



**UNIVERSITY OF OSTRAVA**  
FACULTY OF SCIENCE

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# **Sustainable rural-urban development and ecosystems services**

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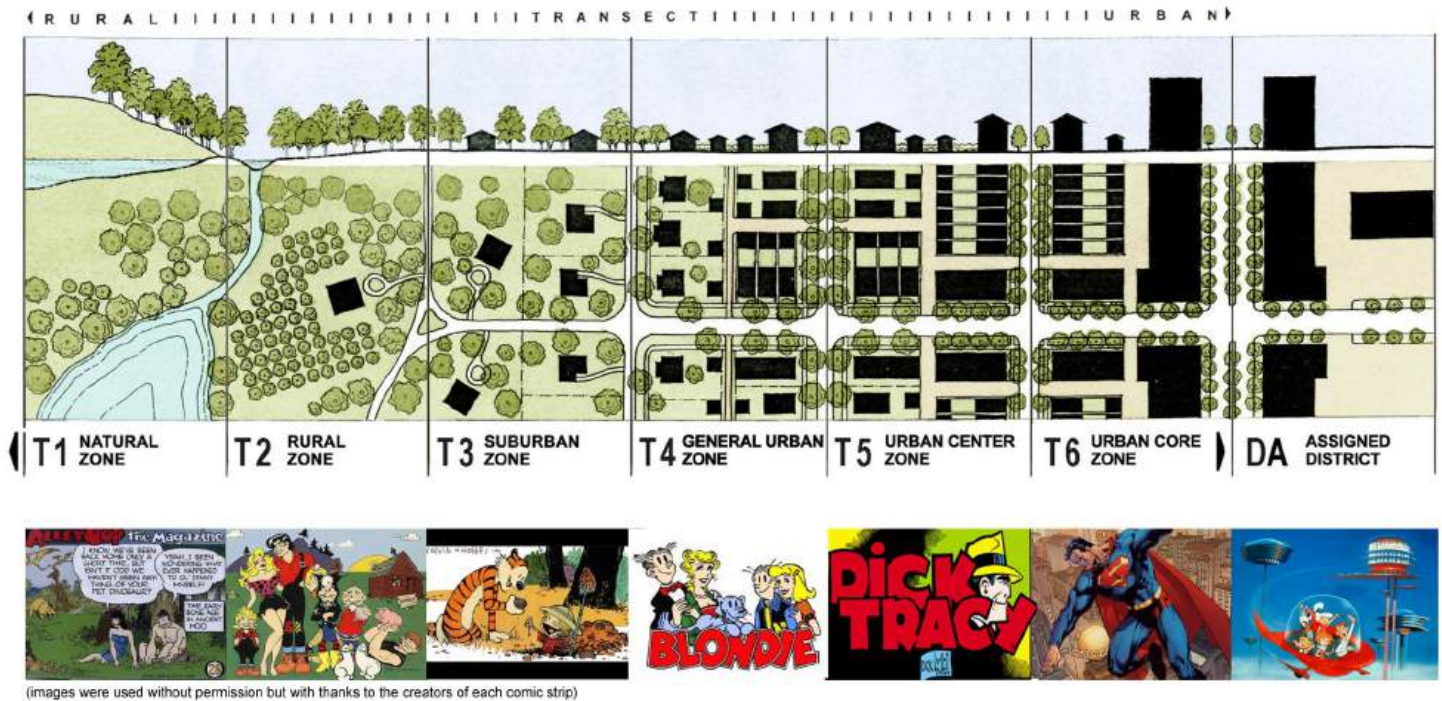
# Urban-rural linkages

Spatial flow of people, products, services & information (UN Habitat).

Territory that is not defined with one administrative boundary (EC).

EU Cohesion Policy promotes Functional Area approach to design policies for territories where people share their lives.

## The Transect of the Sunday Comics



Source: <https://transect.org/index.html>

# Peri-urban landscapes (PULs)

- PULs are a fluid mixture of natural and anthropogenic land covers and land uses related to green open spaces, agricultural fields, and artificial areas with different degrees of urbanisation (Spyra et al., 2025)
- What is characteristic for them? (Spyra et al., 2020)

transitioning

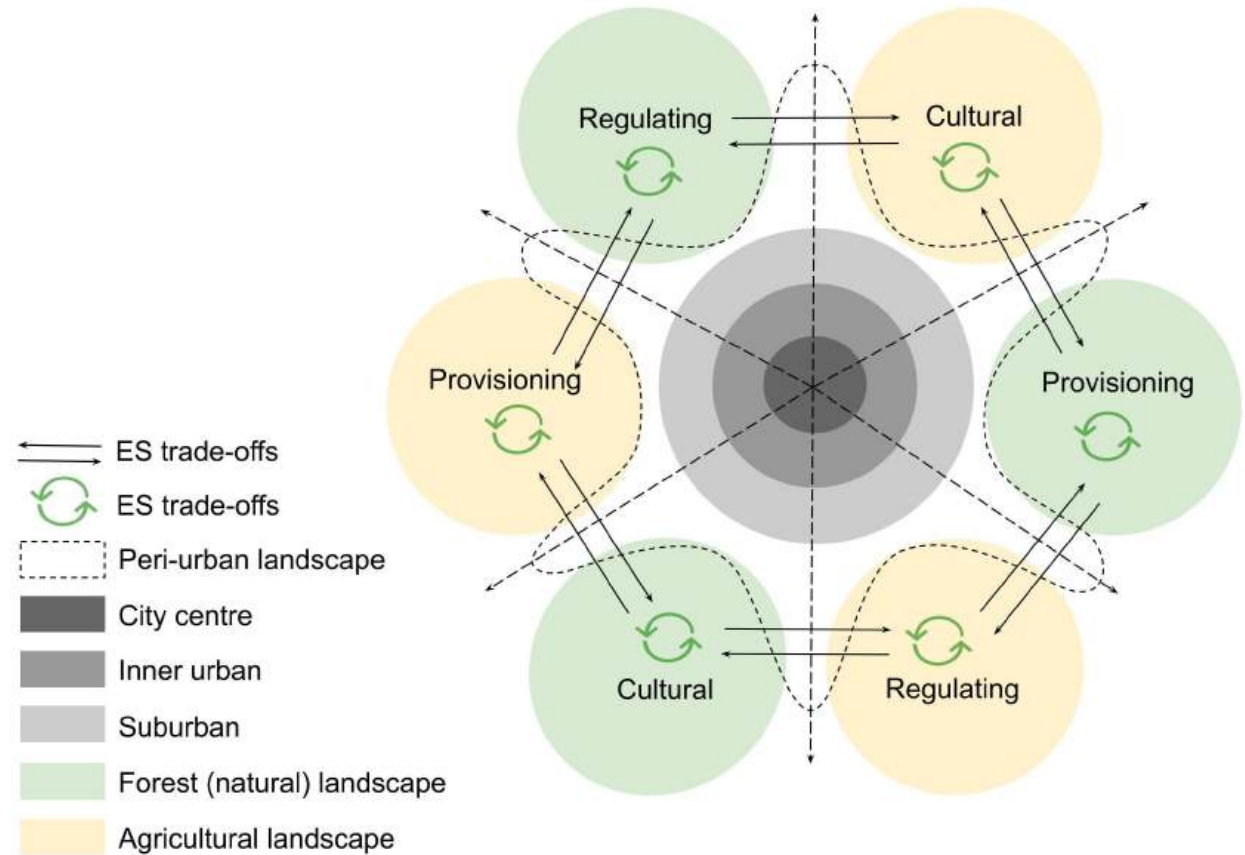
expanding dynamically

difficult to delimitate

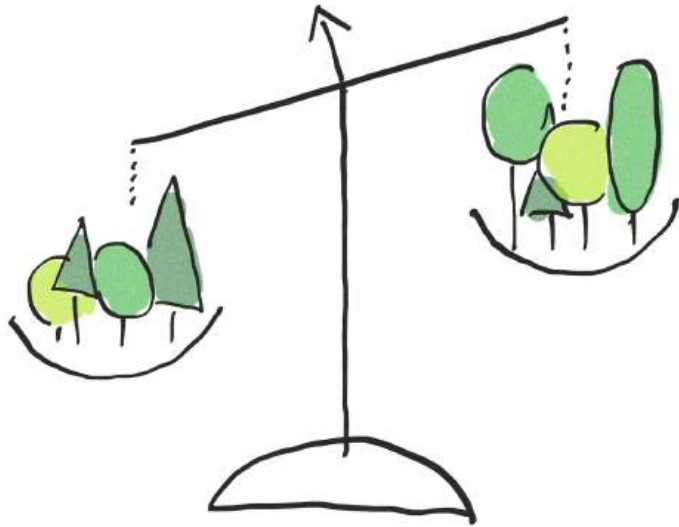
located at rural – urban interface

Source:

<https://www.sciencedirect.com/science/article/pii/S0264275124007224> and <https://www.sciencedirect.com/science/article/abs/pii/S0264837719318757>



# Ecosystem services (ES)



- ES are **the benefits people obtain from ecosystems**
- **Provisioning services** (e.g. food and water), **regulating services** (e.g. regulation of floods, drought, land degradation, and disease), **supporting services** (e.g. soil formation and nutrient cycling), **cultural services** (e.g. recreational, spiritual, religious)
- **ES trade-offs** represent a situation where one ES decreases as a result of the increase of another ES (Spyra et al., 2020)

Source: <https://www.millenniumassessment.org/en/index.html> and <https://www.sciencedirect.com/science/article/abs/pii/S0264837719318757>



# ES Trade-Offs in PULs: Drivers, Governance Obstacles and Improvements

## Drivers of ES trade-offs (Spyra et al., 2024)

- Cultural and provisioning: conflict between current land use and those requested for ESs by local governance actors
- Cultural and regulating: reduction in the regulating capacity of ecosystems
- Regulating and provisioning: challenges related to forest management
- Different types of cultural: conflicts between new and old inhabitants
- Different types of provisioning: the need to provide food for the urban core and the use of arable land for food or energy purposes
- Different types of regulating: urban expansion over agricultural, forested, or semi-natural areas

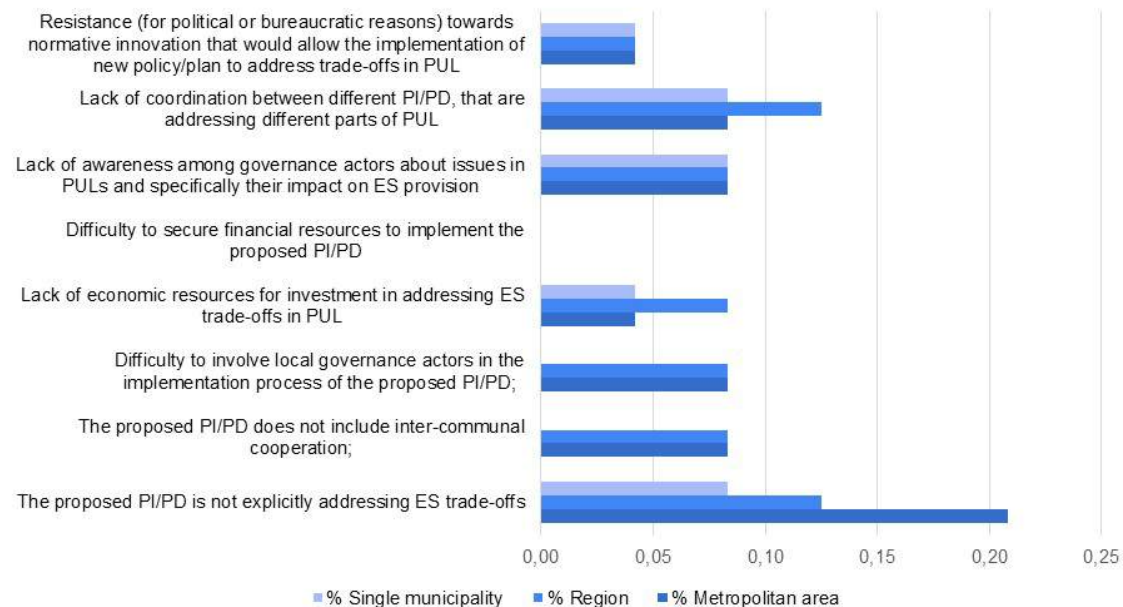
Source: <https://www.mdpi.com/2073-445X/13/7/1061>

# ES Trade-Offs in PULs: Drivers, Governance Obstacles and Improvements

## Obstacles in Addressing Ecosystem Service Trade-Offs by Policy and Planning (Spyra et al., 2024; Spyra et al., 2025)

## Improvements to better address peri-urban ecosystem services trade-offs in policy making and planning (Spyra et al., 2024; Spyra et al., 2025)

Sources: <https://www.mdpi.com/2073-445X/13/7/1061> and <https://www.sciencedirect.com/science/article/pii/S0264275124007224>

