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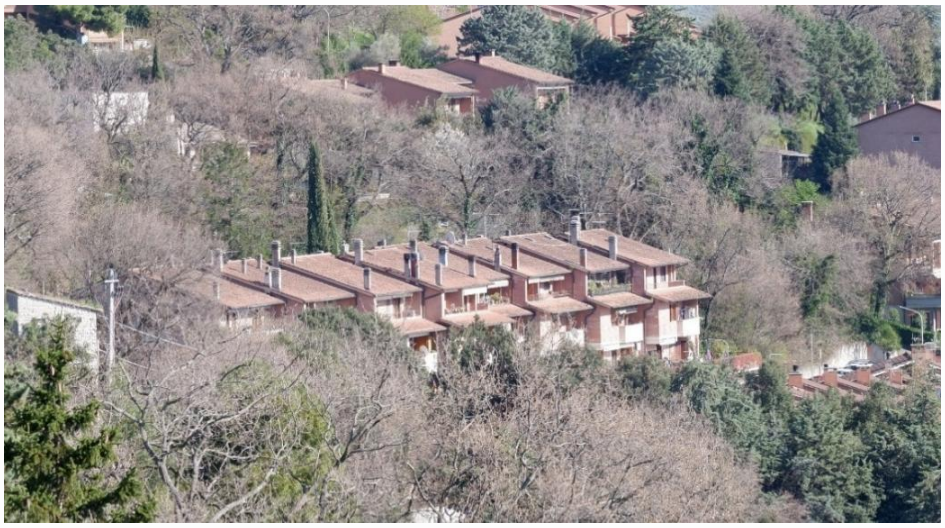
REDUCING HOUSING INEQUALITIES



Case Study Report Assisi

An extract from Deliverable 5.1, *'Case study reports on green transition initiatives and their impact on housing inequalities,'* of the ReHousIn project

March 2026

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This document has been prepared in the framework of the European project ReHousIn – "Contextualized pathways to reduce housing inequalities in the green and digital transition".

The ReHousIn project aims to spark innovative policy solutions towards inclusionary and quality housing. To achieve this, it investigates the complex relationship between green transition initiatives and housing inequalities in European urban and rural contexts, and develops innovative policy recommendations for better and context-sensitive integration between environmentally sustainable interventions and socially inclusive housing.

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1 Section 1- Introduction

1.1 City/Town profile, challenges around just (housing and ecological) transition

Assisi, a small city with around 27.400 inhabitants in a vast rural territory (including a natural park), is located in the rather inner and less-urbanized central region of Umbria. The city's economic focus is (religious) tourism, also driven by a peculiar history of forefront urban planning that preserved the medieval landscape, regulated the transformation of the historic city center and provided a qualified and sound extension of the city.

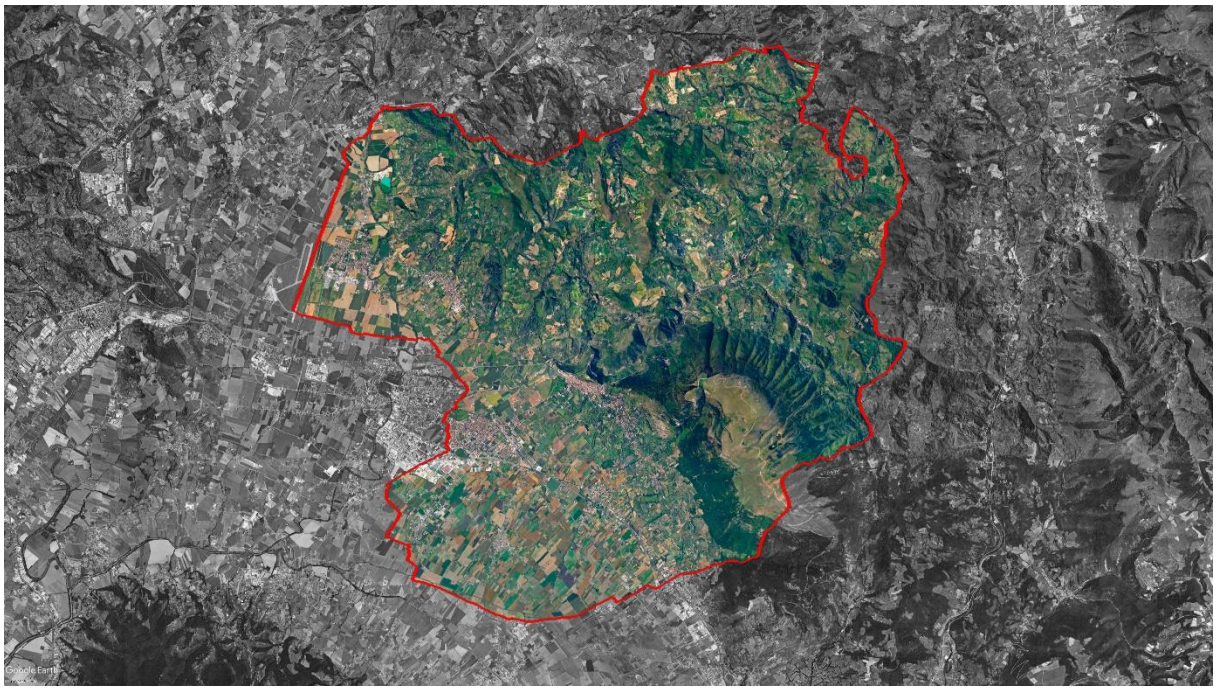

Figure 1 The municipal territory of Assisi. Source: Authors' elaboration on Google Earth

Assisi consists of two main cores: the medieval historic center uphill and the more modern expansions in the plain, mainly the residential neighbourood of Santa Maria degli Angeli, that features some industrial and commercial areas areas, and access to the train and highway networks. The city is somehow functionally organized into two main built areas: the mainly touristic historic center uphill; the center of daily life and housing stock of Santa Maria degli Angeli, including industrial, commercial and tourism infrastructures. Most residents are concentrated in Santa Maria degli Angeli that has seen its population increase in the last years, while the overall municipal population has been decreasing and ageing since 2018. Some smaller and old settlements are in the surrounding agricultural and natural land.

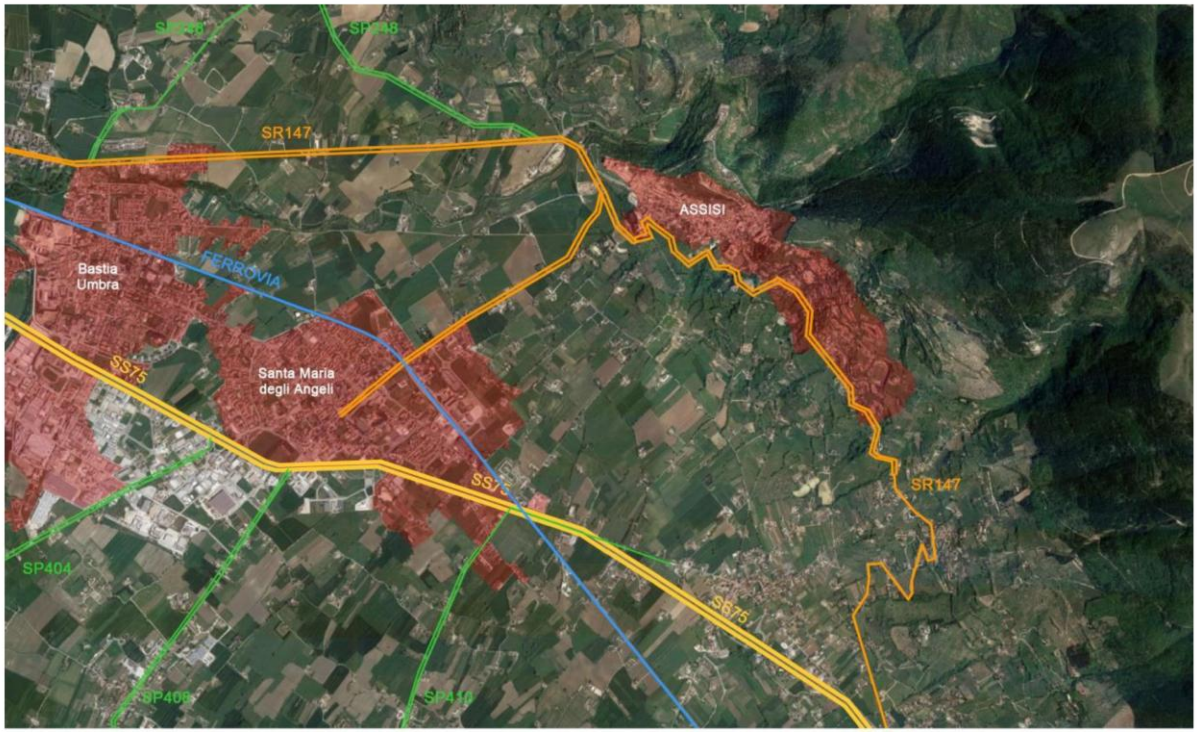

Figure 2 Assisi main built areas: historical center, Santa Maria degli Angeli, road (orange-yellow-green) and railway (blue) connections. Source: PAESC

The historical center is well known for its UNESCO World Heritage status and strong tourism economy, particularly pilgrimage based. Given the driving role of tourism, the city faces specific housing inequality and sustainability challenges, shaped by broader national trends in housing policy and socio-economic changes. The housing sector in Assisi features a tourism-driven gentrification affecting general housing affordability level, a high percentage of outdated housing stock in need of energy efficiency upgrades, a limited public housing availability, and government-led sustainability initiatives (e.g. Superbonus 110%) that indirectly contribute to housing inequalities. Strong heritage conservation rules – also linked to the 1957 Astengo urban plan that focused on landscape protection (Indovina, 1991), have anticipated the UNESCO preservation framework (Ricci, 2024). In recent years building activity has mostly taken place through a variety of small density increases across the building stock, often plot by plot (Berni, 2024; Mariucci, 2024). Outside of the historic city center, urban sprawl processes have continued,with increasing soil consumption (Peverini, 2024), mainly in the plain area closer to road infrastructures, without any connection to alternative mobility (Lanfaloni, 2024).

Figure 3 View of the historical center of Assisi from the main streetof Santa Maria degli Angeli. Source: Expedia

Regarding housing tenures, along with the national trends, Assisi features a vast majority of homeownership and a shrinking share of social/public housing. In Assisi, the percentage is even higher, with owner-occupation reaching 75,5% of all households, and tenants only representing 12,7% of all households, with other tenures representing 9,8%. This translates to a high rate of ownership of inherited properties that reduce mobility in the housing market and minimal rental and social housing supply, which, together with a highly competitive rental sector impacted by short-term tourism rentals driving up prices, make it difficult for low-income residents to access affordable homes.

Tenure 2021	Ownership	Rental	Other	All households	(of which public housing)	(of which companies)	(or which physical persons)
2021	8.944	1.471	1.127	11.541	(182)		
% 2021	77,5%	12,7%	9,8%	100%	(1,6%)		
2011	8.647	1.914	1.030	11.591	(122)	(146)	(1.646)
% 2011	74,6%	16,5%	8,9%	100%	(1,1%)	(1,3%)	(14,2%)

Table 1 Housing tenures in Assisi. Source: authors' elaboration based on Istat censuses. 2021 public housing data from local source

The housing stock in Assisi in on average significantly older than the Italian stock (Figure 4). In Assisi, 60% of the buildings rely on natural gas heating, almost 25% on wood or coal, and 10% on LPG (Liquified Petroleum Gas), making decarbonization highly challenging (Comune di Assisi, 2017). In particular, most of the buildings in the historic center have been built long before 1919, while the housing stock of thof Santa Maria degli Angeli has mainly been built before the adoption of Energy efficiency rules. This entails two different typologies of housing that needs retrofitting: the protected medieval stock; and the inefficient modern housing. Mass housing is not a diffused typology in this territory.

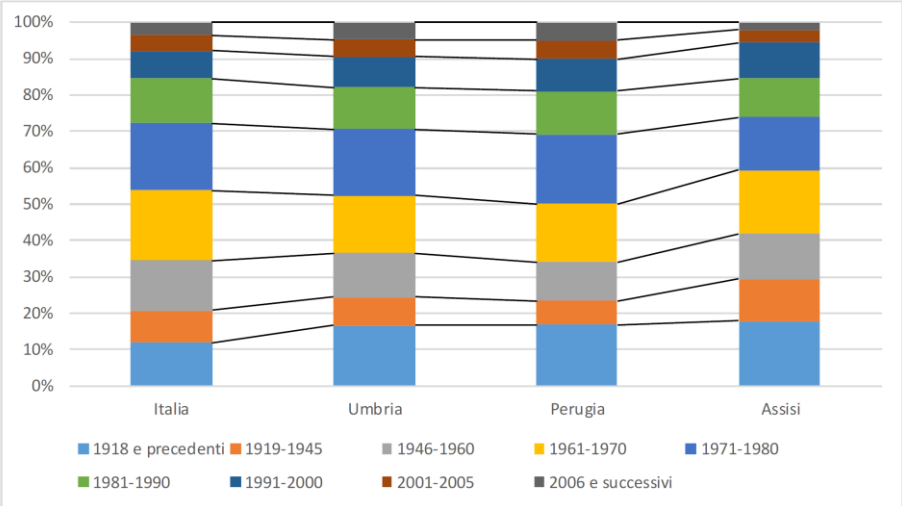

Figure 4 Building by age of construction in Assisi and other scales. Source: PAESC

