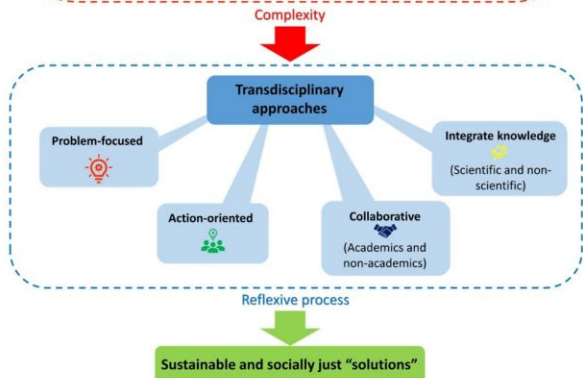
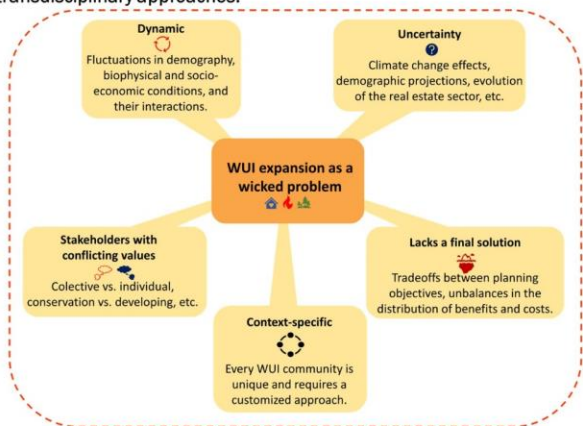


## The wicked problem

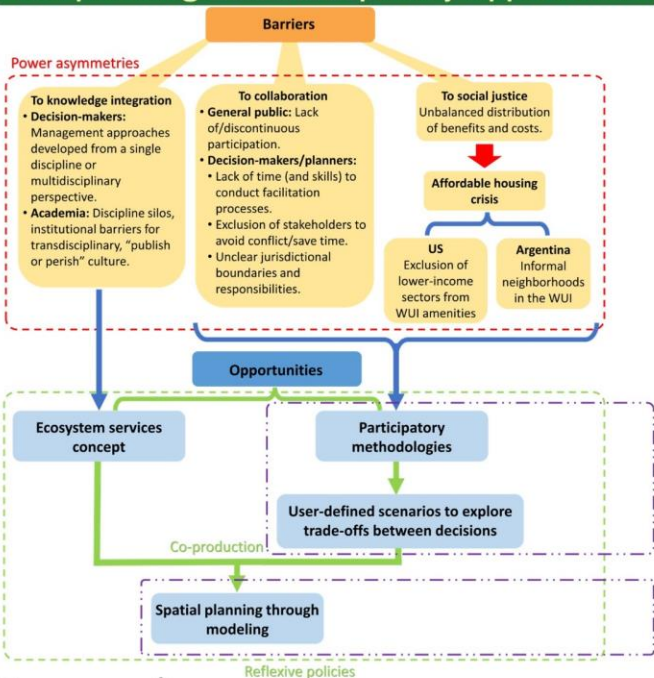
- Wildland-urban interface (WUI) expansion is a pressing phenomenon affecting different regions around the World.
- Due to its challenging nature, it can be considered a wicked problem.
- Science can contribute to addressing this problem through transdisciplinary approaches.



## Objectives

- Present the state of the art of WUI planning mechanisms and tools.
- Identify the barriers and opportunities for the implementation of transdisciplinary approaches in WUI planning.
- Assess the feasibility of incorporating stakeholder-informed ecosystem services modelling in WUI planning.

## WUI planning: transdisciplinary approaches



## Current WUI management approaches

### Methods

- Normative and literature review, semi-structured interviews to key stakeholders.

### Results

WUI management aspects	Argentina (Neuquén)	US (Colorado)
Governance approach	Top-down (National/Provincial level)	Top-down (National/State level) and bottom-up ("communities at risk")
Legal instruments	<ul style="list-style-type: none"> <li>Native Forest Protection Act (NFPA)</li> <li>National Fire Management Act (NFMA)</li> <li>Minimum standards for provinces, defined at a national level</li> </ul>	<ul style="list-style-type: none"> <li>Healthy Forest Restoration Act (HFRA) (Federal level)</li> <li>Minimum standards defined by CSFS</li> </ul>
Planning instruments	<ul style="list-style-type: none"> <li>Provincial native forest and wildfire management plans (derived from the NFPA and NFMA)</li> </ul>	<ul style="list-style-type: none"> <li>Community Wildfire Protection Plans (CWPPs)</li> </ul>
Focus	<ul style="list-style-type: none"> <li>Protecting native forest from deforestation (NFPA)</li> <li>Coordinating fire management actions among different jurisdictions (NFMA)</li> </ul>	<ul style="list-style-type: none"> <li>Reducing wildfire risk and protecting watersheds (HFRA)</li> <li>Identifying priority areas for fuel reduction and recommending treatments (CWPPs)</li> </ul>
Planning scale	Provincial	County, FPD, City, or HOA
WUI planning/building codes	Development and implementation is optional, not enforced	
Participation/collaboration	Weakly defined and implemented	

### Argentina

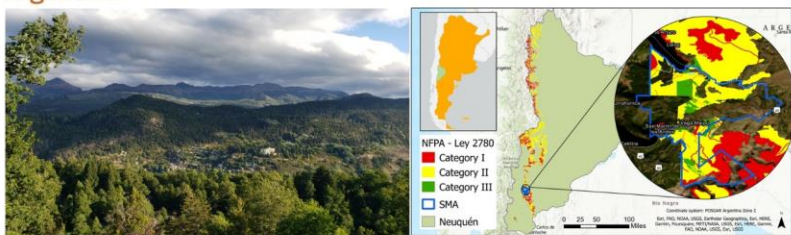


Photo: City of San Martín de los Andes (SMA) in the province of Neuquén, Argentina (Credits: Clara Mosso, December 2021). Map: Native forest zoning in Neuquén. The areas classified as Category III within SMA correspond to forests that can be replaced by residential development.

### United States



Photo: Rebuilding efforts in neighborhood affected by the Marshall fire (December 2021) in Superior, Colorado (Credits: Clara Mosso, November 2022). Map: Only 6 out of 143 Colorado's CWPPs recommend the use of building/land use codes as a wildfire mitigation strategy (Preliminary results - CoNIFER project). WUI source: SILVIS lab (2022).

## Final remarks

- The WUI is a complex social-ecological system that transcends wildfire and forest management aspects: Narrow approaches to this issue are inefficient.
- It is imperative to develop expertise in the implementation of interdisciplinary and participatory methodologies that can inform WUI planning.
- The integration of interdisciplinary methodologies and inclusive collaboration facilitates the co-production of knowledge, which can improve the identification of future WUI pathways and aid decision-making.
- Transdisciplinary approaches enable synergy between and within academic and non-academic sectors which, in turn, would lead to innovative and more holistic solutions in WUI planning.

Aspects that need further development to make the incorporation of transdisciplinary approaches in WUI planning feasible in the studied social-ecological systems:

- Expertise in the implementation of inclusive participatory methodologies to inform spatial planning.
- Expertise in ecosystem services modeling among WUI planners and policy-makers.
- Argentina: Development of official geospatial information to feed ecosystem services modeling and inform policy implementation.

References and acknowledgements:

