

THE LANDSCAPE IN THE MANAGEMENT TOOLS IN SLOVAKIA

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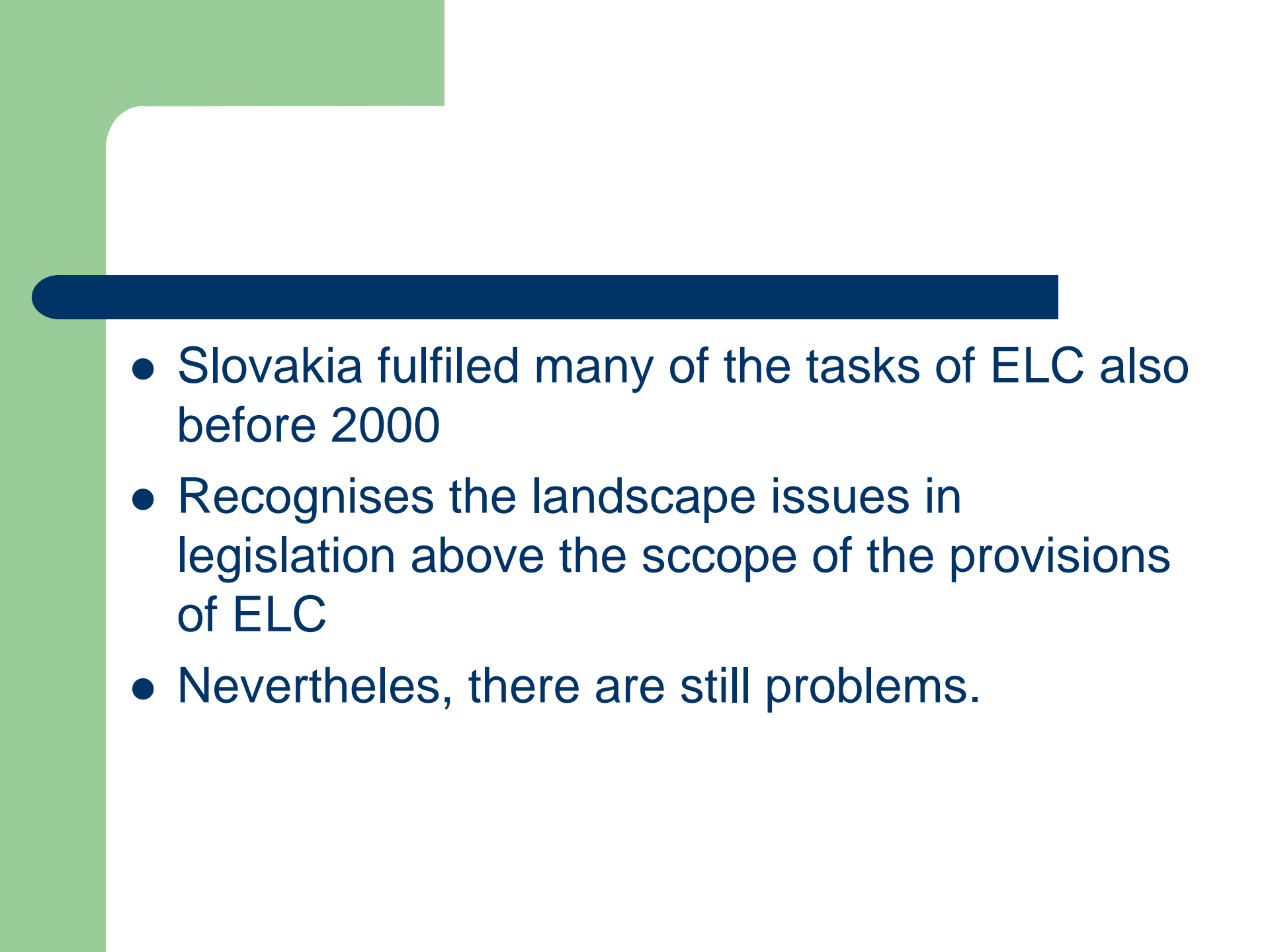
*Ministry of the Environment of SR/Technical
University in Zvolen*

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Slovakia*

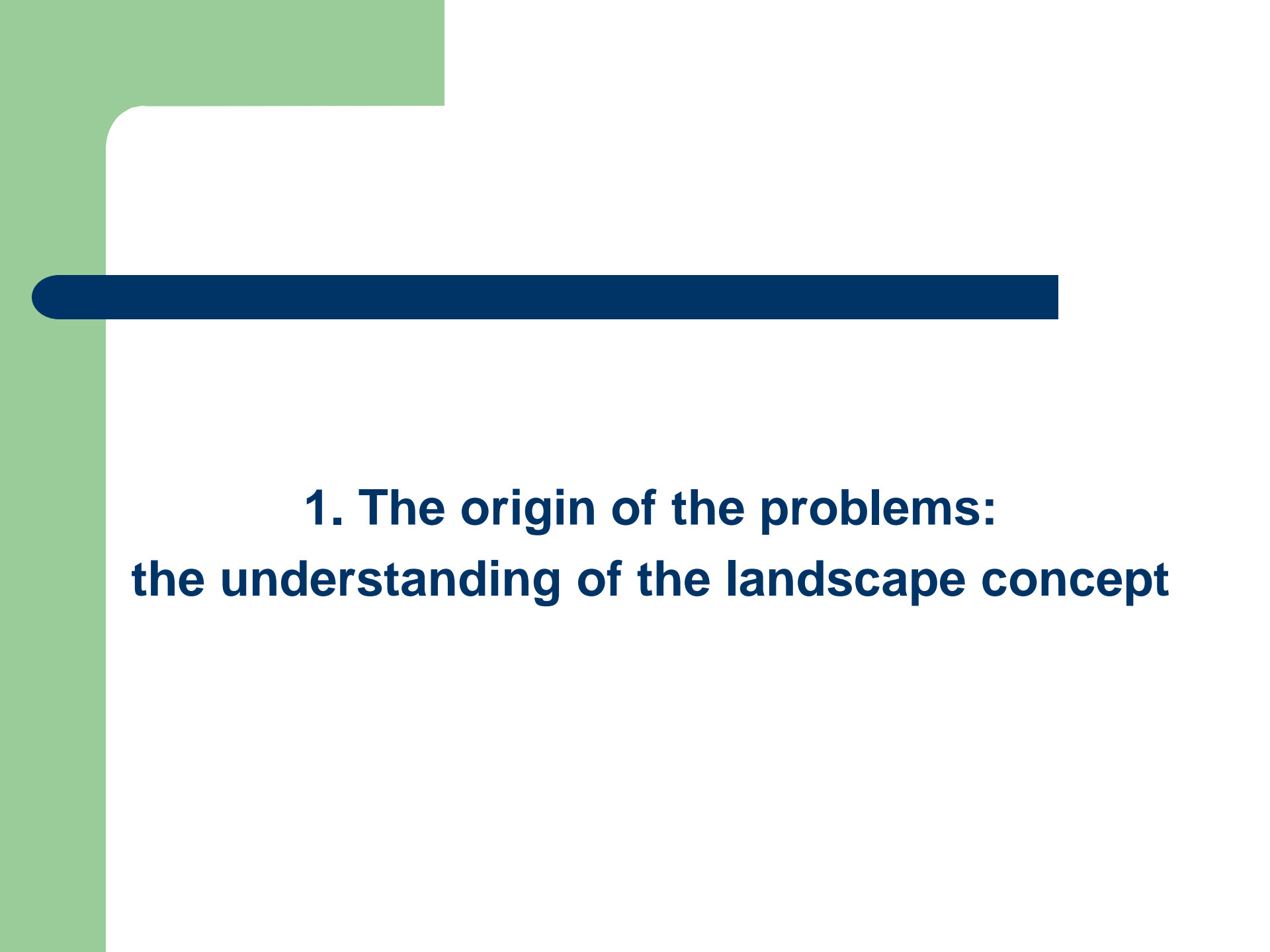
EIGHTEENTH COUNCIL OF EUROPE MEETING OF
THE WORKSHOPS FOR THE IMPLEMENTATION OF
THE EUROPEAN LANDSCAPE CONVENTION
5-6 October 2016 Yerevan, Armenia

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- 
- Slovakia fulfilled many of the tasks of ELC also before 2000
 - Recognises the landscape issues in legislation above the scope of the provisions of ELC
 - Nevertheless, there are still problems.

Content

- 1. The origin of the problems:
the understanding of the landscape concept**
- 2. The implementation the landscape
concept to the law in Slovakia**
- 3. The practice of the landscape
management in Slovakia**



**1. The origin of the problems:
the understanding of the landscape concept**

What is that on the picture?
What is the landscape?



- *environment*
- ***landscape***
- *geosystem*
- *ecosystem*
- *watershed*
- *mountain*
- *biota*
- *territory*
- *region*

An integrated material reality! The terms are only words!

Traditional landscape-ecological schools and new approaches

German physical-geographical/landscape ecological school
Central European schools
Soviet landscape sciences school (landshaftovedenye): The landscape as
a **geographical complex, geosystem**

West-European and American landscape school: The landscape as
a **structure of land cover**
and its **pattern**

Friends of landscapes“, landscapers: The landscape as
a **phenomenon**,
the "**scape**" of the land, the cultural/natural **heritage**, a **value**.

The landscape and its definitions

- Rigid, **geosystem** based



- Soft, **“cultural-heritage”** biased

Where is (where is not) the

in spite of this

Separate policies, programmes



- *environment*
- *landscape*
- *geosystem*
- *ecosystem*
- *watershed*
- *mountain*
- *biota*
- *territory*
- *region*



An integrated material reality! The terms are only words!

But:

Which programme is devoted to the object as a whole?



E.g. the integrated project on the territory of the watersheds in an afforested mountain-landscape environment?

Not too many, if any!

