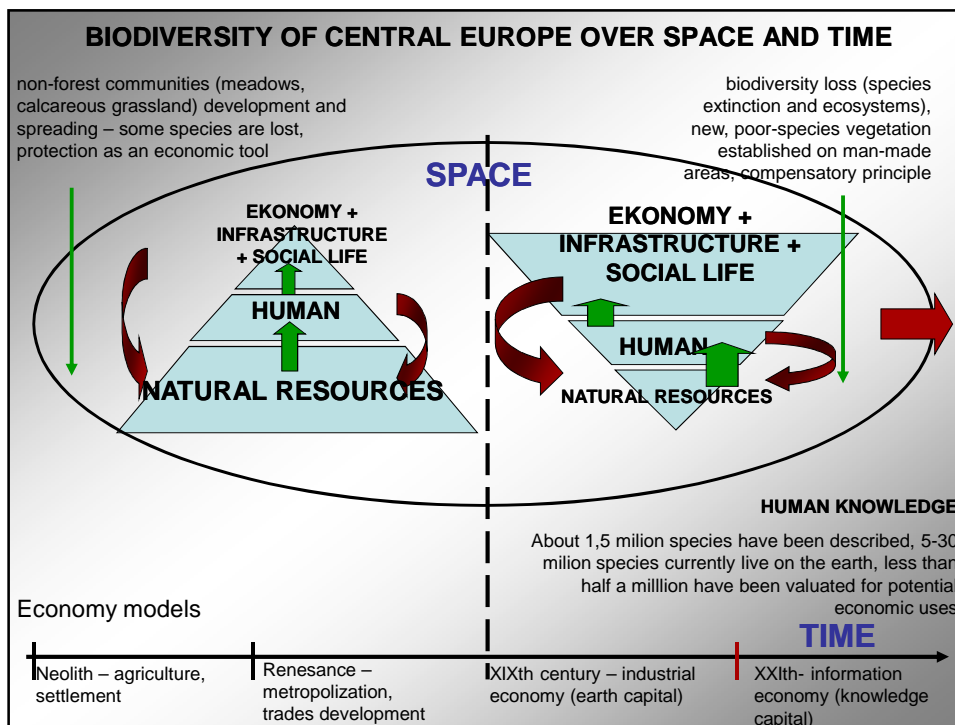




## INTRODUCTION

- **Competitive space** - areas of business in which a firm feels comfortable against competitive pressures, on the basis of its cost advantage or technological leadership.
- **Creation of competitive space** - projection of its quality-quantity parameters and such way of its components management (environment + human + infrastructure) which enable the use of natural resources for fulfillment human needs and guarantee their regeneration or recreation at the same time.
- The basic condition of rational management of competitive space is recognition the size of its resources and the processes running within them. The basic unit within which ecological processes (i.e. biogeochemical cycles matter and energy flow, regulation of populations) and human activity are running is landscape. **Landscape** is the fragment of earth area with characteristic configuration which is the effect of mutual interaction of many factors (land relief, soils, water, species, ecosystems) with element of human economy, constituting integrated circuit.
- Present country and local **spatial policy** as well as regional development policy, influence future landscape characters. Considering different social, cultural, economic and natural conditions of European countries, there is impossible to determine the unique standards of competitive space parameters, but it is advisable to estimate the minimum dimensions of its three components and indicators which describe them.
- The aim of this paper is indication positive and negative factors which influence the creation of competitive space in Poland and result from present law conditioning, the size and the way of natural resources management as well as our knowledge about them, using SWOT analysis. During analysis the following assumption was made: strength and weakness reveal present state, in turn opportunities and threats are future expected occurrences. The **model of competitive space** based on three components of sustainable development was also presented.



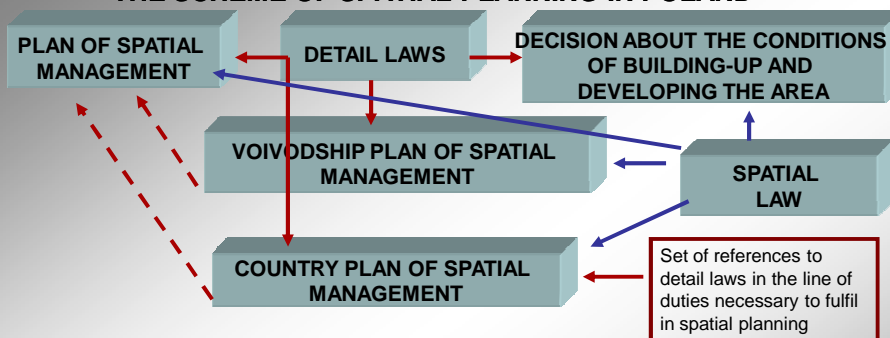
### FOUR OPTIONS FOR A 2020 TARGET [COM(2010) final]

