SLOVAKIA:

from *Landscape Atlas*
towards *Landscape Typology*

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The current need - to unify the view of the distinctiveness and diversity of the Slovak landscape types and their sustainable use
Where are we?

Why do we need to move forward?

**Landscape Atlas**
- in 2002
- a new source of information in the field of natural and social sciences
- a unique work that presented the scientific view of the landscape
- Scale:
  - 1 : 500 000
  - 1 : 750 000
  - 1 : 1 000 000
  - 1 : 1 500 000
  - 1 : 2 000 000
  - 1 : 3 000 000
  - 1 : 4 000 000

**Landscape Typology**
- started in 2008, no finished yet...
- **Objective**: to propose the hierarchy of landscape classification, from the supranational to the local levels
- With a special emphasis on the cultural-historical aspects
- As a tool to reach a better landscape management + the increase awareness of the landscape values
- **Natural-cultural landscape types**
Where are we?
Why do we need to move forward?

**Landscape Atlas**
As a unique multi-functional map
the atlas is focused on
- the comprehensive knowledge of landscape values
- and also on the characterisation of economic use of the landscape
- stress factors affecting the landscape
- assessment of the environmental quality
- and assumptions of the future development of the territory

**Landscape Typology** should also be used when determining the potential and regulations within:
- landscape planning
- spatial planning
- strategic social-economical planning
- land consolidations
- integrated river-basin management
- forestry plans
- nature and landscape protection concept
- EIA, a.o.
It contains 1,200 various graphic item
• maps of various scales
  analytic
  synthetic
  prognostic
• and other graphic data
  photographs
  tables
  graphs
  satellite and aerial photographs
  ortophotomaps
  drawings, etc.

The Atlas has been published in the form of a printed book (as a bound book and also as loose leaves) and in two electronic forms (CD-ROM and DVD). Text and legends in Slovak and English.
Atlas is divided into 10 chapters

- Landscape and its representation
- Development of settlement and map representation
- Location
- Primary landscape structure
- Secondary landscape structure
- Population and their activities in the landscape
- Natural-Urban regions
- Protected areas and natural resources
- Stress phenomena in landscape
- Landscape as the human environment
Comparison of protected areas in the SR in 2002 and 2010

<table>
<thead>
<tr>
<th>Category</th>
<th>2002 Number</th>
<th>Area (ha)</th>
<th>% of SR</th>
<th>2010 Number</th>
<th>Area (ha)</th>
<th>% of SR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>core area</td>
<td>protective zone</td>
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<td>core area</td>
<td>protective zone</td>
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<tr>
<td>Protected landscape areas</td>
<td>14</td>
<td>525 547</td>
<td>-</td>
<td>14</td>
<td>522 562</td>
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<td>Large-size protected areas</td>
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<td>843 368</td>
<td>238 124</td>
<td>23</td>
<td>840 471</td>
<td>270 128</td>
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<td>2 263</td>
<td>172</td>
<td>5 534</td>
<td>2 419</td>
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<td>Nature reserves</td>
<td>376</td>
<td>11 767</td>
<td>243</td>
<td>388</td>
<td>13 175</td>
<td>247</td>
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<td>231</td>
<td>85 905</td>
<td>3 383</td>
<td>219</td>
<td>84 130</td>
<td>2 239</td>
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<td>Nature monuments</td>
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<td>1 531</td>
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<td>496</td>
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<td>27</td>
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<td>59</td>
<td>2 352</td>
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<tr>
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<td>3</td>
<td>-</td>
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<td>Small-size protected areas</td>
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<td>106 263</td>
<td>6 124</td>
<td>1 094</td>
<td>104 486</td>
<td>7 752</td>
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</tbody>
</table>