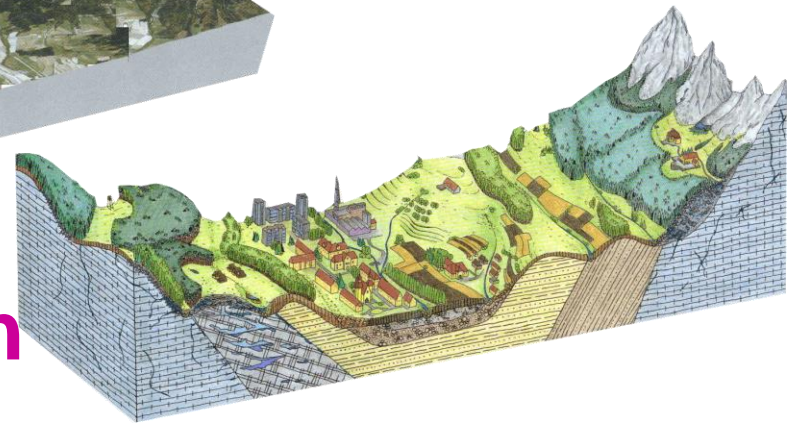
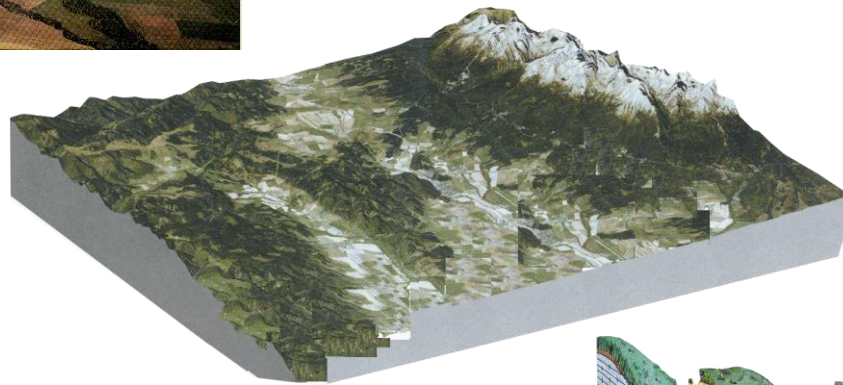
What is the problem?

The reality vs. models vs. definition



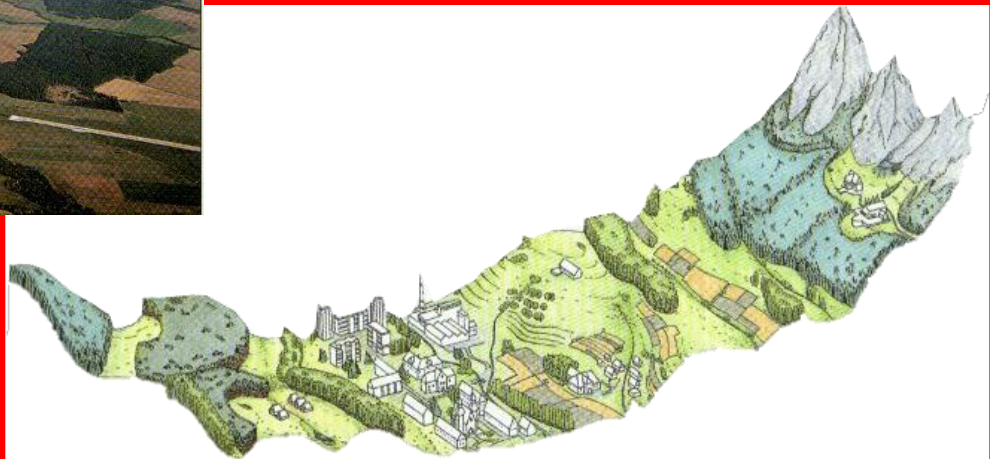
The reality:
holistic
perception

The picture:
selective perception

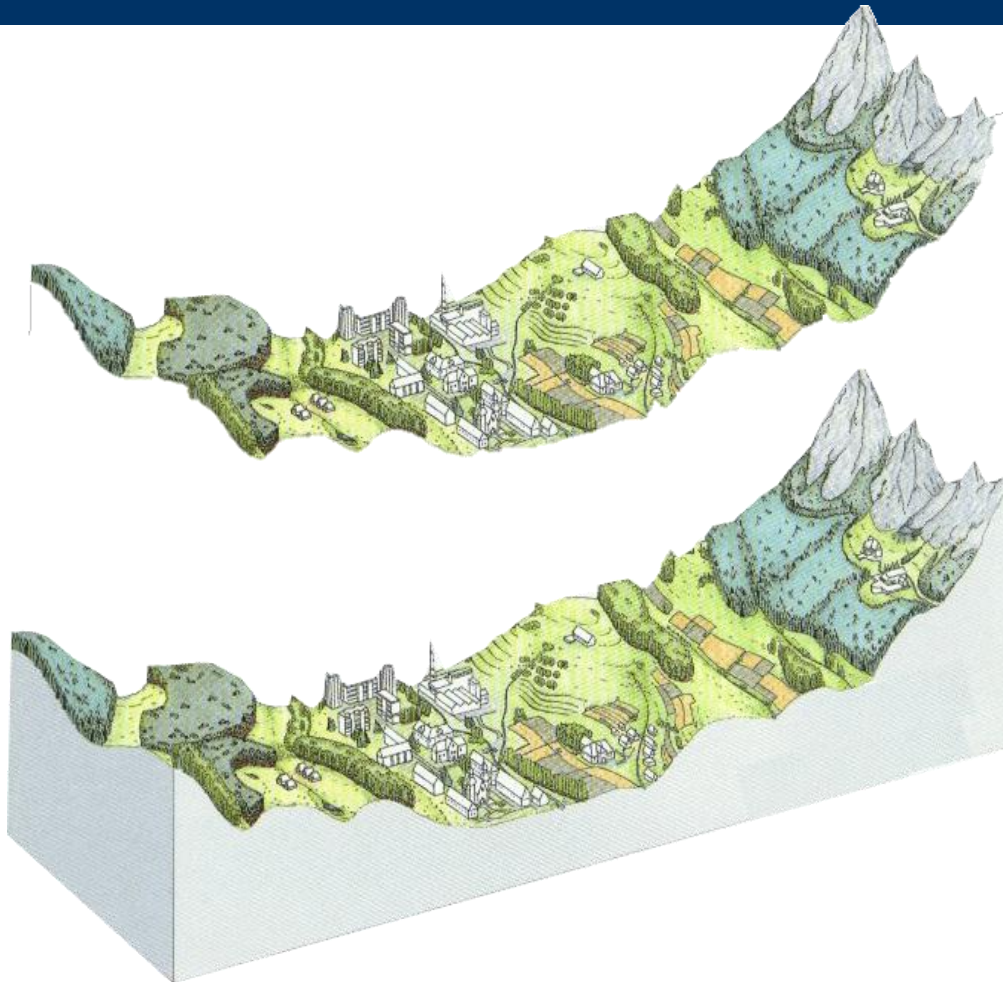


Models: **scientific approach**

What do we see (perceive)?



Is that the landscape?



This ?

In better
case
this ?

The European Landscape Convention

Landscape as a perception



A landscape means:

an area, as **perceived** by people, whose **character** is the result of the action and interaction of natural and/or human factors;

Is it a right definition?
Of course!
But what further on?

The European Landscape Convention

Article 1

a "Landscape" means an area, as **perceived** by people, whose **character** is the result of the **action** and **interaction** of natural and/or human **factors**;

The definition is true, but it is

- *Non-materialistic* definition, landscape is not defined as a system conceptualized by elements in interaction
but
- an *imaginar entity* based on perception, character, action, interaction, factors

Topic geosystem model of the landscape

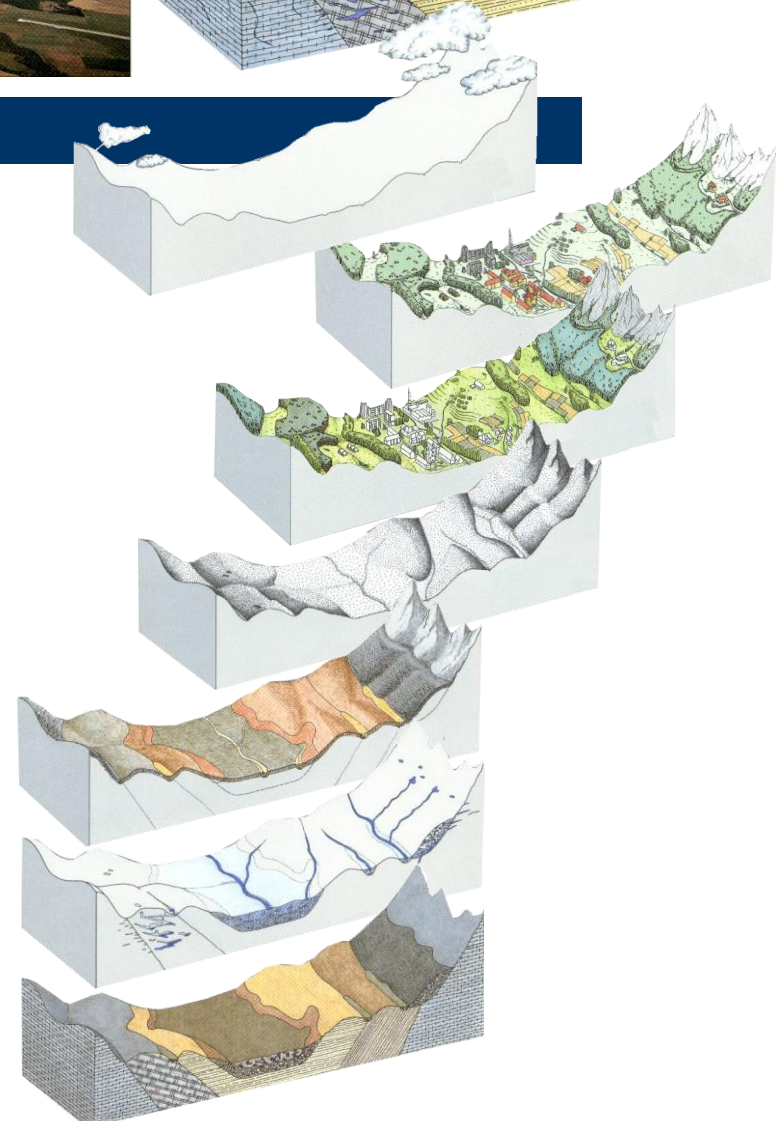


Or this?



Elements of the system = the components

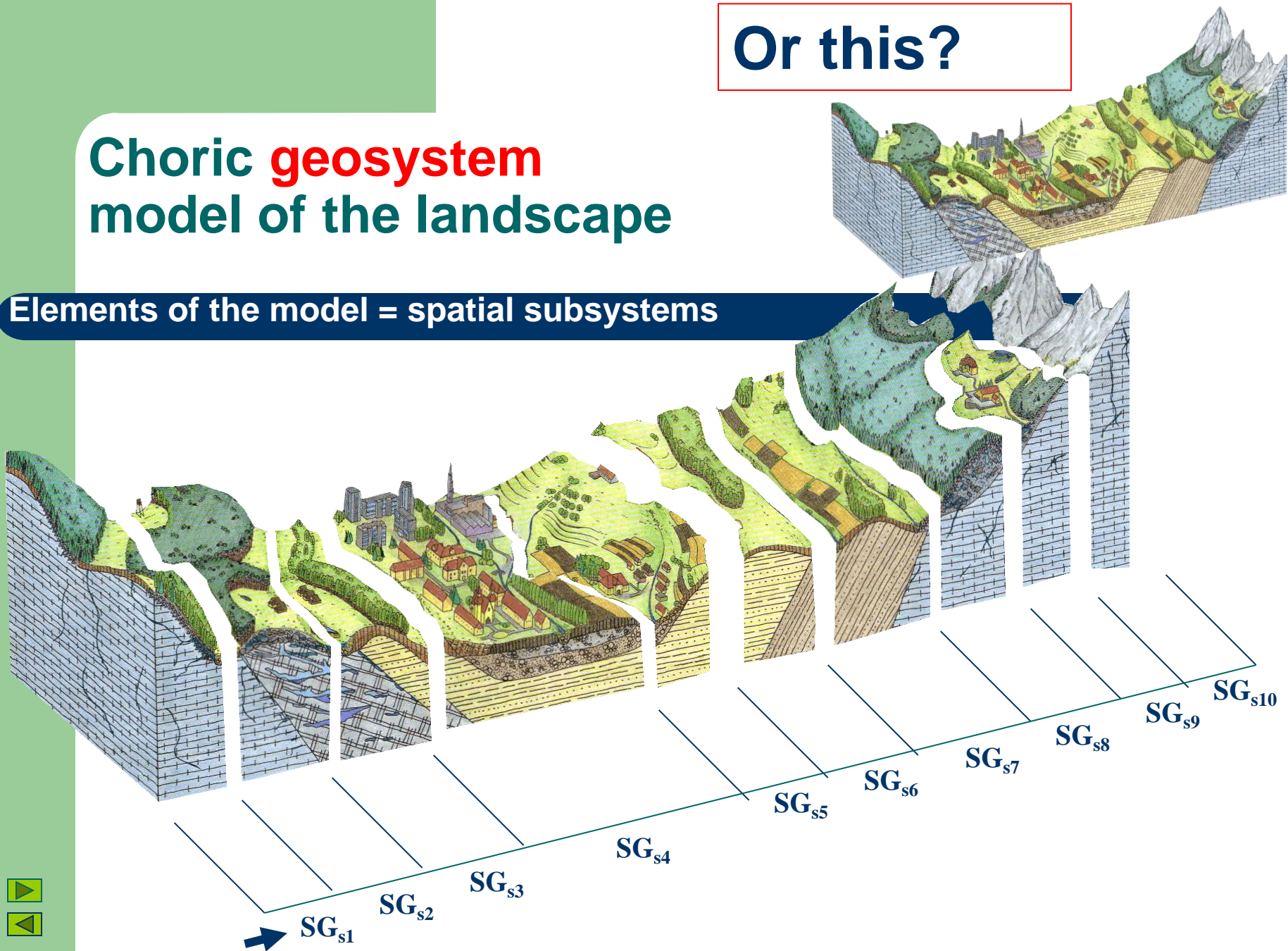
- a_1 - air
- a_2 - objects and land-use
- a_3 - vegetation and fauna
- a_4 - relief (georelief)
- a_5 - soils
- a_6 - waters
- a_7 - geological base



Or this?

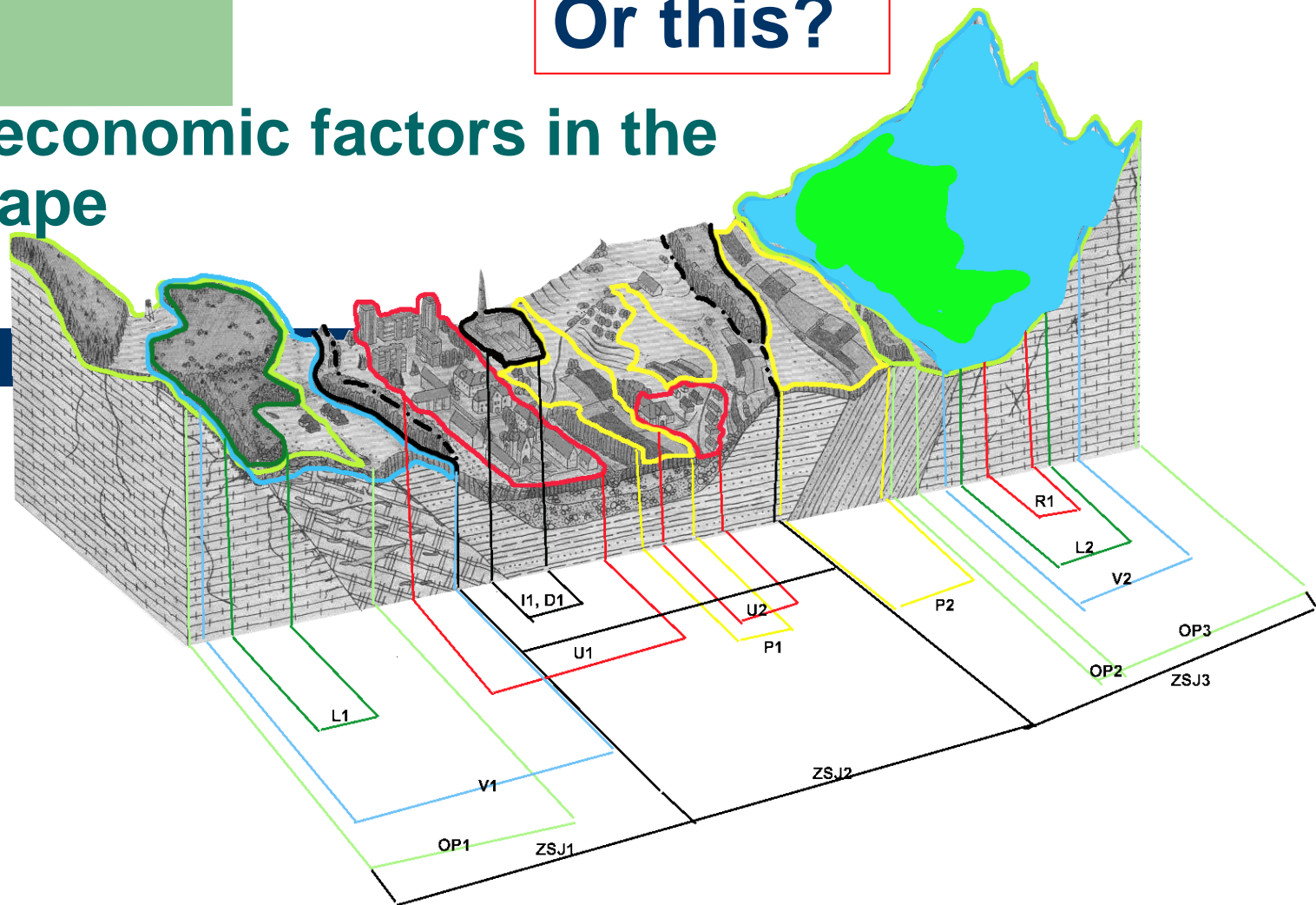
Choric geosystem model of the landscape

Elements of the model = spatial subsystems



Or this?

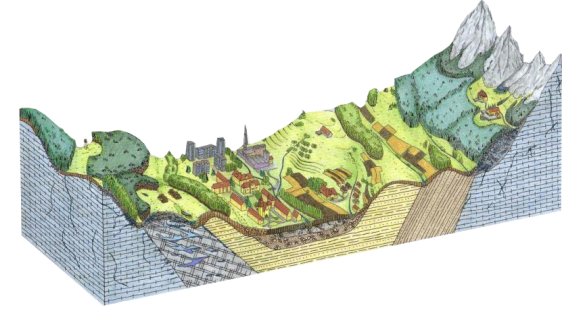
Socio-economic factors in the landscape



- a, SEP linked to production and objects (**I, D**)
- b, SEP linked to urbanization (**U, R**)
- c, SEP linked to conservation of nature, cultural monuments, and natural resources (**V, P, L, OP, OK**)
- d, SEP characterizing deterioration of the environment (**E**)
- e, SEP ensuring from the administrative division (**ZSJ**)



What is the landscape?



An integrated system

Landscape =
geosystem

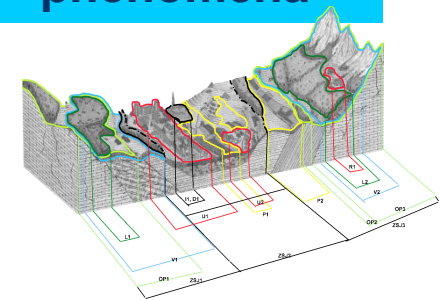
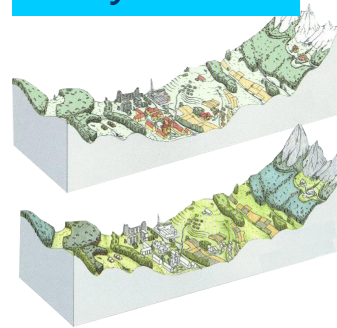
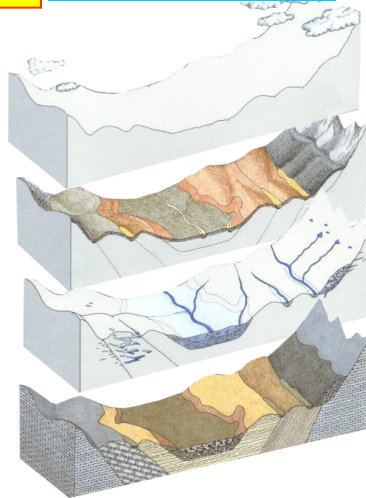
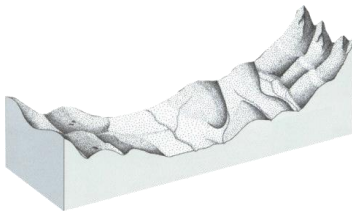
material elements

