



# Barriers and drivers for the implementations of NbS in Romania

## *An environmental research perspective*

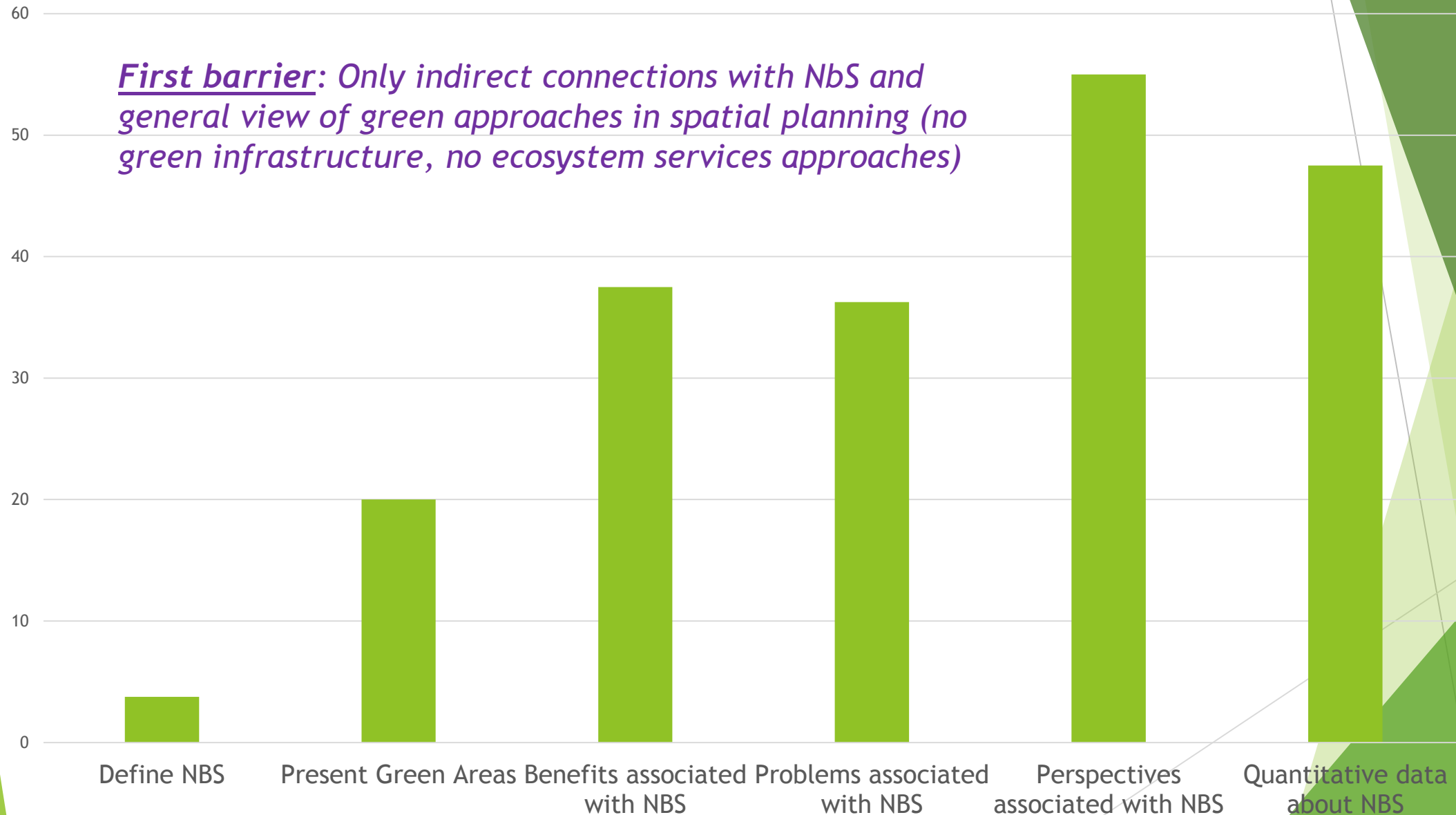
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# Three main questions

- ▶ 1. Are spatial and environmental planning important for increasing the chances to transfer NbS in society?
- ▶ 2. Can environment regulations (SEA and EIA framework) help NbS transfer in society?
- ▶ 3. How important is the perception of different stakeholders for NbS application?
- ▶ 4. What about research?

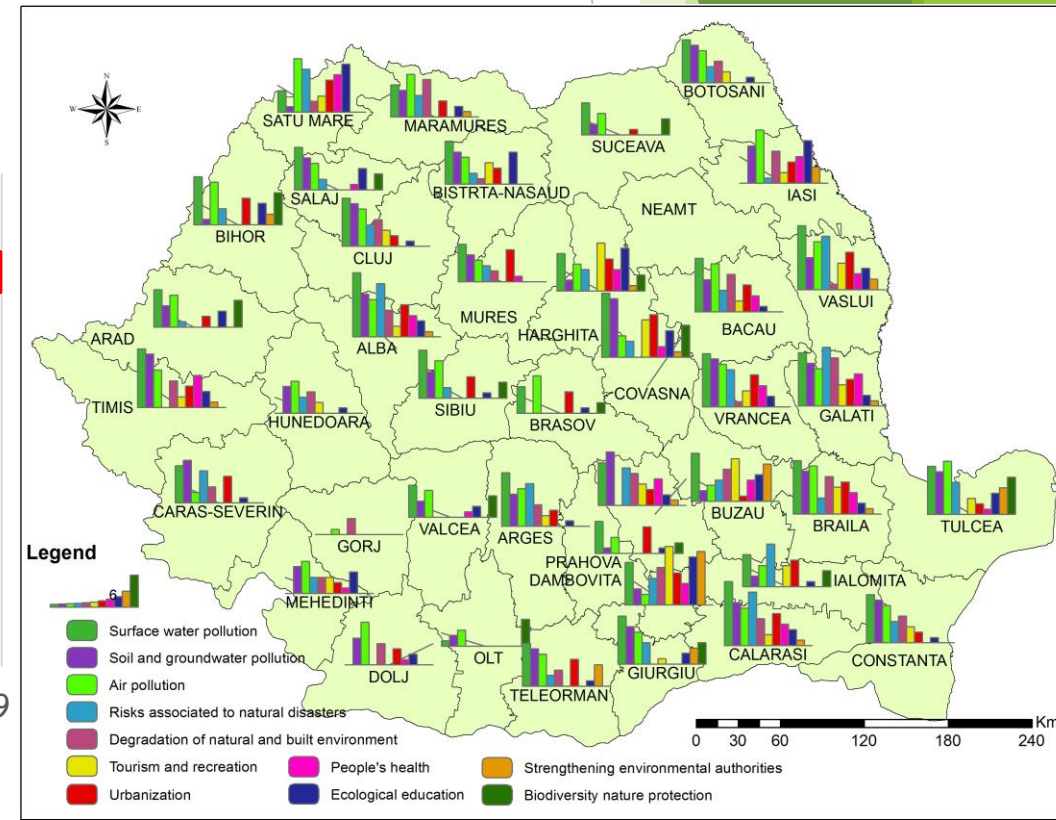
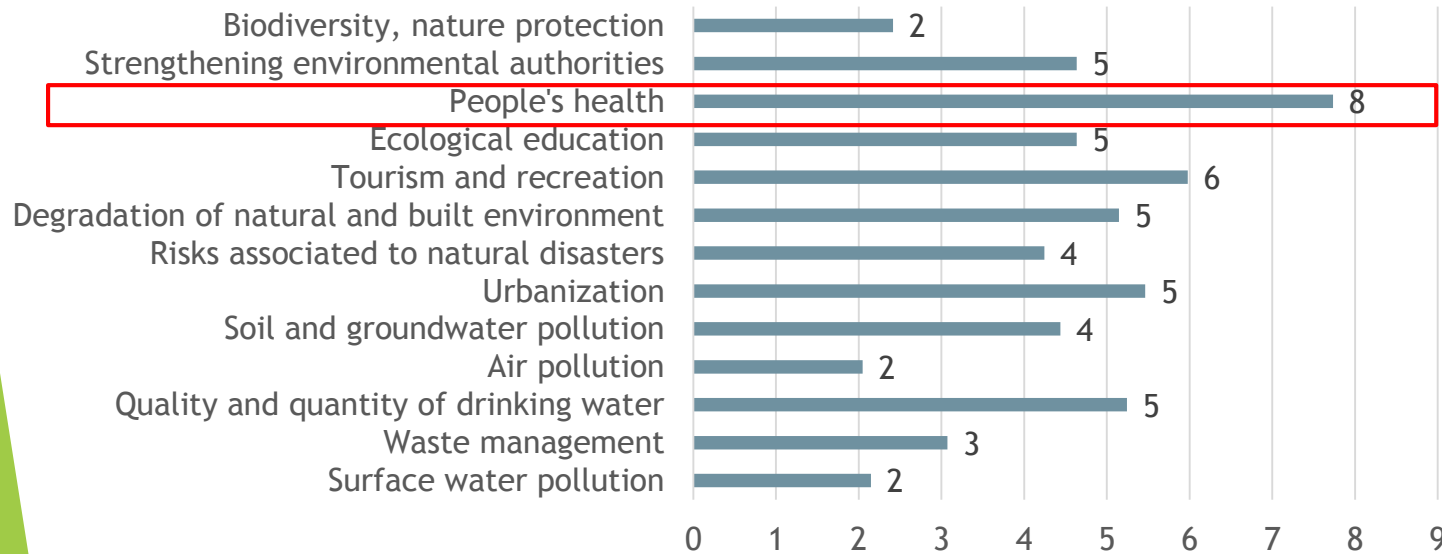
# NbS in spatial planning in Romania



# Main environmental challenges in Local Environmental Plans in Romania

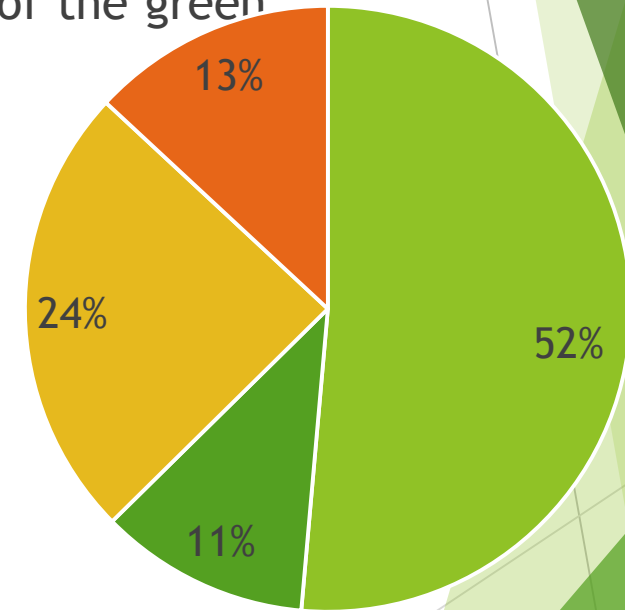
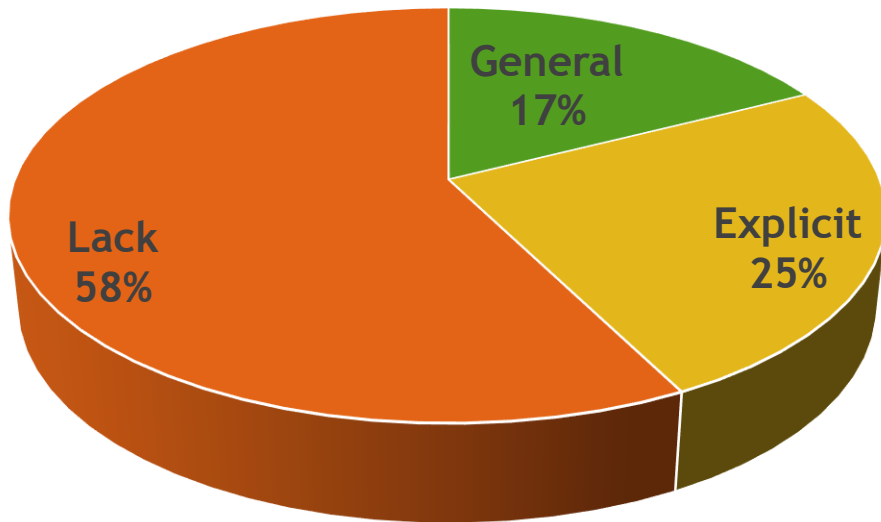
Focus on the impact of environmental issues ( e.g. People' health), not on causes