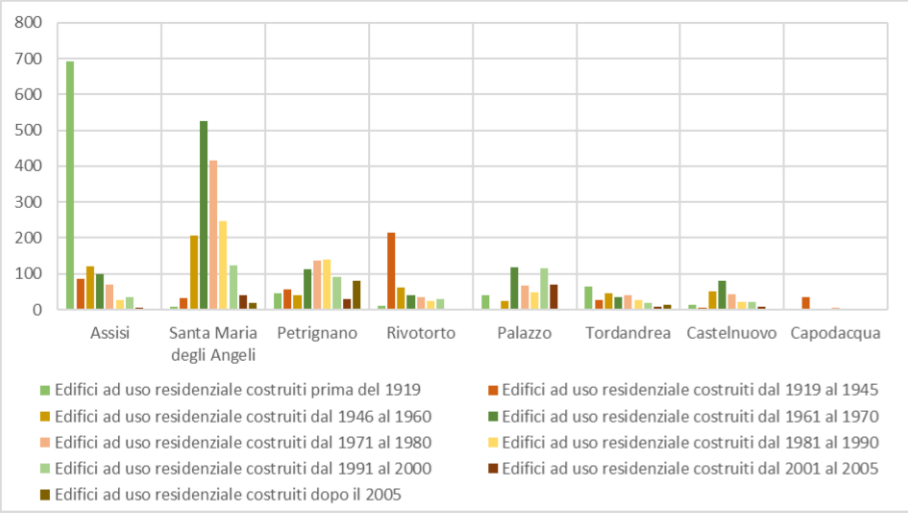

Figure 5 Building by age of construction in the different neighborhoods of Assisi. Source: PAESC

Umbria was hit by an earthquake in 1997 that damaged significant parts of the built stock in the region, including Assisi.

The reconstruction plan is widely recognized as very innovative and efficient, its implementation has been relatively fast (Nigro, Fazzio, 2007). According to data from the Umbria Region Reconstruction Observatory, as of 2014, 97% of the population living in damaged buildings had returned to their homes[1]. As acknowledged by many scholars, in the

[1] For further references, see: https://www.regione.umbria.it/protezione-civile/pubblicazioni?p_p_id=101_INSTANCE_PU2zkUL42Nay&p_p_lifecycle=0&p_p_state=normal&p_p_mode=view&p_p_col_id=column-2&p_p_col_count=1&p_r_p_564233524_categoryId=224125

case of Umbria in September 1997 it was possible for residents to return to the areas affected by the earthquake within a short time thanks: an efficient public coordinating structure; generous public subsidies; an innovative approach supporting and facilitating minor repairs to the involved buildings while ensuring a coordinated activity on minimum urban compartments (Nigro, Fazzio, 2007; Mecucci, 2016). Additionally, decisions by local institutions to safeguard residential and economic activities after the earthquake by local institutions were very distinctive and relevant. In Umbria (as well as in Emilia after the 2012 earthquake) no “new town” - for the resettlement of those who lost their homes - has been built, strengthened the sense of rootedness (Marincioni et al., 2017). Nevertheless, in Assisi, as well as in many other historical towns in central Italy, important parts of the population of the historical centers that had to leave their home temporarily did not actually come back: during the reconstruction phase, many bought or built new houses, while maintaining the property of damaged dwellings in historical centers, paving the way for depopulation of historical centers – and, where possible, for substitution with touristic functions.

Housing costs in Assisi have risen significantly due to tourism and a thriving real estate market (Mariucci, 2023). The strict heritage preservation regulations within the historical center limit new housing developments, further constraining supply. Urban expansion has happened mostly in the plain, as the area of the historic city center is strongly protected by a special safeguard zoning act since the1957 urban plan. Moreover, upgrading and modernization of existing old housing is limited by heritage protection regulations and extremely costly: both factors have been a driver for many to relocate in cheaper and more comfortable housing. The peculiar local housing crisis is intensified by the lack of public and social rental housing stock, the rise of short term rentals in the last decades (Mariucci, 2023), and the weakness of rent control measures (common issues across Italy, where rental assistance programs have been systematically underfunded). This has made it difficult for low-income residents to remain in the city, as private rental prices continue to increase, and the historic center increasingly resembles a touristified desert. The public housing stock, which was already limited, has not expanded, making access to affordable homes nearly impossible for vulnerable groups.

In Assisi and in its surroundings, the presence of “green” (agricultural fields, forests, mountain area) is perceived as pervasive by the interviewees, due to overall low density and outstanding landscape qualities, even though within the city neighborhoods public green areas and parks are few and rather small. Main ecological challenges identified by the local actors include: inverting sprawl in the plain and reducing land take, together with inverting the trend of growing car dependency; reusing vacant buildings (often linked to abandoned industrial plants or service buildings, and failed entrepreneurial activities, such as hotels); retrofitting the older residential stock in the two different versions (heritage medieval stock; modern housing); difficulties in overall decarbonization strategies due to heritage protection in the historical center (e.g., entailing constraints of photovoltaic roofs); more widely, the issue of combining transition to renewal with landscape preservation (especially regarding wind turbines on top of hills and the allegedly looming proliferation of photovoltaic fields over agricultural areas) (Latterini et al., 2025).

1.2 Green Transition Interventions in Assisi

The green transition initiatives introduced at the national and local levels have had mixed effects on housing affordability. Housing retrofitting programs such as the Superbonus 110% - introduced by the national Relaunch Decree (Decree Law 34/2020, Article 119) and subsequently amended by various laws (such as the 2022 Budget Law and subsequent Decree Laws) – are fiscal welfare-based, which provided financial incentives for energy retrofitting. Previous research has shown that Italian fiscal welfare-based retrofitting and renovation schemes, which have become prevalent in the Italian policy landscape, have primarily benefited wealthier homeowners rather than low-income renters (Figari et al., 2019; Jessoula, Pavolini, 2022), in an overall policy context that is not fostering social justice through ecological transition policies (Peverini et al., 2023; Carrosio, Cogliati Dezza, 2025).