natural

*re-created
and created
by man*

socio-economic
phenomena

of space,
position, relief



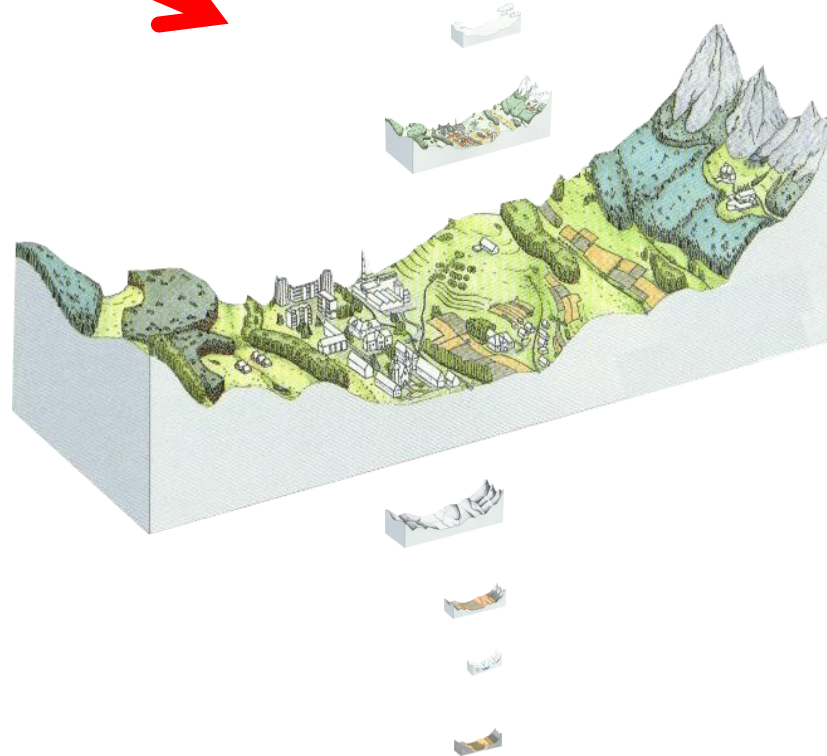
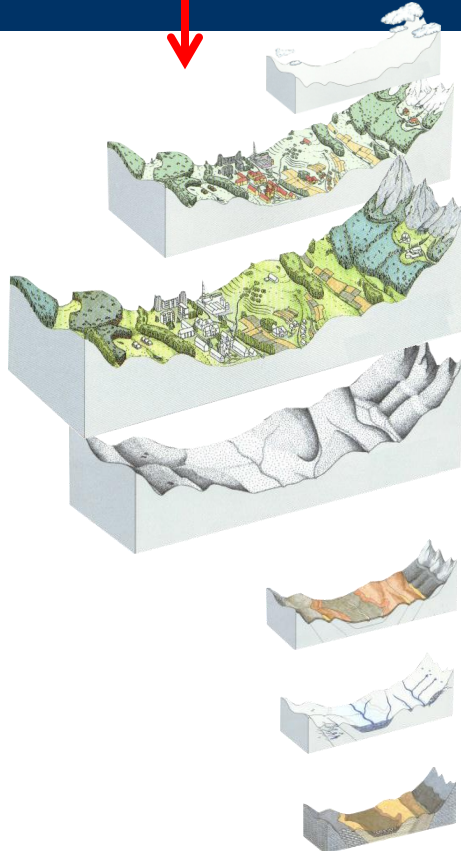
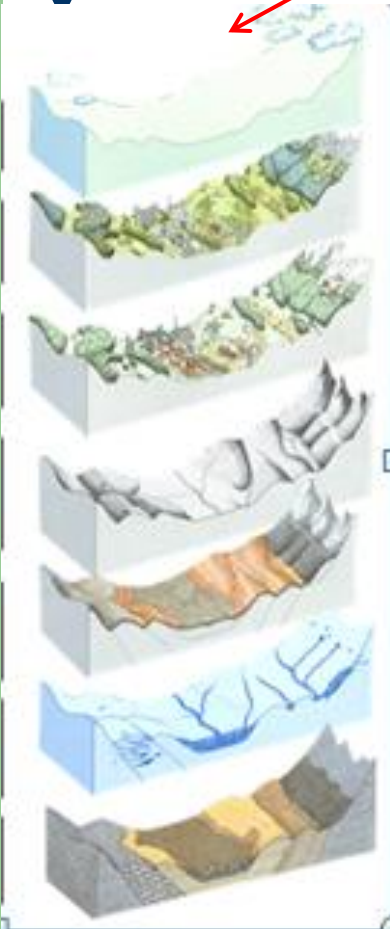
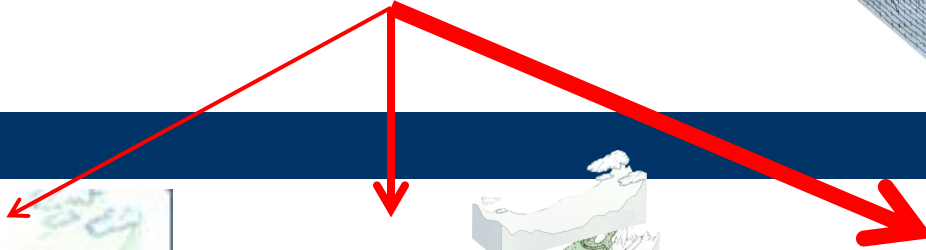
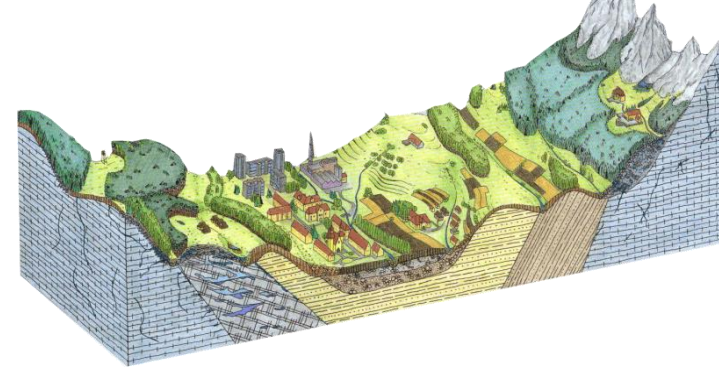
where the
humans and
other
organisms live

and their mutual relations

environment

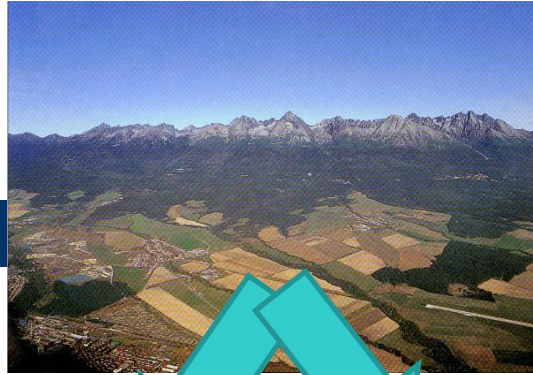


How many LE projects has the structure like?



The possibilities to **apply** practical procedures.

The problem is not the definition!



Perceived “scape” picture,



“soft” definition

Geosystem

Landscape =
geosystem

of space,
position, relief



material elements

natural

re-created
and created
by man



socio-economic
phenomena

where the
humans and
other
organisms live

and their mutual relations

environment

“Rigid” definition

Hard tasks and measures

Different definitions, but rigid tasks and measures

- *Article 3 – Aims:* ... to promote landscape **protection**, **management** and **planning**, ...
- *Article 5* – integrate landscape into its **regional and town planning** policies ...any other policies

How to force those hard policies on softly defined landscapes ?!

Problem of application: not the definition, but the acceptance

- ❑ If the landscape **is not defined strictly** materialistically,
- ❑ if its elements are **not-tangible**,
- ❑ if they are **not related to regulatives**,
 - the policies, the planning practices will apply the theoretical provisions in a **voluntary** way
 - not as **obligatory regulatives**.

How to force those hard policies on softly defined landscapes ?!

Other problem of perception – the landscape quality

Article 1 – Definitions

- "Landscape protection" ... conserve and maintain the **significant or characteristic** features ... by its **heritage value** ...

Article 2 – Scope

- ... concerns landscapes ...outstanding, ... everyday or degraded landscapes.



Do we believe the ELC will be applied forced by heritage values and perception to such landscapes ?

Other: what if ...?

Article 2 – Scope: Convention applies to the **entire territory** of the Parties,

but

Article 15 – Territorial application

- The Parties shall **specify the territory ...** which the Convention shall apply
- may extend the application
- may **withdraw them.**

Good will needed!!!

A decorative graphic on the left side of the slide, consisting of a light green vertical bar and a dark blue horizontal bar with rounded ends.

2. The implementation the landscape concept to the law in Slovakia

The state of the landscape and its changes



is the **result of the land-use**
of each single ***material element***
(displayed as dots, lines, polygons).

Starting point - a simply question:

Do we like or *do not like*
the present landscape structure (quality, values...)?

If yes:

We have to

prevent changes

and to **keep** the present
land use

If not:

We have to

promote changes

Both policies need legal planning procedures!!!

Tools for implementation of the landscape to the spatial **policies, management and planning** = horizontal tools for integrated management

Competency of the Ministry of Environment:

OP

Nature conservation (territorial nature conservation)

KP

Landscape-ecological planning (?), econet planning

IMP

Management of the watersheds

FP

Flood protection

IPPC - Integrated prevention and pollution control (IPPC)

Competency of other ministries:

ÚPN

Territorial planning (MVaRR / MŽP)

PPÚ

Agricultural land arrangement (MP)

LHP

Forest management planning (MP)

Real policies - law-based goals

1. To protect (conserve) the **landscape structure**
2. To improve the **ecological stability/the functioning of the landscape = ecological networks**
3. To promote the **optimum organisation and utilisation of the landscapes = landscape ecological plans** in territorial planning
4. Implement the landscape-ecological issues to the **integrated landscape management**