	OPTION I	OPTION II	OPTION III	OPTION IV
Options	Significantly <b>reduce</b> the rate of <b>loss biodiversity</b> and ecosystem services in the EU by 2010	Halt the loss of biodiversity <b>and ecosystem services</b> in the EU by 2010	Halt the loss of biodiversity and ecosystem services in the EU by 2020 <b>and restore them insofar as possible</b>	Halt the loss of biodiversity and ecosystem services by 2020, restore them and <b>step up the EU's contribution to averting global biodiversity loss</b>
Assumptions	halting biodiversity loss is unattainable for the foreseeable future	keeping the current target but postponing achievement to a later date	broadening the existing biodiversity target, to restoration of ecosystems	EU has interest to stop biodiversity loss also beyond its boarder
Aims	slow rather than stop biodiversity loss	halt loss biodiversity and ecosystem services	restoration objectives to attain favourable conservation status	reducing the impact of EU consumption patterns on biodiversity elsewhere, enhancing efforts to protect biodiversity in other countries

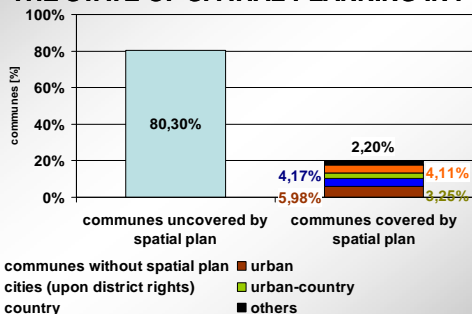
Options for an EU vision and target for biodiversity beyond 2010 and directions of system activities in Polish environment protection for years 2009-2012 with perspective to 2016

	European activities beyond 2010	Polish environmental goals
1	Implement gaps in establishment of Natura 2000 network	Elaboration of protection plans for Natura 2000 sites
2	Fill policy gaps – concerning soils and invasive species, <b>protection species and habitats outside protected areas, investment in green infrastructure</b>	<b>Responsibility for environmental damage; creation new National Parks</b> , Participation of society in activities for environment protection purpose
3	Fill knowledge and data gaps, straighten the role of monitoring efforts, building Biodiversity Information System, building appropriate indicators for ecosystems and ecosystems services	Research development and technical progress
4	<b>Improving integration of biodiversity concerns into other policies</b>	Implementation of environmental protection rules in different sectors strategies; <b>Ecological aspect in spatial planning</b>
5	Assessing funding needs for biodiversity in the EU	
6	Reinforce in environmental legislation polluter pays and full cost-recovery principles	Promotion of market for environment protection purpose; Environmental management;