At the local level, the 2017 Assisi action plan for sustainability and climate outlines the city's comprehensive strategy for addressing climate change through sustainability initiatives (Moretti, Stamponi, 2023). The Sustainable Energy and Climate Action Plan (PAESC) in Assisi, named *Assisi 2050 a carbon neutral city* ("Assisi 2050 una città carbon neutral"), has mainly encouraged the adoption of renewable energy and improved energy efficiency in housing. According to Moretti and Stamponi (2023, p.6),

„In 2021, Assisi joined the European Horizon 2020 European City Facility (EUCF) program, which funded the project "Towards a climate neutral Assisi: the role of citizens and tourists in the city of Francesco in the post-COVID new normal". The obtained resources aim to accelerate the achievement of the goals outlined in the PAESC, thanks to an in-depth technical, economic, and legal analysis of specific actions. Despite being a public-driven project, it primarily targets citizens and private entities and develops through two main directions. The first is a comprehensive renovation of residential buildings, aiming to save 26,749 GWh/year, with 7791 energy refurbishment interventions planned by 2030. These interventions involve improving the building envelope, enhancing energy systems, and transitioning from fossil fuel-based heating systems to more environmentally friendly alternatives. The second direction focuses on significantly increasing renewable energy production through the installation of new photovoltaic systems on public and private buildings' rooftops and the creation of the first renewable energy community (REC) within the territory of Assisi, as explained below."

The PAESC is a dynamic plan, subject to continuous monitoring, assessment, and revisions to align with evolving environmental and technological developments. It aims at positioning Assisi as a model city for balancing cultural heritage preservation with ecological sustainability, setting a precedent for other historic towns striving for climate neutrality. The PAESC aims to reduce CO_2 emissions by 40% by 2030 while improving the city's resilience to climate change. The PAESC is structured around key mitigation and adaptation measures, addressing energy efficiency, sustainable mobility, renewable energy adoption, waste management, and climate adaptation strategies. One of its fundamental goals is to enhance energy efficiency across residential, commercial, and public buildings and includes incentives for energy retrofitting, installation of solar photovoltaic systems, and upgrading heating and insulation systems in existing buildings. To achieve this, the plan establishes thirteen strategic emission mitigation actions involving different sectors. Five actions are related to energy efficiency in different sectors, one action is related to renewable sources, three actions are related to mobility and transport, one action relates to energy efficiency and upgrading of public lighting, another relates to tree planting, another action involving raising awareness and involvement of stakeholders. And finally, for efficient and proper implementation and coordination of the

actions, the Energy Management Office and Energy Counter (Sportello Energia) are established.

The public sector is leading the process, favoring the retrofitting of municipal buildings, switching to efficient lighting for public illumination, and promoting the REC (Moretti, Stamponi, 2023). The PAESC places a strong emphasis on renewable energy adoption. It promotes the expansion of Renewable Energy Communities (REC, or CER in Italian), where local stakeholders, including residents and businesses, can produce, share, and consume green energy collectively (Moretti, Stamponi, 2023). The city is investing in solar photovoltaic installations and other renewable energy infrastructure to increase self-sufficiency and reduce dependency on fossil fuels.

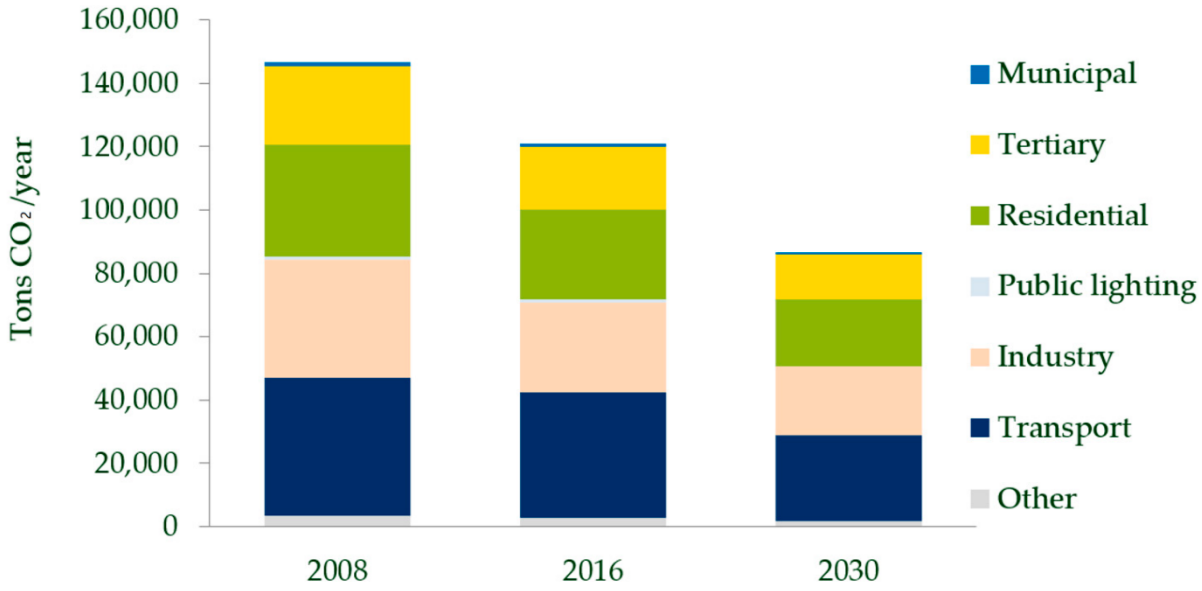

Figure 6 Outline of emissions in Assisi according to the PAESC. Source: Moretti, Stamponi, 2023.

Energy efficiency of residential buildings account for 19,5% of the reduction target of the PAESC – while, for example, mobility and transportation represent approximately 56%. According to the plan, residential retrofitting include:

The replacement of household appliances, lighting with LED lamps, efficient cooling systems, photovoltaic systems with storage systems to encourage self-consumption, etc.
All these actions are promoted by the Administration through territorial planning tools and communication with citizens, facilitated in particular by the energy help desk that the municipality is committed to setting up (actions S2 and S3, which will be a driving force for the action in question). The action will receive a significant boost thanks to incentive schemes (thermal account, energy efficiency certificates) and tax deductions, including the recently introduced 110% superbonus (PAESC, page 124).

The transport sector alone accounts for about 30% of total emissions, making it a major focus for achieving carbon reduction targets. A significant component of the plan is the sustainable mobility, as mobility and transportation represent approximately 56% of the reduction target of the PAESC. The PAESC envisions a transition toward low-emission transportation through policies like the renewal of private and municipal vehicle fleets, the promotion of electric vehicles, and the development of a Sustainable Urban Mobility Plan (PUMS). The PAESC highlights that “There are no dedicated cycle paths in the municipal area of Assisi”.