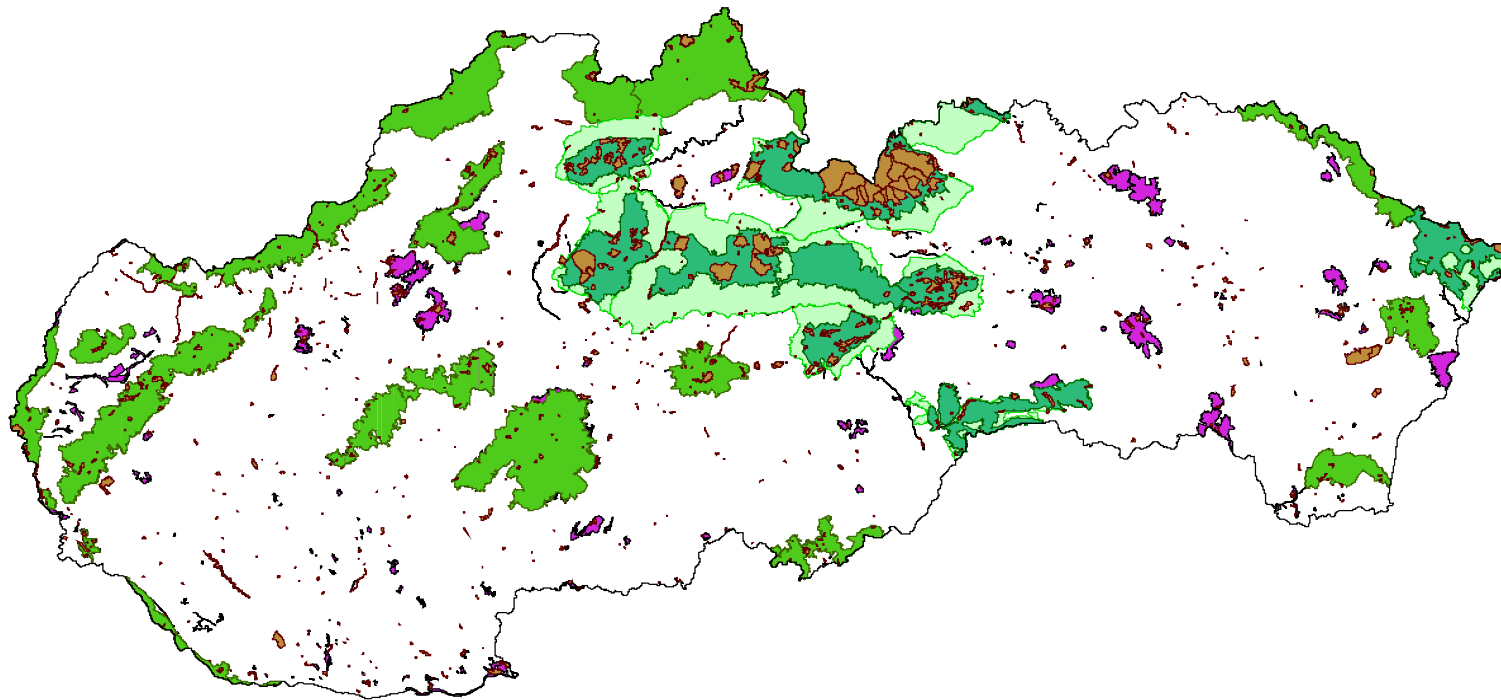
1. “Conservation” of the landscape structure

- The pragmatic starting point/outcome = the “scape” of the land
- The basement procedure = within the frame of the **nature conservation**
- **Act No.543/2002 Z.z.** on the nature and **landscape conservation**

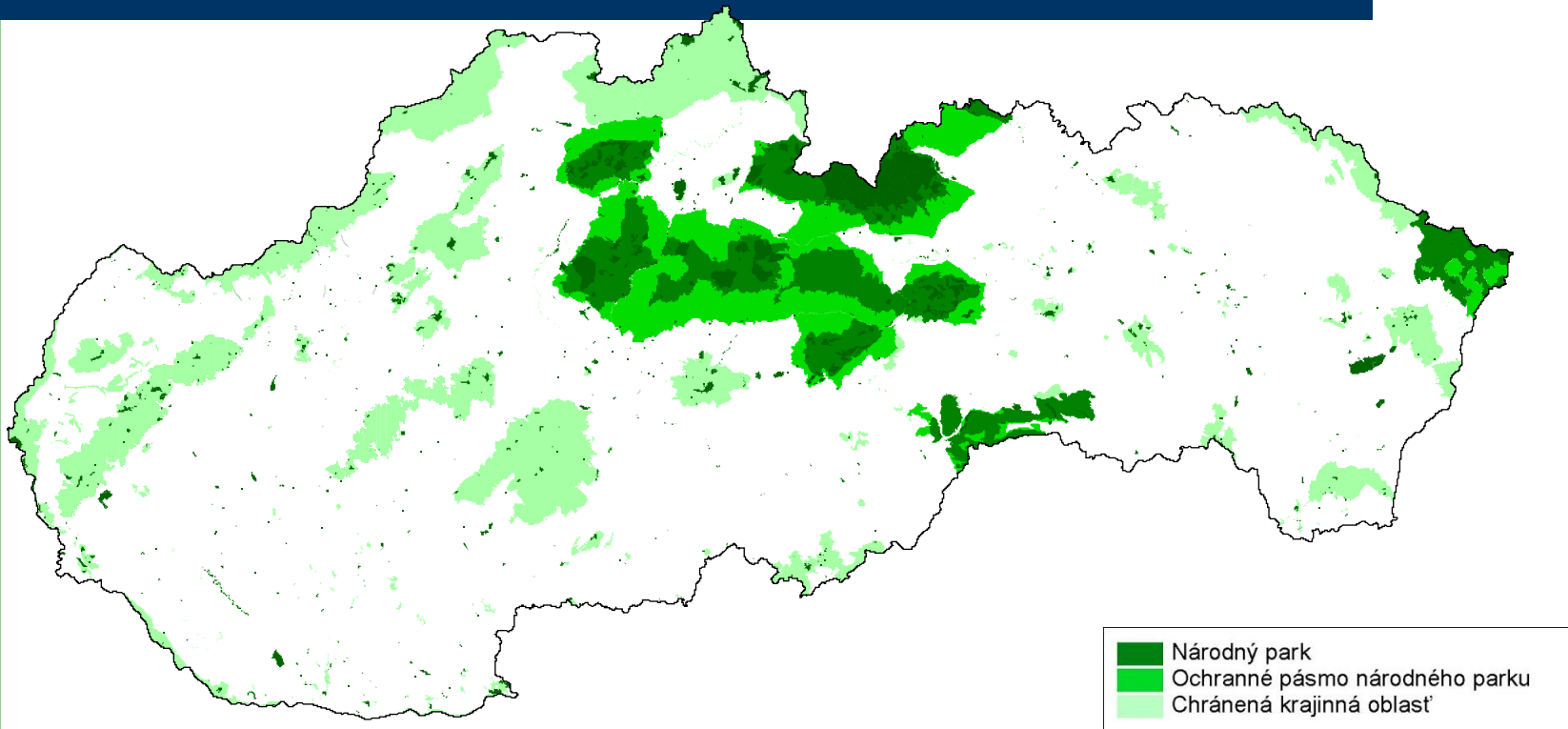
Act No.543/2002 Z.z. on the nature and landscape conservation

- Allows to declare the territories with **characteristic features, specific historic structures (historic landscapes), with unique natural structures or even significant single small-area landscape elements**
for protected
- Constraints
 - Negotiation with the owners or users
 - Need of compensation for the limitation
 - Lack of political will to protect **more territories**

Nature conservation areas – The national network of SR



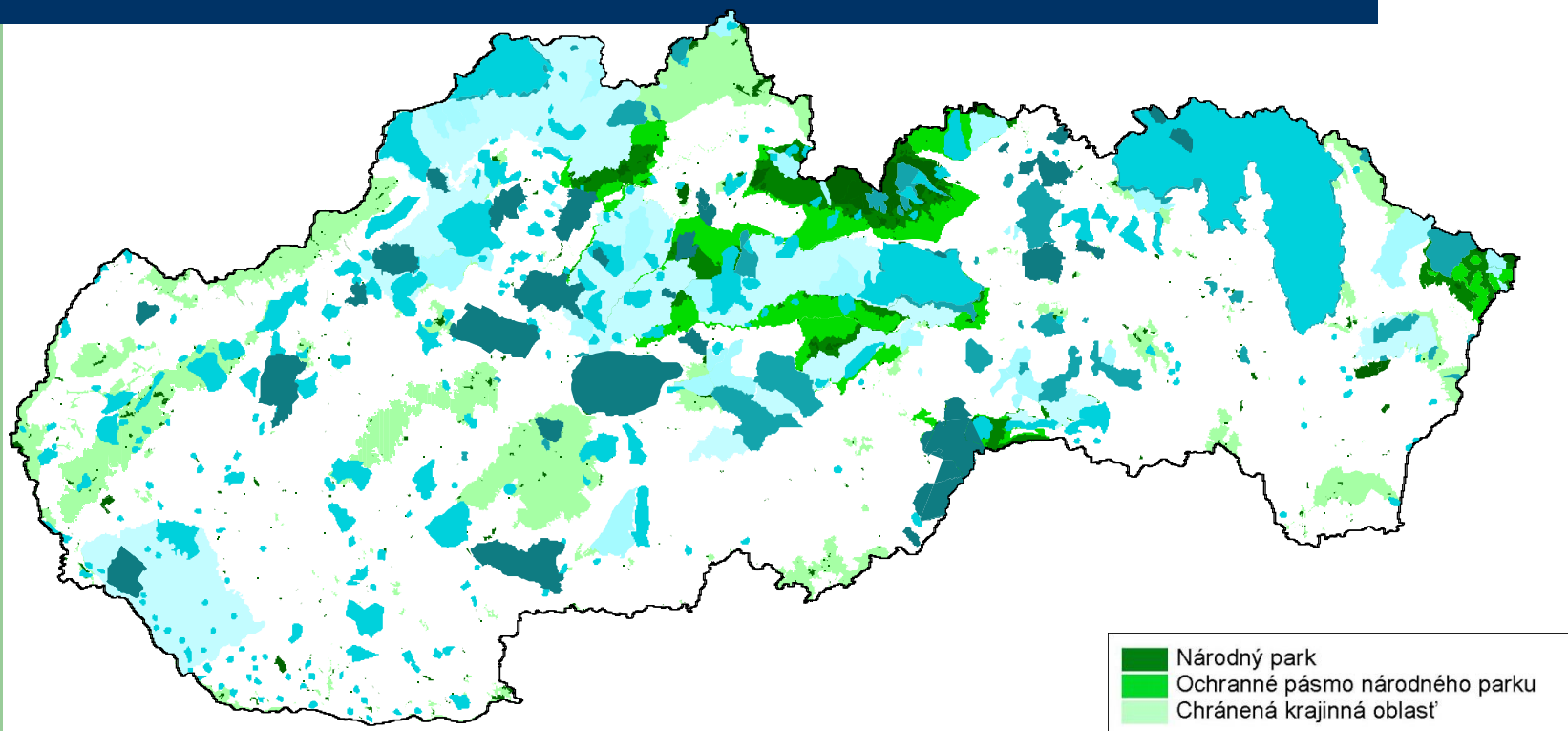
Nature conservation areas and water protection areas



Mapa 14: Chránené územia prírody

Mapa 15: Ochrana vodných zdrojov

Nature conservation areas and water protection areas



Mapa 14: Chránené územia prírody

Mapa 15: Ochrana vodných zdrojov

2. The ecological stability/functioning of the landscape = **ecological networks**

- Desired **landscape structure and landscape elements** – parts of the **econets - biocentres, biocorridors, buffer zones/interactive elements**
- **Act No.543/2002 Z.z.** on the nature and landscape conservation defines the Territorial System of the Ecological Stability TSES

Legal support of the TSES – basic acts

1. Act 284/1994 and 543/2002 Z.z on **Nature and Landscape Protection**:
 - the basic **definition of TSES** and its determination as basic document for planning;
2. Act 331/1991 Zb.on **Land Arrangement and Land Ownership**:
 - **TSES** is an **obligatory basement and part** of each Land Arrangement Project
 - the need for improving the **TSES** function might be accepted as a **legal cause for enactment** the land arrangement procedure.
3. Act 50/1976 Zb. on **Territorial Planning and Building Code**, amendments 262/1992 Zb. and 237/2000 Z.z.:
 - the elements of **TSES** are **obligatory regulative** on all level of territorial plans.