### THE SCHEME OF SPATIAL PLANNING IN POLAND

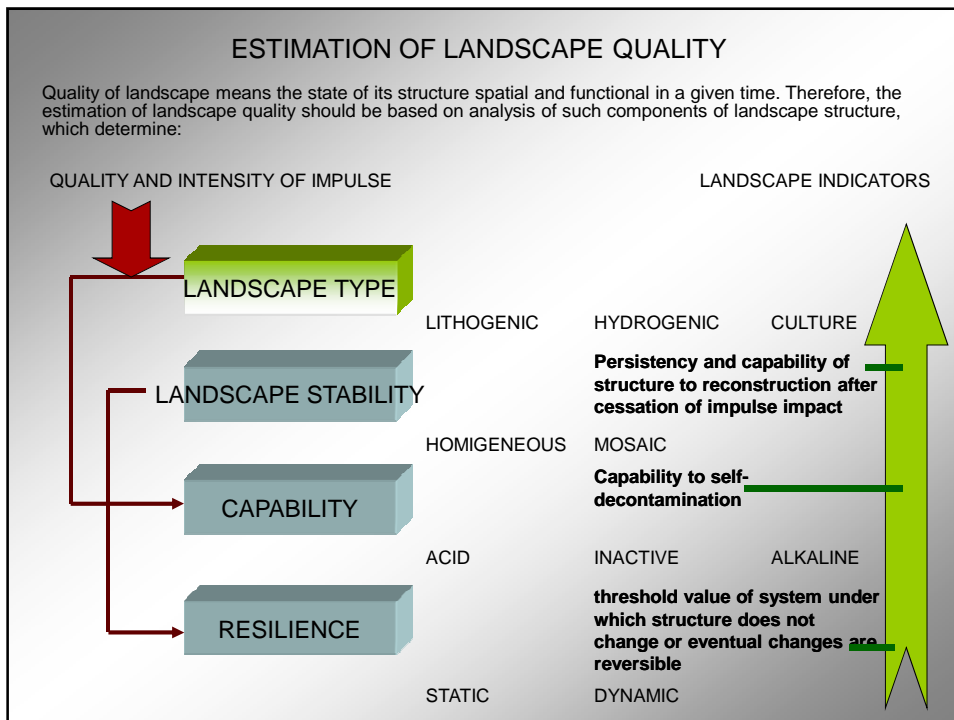
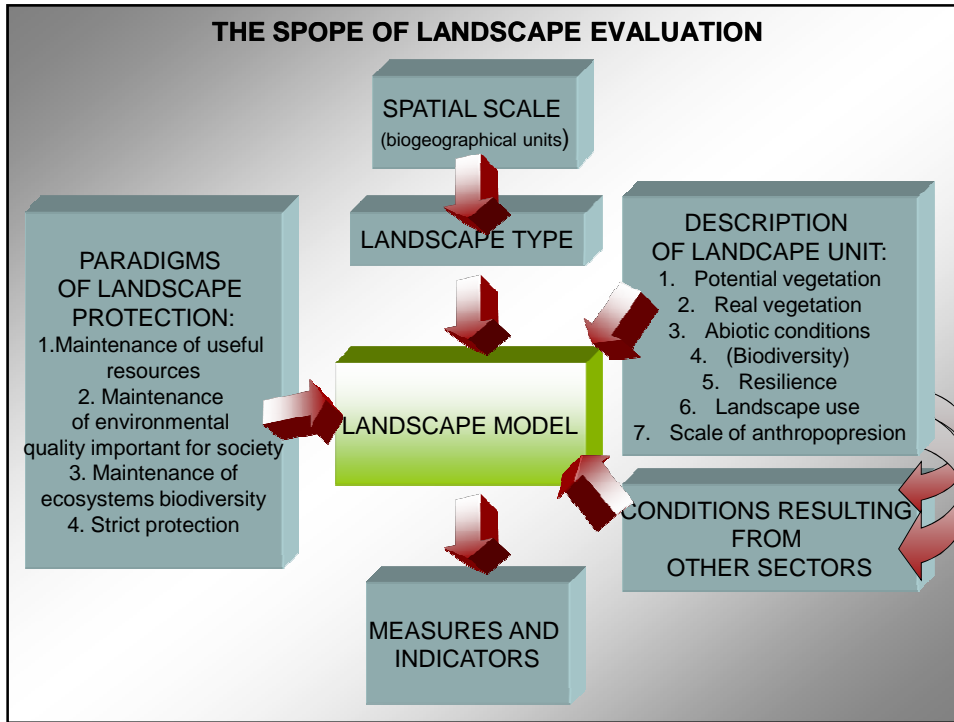


### THE STATE OF SPATIAL PLANNING IN POLAND (NIK 2007)



CONSEQUENCES:

**Longer time of investment process**  
**Deterioration of environment quality, including landscape**  
**Spatial chaos**



THE ASSUMPTION OF RESILIENCE TO ANTROPOGENIC DESTRUCTION ON THE CHOSEN LEVEL OF NATURE ORGANIZATION			
Level of organization	Feature	High resilience	Low resilience
Species	The size of distribution	large	small
	Number of sites	numerous	small
	Population abundance	great	small
	Location inside the range	centre	boundry
	The size of ecological niche	wide	tight
	Level of synantropization	antropofil	antropofob
	Reproductiveness/mortality	great	small
	The way of reproduction	generative/vegetative	generative or vegetative
	The way of pollination/ distribution	wind	animals
	Life strategy	cosmopolit	specialist
	Ecosystems	Biodiversity	?
Diagnostic species		depends on species features	
Habitats humidity		small	great
Habitats trophy		great	small
Buffer features of soil		great	small
Surface		large	small
Maturity		young	mature
The level of hemerobia		low	high
The lenght of trophic chains		long	short

## INDEX

Nowadays there are several sets of index estimated landscape and its sustainable development (340, Proposal ... 2002); The systems of indicators recommended by OECD and UN Commission on Sustainable Development are based on **concept: „pressure – state – reaction”** and estimation of 3 separates categories of phenomenons running at the contact of society and nature: adverse effects on environment, state of environment, society reaction to environmental changes. In the frame of UE countries **another solution** is recommended, based on two groups of index which reflect the state of environment and describing the results of sectors policies (**state – change**)

According to Proposal .... 2002 these index are divided into following themathic groups:

- I. **Landscape features** - Landscape composition, Landscape configuration, Natural landscape features, Historical-cultural landscape features, Present – cultural landscape feature
- II. **Human perception – Visual and aesthetic lanscape value**
- III. **Landscape management, conservation and protection** - Cultural landscape protection/conservation, Nature Conservation/protection

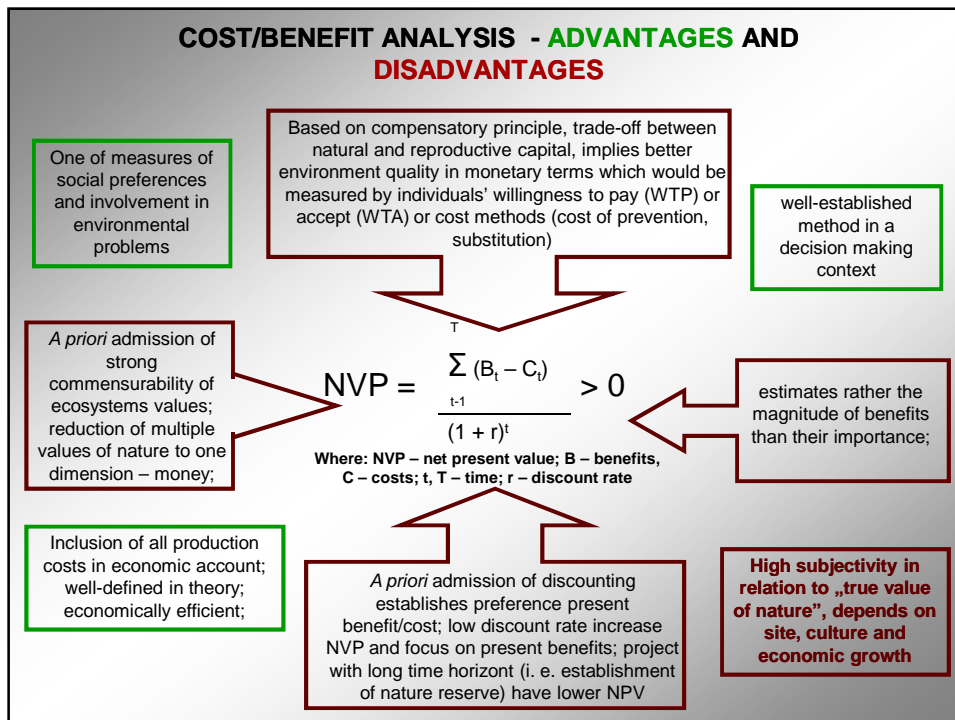
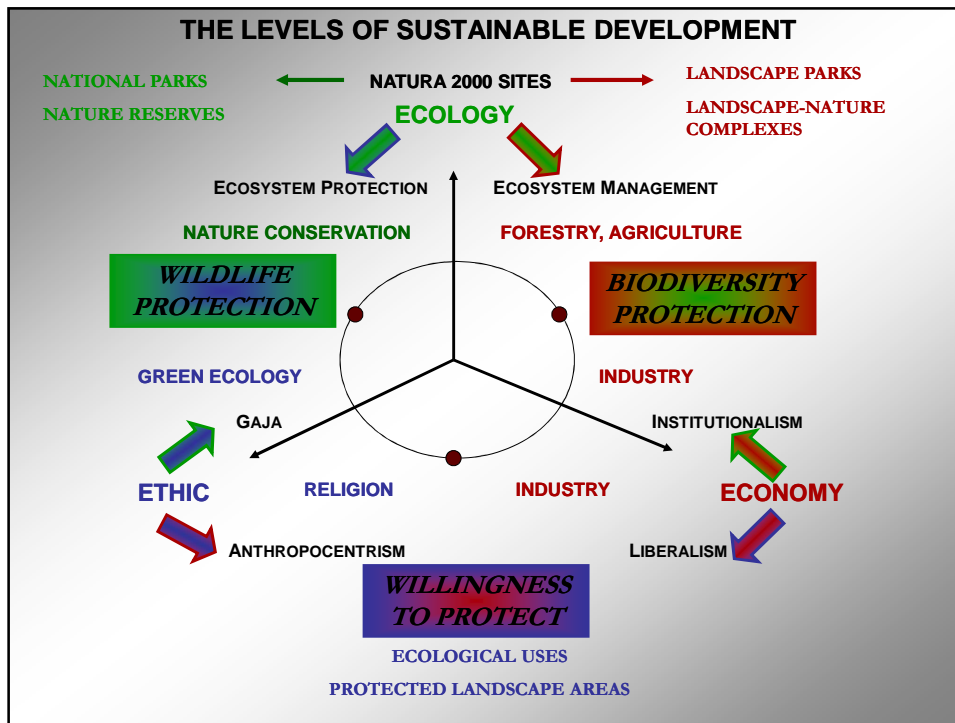
In most cases index of landscape features reflect the earth area management or land cover based on category of Corine Land Cover but not the diversity of ecosystems. Therefore important information about habitats is neglected and in effect they are useless for the purpose of management and protection of habitats and landscape.

