

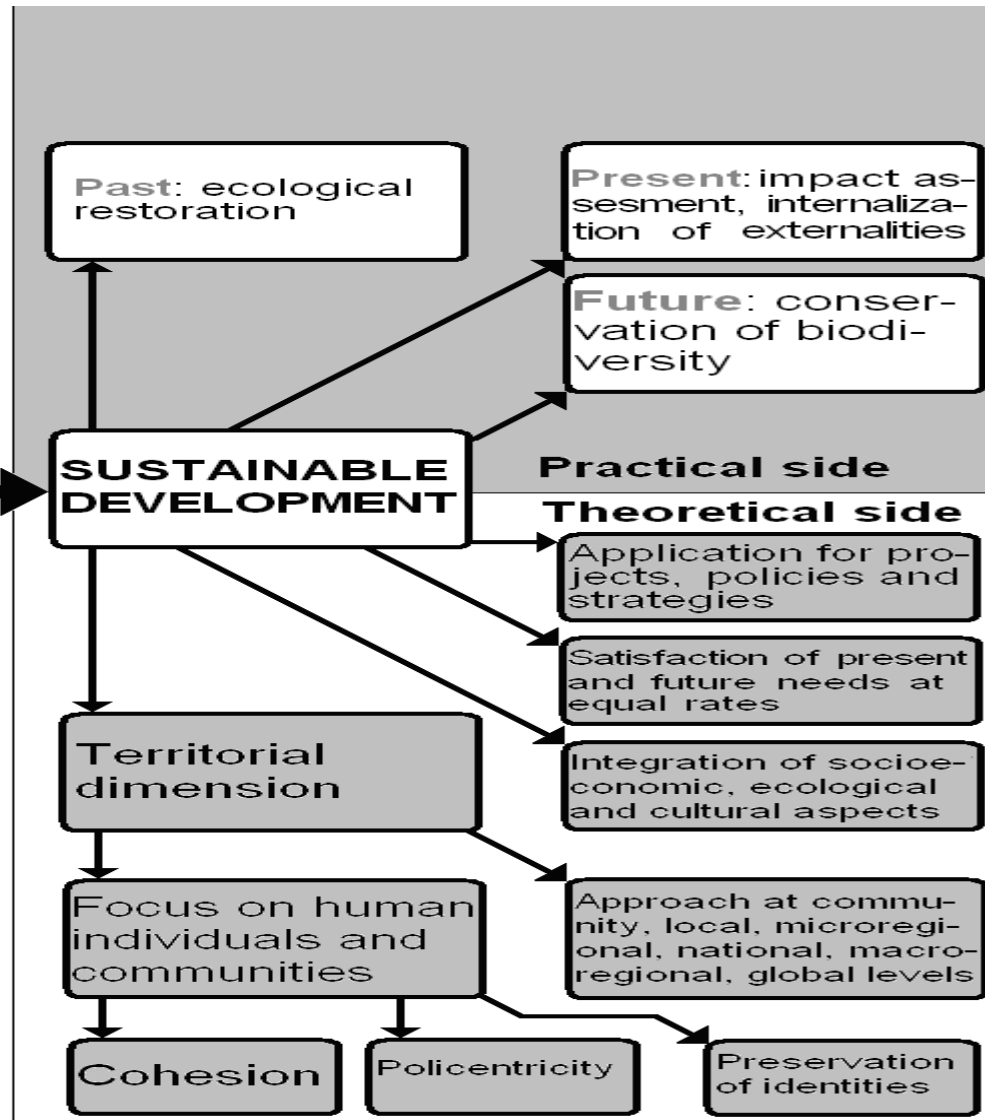
# Role of environmental education in the sustainable spatial development.