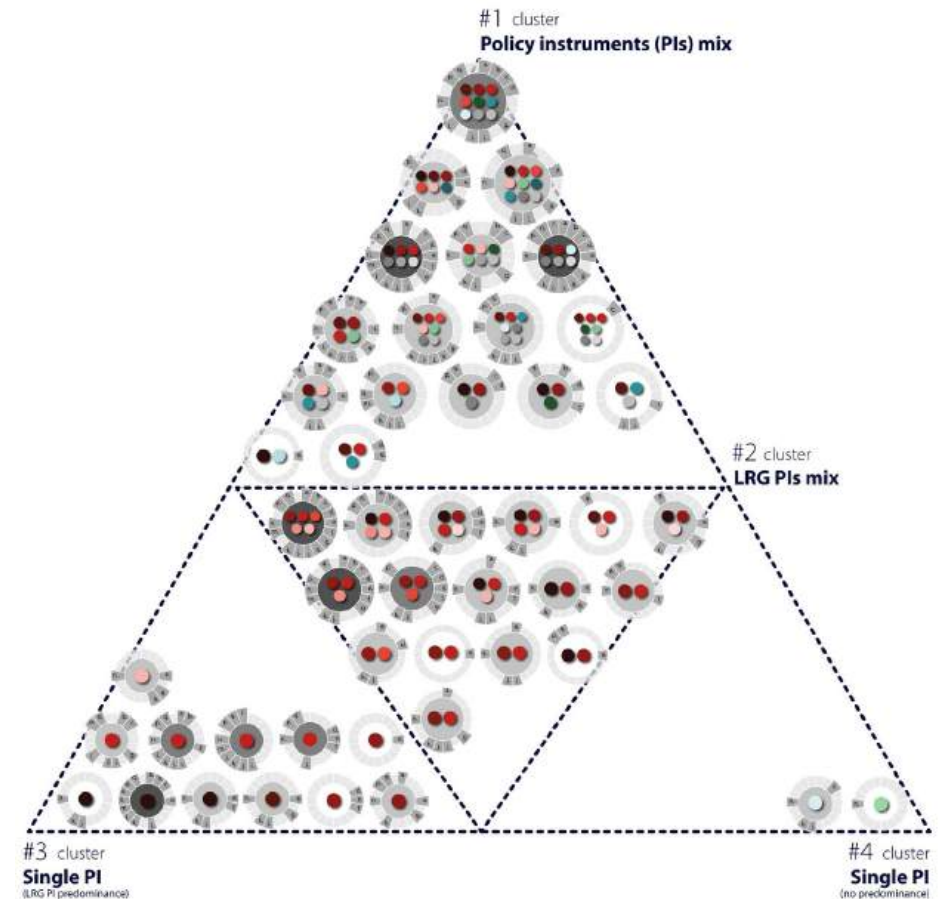


- Enhancing cooperation/communication of different governance actors
- Integrating the described PIs within planning and management instruments
- The need for increased awareness of peri-urbanisation processes and their impacts on landscape sustainability

# An overview of policy instruments for sustainable peri-urban landscapes: Towards governance mixes

- LRG = Legal and regulatory instruments;
- RBC = Rights-based instruments and customary norms;
- EFI = Economic and financial instruments;
- SCI = Social and cultural instruments
- Policy mixes combining different types instruments suffer from shortcomings and can encounter more obstacles than policy mixes based on combinations of regulatory instruments (Spyra et al., 2025)

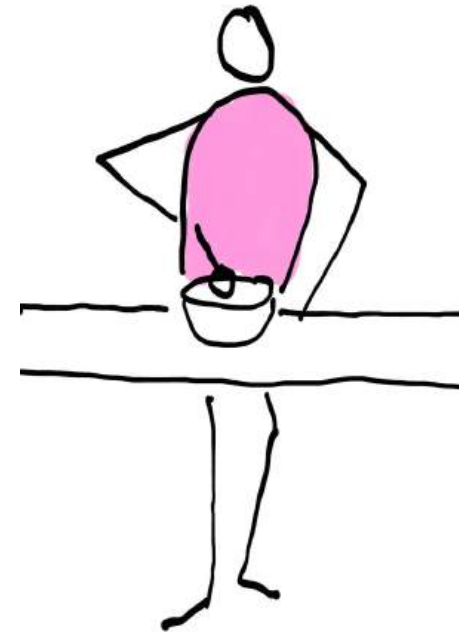
Source: <https://www.sciencedirect.com/science/article/pii/S0264275124007224> and <https://www.ipbes.net/policy-instruments>