The main shortcomings of these index:

1. Lack of connection with spatial scale of landscape
2. Using standard statistical data, no individual field studies in a given area
3. Lack of analysis of connection between values of index
4. Subjective choice and interpretation of index

The index describing state of landscape and its model should reveal following attributes:

1. Adequate to scale of analysis
2. Describing present state as a percent of model state
3. Including landscape composition and configuration



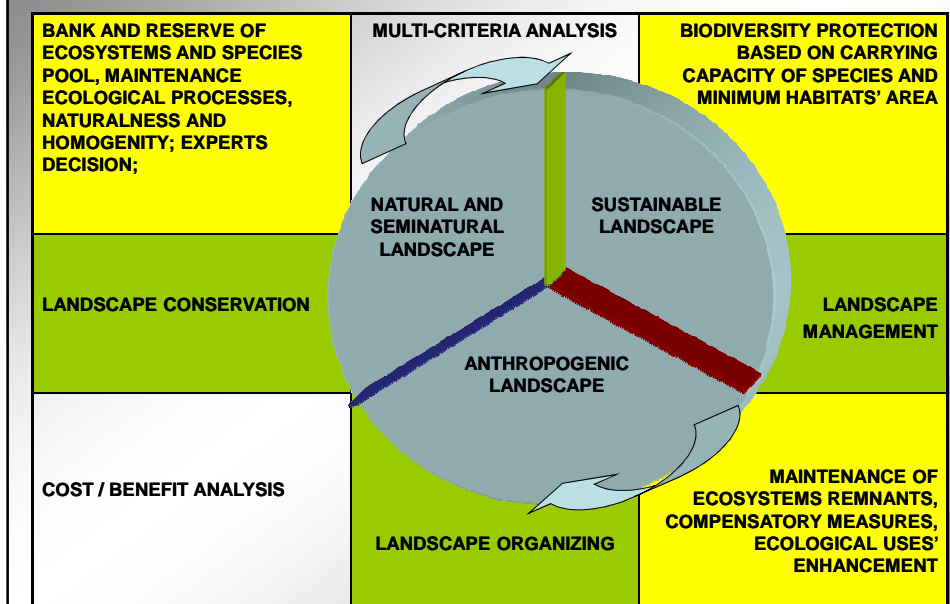


### MULTI-CRITERIA ANALYSIS

- is adaptable to different conditions (social, economic and natural), includes all criteria in the process of evaluation
- Is valuable method when different alternatives are assessed
- implies incommensurability of values – the absence of a common unit of measurement across plural values of ecosystems, valuing habitat protection as a way to know benefits derived from protection and contrast them with cost associated with conservation
- assumes possibility of criteria weighting
- implies quality and quantity analyses
- evaluation process may be influence by ethical judgments of all actors
- policy options results from dialogue between society and analysts (elimination of knowledge gaps and taking into account property rights).

EXAMPLE OF A MULTI-CRITERIA MATRIX					
DIMENSION	CRITERIA	UNITS OF MEASUREMENT	OPTIONS		
I	1. ECONOMIC	A, B, C	I	...	En
	2. ENVIRONMENTAL	...	...	...	...
	3. SOCIAL	...	...	...	...
II	1. ECONOMIC	A, B, C	I	...	Sn
	2. ENVIRONMENTAL	...	...	...	...
	3. SOCIAL	...	...	...	...
III	1. ECONOMIC	A, B, C	I	...	Ecn
	2. ENVIRONMENTAL	...	...	...	...
	3. SOCIAL	...	...	...	...

### LANDSCAPE MANAGEMENT MODEL – STRATEGY, AIMS AND METHODS IN THE POINT OF PARADIGMS INFLUENCING LANDSCAPE CHARACTER



<b>FORMS OF NATURE PROTECTION (law on nature protection, Act of Journal 2004, Nr 92, pos. 880)</b>							
	NATIONAL PARKS	NATURE RESERVES	LANDSCAPE PARKS	NATURA 2000 SITES	LANDSCAPE-NATURE COMPLEXES	PROTECTED LANDSCAPE AREAS	ECOLOGICAL USE
AREA [thousand ha]	314,5	173,6	2513,8	6566,38	84,6	6969,1	84,6
NUMBER	23	1368	120	498 (total)	170	448	6750
PLANS OF PROTECTION	YES	YES	YES	YES	NO	NO	NO
INCLUDING IN LOCAL SPATIAL PLANNING	YES	YES	YES	YES	YES	NO	NO
PROHIBITIONS OF BUSSINES OPERATION/DAMAGE	YES*/YES	YES*/YES	NO, if it does not reveal advers effect*/YES	NO, if it does not reveal advers effect*/YES	NO/YES	NO/YES	NO/YES
SURVEILLANCE ORGAN	MINISTER	GENERAL DIRECTOR	VOIVODE	REGIONAL DIRECTOR	LOCAL (COMMUNE)	LOCAL (COMMUNE)	LOCAL (COMMUNE)