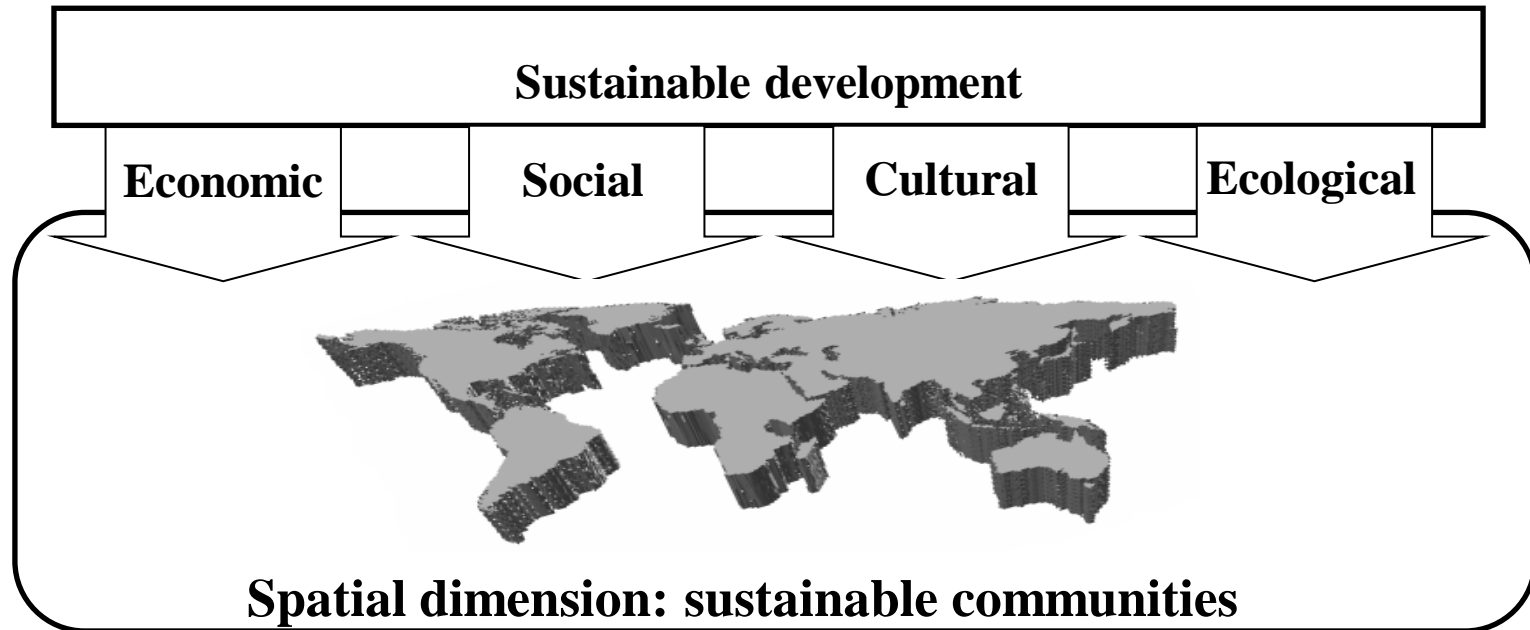
## Achievements and barriers

(Rolul educației de mediu în dezvoltarea spațială durabilă: realizări și obstacole)

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- Spatial sustainability: *„Territorial balance of satisfying at the same rate the economic, social and environmental needs of present and future generations” (Petrișor, 2008)*

# The Romanian Planning System

## Spatial Planning

Supra-national (e.g., Tisza river)  
National  
Regional (e.g., Danube Delta)  
County (NUTS II)

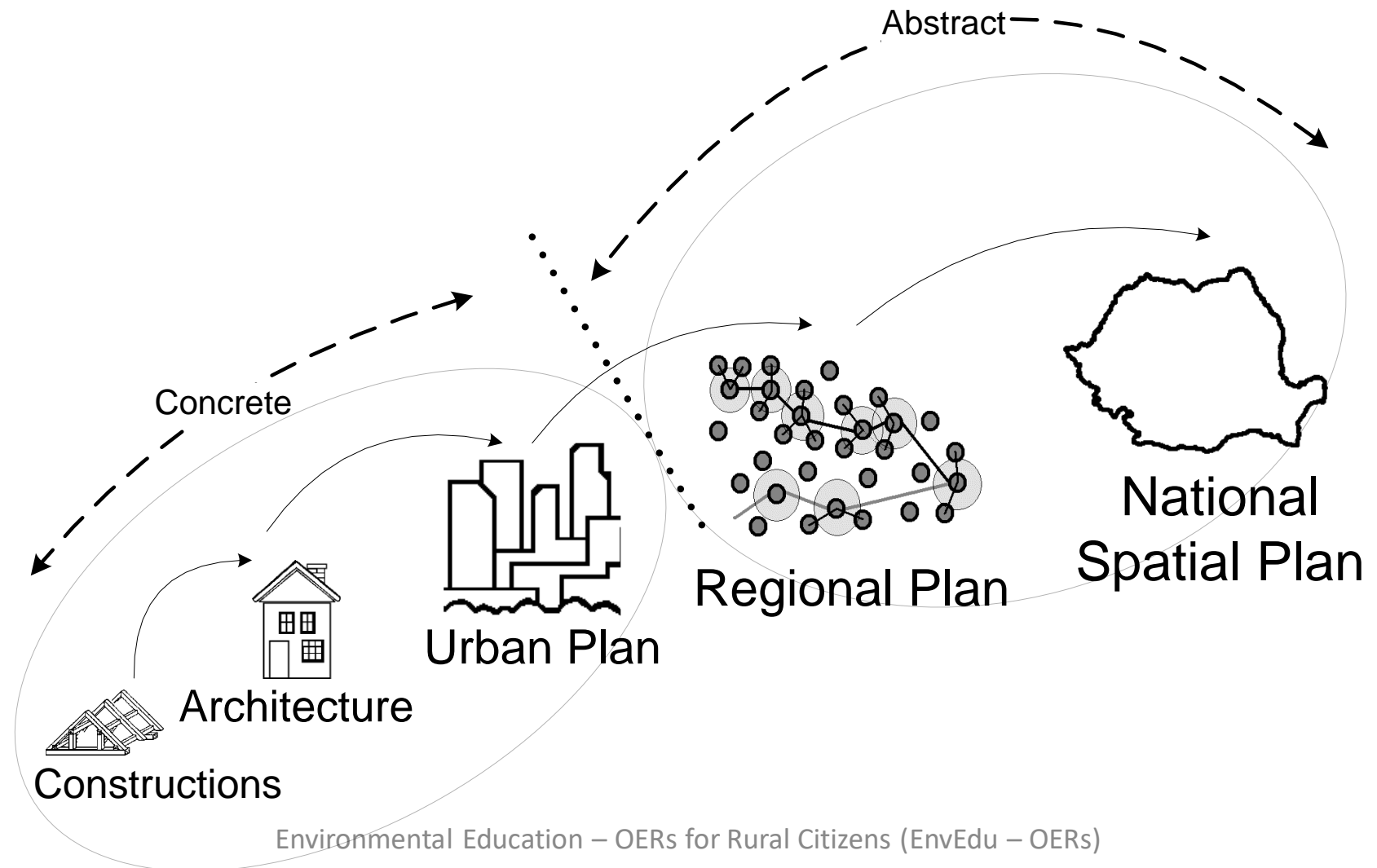
Analyze the overall situation, underlining problems in specific areas or administrative units  
Propose long-term strategies

## Urban Planning

Administrative units  
NUTS V (urban, rural)  
Specific areas  
(center, historical)  
Point interventions (new)

Analyze the specific situation, pertaining to economic, technical, and judicial issues  
Propose “on the spot” interventions

# The Romanian Planning System



# Role of urban ecology (1/2)

- Romanian view (1/2)
    - Taxonomy of professions: (2) Specialists from different fields → (21) Specialists in sciences and **engineering** → (213) Specialists in life sciences → (2133) ecologist: specialist in environmental protection, studies and assess environmental effects of human activity, such as pollution of air, water and noise pollution, soil contamination, climate changes, effects of toxic wastes, as well as the exhaustion and degradation of natural resources. They develop **plans and solutions to protect, preserve, restore, reduce and prevent continuous environmental degradation.**
    - Commission for Higher Education: Engineering sciences → Environmental engineering; Mathematics and natural sciences → Earth Sciences
- ⇒ **Engineering-dominated view on the role of ecology**

# Role of urban ecology (2/2)

- Romanian view (2/2)
  - National Research, Development, and Innovation Strategy for 2014 – 2020: *Smart specialization areas* – Energy and environment– Smart city; *Public priority areas*
    - Qualitative criteria: challenge, need for research/innovation, pre-conditions, perspectives and potential– effected (repeating ICT)
    - Resources and results: no. researchers (existing and needed), funds needed, scientific output, patents, new SMEs, sales of products
  - Criteria of the Higher Education commission
    - Environmental engineering: scientific articles (Scopus, ISI), citations, patents
    - Earth Sciences: scientific articles (IBD, ISI), Hirsch index, research grants

⇒ **Ecology assimilated to basic or engineering sciences**

# Specific jargon

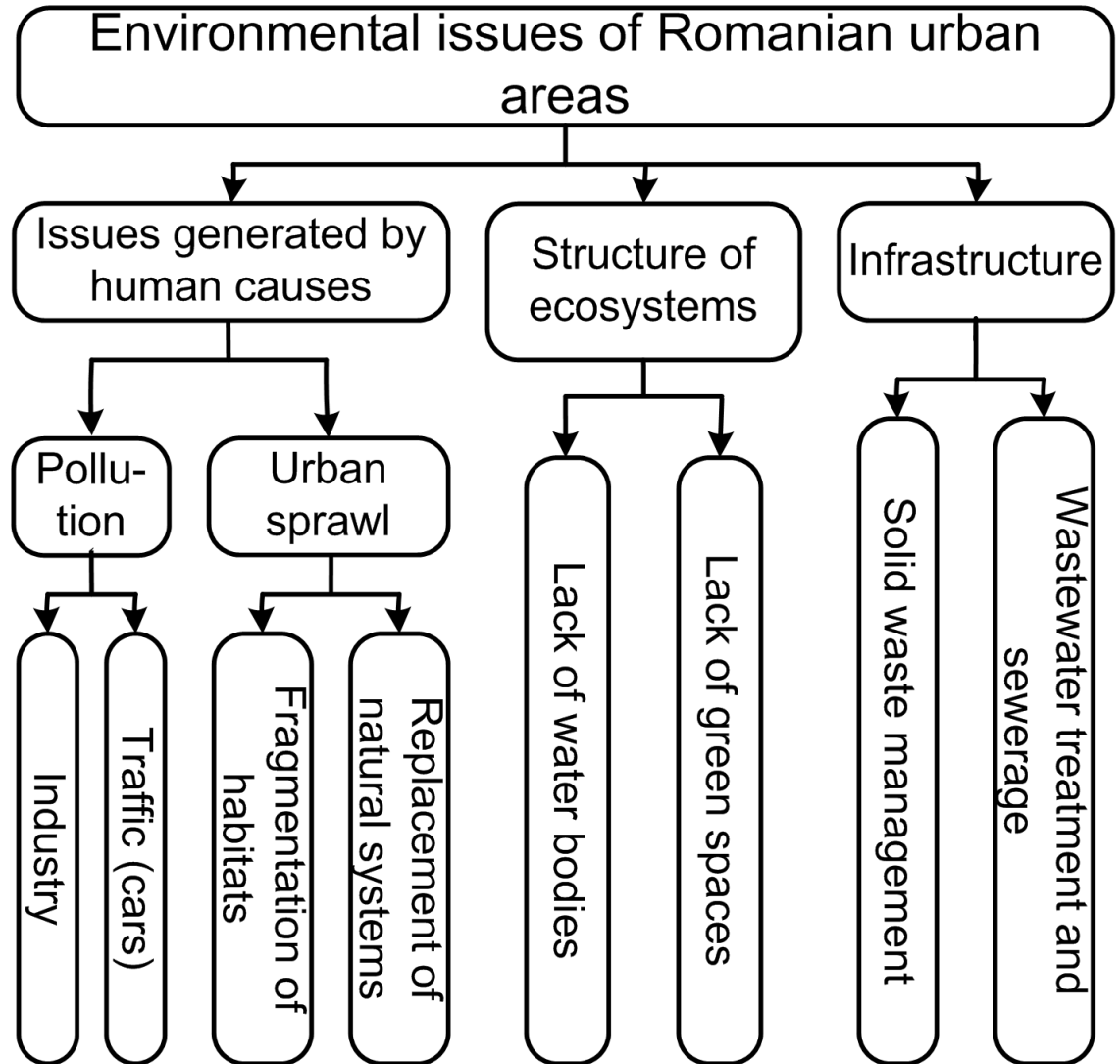
- Ecology (urban ecology)
  - Socio-ecologic complex
  - 4 types of urban nature
  - Green infrastructure
  - Ecosystem services
  - Nature-based solutions
- Planning
  - Natural framework (landform, geotechnical settings, hydrology, climate, green spaces etc.), natural resources, areas with natural risks, historical and natural monuments, leisure and recreation areas, natural objectives with environmental impact, communication routes, household and industrial waste sites etc.
  - Dysfunctions: zoning of land use, pollution sources, quality of **environmental factors** (water, air, soil, vegetation and fauna), intervention priorities.

⇒ **Planning uses an outdated language, uncorrelated with the scientific progress of ecology**