Legal support of the TSES – connected acts

4. The **Water Act** 364/2004 Z.z. (based on Water Framework Directive 2000/60 of EP and EC):
 - the long-term **Management plan of watersheds** should project also the **TSES**, the important landscape elements and the eco-stabilising measures.
 - the **utilisation of the water protecting function** of **TSES** with the coordination of water management tasks is **obligatory**.
5. Act 7/2010 Z.z. on **Flood Protection**: enacts that the long-term management plan should project also the TSES, important landscape elements and the eco-stabilising measures.
6. Act on **Environmental Impact Assessment** 127/1994 Z.z. and 24/2006 Z.z.:
 - The **TSES** is an **obligatory object** of impact assessment.
7. Act on **Authorised Architects** ... 138/1992 Zb. The TSES projecting became the **subject of the authorisation** according to the act and its later amendments.

TSES: the key ecological element for landscape and its integration in Slovakia

The

Territorial System of Ecological Stability

TSES

TSES = the Slovak econet

- biocorridors, biocentres, interactive elements
- ecostabilising measures

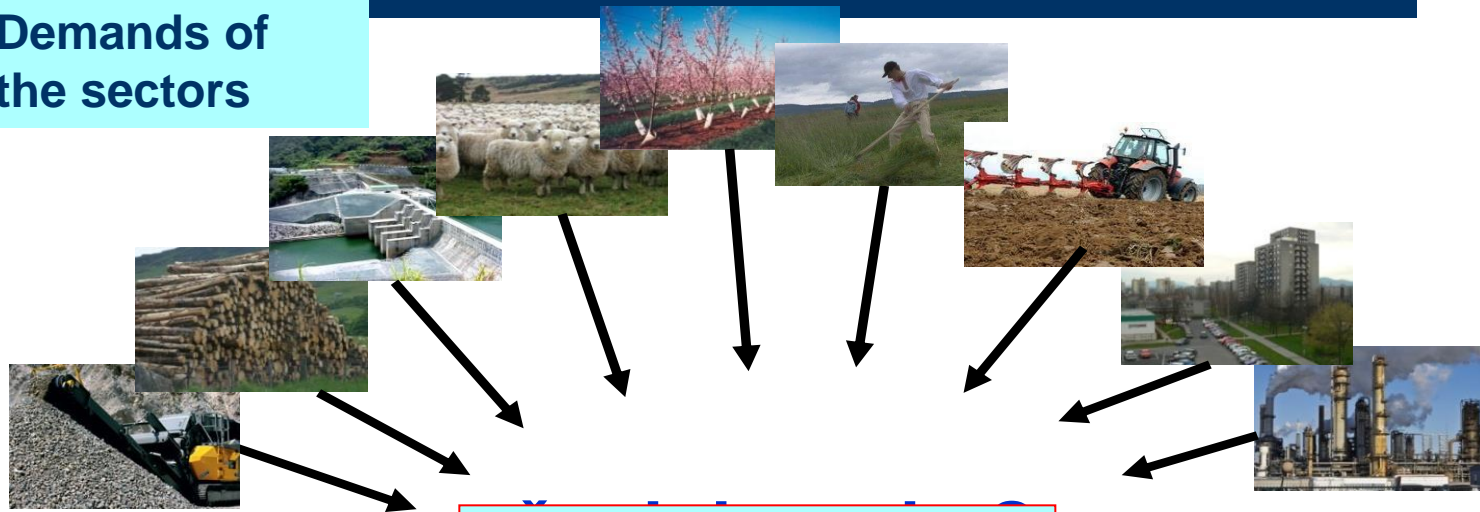
Defined in all mentioned acts !

3. Optimum organisation and utilisation of the landscapes = landscape ecological plans

- Landscape as geosystem: expressed as the **types of landscape-ecological complexes**
- **properties of the landscape elements**: the **regulative** for the decision on the optimum use of the territory
- **basement for spatial planning processes.**
- landscape-ecological planning **LANDEP** (Ružička, Miklós, 1982, 1990, Miklós, Špinerová, 2011)
= **obligatory part of the physical planning** in the Act on Territorial Planning and Building Order, amendment 237/2000 Z.z.

Optimum organisation and utilisation of the landscapes

Demands of the sectors



What, where and how?

Basement:
geosystem
approach



Landscape

Legal support of the LANDEP

Act 50/1976 Zb. amendment 237/2000 Z.z.

The basement of the legal implementation:

- the **geosystem definition** of the landscape
- the properties of the elements of the landscape act as **obligatory regulative** for the “ecologically optimal spatial arrangement and functional utilisation of territory”.

The geosystem-based definition of the landscape in the **legislation**

Article 139a **Terms** of territorial planning:

*“(5) Landscape is a **complex system** of space, location, georelief and other mutually, functionally inter-connected material natural elements and elements modified and created by a man, in particular geological basement and soil creating substratum, water bodies, soil, flora and fauna, artificial objects and elements of utilisation of territory, as well as their connection determined by socio-economic phenomena in the society. Landscape is the environment of the man and other living organisms.”*

Act 50/1976 Zb. on Territorial Planning and Building Code (Building Act)., amendments **262/1992** Zb. and **237/2000** Z.z .

Act 50/1976 Zb., amendment 237/2000 Z.z The link of the landscape elements and regulative

Article 139a *Terms of territorial planning*

“(1) **Regulative** of spatial arrangement ... and functional utilisation of territory is a **binding** guideline which guides the **localisation and arrangement** of a certain object or realisation of a certain activity in territory. It is expressed through **values of properties of elements of landscape** structure by words, figures and graphically, if possible. Regulator has a character of **bans, limitations or supporting factors** in relation to spatial arrangement and functional utilisation of territory. In this way regulator determines banned, limited and acceptable activity or function in territory.”

i.e.

the values of the **elements** act as binding **regulative =
bans, limitations or supporting factors**
of spatial arrangement and functional utilisation of the territory

4. Landscape in the ecological sound **integrated landscape management**

- The principles of the LANDEP and the TSES completed the ideas of the
ecological networks
and of the
integrated management of the landscape
(i.e. the optimum organisation and utilisation of the landscape as a whole).
- Presents a practically proved method for the development for the **integrated landscape management**

**Legal definition of the integrated management:
Act 7/2010 Z.z. on *Flood Protection*
§ 9 Co-ordination**

- ❑ *plan of the **flood risk management***
- ❑ ***watershed management plan***

shall be **co-ordinated** with
the

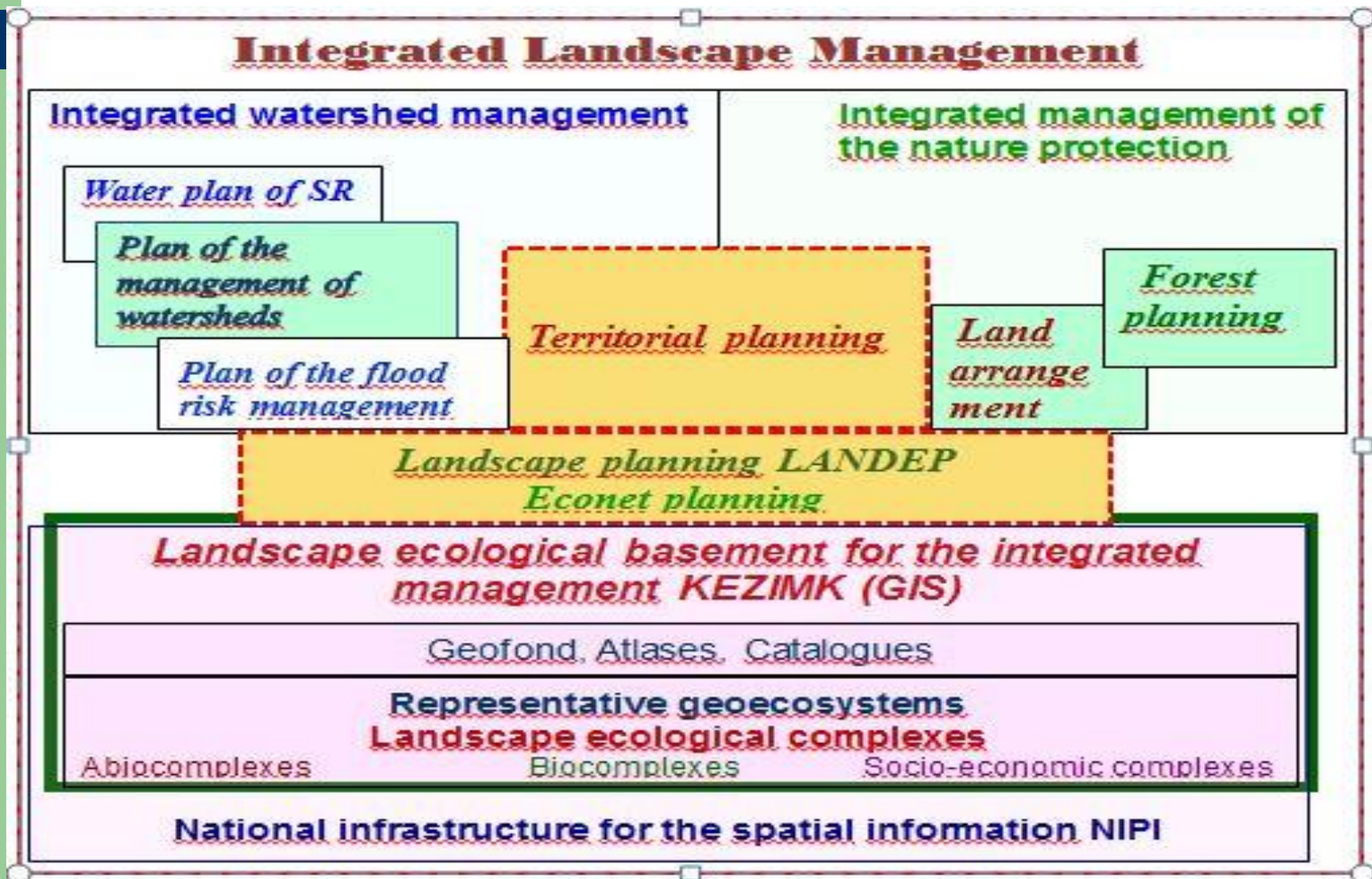
- ***land arrangement projects,***
- ***territorial plans***
- ***forest management plans***

Altogether they will constitute the tool of

integrated landscape management

on the whole territory of the watershed.