↓

\*Possibility of abolishment of prohibitions on the basis of competent authorities decision in case of realization the investments projects of overriding public interest (art. 15. pass. 3 and 4)

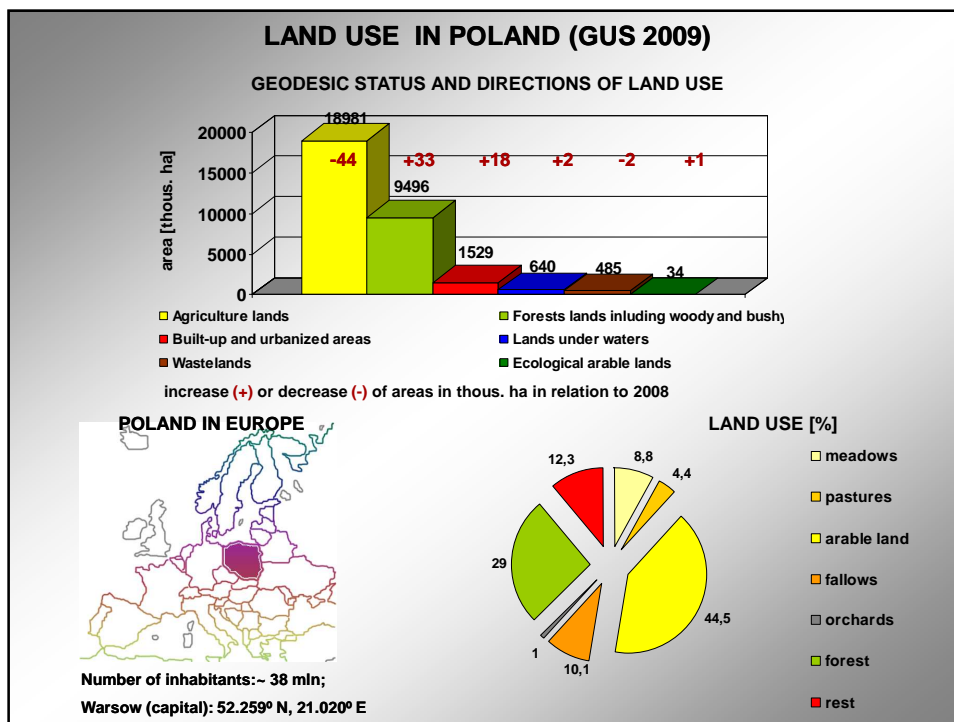
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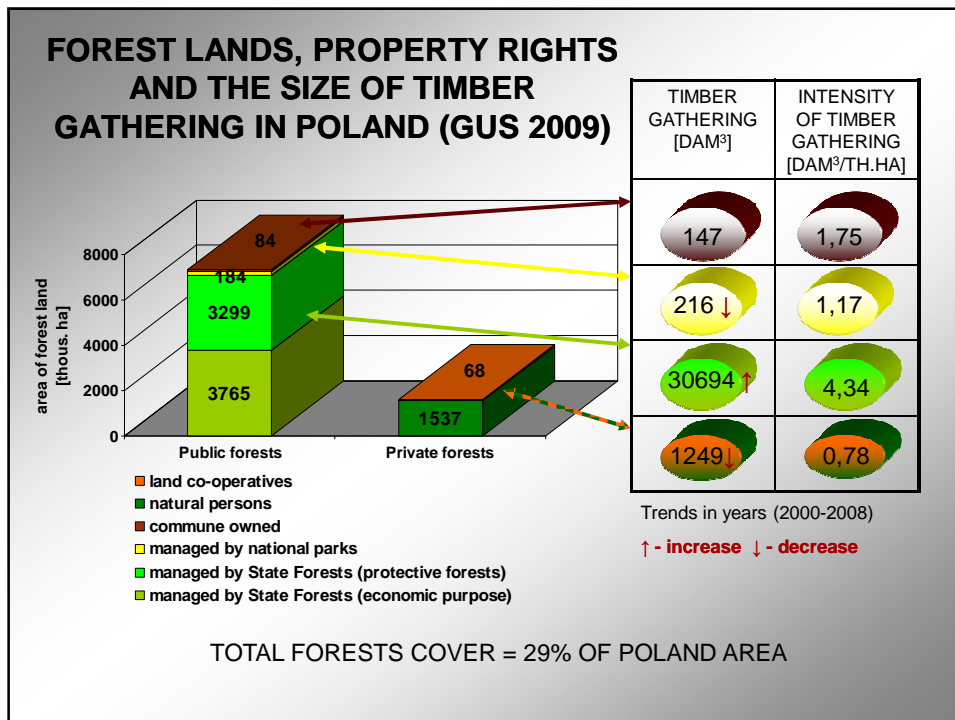
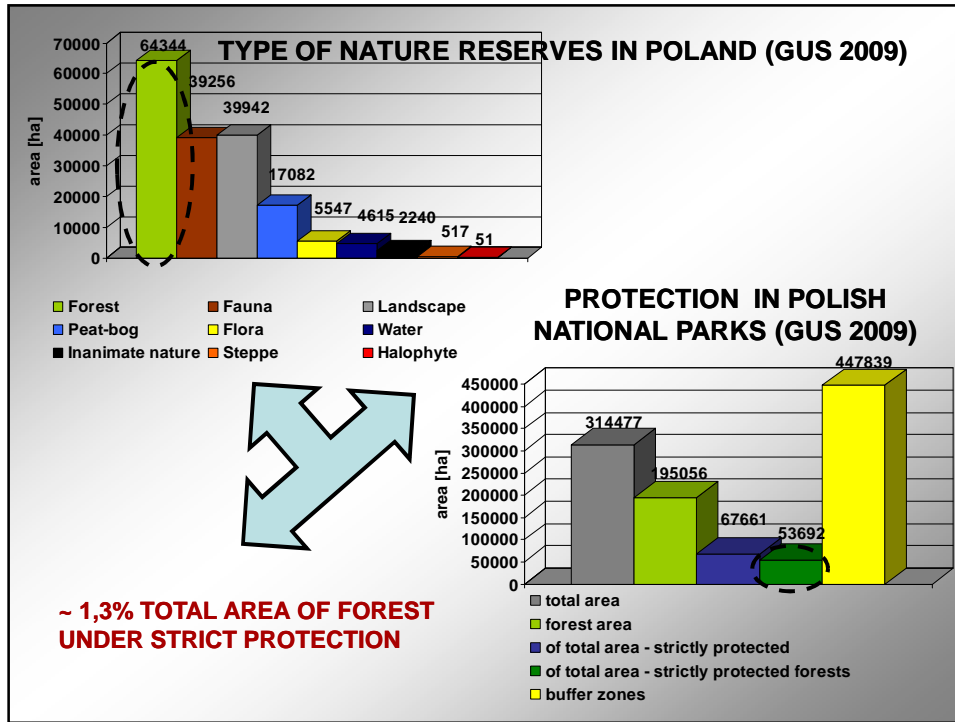
Reduction of first dimension, all resources are expected to be used