Source: SNC SR

Trend in the structure of immovable national cultural monuments (NCM) by types

<table>
<thead>
<tr>
<th>Categorization of immovable NCM*</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
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<tr>
<td>Architectural monuments</td>
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<td>7 799</td>
<td>7 802</td>
<td>8 069</td>
<td>8 092</td>
<td>8 408</td>
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<td>Archaeological monuments</td>
<td>360</td>
<td>368</td>
<td>369</td>
<td>376</td>
<td>393</td>
<td>407</td>
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<td>Historical monuments</td>
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<td>1 382</td>
<td>1 380</td>
<td>1 394</td>
<td>1 401</td>
<td>1 399</td>
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<tr>
<td>Historical gardens and parks</td>
<td>340</td>
<td>341</td>
<td>344</td>
<td>344</td>
<td>373</td>
<td>382</td>
</tr>
<tr>
<td>Folk architecture monuments</td>
<td>1 833</td>
<td>1 823</td>
<td>1 821</td>
<td>1 902</td>
<td>2 055</td>
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<td>Technical monuments</td>
<td>454</td>
<td>484</td>
<td>496</td>
<td>500</td>
<td>526</td>
<td>520</td>
</tr>
<tr>
<td>Art work monuments</td>
<td>1 005</td>
<td>1 015</td>
<td>1 007</td>
<td>1 367</td>
<td>1 506</td>
<td>1 603</td>
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<tr>
<td>Total</td>
<td>13 116</td>
<td>13 212</td>
<td>13 228</td>
<td>13 952</td>
<td>14 346</td>
<td>14 818</td>
</tr>
</tbody>
</table>

Source: MB SR

* Presented is the number of monument buildings, which comprise the immovable NCM.
The goal of the Atlas

- preparation was not only to present a scientific approach to the landscape perception but also to provide an opportunity to use the collected data in further work with the territories.

- Therefore, the territorial data were processed to create data structures usable in the GIS.

The film “Landscape of the Slovak Republic”

- was prepared in four language variations – Slovak, English, German and Russian.
- subtitles can be selected in English, Spanish and French languages.

- This documentary and educational film explains the scientific perception of the landscape to wide public.
Other resources
Classification maps, regional typification

- Jancura, 2006: *Metodology of Landscape Characteristic Appearance*
- Miklos, Izakovicova et al., 2006: *Atlas of the Representative Geo-ecosystems*
- Izakovicova et al, 2007a: *Integrated Landscape Management 1*
- Izakovicova et al, 2007b. *Integrated Landscape Management 2*
- Otahel 1999: *Visual Landscape Perception: Landscape Pattern and Aesthetic Assessment*
Other resources
Classification maps, regional typification
Atlas of the Representative Geoecosystems
The core of the assessment will be pointing out and delimitating the natural-cultural landscape types, which will be characterized by:

- Relief-climate-soil-vegetation units, which had predetermined the form of land use in the past, as well as the form of historical settlement and the first landscape cultivations (categories will be appointed, which will be then filled in the natural units),
- Existing form of land use and settlement forms (the historical and the existing form of land use will be compared and the degree of distinctiveness will be determined),
- Level of protection (protected natural areas and monuments), where the reference to the landscape character and characteristic landscape features will be interpreted.

A special emphasis will be put on cultural-historical aspects, although many of its traces in the landscape are just fragmental. In spite of that, it is needed to include them and identify them as landscape historical layers.
LANDSCAPE TYPOLOGY

FRAMEWORK for the methodological procedure

**Natural landscape identification** - using methods of geo-ecological research, is primary mainly from the viewpoint of knowing the self-regulative abilities and potential of the landscape for social utilization. It is likely to present the results using the national and regional map scale (1:500 000 up to **1:50 000**) and methods of regional taxonomy, mainly regional typification.

**Cultural landscape** - is being represented by contemporary land use, material entity of which features land cover. Its identification through the CORINE land cover (CLC) method, mainly the newest data layer from the year 2006 (CLC2006), enables to present real landscape at the national and regional map scale (1:500 000 up to **1:100 000**).

**Functional types** - of contemporary landscape can be presented at the national map scale according to the basic CORINE land cover classes, completed with nature and landscape protection data, buffer zones of different landscape resources, urban and development plans, etc.
Cultural-historical phenomena of Slovakia

- can be presented on another landscape layer at different map scales. The historical view of Slovakia settlement differentiates regions and landscape types at the national map scale.