The environmental problems mostly mentioned within the EAPs



# Are Nature-based solutions considered an opportunity for Romania's cities?

- ▶ 25% of local EAPs consider NbS as an opportunity to solve the environmental challenges
- ▶ Most frequent solutions are oriented to: quantity and protection of the green areas and general climate mitigation



- I. Enhancing Sustainable Urbanization
- II. Restoring Degraded Ecosystems
- III. Developing Climate Change Adapt and Mitig
- IV. Improving Risk Management and Resilience

### **Urban setting – Pest Regulation**

Encourage planting of appropriate resource plants and caterpillar food plants in gardens and municipal areas.  
Retain areas of rough ground or old built structures for nesting habitat.

### **Urban setting – Disaster Risk Reduction**

Increase use of Sustainable Urban Drainage Systems.

Put streams in daylight.

Reduce garden paving.

Increase use of green roofs/walls.

Increase tree planting in urban locations.

Increase use of balancing ponds and underground storage systems.

Use permeable surfaces in hard landscape construction to provide aquifer recharge.

Increase use of recreative green areas along the river in urban zones to limit potential damages of flooding.

### **Urban setting – Soundscape management**

Plant trees/bushes between roads and housing.

Use running water to mask aversive sounds in public places.

Ensure food sources and safe shelter for song birds.

### **Urban setting – Health**

Make green spaces attracting to access.

Link schools/work to housing through green spaces.

Increase biodiversity within green areas (shown to reduce stress).

### **Legend**

Frequent in Environmental Action Plans

Accidental presence in Environmental Action Plans

Absent from the Environmental Action Plans

## Second barrier: environment planning has low quality and limited capacity to transfer NbS in society

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There is a focus on the green spaces

- *mostly on their quantity, not quality, connectivity and multifunctionality*

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Water management, urban agriculture, risk management, and biodiversity

- *the main neglected topics*

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Nature based solutions - low degree of integration within the LEAPs

- *staff with insufficient skills in topics related to nature*

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The fundings for NbSs are sometimes unclear

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## 2. The quality of environmental regulation

Categories/Sub-categories	Mean values (0-10)	
1. General presentation	8.04	high
1.1. General information	8.15	High
1.2 . Investment description	7.93	High
2. Environmental protection measures from sustainable development perspective	5.44	moderate
2.1. Environmental dimension	6.00	moderate
2.2. Economic dimension	4.80	Low
2.3. Social dimension	4.32	Low
2.4. Institutional dimension	6.62	moderate
3. Environmental protection measures from nature-based solutions integration perspective	2.94	Low
4. Characteristics of environmental protection measures	4.03	Low
4.1. Maximize stability	7.10	High
4.2. Minimize uncertainty	7.64	High
4.3. Integrate public priorities across jurisdictions	1.12	Low
4.4. Accommodate flexibility	0.25	Low



*Green spaces management*  
(69.01%)