<b>UTILITY OF COMPENSATORY MEASURES IN LANDSCAPE PLANNING</b>	
<p>Habitats creation (in new location) or re-creation (in location of occurrence) is adopted as a compensatory measure to offset losses, which results from infrastructure and commercial development pressure in order to achieve sustainable development. Adoption of such compensatory measure which in connection with habitats protection have to be a tool for maintenance of species and habitats bank meets many constraints in reality:</p>	
1.	Compensation possibilities of different habitats are limited by specific physiological and ecological features of diagnostic and accompanying species of a given vegetation type, as well as abiotic conditions and ecological processes (i.e. competition, bio-geochemical cycle, energy and matter flux) which run on the higher – landscape level;
2.	Ecosystems do not always reveal sharp limits in landscape, developing along abiotic gradients (i. e. river valley). In case of adverse impact on crucial abiotic factor (i.e. water conditions) all ecosystems change;
3.	Replacement habitats are not always of similar quality to that lost or reveal insufficient quality to support vulnerable plants and animals;
4.	Semi-natural (grasslands) or natural (forest and peatbogs) habitats developed over geological time (thousand years), under different than present way of management, climate conditions and depends upon specific localised hydrology and lithology. Such habitats are very limited or impossible to restore because their key features are not re-creatable in realistic time-scale;
5.	Compensation does not always lead to Pareto efficiency because of high costs of habitats re-creation and lower quality of new created habitats; Compensation neglects the role of landscape protection and significance of ecological processes;
6.	Creation of habitats as a compensatory measure generates false conviction - the effects of business operation may be alleviated by habitats creation;