Landscape physiognomy, settlement character and utilization

- we perceive as a scenic quality (image) of the landscape. Landscape scenic quality and landscape character can be assessed using various approaches. One of the approaches works by the means of landscape physical state identification (land cover) and through accepting esthetical principles and criteria.
LANDSCAPE TYPOLOGY

Proposed methodology

• I. analytical part

• II. Synthetic part

• III. Interpretation and evaluation of the representative, rare and unique landscape types in Slovakia

• IV. Implementation and promotion of the project’s outputs
LANDSCAPE TYPOLOGY Methodology
I. analytical part

• **analysis of the contemporary state of processing and utilization of landscape typology within Europe** international aspects of landscape typology). It will be very important to provide for transmission of the European typology results to the Slovak level

• **analysis of the resources and criteria for working up the typology in the selected countries** (e.g. from the projects of surrounding countries: Czech Republic, Austria, Hungary and other countries: Netherlands, Great Britain and Belgium)

• **analysis of existing partial backgrounds for elaborating landscape typology in Slovakia**, their availability and feasibility (digital/analog form, scale, % of the coverage of the territory of Slovakia with a professional background, availability of the background, authors` rights, a.o.)
LANDSCAPE TYPOLOGY Methodology
I. analytical part

- analysis and selection of the criteria for elaborating landscape typology of Slovakia (natural landscape structure, historical landscape structure, contemporary landscape structure, cultural-historical structures, localities, objects and cultural-historical landscape potential and elements determining landscape perception)

- Slovakia landscape analysis from the viewpoint of its implementation into planning and decision-making processes regarding land use

- specification of indicators for agricultural, vineyard, forest, mining, urbanized, recreational and other types of landscape on different hierarchy levels

- analytical maps digital processing
II. Synthetic part

- Categorization of landscape types of Slovakia in reference to the European landscape types system:
  In this part we expect to use the Pan-European Landscape Classification LANMAP2 from the year 2006, which methodically stems from synthesis of digital European databases on climate, relief, soils, potential vegetation and land cover. The eventual landscape type represents a functional hierarchy of the abiotic, biotic and cultural elements of landscape.

- Synthesis of the initial criteria for creating landscape types on the national level:
  synthesis/superposition of typical and specific classification features for landscape types identification and their categorization, scaling of classification features according to hierarchy levels, reference features and prevailing features identification, as well as their combination for individual landscape types)
LANDSCAPE TYPOLOGY Methodology
II. Synthetic part

- synthesis of the initial criteria for creating landscape types on the regional, micro-regional and local level. Several properly appointed model/example areas will be chosen on regional and local level.

- digital processing of landscape types and the characteristic appearance of landscape in Slovakia, Landscape Encyclopedia concept.
III. Interpretation and evaluation of the representative, unique landscape types in Slovakia

• determination of the criteria of representativeness, rareness and uniqueness of the landscape types in Slovakia from the viewpoint of their utilization for particular land use
• interpretation and evaluation of types and regions in Slovakia from the viewpoint of their representativeness, rareness and uniqueness
• identification, delimitation and interpretation of representative, rare, unique and threatened landscape types in Slovakia
• collision of interests assessment and determination of the degree of threat of the delimited representative, unique and rare landscape types in Slovakia
• criteria determination for the assessment of the landscape types in Slovakia from the viewpoint of land use
LANDSCAPE TYPOLOGY   Methodology –  
III. Interpretation and evaluation of the representative, unique landscape types in Slovakia

• proposing areas to work up **model projects of special management** for representative, unique and rare landscape types at a more detailed scale

• **interpretation of land use structure** from the viewpoint of expected changes dynamics, including climate change

• proposing regulations for location of new activities into landscape for individual landscape types – differentiated landscape types tending

• **digital processing** of representative, unique, rare and threatened landscape types in Slovakia and other interpretation maps

• digital **Landscape Encyclopedia** of Slovakia elaboration
IV. Implementation and promotion of the project’s outputs

- implementation indicators determination
- elaborating a plan for the work with public and media
- supporting activities on the international level and strengthening trans-border awareness
- strengthening activities on the national, regional, micro-regional to local level supporting raising of the environmental public awareness, strengthening cooperation and communication with stakeholders
- verifying of the proposed procedures of special management for the model areas
- potential identification for implementation of the project’s outputs into related projects
- project outputs implementation into education and Action Plans
- project outputs implementation into enactments, documents and methodologies