Scheme of the sequence of the tools in the integrated landscape management



Basic precondition for realisation

- **Unified complex information basement on GIS**
- **Landscape plans** as legal, **obligatory frame** and **obligatory regulative for each sectoral plan** including the **water management plans**
 - According to the provisions of AGENDA 21

Landscape plans – not yet legally defined

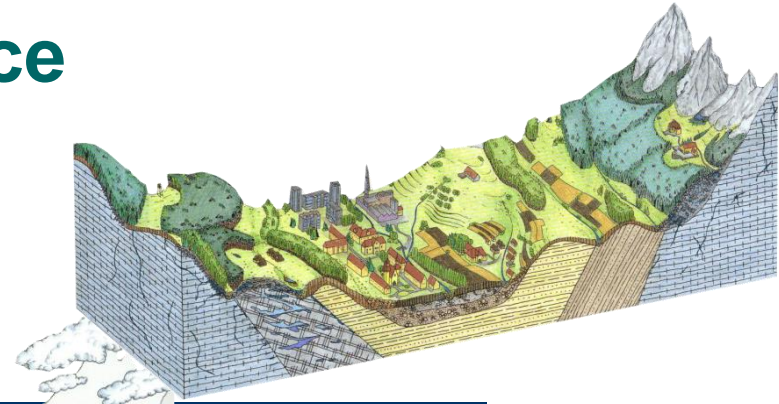
- Minimum content: **spatial projection of all interests** of the nature conservation, protection of the natural resources and care on the environment (legal, methodical) as limitation for land-use
- Ideal content: as above + accepted proposal for the best use of the territory



3. The practice of landscape management in Slovakia

The practice

The **sectoral** management:
protection of the components
prevails



Air protection

Species conservation,
forest management

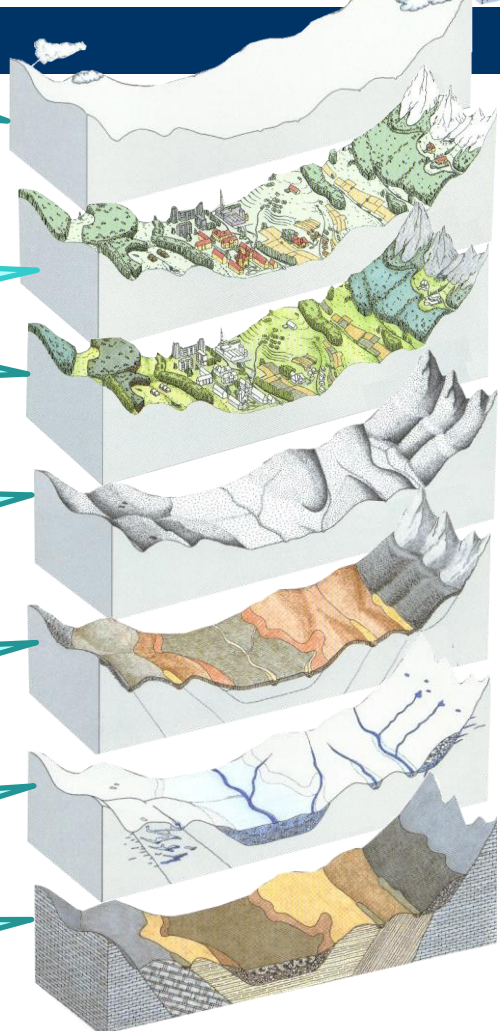
Building order, IPPC, EIA,
waste management

Natural monument
protection

Soil protection

Water management

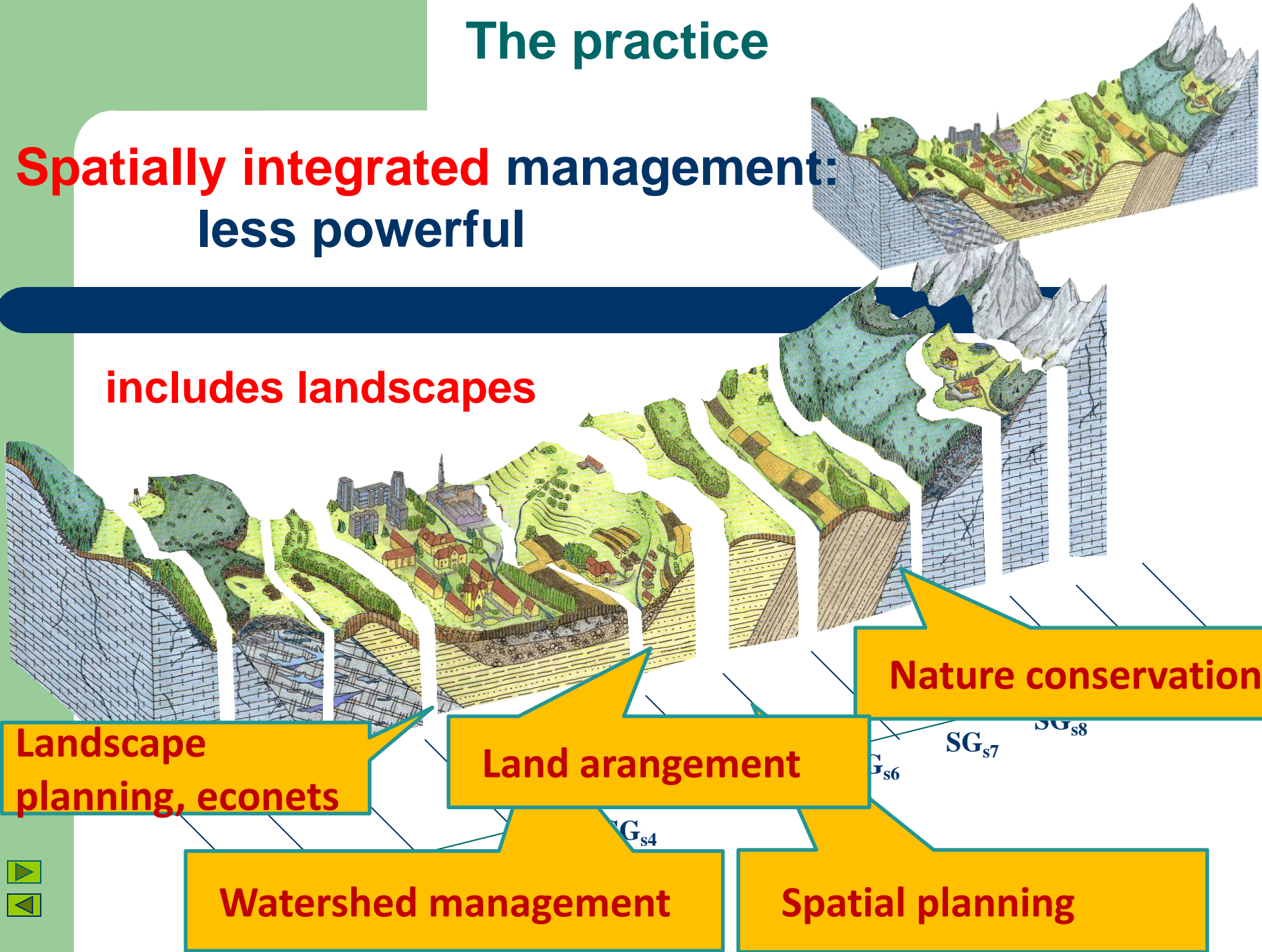
Mineral resources
management



The practice

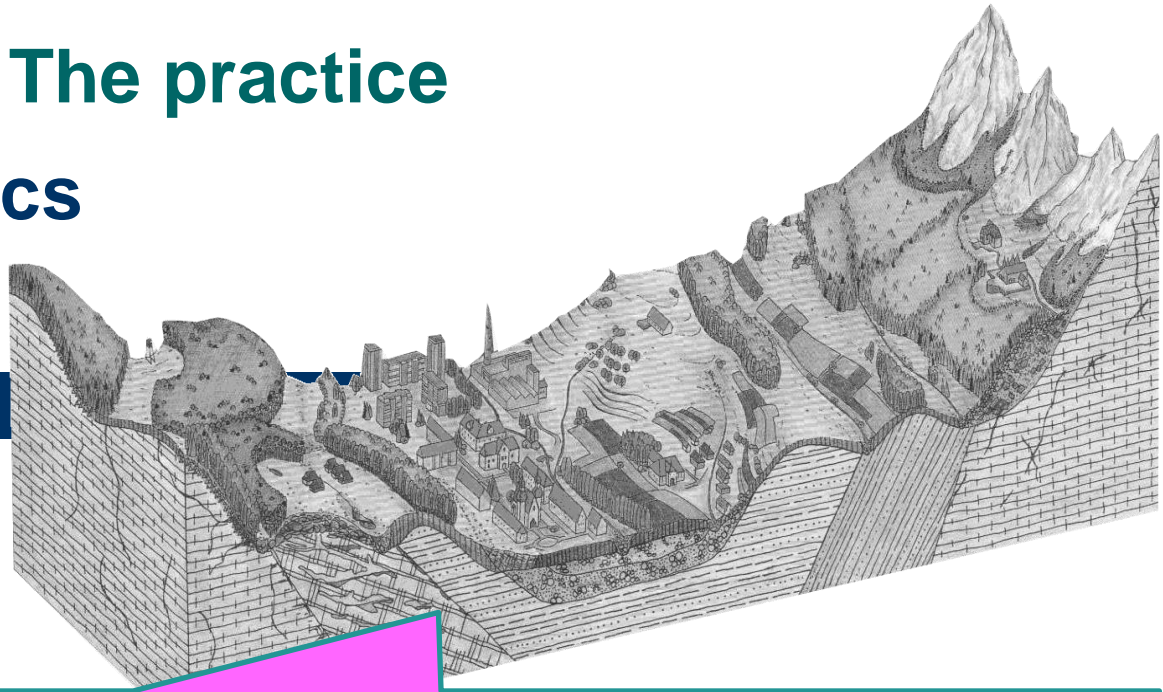
Spatially integrated management:
less powerful