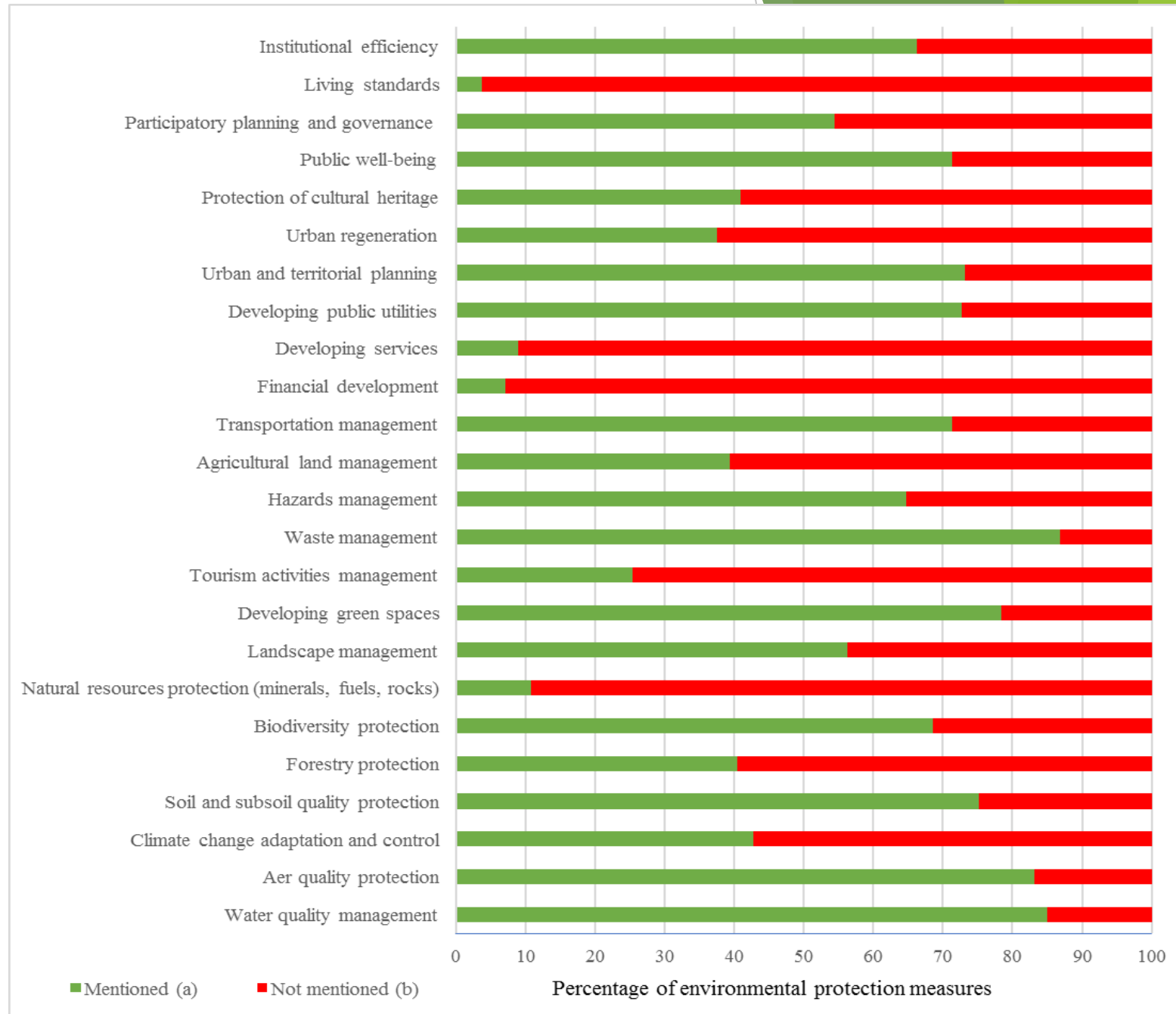
*Air quality* (49.30%)

*Public health and well-being*  
(43.19%)