POSSIBILITIES AND CONSTRAINTS OF HABITATS CREATION			
	Easy creation or re-creation	Possibility of creation or re-creation	Little possibility of creation or re-creation
time	<b>1-3 years</b>	<b>5-10 years</b>	<b>50-500 years</b>
quality	Full restoration	Lower quality of created habitats	„New quality” of created habitats
Critical factor(s) for successful re-creation	Ground (soil) quality (i.e. sand, chalk) influencing pH and water eutrophy	Modification of soil conditions to reduced nutrients level and seed bank of ruderal plants– (soil removal); introduction of new plant material (pieces of sward, seeds); restoration of appropriate water conditions; introduction key fauna species for pollination and seeds dispersal;	Modification of soil conditions (slow development of woodland soils), poor dispersal capabilities of diagnostic species, low rate of colonization of woodland species (mainly specialist species);
Examples from Habitat Directive 92/43/EEC (annex II)	oligotrophic waters containing very few minerals on sandy plains ( <i>Littorelletalia uniflorae</i> ) [3110] or sandy soils, with <i>Isoetes</i> spp [3120], oligotrophic to mesotrophic standing waters with vegetation of the <i>Littorelletea uniflorae</i> and/or of the <i>Isoëto-Nanojuncetea</i> [3130], natural eutrophic lakes with <i>Magnopotamion</i> or <i>Hydrocharition</i> [3150], natural dystrophic lakes and ponds [3160]	semi-natural dry grasslands ( <i>Festuco-Brometalia</i> ) [6210], *species-rich <i>Nardus</i> grasslands [6230], <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils ( <i>Molinion caeruleae</i> ) [6410], alluvial meadows of river valleys of the <i>Cnidion dubii</i> [6440], Lowland hay meadows [6510], Mountain hay meadows [6520]	<i>Luzulo-Fagetum</i> beech forests [9110], Medio-European limestone beech forests of the <i>Cephalanthero-Fagion</i> [9150], <i>Gallio-Carpinetum</i> oak-hornbeam forests [9170], *alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> ( <i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i> ) [91E0], riparian mixed forests ( <i>Ulmion minoris</i> ) [91F0]





STRENGTHS	WEAKNESS
<ol style="list-style-type: none"> <li>1. Introduction of landscape protection elements through obligation of integrity and connectivity maintenance of Natura 2000 areas</li> <li>2. Supporting green agriculture in the frame of agro-environmental schemes</li> <li>3. Development of multi-functional forestry based on creation Forest Promotion Complexes</li> <li>4. Scientific compilation of landscape types based on biogeographical criteria and esthetic values; compilation of integrated map of country natural resources (vegetation, soils, minerals)</li> <li>4. Implementation of environment protection rules in different sectors policies in the frame of strategic environmental assessment.</li> </ol>	<ol style="list-style-type: none"> <li>1. Lack of implementation of landscape policy, rules of protection and management, as well as quality landscape standards in polish law on nature protection</li> <li>2. Lack of vision of spatial planning on country and regional levels;</li> <li>3. Lack of spatial management plans in most Polish communes</li> <li>4. Predominance of economic criteria in natural resources management which appears by introducing compensatory principle on the area of Natural Parks and Nature Reserves, focus on quantity not quality of nature and landscape elements</li> <li>5. Insufficient protection of ecosystems remnants on urbanized areas</li> <li>6. Insufficient protection of forest resources</li> <li>7. Lack of protection plans for Natura 2000 areas;</li> </ol>
OPPORTUNITIES	THREATS
<ol style="list-style-type: none"> <li>1. <b>Implementation rules of Landscape Convention in Polish law on nature protection</b></li> <li>2. Elaboration of protection plans for Nature 2000 sites, fill data gaps about natural resources on the level of communes</li> <li>3. <b>Implementation landscape protection rules in spatial planning</b></li> <li>4. Straighten institutional network in the frame of research on improving quality of natural environment</li> </ol>	<ol style="list-style-type: none"> <li>1. Awaking ecological conscience in society instead of rising ecological knowledge resulting in complicated and changeable law regulations</li> <li>2. <b>Inappropriate distribution of natural resources</b> in the frame of forms of nature protection as a results of protection of stakeholder economic interest (i.e. foresters);</li> <li>3. <b>Natural Creationism</b>, lack of strictly established limits between different levels of sustainability in the frame of nature protection forms;</li> </ol>

## CONCLUSION

Attaining of halting biodiversity loss goal will be possible in Poland under following conditions:

1. preservation of natural resources in the frame of implemented landscape policy and rules of lanscape management;
2. establishing transparent limits of management within each dimension of competitive space;
3. distribution of natural resources adequately to the size and ecological features of ecosystems in the frame of forms of nature protection;
4. improving integration of regional development policy with biodiversity concerns and quality of spatial planning though elaboration and implementation of landscape model;



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