For the retrofitting of residential buildings, the PAESC seems mainly to rely on national instruments, such as the Superbonus 110%, and foresees a 4% yearly retrofitting rate. Therefore, within the social issues described of transition policies at the national level, the local translation of these initiatives has largely favored property owners rather than addressing the needs of renters, as highlighted also in the interviews (see below). As a result, the push for sustainability might have unintentionally contributed to housing inequalities. A partial correction could be the stress on public engagement and citizen participation Energy Management Office and Energy Counter (Sportello Energia) established to provide technical support for households and businesses in implementing energy-saving measures

A critical aspect of the PAESC is its approach to climate adaptation and risk mitigation. The plan identifies seven major climate risks, including heatwaves, floods, droughts, landslides, forest fires, and air and water pollution. Specific adaptation actions include reforestation efforts with the “Un Albero per Francesco” initiative, protection and restoration of Monte Subasio Park, and water conservation strategies like public water incentivization and the Zero Waste strategy.

In Assisi the main NBS intervention is the “Bosco di San Francesco”, a 64-hectares forested area open to paying visitors inaugurated in 2011 nearby the San Francesco Basilica. The park is owned and managed by Fondo Ambiente Italiano (FAI), a national NGO). The forest was already there, protected by the urban plan, but the project meant a more active management, the provision of small-scale infrastructures (e.g. trail paths, a restaurant, etc.) and featured an attractive land art piece by Michelangelo Pistoletto built using 121 olive trees. The main reasons for the project, in line with FAI policy and objectives, are the cultural and touristic valorization of historic and landscape heritage, mainly through donation- and ticket-based management. In this sense, this intervention has probably the effect of attracting visiting tourists, while not really contributing to daily use of green infrastructure which in fact is widespread all around in the Mount Subasio National park. Indeed, parks and gardens are a rare feature in the densely built historical centre, while the direct connection between compact urban “island” and the surrounding agricultural and natural land provides a rather high quality of the green infrastructure, being in itself a factor of housing price inflation.

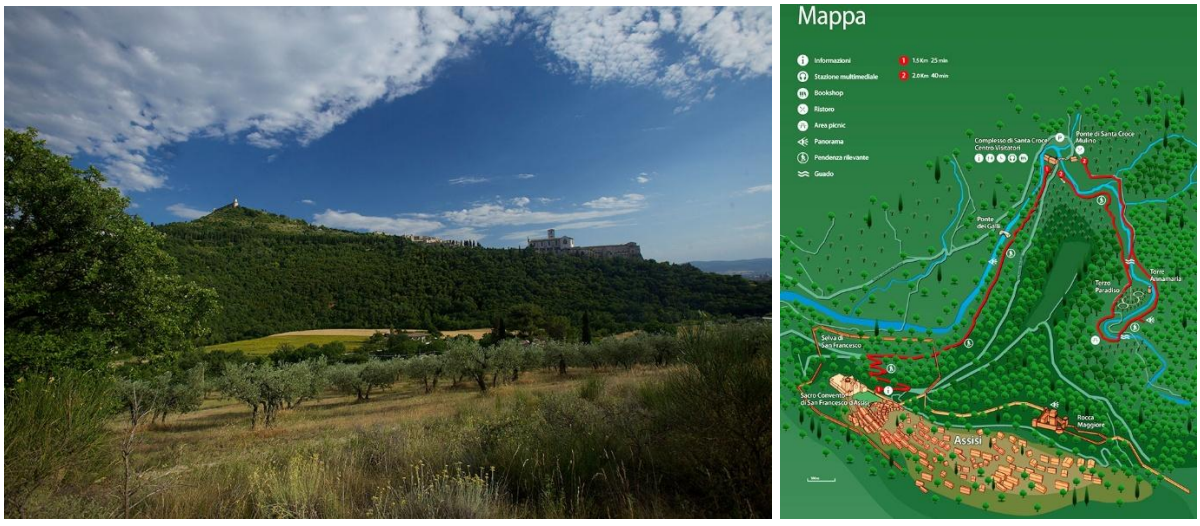

Figure 7 The Bosco di San Francesco. Source: Fondo Ambiente Italia

A grassroot project that is gaining increasing momentum is the so called “Parco della Piana”, The project was launched in 2022 by a network of local associations, with the aim of transforming the large valley-floor green area between Assisi and Bastia Umbra into an ecological, social, and landscape park, bringing together integral ecology, sustainable agriculture, slow mobility, and landscape regeneration. While the project is raising interest and gaining extensive citizen support, while there are signs of some political support, there are no binding regulations yet put in place to support its implementation.

The pressure of tourism is, however, acknowledged as the main driver of housing constraints due to heritage protection constraints in terms of new buildings and mainly features investments to turn residential buildings into hotel facilities or short-term rentals. This trend has also made it more difficult for younger generations and working-class families to secure stable housing in the city. Despite the economic benefits of tourism, its unregulated impact on the housing market has created significant affordability challenges, pushing many residents to the periphery or out of the city entirely. The absence of any significant housing policy initiative has made it difficult for low-income residents to remain in the historic city, as private rental prices continue to increase together with tourism rentals.

In conclusion, local policies for ecological transition of the building sector cannot display other resources and means and rely primarily on national (fiscally based) incentives for energy retrofitting, installation of solar photovoltaic systems, and upgrading heating and insulation systems in existing buildings. With the aim of counterbalancing some of the negative effects in terms of inequalities, the local plan promotes citizen engagement actions, and the creation of a municipality-driven Renewable Energy Community while the PAESC puts most effort on the transportation and mobility.

The city’s main green policy is, however, the strict heritage preservation regulation, limiting new building developments while allowing small-scale densification, in the city center and in many residential areas in the plain. Specifically, regional building regulations grant an increase of 20% in building volume when a significant energy efficiency improvement is certified. This policy, valid for all building and not linked to local planning or mobility strategies, often results in an unregulated suburbanization process, as densified buildings are often far from sustainable mobility infrastructure, and might paradoxically induce extra car dependency (Mariucci, 2024; Lanfaloni, 2024).

Table 1. Key data on case study area of Assisi, focused on the PAESC.