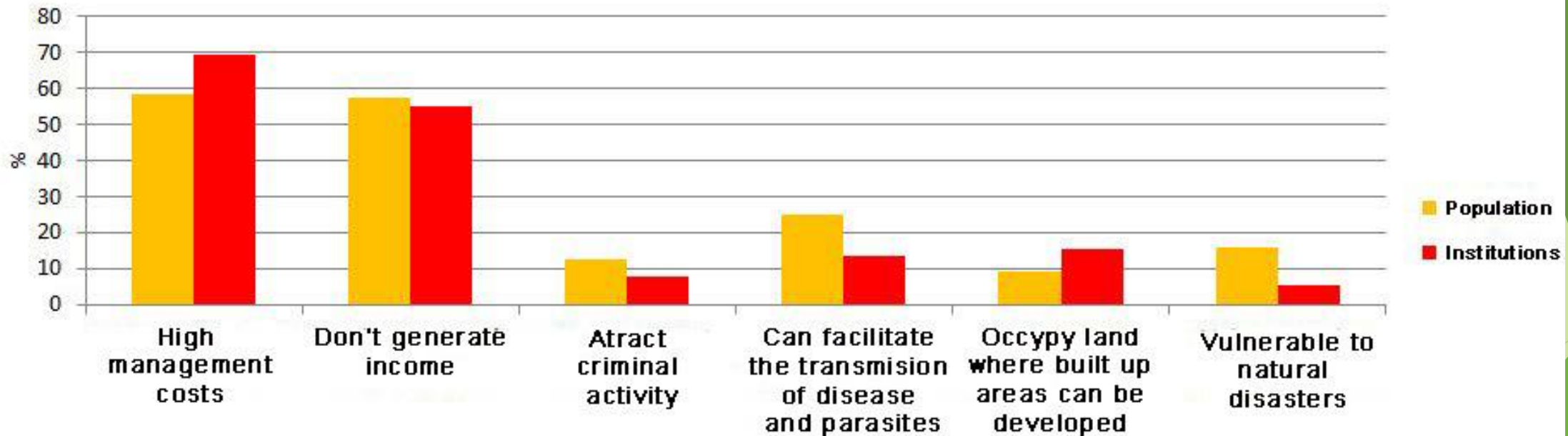
*Water management* (35.68%),

The least appreciated refers to *social justice and cohesion* (0.94%) and *participatory planning and governance* (8.45%)