# An overview of policy instruments for sustainable peri-urban landscapes: Towards governance mixes

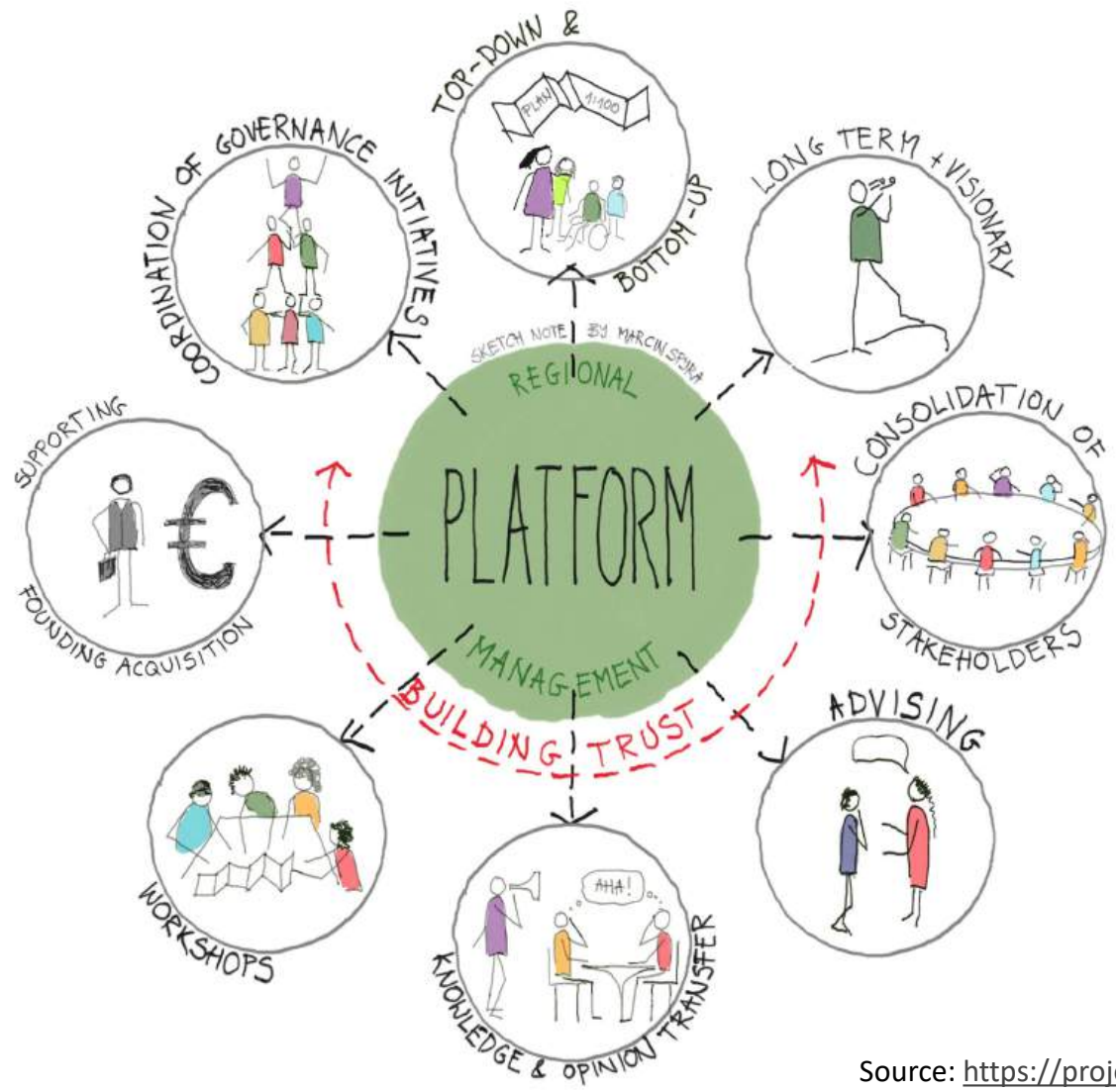
## Governance mix (Spyra et al., 2025)

- A mix of policy instruments from different categories + a set of policy support tools and methodologies
- An active, scientifically based landscape monitoring component
- Integrate various land-use planning actors, with actors involved in other policymaking processes, who are often a different group
- Well-established, transparent and multi-level coordination among all governance activities and involved actors should be in place to provide a remedy for governance fragmentation.



Source: <https://www.sciencedirect.com/science/article/pii/S0264275124007224>





Source: <https://projects2014-2020.interregeurope.eu/renatur/>