	Municipality-wide	**Historic center**
Neighborhood characteristics (general social type, economic activities, density, etc.)	Historical city with strong tourism focus	Almost entirely dedicated to religious tourism

Duration	PAESC (municipality wide instrument) adopted in 2020, with target 2030	(as municipal)
Funding *(be explicit if public/private, nonprofit, etc.)*	Multiple sources (mostly relying on national level retrofitting incentives)	(as municipal)
Actor constellation *(aka stakeholders)*	Municipality, State, Private building owners	(as municipal)
Aims and objectives	Overall municipality-wide aims and objectives re: 40% reduction of CO_2 emissions	(as municipal)
Specific physical measures	Mainly: energy efficiency of mobility and transportation; retrofitting and energy efficiency of residential building through national incentives and regional density bonuses; a municipality-led Renewable Energy Community	(as municipal)
Accompanying housing policy/regulatory measures	Very few and small-scale housing policy measures (reuse of abandoned building for public housing)	(as municipal)
Key social tensions or/and benefits between greening and housing	• Difficulties of retrofitting the old protected residential stock in the two different versions (protected medieval stock; housing of the boom); • difficulties in overall decarbonization strategies due to heritage protection in the historical center (e.g., entailing constraints of photovoltaic roofs); • Fiscal-based incentives for retrofitting might contribute to inequality, weak local correction measures; • location-blind retrofitting and densification policies might increase sprawl and car dependency (and some land take); • Difficulty in fostering reuse of vacant buildings (often linked to abandoned industrial plants or service buildings, and failed entrepreneurial activities, such as hotels) • tourism-focused greening initiatives might worsen touristification; • tourism promotion combined to planning limits to hotel expansion might push conversion of residential units into short term rentals;	As per municipal, plus high level touristic desertification

	• more widely, the issue of combining transition to renewal with landscape preservation (especially regarding wind turbines on top of hills and the allegedly looming proliferation of photovoltaic fields over agricultural areas) (Latterini et al., 2025).	

2 Section 2 - Methods

In Assisi, twelve semi-structured interviews have been conducted involving fifteen respondents (two interviews were collective). The interviewee sample included representatives from the public sector (public housing associations and local and regional administrations), members of civic associations and NGOs involved in environmental and social issues, and representatives from the tourism industry. A key moment for the sampling was the Policy Lab held in Assisi on April 4th 2025[2], where we invited representatives of key local actors of different types (see dedicated report) and collected suggestions about additional interviewees. Concerning gender, while the Policy Lab was rather balanced, only 3 out 15 interviewees are female (20%), reflecting an unequal position of women in key positions in the region (including in civic groups). Interviews were conducted between April and September 2025, mostly in person. Furthermore, fieldwork has been conducted in Assisi, including visits to case study sites and photo documentation. Academic and grey literature on the case study sites was collected and analyzed and is referenced in the previous sections. Interviews were semi-structured, based on a template provided by the core group of WP5, and lasted approximately one hour each. All interviews have been transcribed, coded and summarized, and key quotations by interviewees have been extracted.

The interviews, together with relevant sections of the focus group transcripts, were coded via the MAXQDA software deductively, following a shared codebook developed within the core group of WP5. A few new codes were added for the specific context of Assisi, when relevant. The coding results were then pseudonymized.

[2] The Policy Lab involved seventeen participants from Assisi and the regional context of Umbria. The methodology included a brief presentation of the project by the research team aimed at clarifying the objectives, research questions, methods, and case studies of Rehousin, tailored to the Italian context. Rehousin's research interests were broken down into a set of very open questions (see below), addressing both the positive and negative implications of ecological transition policies and programmes. Participants were divided into two equally sized groups, each guided by two members of the research team, allowing both greater depth and efficiency in the discussion, and more time for each participant to express their views. Free and open responses were encouraged, intervening only for the purpose of time management or to gently steer the conversation back on track when it drifted significantly from the topic.

In a next step, the researcher team identified the key topics that emerged from the interviews through an in-depth reading and discussion of the empirical material - this was aimed at establishing a shared analytical framing and at surfacing recurring themes and preliminary interpretations.

After that, an LLM tool was used - through a dedicated prompt - to perform the same exercise on the anonymized material, with the aim of identifying overlaps, potential biases, and themes that may have been overlooked by the researchers. The LLM tool was thus used as an additional analytical agent, supporting but not substituting the researchers' interpretative work.

The pseudonymized coding results were summarized (with the support of the LLM tool) around the main themes that are highlighted in this report. Key quotes from the coding exercise are reported in some of the following sections. LLM tool was used as follows:

- coding was summarized in a pseudonymized word file that included all relevant quotes with the related codes (interviewees were identified with a code "A1, A2, A3, etc."); the table with clarification of the alias was safely stored;
- regarding each of the nine codes (precedents and implementation, participation and governance, etc.), a researcher of the team read again all the quotes and created a list of relevant results emerging from the interviews regarding the code;
- we created a prompt for the LLM tool, asking for a draft summary description of the interviewees' perspectives for each of the indicated results, based exclusively on the given empirical material (the file with anonymized quotes), giving the possibility to the LLM tool to indicate new results if based on at least two quotes;
- then, a researcher of the team has read, revised and expanded the summary of results – eliminating possible results that were not based on empirical evidence of the quotes.

3 Section 3 – Civic Perceptions of Green Initiatives in Case Study Areas: Assisi

3.1 Precedents and implementation

The analysis of precedents and implementation emerging from the interviews highlights a policy trajectory marked by structural constraints, institutional discontinuities, and place-specific legacies.

The **peculiar urban form** of the regional territory, with historical centers situated on top of steep hills, had several consequences on urban development trajectories. Especially in Assisi, the famous and celebrated **1957 Astengo urban plan** is very often referred to as a major strategic choice that paved the way to an extensive preservation of the landscape and of the medieval fabric of the city.

In this context of very sensitive and valuable heritage, **the 1997 earthquake** played a further relevant role in the regional and local trajectory of the city. The post-earthquake reconstruction planerred to for the high-quality building interventions and became a long-lasting catalyst for funding and technical capacity, while it also accelerated residential displacement from historic

centers and their subsequent tourist-oriented reuse (A4, 29). This dual legacy - capacity-building in intervening on of a fragile and sensitive built environment on the one hand and socio-spatial restructuring on the other - continues to shape current implementation frameworks and policy debates in Assisi and, more broadly, in Umbria.