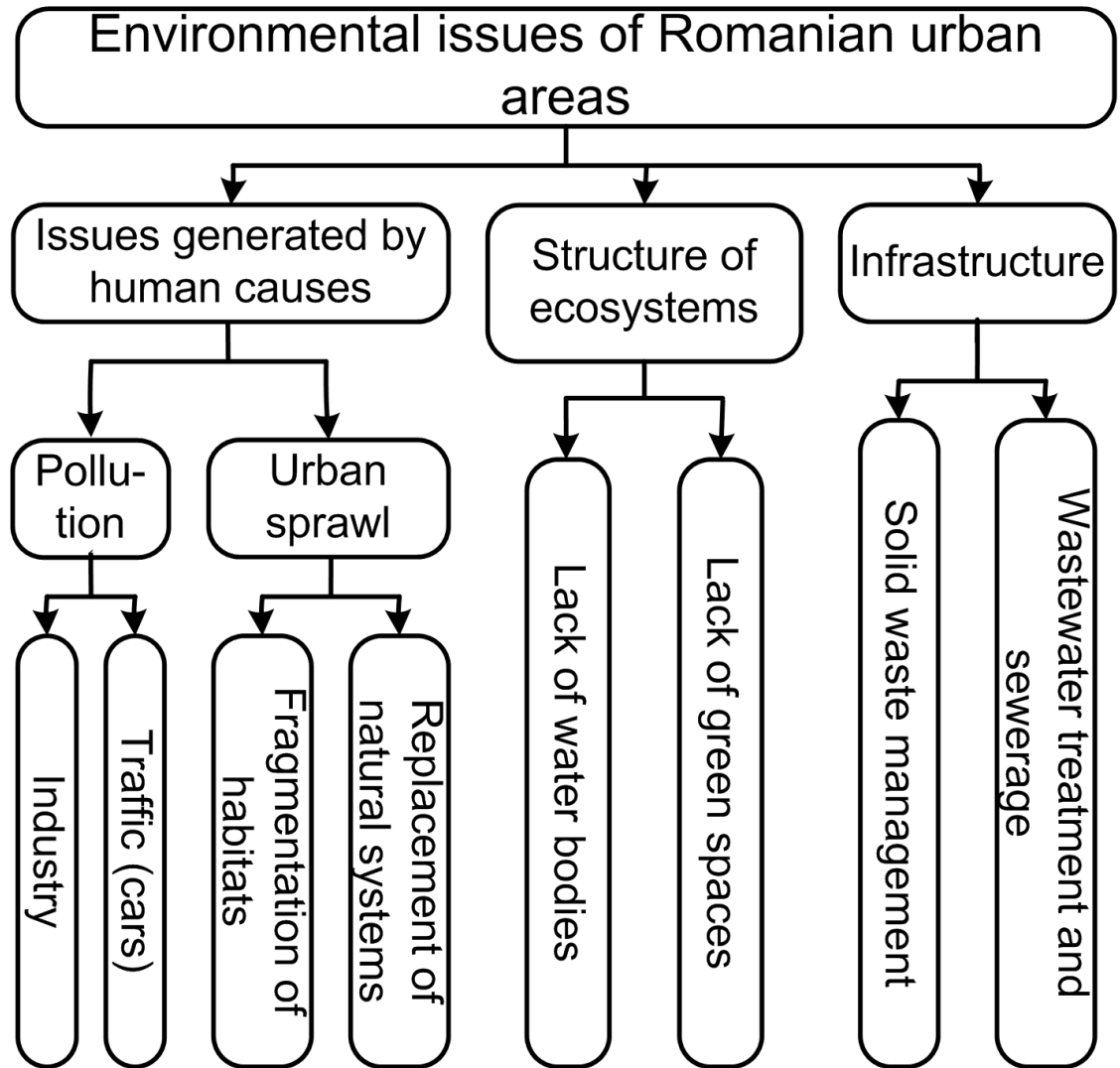
# Methods

- Didactic exercise
  - Enumerate 5 issues affecting the urban environment (first 2 periods: environmental)
  - Aggregate them into categories
  - Rank categories
- Use Kendal coefficient of agreement



# Methods (2/2)

- Example:  
2010-2011  
categories  
(Batelle-  
Columbus  
method)



# Results

Year	Group	Specific issues	Total	Rank	Agreement
2016-2017	1. Lack of green spaces	Lack of green spaces; insufficient parks in the neighborhoods; insufficient green spaces per person; insufficient green spaces; diminishing green spaces	25	3	W=0.578, p=0.00985
	2. Social & health issues	Airborne diseases; homeless people; issues related to the health of dwellers; social segregation	20	2	
	3. Environmental quality	Noise pollution; increased noise; increased temperature; pollution; soil pollution with heavy metals; low environmental quality; underground water pollution; waste; air pollution; water pollution	30	4	
	4. Traffic and accessibility issues	Traffic jams and agglomeration; hardly accessible public spaces; insufficient public transportation; lack of parking spaces; lack of accessibility; agglomeration; traffic; cars parked on pedestrian areas; increased traffic	10	1	
	5. Life and habitat quality	Public spaces not landscaped; lack of resting areas and facilities; visual pollution (commercials, kitsch); unsuitable habitat and human agglomeration	35	5	

Year	Agreement
2015-2016	W=0.477, p=0.000003
2014-2015	W=0.336, p=0.007048
2010-2011	W=0.573, p=0.000376

# Questions

Thank you for  
listening & wait  
for your  
questions.



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