includes landscapes



The practice

Horizontal politics



Environmental legislation

Environmental state administration

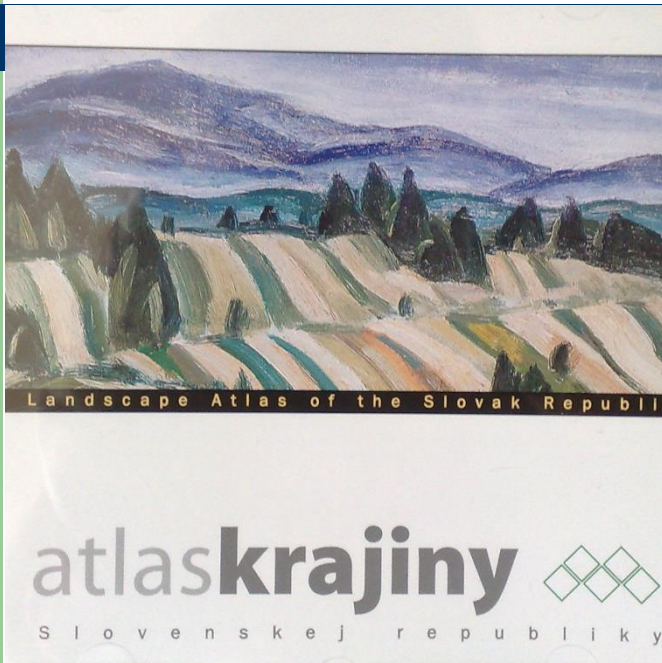
Information systems and monitoring

Environmental education

Voluntary tools: EMAS, ISO, Green products



The Landscape Atlas of Slovak Republic. Miklós, Hrnčiarová et al. (Eds.) 2002



- 639 maps on 342 map sheets
- Basic map scale 1 : 500,000
- 328 authors

Landscape atlas of Slovak republic (Miklós, Hrnčiarová et al. (Eds.) 2002

1. KRAJINA - HMOTNÁ REALITA - VÝREZ GEOGRAFICKEJ SFÉRY
LANDSCAPE - MATERIAL REALITY - FRAGMENT OF GEOGRAPHICAL SPHERE

Hôrnaté krajiny (Mountainous landscapes)
Ušľachtelá krajina (Rolling hills)
Travná krajina (Grassland)
Travná krajina s poľnohosp. územím (Grassland with agricultural areas)

Algebraic symbol of space	Mathematical symbol	Visual model of the landscape
High mountains	$z \gg 1000$	
Rolling hills	$z \approx 100 - 1000$	
Grassland	$z \approx 100 - 1000$	
Grassland with agricultural areas	$z \approx 100 - 1000$	
Lowlands	$z \approx 100 - 1000$	
Highlands	$z \approx 100 - 1000$	
Lowlands with agricultural areas	$z \approx 100 - 1000$	

Visual model of the landscape / Visual model of the landscape and its visualization

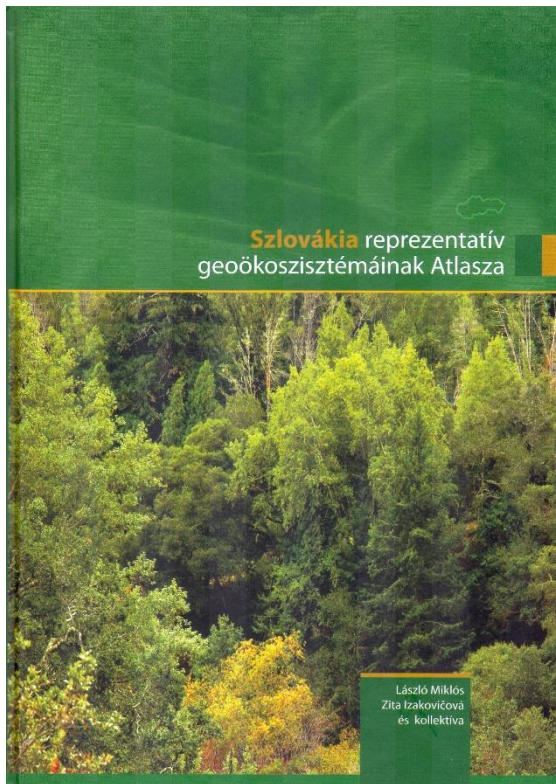
2. KRAJINA, JEJ PIVKY A VZÁJOMNÉ VZŤAHY
LANDSCAPE, ITS ELEMENTS, AND RELATIONSHIPS

Prvky krajiny ako geosystému / Elements of the landscape as geosystem
Travná krajina / Grassland
Ušľachtelá krajina / Rolling hills
Hôrnatá krajina / Mountainous landscape

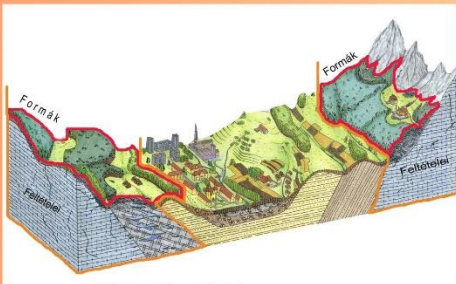
1. **Ušľachtelá krajina / Rolling hills**
 2. **Hôrnatá krajina / Mountainous landscape**
 3. **Travná krajina / Grassland**
 4. **Ušľachtelá krajina / Rolling hills**
 5. **Hôrnatá krajina / Mountainous landscape**

Visual model of the landscape / Visual model of the landscape

The Atlas of the representative geoecosystems of Slovak Republic



Miklós, L. Izakovičová, Z., et al. 2006



ÉLETFELTÉTELEK & FORMÁK - MELYIKET ELSŐSORBAN?

Ha megtartjuk az életfeltételeket,
Az életformák biztosan megmaradnak.
Fordítva ez lehetetlen!



GEOÖKOLÓGIAI RÉGIÓK

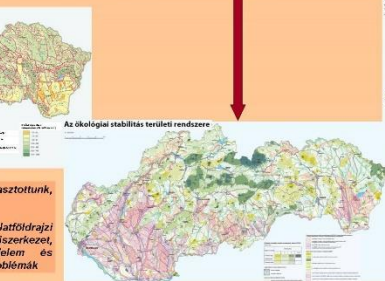
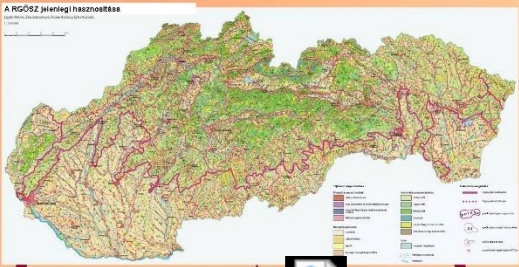
Chorvácskai párházkötés

Pálfi

Padiszeri kávé

A RGÖSZ típusú termékek faja

REPGES = komplex tájökológiai egységek, amelyeket az abiotikus (litoszféra, hidroszféra, atmoszféra) és a biotikus komponensek (főleg a növényzet, a bioföldrajzi aspektusokkal együtt) összessége jellemez



REPREZENTATÍV GEOÖKORENDSZEREK

[madarsky leták Atlas.pdf](#)

Szlovákia területén 84 geológiai régiót választottunk, melyeket az Atlasz a következőképpen ír le:
rövid jellemzés, növényföldrajzi és állatföldrajzi besorolás, klimatikus övezet, jelenlegi tájszerkezet, szocio-gazdasági szerkezet, természetvédelem és a NATURA 2000, potenciál, environmentális problémák

Szlovákia területén 120 REPGES-típust választottunk, melyeket az Atlasz a következőképpen ír le:
a REPGES fő jellemzése, domináns társulások, domináns növényfajok, domináns talajtípusok, természetvédelem

Miklós, L. Izakovičová, Z., et al. 2006

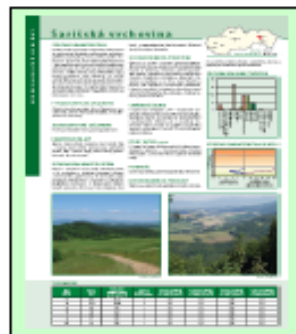
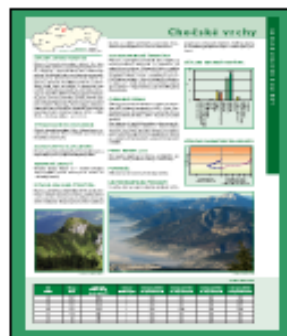
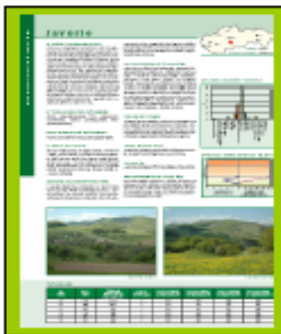
The Atlas of the representative geoecosystems of Slovak Republic.

Issued 2x in Slovak, English and Hungarian

Atlas of the representative geo-ecosystems of SR (Miklós, Izakovičová et al. 2006)

Szlovákia geoökológiai régiói

A geoökológiai régiók olyan területi egységek, melyek a REPGES jellemzésére szolgálnak. Szlovákia geomorfológiai tagozódásán belül a hierarchikus jellemzésben, mint „alegység” szerepelnek (Szlovákia tájatlasa, 2002)

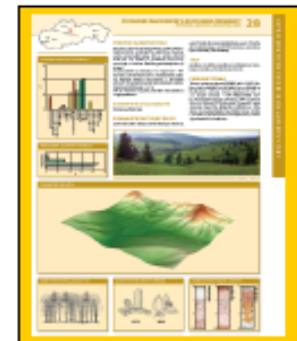
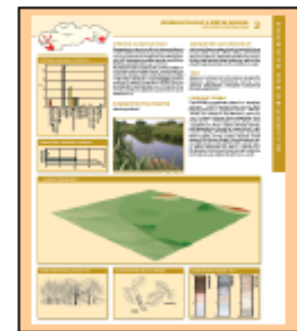


Szlovákia területén 84 geoökológiai régiót jelöltünk ki, melyeket az Atlasz a következőképpen jellemez: tömör jellemzés, fitogeográfiai és zoogeográfiai besorolás, éghajlati övezet, jelenlegi tájszerkezet, szocioökonómiai szerkezet, természetvédelem és NATURA 2000, potenciál, életkörnyezeti problémák

Reprezentatív potenciális geökoszisztémák - REPGES

Szlovákia olyan reprezentatív tájtypusai, melyeket az alábbiak szerint jelöltünk ki:

- zonális (bioklimatikus) feltételek - vegetációs övezetek
- azonális feltételek - abiotikus adottságok, főképpen kvartér - geológiai szerkezet, reliéf, a talajok és a talajvízszint



Szlovákia területén 120 REPGES típust jelöltünk meg, melyeket az ATLASZ a következőképpen jellemez: a REPGES tömör jellemzése, domináns társulások, domináns növényfajok, domináns talaj altípusok, természetvédelem

The landscape types of Slovak Republic

Bezák, P., Izakovičová, Z., Miklós, L., 2010

Scientific publications on the theory of landscape



It is certainly not all what remained as
problem

**There is still a lot of work
for us all!!!**

Thank you for your attention !

László Miklós