> *"When I was working at the historic center office, a specific law had been passed as it was realized that simply redeveloping physical appearance was not enough: vitality and economic activity had to be brought back to those areas. It was a commendable attempt, but I don't know if it really succeeded in reversing the trend. Meanwhile, businesses were moving out of the historic centers to abandoned industrial areas on the outskirts of the city, which were being transformed into shopping centers accessible by car. The historic centers were emptying."*
>
> *Civil servant in regional administration (A3, 111)*

This happened in **Assisi as well as in many other historic centers, depopulating as households moved to more recent urban fabric** in new or 20th century concrete buildings. The hollowing out of historic centers emerged as a long-term trend, driven by the relocation of residents and economic activities toward peripheral or commercially oriented areas (A3, 111). From a spatial perspective, several institutional interviewees discuss earlier shortcomings in regulating land-use change following those transformations. **Insufficient attention to land speculation** in past planning phases led to the conversion of agricultural land into residential areas without adequate public returns, representing a missed opportunity to secure public housing as a planning gain (A2, 37):

> *"In the 1990s, urban planning standards (green spaces, parking, facilities) and equalization measures were introduced to reduce speculation in zoning changes. Today, there is greater focus on quantifying the public "quid pro quo" and recognizing the economic value of the building index. In the past, however, many agricultural areas were converted to residential use without obtaining sufficient public benefits: a missed opportunity. In the new plan forecasts, public housing could be better constrained as a territorial resource, imposing it when variations are requested."*
>
> *Public manager in urban planning (A2, 37-38).*

However, the earthquake and depopulation of historic towns also triggered some interesting exceptions and positive cases, such as the reconversion of empty buildings for public housing – as in the case of the former hospital in Assisi which in 2017 was converted into public housing, providing 28 dwellings.

Institutional discontinuity emerged as a critical issue. Interviewees contrasted earlier phases (in the 90's and early 2000's) characterized by more stable policy frameworks - particularly during the long season of complex urban programs - while the past ten years were marked by frequent political change and staff turnover. In the past, continuity in decision-making allowed administrative competences to consolidate and reporting procedures to become routine (A6, 95). By contrast, the various urban policy programs promoted in the recent years are described as burdened by fragmented responsibilities, high turnover of officials, and the loss of experienced personnel at both regional and national levels, weakening implementation capacity (A6, 101–102). Political shifts were consistently associated with

intermittent policy priorities and abrupt changes in approach (A3, 22; A3, 104; A10, 7). A key structural turning point repeatedly mentioned is, at the end of the 1990s, the abolition of the GESCAL (Gestione Case Lavoratori - *Management of Housing for Workers*) the national public fund created in 1963 to finance the construction and allocation of housing for workers. The end of this stable state-financed mechanism for public housing led to a sharp reduction in new housing provision and forced a shift toward compensatory instruments such as schemes and programs for the regeneration of public housing estates and, later, finance-linked social housing funds. Several interviews underline that this transition resulted at the local level in an insufficient public housing **provision** and increasing reliance on episodic programs rather than long-term strategies (A2, 53; A6, 108–111).

"*No new public housing has been built. Demand far exceeds supply: the situation is completely inadequate. Something could also be done about rents and existing housing, but this requires significant investment and, above all, political will."*

Public manager in urban planning (A2, 53)

While the Region and some Municipalities attempted to mitigate this through the regeneration of the existing stock and the conversion into housing of existing buildings, the overall capacity to respond to rising demand remained inadequate. The words of the president of the regional public housing agency (ATER) are very clear:

"To properly frame the issue, we must start with one fact: the closure of GESCAL. Until then, public housing programs were financed by the state through regionalized funds (Umbria quota, Lombardy quota, Tuscany quota, etc.). With the end of GESCAL in the late 1990s, this system ceased to exist and had to be compensated for in other ways, such as through complex urban programs. During that period, attempts were made to give ATER new opportunities, including self-sustainability. Then, with the Prodi government (1998-2000) and later with Berlusconi, came the era of so-called social housing and the FIA Fund, in which what remained of GESCAL was used - in part as a non-repayable grant - to co-finance this new instrument. From then on, some regions more sensitive to the issue of housing, such as Umbria, tried to implement policies to enable ATER to renovate buildings for use as public housing. The idea was that even small villages could be revitalized through the presence of social housing."

Urban planning expert (A6, 108-111).

Concerning ecological transition policies, a recurring theme concerns the gap between policy intentions and actual outcomes, particularly in relation to the socio-economic conditions of beneficiaries. A paradigmatic example is the adoption of centralized heating systems in public housing. While technically grounded in principles of efficiency and standardization, interviewees stressed that these systems often fail in practice due to the very limited spending capacity of tenants, who are unable to afford heating costs even when infrastructure is provided. As one key informant noted, installations were celebrated as successes, yet later evaluations revealed that many systems were underused or not used at all (or even interrupted) because tenants could not pay for energy consumption (A6, 14–16). This highlights a broader mismatch between technical solutions and the economic realities of low-income households.

"At first, everything looks like a success … but then you check and discover that none of them really worked. I remember a manager saying, half-jokingly but not entirely, that there is no better example than a social housing tenant who gets a new boiler installed but, not having the money to pay for it, doesn't even turn it on"

Urban planning expert (A6, 14-16)

A similar mismatch was raised between the technical solutions used for the Superbonus 110% and the real environmental and energy improvements.

"However, the problem is that interventions are often limited to maintenance: photovoltaic panels or fixtures installed on buildings without adequate insulation or with incorrect exposure. This means that efficiency gains are not real. Even the software used to certify energy classes produces dubious results. Furthermore, the technical quality of designers varies greatly. For this reason, the actual impact of interventions remains a big question mark."

Public manager in urban planning (A2, 68)

3.2 Participation and governance (procedural)

The interviews converge on a critical assessment of participation and governance processes, revealing structural weaknesses in consultation practices, existing asymmetries of power among actors, and uneven inclusion of affected populations. While several policy initiatives rhetorically reference participation or bottom-up approaches, their implementation is often described as partial, selective, or overridden by top-down decisions. Overall, the interviews depict a governance landscape in which participation is formally recognized but unevenly practiced, constrained by hierarchical decision-making and selective inclusion. These dynamics limit the capacity of participatory processes to influence outcomes and raise questions about their role in addressing broader issues of social equity and territorial governance.

A first, recurrent theme concerns the **limited quality of consultation and participatory processes**. Professionals involved in preliminary policy design reported the tendency to be often excluded during later implementation phases, particularly when strategic decisions are taken without prior discussion with those who had contributed to project formulation. One respondent described the frustration of seeing a carefully developed project substantially altered without consultation, raising doubts about whether the project's objectives had been understood at all (A9, 26). This perception of symbolic rather than substantive participation suggests that consultation is often confined to early or formal stages, while key decisions remain centralized.

Closely related is the tension between **bottom-up initiatives and top-down governance**. In projects that explicitly aimed to adopt inclusive, bottom-up approaches - especially in the fields of tourism and territorial development - interviewees reported some difficulties with municipal authorities. Conflicts emerged when higher-level institutions-imposed investment priorities or external communication strategies that contradicted locally defined goals, such as social inclusion or mitigation of gentrification pressures (A9, 25). This dynamic illustrates how

governance arrangements can neutralize participatory ambitions by reasserting hierarchical control at decisive moments.

