, etc.)². Therefore, it is important to address outdoor recreation as an important activity, which will take place in various parts of South Primorska.

For most recreation types, quality environment is a condition for its operation and development. Environmental conditions, experiential potentials and landscape suitability for implementing the activities are essential for determining the areas suitable for such activities to take place. However, particular infrastructure is needed for the implementation of recreational activities.

Walks in the nature, mountain hiking and trips, running, sightseeing, swimming in a natural environment, waterside recreation, cycling, horseback riding, picnics, gathering of forest fruits are the recreational types tied to the open landscape and taking place "in the green", in/by the water", "in/by the forest". For their operation they need a certain kind of infrastructure but interventions linked to it are of smaller dimensions. It concerns individual hospitality and accommodation facilities, network of marked footpaths, view points, access to water, arrangement of smaller parking spaces, and installation of small urban equipment and information boards, etc. The interventions required for the arrangement of supportive facilities are small; they mostly take place on the land most suitable for interventions and do not require larger construction and planning works (e.g. parking spaces can be arranged at widened road verges). From the viewpoint of addressing the environmental impacts it is necessary to mention an increased presence of people in the natural environment, which can be more disturbing than spatial physical interventions.

Table 14: Nature vulnerability model due to outdoor recreation

DATA	CATEGORIES	ESTIMATE
Valuable natural features		
	Valuable natural feature – area	3
	Valuable natural feature – point, monument	4
	up to 50 m from the valuable natural feature – point, monument	2
Ecologically important areas		
	Ecologically important areas	2
	Ecologically important areas – caves	3
Natura 2000 special protection areas		
	Natura 2000 special protection areas	3
Protected nature areas		
	Natural monument	4
	Nature reserve	4
	Monument of man-made nature	2
	Landscape park	2
	Regional park	2

² Jeršič M., Zasnova športa v prostoru - projekt št. 3: Proučitev rekreacijskih navad za potrebe prostorskega planiranja, Inštitut za geografijo, oktober 1995, str. 34

Forest		
	Forest with special ecological functions of level 1	3
	Forest with special ecological functions of levels 2 and 3	2
	Protective forest	4
	Forest reserve	4
Erosion areas		
	Strict anti-erosion protection	3
	Areas, where more demanding anti-erosion measures are necessary	2
Erosion centres		
	Erosion centres with a 100 m zone	3
Flood areas		
	Frequent floods	3
	Rare floods	2
Coastal zone		
	0 – 100 m from the sea	3
	100 – 250 m from the sea	2
	to 250 m into the sea	3
	250 – 500 m into the sea	2
Watercourses		
	Watercourse	4
Quality of watercourses		
	Natural watercourses, partially natural watercourses, environment regulated water courses	4
	Technically regulated water courses, partially rigidly regulated watercourses, rigidly regulated watercourses	3
Altitudes		
	0 – 400 m (plains and valleys)	1
	400 – 600 m (sub-mountainous zone)	2
	600 – 1000 m (mountainous zone)	3

	above 1000 m (high mountainous zone)	4
Steep slopes		
	0 – 15 %	1
	15 – 30 %	2
	30 – 45 %	3
	Over 45 %	4
Settlements		
	Settlements	1

Table 15: Spatial vulnerability model due to outdoor recreation

DATA	CATEGORIES	ESTIMATE
Potentials for agricultural land		
	Land not suitable for agriculture	1
	Land little suitable for agriculture	1
	Land semi suitable for agriculture	1
	Land suitable for agriculture	2
	Land very suitable for agriculture	3
Forest		
	Forest with special production functions of level 1	3
	Forest with special production functions of levels 2 and 3	2
Water source protection areas		
	Catchment areas with a 100 m zone	3
	Level I water source protection area	3
	Level II water sources protection area	2

Table 16: Residential quality vulnerability model due to outdoor recreation

DATA	CATEGORIES	ESTIMATE
Cultural heritage objects		
	CH object with a 50 m zone	2
Cultural heritage areas		
	Cultural heritage area	3
Exceptional landscapes		
	Exceptional landscapes	3
Coastal zone		
	0 – 100 m from sea	3
	100 – 250 m from s	2

5.1.4 Spatial Vulnerability Due to Golf Courts

The model is built on the assumption that arranging of golf courts means a big intervention into the nature involving the transformation reformation of the relief, the input of non-indigenous species, a total change in water regime and the soil, and subsequently big changes in visible landscape features, which are however, not very visually exposed due to the levelled or mildly undulating relief. Operation of golf courts with the associated infrastructure brings about the presence of visitors, parking of vehicles, and also regular maintenance of more or less monocultural grassland and consequently disturbances in the natural environment. Due to the demand for vast areas, arranging of golf courts is significantly reducing the potential of space for other uses, e.g. agriculture.

Table 17: Nature vulnerability model due to golf courts

DATA	CATEGORIES	ESTIMATE
Valuable natural features		
	Valuable natural feature – area	4
	Valuable natural feature – point, monument	5
	up to 50 m from the valuable natural feature – point, monument	4
	50 – 100 m from the valuable natural feature – point, monument	3
	100 – 250 m from the valuable natural feature – point, monument	2
Ecologically important areas		
	Ecologically important areas	2
	Ecologically important areas – caves	4
	Bear area	2
Natura 2000 special protection areas		
	Natural 2000 special protection areas	4
Protected nature areas		
	Natural monument	5
	Nature reserve	5
	Monument of shaped nature	4
	Landscape park	3
	Regional park	3
Forest		
	Forest with special ecological functions of level 1	3

	Forest with special ecological functions of levels 2 and 3	2
	Protective forest	5
	Forest reserve	5
Erosion areas		
	Strict anti-erosion protection	4
	Areas, where more demanding anti-erosion measures are necessary	3
	Areas, where normal anti-erosion measures are necessary	2
Erosion centres		
	Erosion centres with a 250 m zone	4
Flood areas		
	Frequent floods	5
	Rare floods	4
Coastal zone		
	0 – 100 m from the sea	5
	100 – 250 m from the sea	3
	250 – 500 m from the sea	2
Watercourses		
	Watercourse	3
Quality of watercourses		
	Natural watercourses, partially natural watercourses, environment regulated water courses	4
	Technically regulated water courses, partially rigidly regulated watercourses, rigidly regulated watercourses	3
Altitudes		
	0 – 400 m (plains and valleys)	1
	400 – 600 m (sub-mountainous zone)	2
	600 – 1000 m (mountainous zone)	3
	above 1000 m (high mountainous zone)	4

Steep slopes		
	0 – 5 %	1
	5 – 10 %	2
	10 – 15 %	3
	15 – 45 %	4
	Over 45 %	5
Settlements		
	Settlements	1

Table 18: Spatial vulnerability model due to golf courts

DATA	CATEGORIES	ESTIMATE
Potentials for agricultural land		
	Land not suitable for agriculture	1
	Land little suitable for agriculture	2
	Land semi suitable for agriculture	3
	Land suitable for agriculture	4
	Land very suitable for agriculture	5
Forest		
	Forest with special production functions of level 1	3
	Forest with special production functions of levels 2 and 3	2
Forest		
	Forest	3
Water source protection areas		
	Catchment area	5
	Level I water source protection area	5
	Level II water source protection area	4
	Level III water source protection area	3
Mineral sites		
	Mineral sites	2

Table 19: Residential quality vulnerability model due to golf courts

DATA	CATEGORIES	ESTIMATE
Cultural heritage objects		
	CH object with a 50 m zone	5
	Area of 50 m around CH object	2
Cultural heritage areas		
	Cultural heritage area	3
Exceptional landscapes		
	Exceptional landscapes	4
Forest		
	Forest with special social functions of level 1	2

5.2 Attractiveness Analysis

According to the agreement with the contracting authorities, the analysis of spatial attractiveness for golf courses was made for the purposes of the CSD of South Primorska, due to the growing interest in such activities in the region. It is an activity, which has specific spatial demands.

The attractiveness analysis was carried out with the same data base and the same working tool (ProVal) as the vulnerability analysis.

The spatial attractiveness model for golf courts is built on the assumption that the most attractive land for golfing are plains and mildly undulating relief, in medium distance from settlements and important traffic routes and in the areas easily accessible from the local road network. Agricultural land, in extensive use and overgrowing, as also intense meadows are evaluated as more attractive, while permanent plantations are less attractive for arranging of golf courts. An important information in defining the spatial attractiveness is also the closeness of water resources.

Table 20: Spatial attractiveness model for golf courts

DATA	CATEGORIES	ESTIMATE
Steep slopes		
	0 – 5 %	5
	5 – 10 %	4
	10 – 15 %	3
	15 – 20 %	2
	Over 20 %	1

Actual use of physical space		
	Intense meadows	5
	Land in overgrowing	5
	Extensive meadows	5
	Extensive orchards	4
	Mixed use	3
	Fields and gardens	3
	Fruit tree plantations	2
	Vineyards	2
	Olive plantations	2
	Forest tree plantations	2
	Other permanent plantations	2
Catchment of water resources		
	0 – 500 m from catchment of water resources	5
	500 – 1000 m from catchment of water resources	4
	1000 – 1500 m from catchment of water resources	3
	1500 – 2000 m from catchment of water resources	2
	Over 2000 m from catchment of water resources	1
Distance from main and regional roads and motorways		
	0 – 50 m from road	1
	50 – 100 m from road	2
	100 – 300 m from road	3
	300 – 500 m from road	4
	500 – 1500 m from road	5
	More than 1500 m from road	0
Distance from local roads		
	0 – 100 m from road	1
	100 – 200 m from road	2
	More than 200 m from road	0

Distance from settlements		
	0 – 250 m from settlement	1
	250 – 500 m from settlement	2
	500 – 750 m from settlement	3
	750 – 1000 m from settlement	4
	1000 – 3000 m from settlement	5
	More than 3000 m from settlement	0
Distance from tourist centres		
	0 - 5 km	5
	5 – 10 km	4
	More than 10 km	0

Compilation of data

Matrix 1

Actual use of physical space / Steep slopes

	1	2	3	4	5
1	1	1	1	2	3
2	1	2	2	3	3
3	1	2	3	4	5
4	1	2	4	4	5
5	1	3	4	5	5

Matrix 2

Catchment of water resources / Matrix 1

	1	2	3	4	5
1	1	1	2	3	4
2	1	2	3	4	5
3	1	3	3	4	5
4	1	3	4	4	5
5	1	3	4	5	5

Matrix 3

Distance from main and regional roads and motorways / Matrix 2

	1	2	3	4	5
0	1	2	3	4	5
1	1	1	1	1	1
2	1	1	1	2	3
3	1	1	2	2	3
4	1	2	2	3	4
5	1	2	3	4	4

Matrix 4

Distance from local roads / Matrix 3

	1	2	3	4	5
0	1	2	3	4	5
1	1	1	1	2	3
2	1	1	2	3	4

Matrix 5

Distance from settlements / Matrix 4

	1	2	3	4	5
0	1	2	3	4	5
1	1	1	2	2	3
2	1	2	2	3	3
3	1	2	3	3	4
4	1	2	3	4	4
5	1	3	4	5	5

Matrix 6

Distance from tourist centres / Matrix 5

	1	2	3	4	5
0	1	1	2	3	4
4	1	2	3	4	5
5	1	3	4	5	5