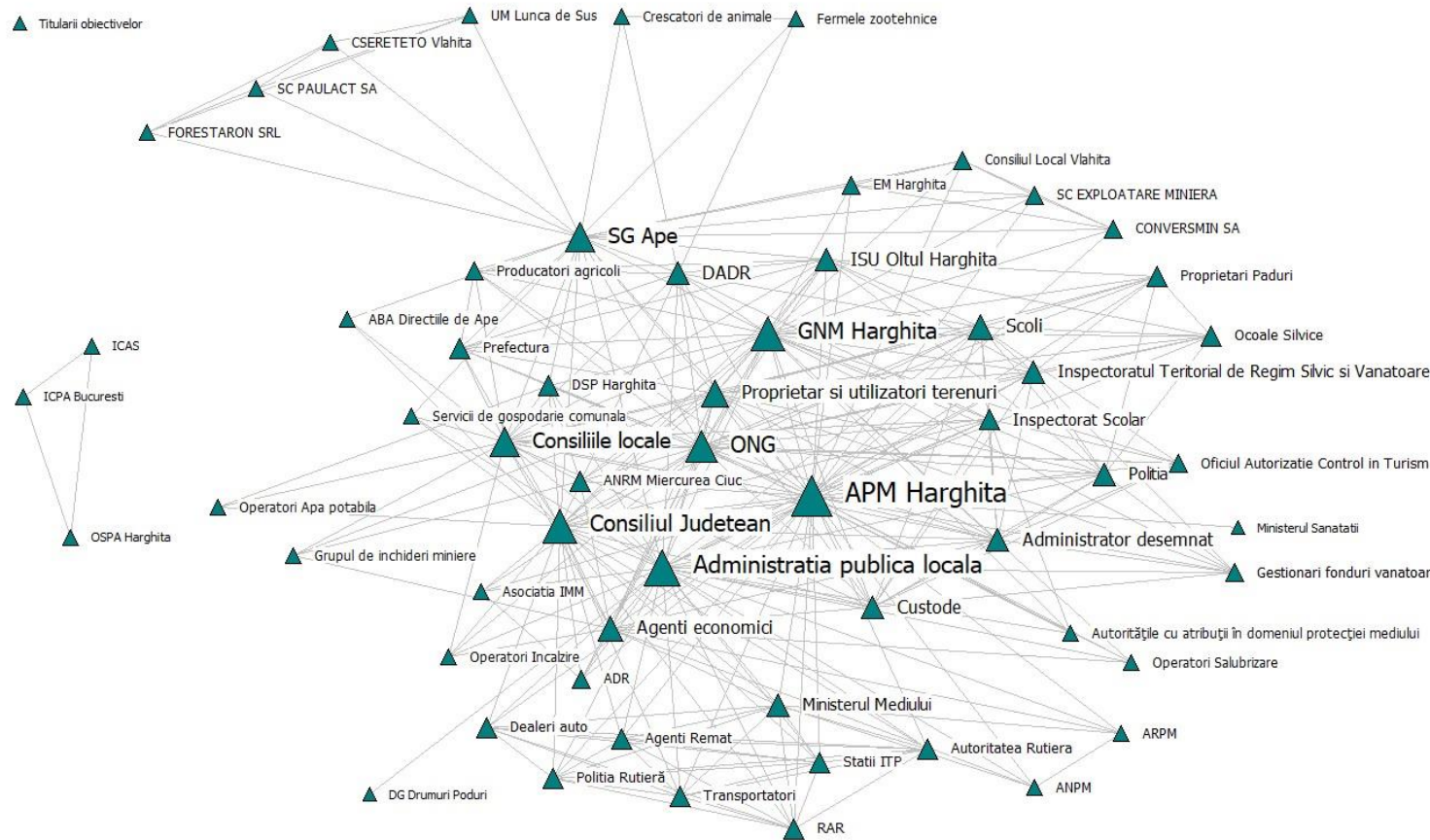
Third barrier: Environmental regulations are more oriented to legislation, not to practical solutions



## Fourth barrier: Perception of stakeholders: population and institutions are not optimistic



# Public institution have central place in the network of stakeholders involved in NBS actions



	Degree	BetaCent	Closeness	Eigenvector	Betweenness
APM Harghita	0.712	19.189	0.702	0.452	0.21
Administrația publică locală	0.593	16.77	0.648	0.395	0.135
Consiliul Județean	0.525	15.673	0.621	0.369	0.093
GNM Harghita	0.508	16.119	0.615	0.38	0.06
ONG	0.475	15.772	0.602	0.372	0.044
Consiliile locale	0.407	13.57	0.578	0.32	0.045
SG Ape	0.407	10.473	0.578	0.246	0.172
Proprietar si utilizatori terenuri	0.356	13.418	0.562	0.317	0.023
Agenti economici	0.288	9.988	0.513	0.235	0.017
Scoli	0.288	11.805	0.522	0.279	0.005

# What about the research of NBS?

- ▶ Data reliability / deficiency
- ▶ Defining and equivalating NBS categories with national legislation
- ▶ Advocate for the increasing use of NBS
  
- ▶ PN-III-P4-ID-PCE-2016-0635 - Nature-based solutions for increasing cities resilience and sustainability - NATURB, funded by Executive Agency for Higher Education, Research, Development and Innovation Funding Romania, 2017-2019, Principal Investigator Prof. Cristian Ioja, cristian.ioja@geo.unibuc.ro
- ▶ [https://ccmesi.ro/?page\\_id=666](https://ccmesi.ro/?page_id=666)

# To conclude:

- ▶ There is a critical need to increase the priority of the environmental issues in the society.
- ▶ There is a need for a common guidance for the inclusion of nature based solutions within spatial and environmental planning, and in SEA and EIA framework
- ▶ There is a real need to clarify for scientist, institutions and general public what means NbS and what are the main benefits that they are expected in the cities after the investment
- ▶ There is a real need to open extensive funding framework at European, national and local level to improve the perception linked with NbS.