A third theme concerns **civic inclusion and exclusion**, particularly regarding which social groups are effectively represented in governance processes. Several interviews highlight that participation processes tend to favor organized actors, professionals, or economically stronger stakeholders, while marginalized groups - such as low-income residents or those directly affected by housing and tourism pressures-remain underrepresented. The general framing of "green" or "sustainable" tourism - mainly referring to nature trails and outdoor activities in the outstanding resorts in the rural outskirts - as inherently positive was explicitly criticized for masking distributive effects that disproportionately benefit higher-income users while producing exclusionary outcomes for residents (A9, 25). This selective inclusion reinforces existing inequalities and limits the redistributive potential of participatory governance.

> *"Otherwise, green tourism is actually seen as an antithesis, as a force that conflicts with social livability. Because there is a push for it, since it is a push for green tourism, it has taken on a gentrifying aspect. We had a rather heated debate with the Municipality of Assisi because our entire project was based on this very bottom-up approach, seeking to include all those members of the population who normally suffer. One of the points of the project we are working on is an ethical charter for tourism, a kind of pact between all the parties involved, the stakeholders and also the population, in which we try to agree on a kind of shared protocol of values, principles, and rules of coexistence that allow this. However, there was a clash because at a certain point they imposed on us that, in addition to investing a large part of the funds in the restoration of the [hidden], they had this large company carry out this campaign…"*
>
> *Urban planning expert (A9, 25)*

The interviews also point to **weak feedback loops between civil action and institutional change**. While forms of civic engagement and advocacy exist - often driven by associations or informal networks - their impact on institutional policies appears uncertain. Even when bottom-up proposals are acknowledged, they do not consistently translate into binding policy adjustments, such as in the case of the Parco della Piana project (A12, 9; A4, 46). Given the extensive citizen support for the project, the lack of binding implications contributes to a perception that governance structures absorb participation rhetorically while remaining largely impermeable to substantive change.

Finally, governance challenges are compounded by **fragmentation across policy domains and institutions**. Participation is often organized on a project-by-project basis, without stable, institutionalized arenas for dialogue between public authorities, civil society, and residents. As a result, as argued by interviewees from civic groups and NGOs, participation heavily depends on individual projects or actors rather than being embedded in governance routines, increasing the risk of exclusion when political priorities or administrative leadership change.

3.3 (in)equity (distributional)

As mentioned, densification and greening are not highly relevant policy fields in Assisi, while energy retrofitting (sometimes through density bonuses) is acknowledged by interviewees as very relevant. The interview material collected in Assisi points to a relatively consistent

perception of the Superbonus 110% as a policy instrument characterized by uneven distributive outcomes. Across interviews, respondents converge on the view that the measure interacted with existing social, economic, and housing structures in ways that favored specific groups, while leaving others marginally involved or excluded.

A first, strongly shared theme concerns the **social selectivity of access to Superbonus 110%**. Multiple interviewees state that the main beneficiaries were homeowners belonging to middle-high and high-income groups, who possessed the financial capacity, informational resources, and professional support required to engage with a complex incentive scheme (A4, 40; A5, 62; A5, 112; A4, 22; A11 ,3). The ability to anticipate costs, manage administrative uncertainty, or tolerate potential regulatory changes is repeatedly described as a decisive factor. Conversely, low-income households are depicted as structurally constrained by insufficient tax capacity and limited access to technical assistance, conditions that restricted their effective participation even when formal eligibility existed (A11, 5; A12, 7).

A second recurring theme relates to the **limited provision of benefits for public and social housing**. Several respondents underline that the application of the Superbonus 110% to public housing stock was minimal, particularly outside major urban centers (A1, 56-58). This outcome is attributed to institutional and procedural barriers, including the complexity of public procurement, governance constraints, and difficulties in managing large-scale interventions within public ownership frameworks (A1, 61). As a result, the distribution of benefits remained concentrated in the private housing sector, reinforcing a perceived imbalance between public expenditure and social reach (A1, 56; A6, 34). Importantly, social housing dwellers and other groups excluded by the Superbonus 110% are highlighted by many interviewees (institutional, civic and related to tenant unions) to be the ones at higher risk of energy poverty.

> *"The superbonus was not a procurement, where you do something for me and I give you the money. The superbonus was: you do something for me, I pay you in 5 or 10 years (they changed it 20 times) in tax credit transfers. So you have to have the tax credits. But tax credits could be bought. And we had to find someone who, in exchange for carrying out the works eligible for financing, would buy the tax credits. So it wasn't just a case of "you do it and I pay you": you do it, I certify that you've done it, you deduct the tax credits, you finance it with the banks. So it's a very complicated procurement for the public."*
>
> *Representaive of Regional Public Housing Institution (A1, 64)*

A third theme concerns the **interaction between the Superbonus 110% and real estate dynamics**, especially in a city with strong touristic attractiveness such as Assisi. Interviewees frequently associate the measure with processes of property valorization, particularly for single-family homes and properties located in high-value or scenic areas (A4, 40-41; A4, 63; A11, 3). In several accounts, energy retrofits are described as contributing to speculative revaluation or facilitating the conversion of dwellings into tourist accommodations, rather than improving housing affordability or energy conditions for residents (A5, 62; A9, 45).

> *"Another aspect concerns energy retrofitting policies, such as the Superbonus 110%. We have seen that it had unequal outcomes: those who benefited were mainly property owners who could have afforded the works anyway, because they had the ability to advance the costs or to rely on professionals capable of handling such complex procedures. From an environmental*

point of view, it was positive, because reducing consumption is always beneficial, but from a social perspective it raised questions. In some cases, it led to speculative revaluation of properties rather than an equitable benefit for everyone. There are also people who were left 'halfway through' the works, unable to complete them."

Representative from Municipalities Network (A5, 62)

A fourth, widely shared perception concerns the **uneven distribution of benefits and burdens across tenure groups**. Property owners are consistently identified as advantaged, having benefited both from direct incentives and from longer-term increases in property value (A4, 63; A6, 34). Renters, young households, and those without property assets, by contrast, are described as facing rising housing and energy costs, without access to comparable policy benefits (A6, 26; A4, 63; A6, 26). This dynamic is framed as contributing to broader socio-spatial inequalities within the local housing market.

Overall, the interviews depict the Superbonus 110% not primarily through its technical or environmental characteristics, but as a policy whose outcomes were strongly mediated by pre-existing inequalities in income, property ownership, and administrative capacity. Perceptions of inequity thus emerge not from isolated shortcomings of the instrument, but from its interaction with a local housing system characterized by unequal distributions of property ownership, financial resources, and access to technical expertise.

3.4 Political mobilization

Political mobilization in Assisi in relation to housing, regeneration, and environmental transitions is quite limited. Some historic and contextual factors – like an organized, dominant and extensive influential role of formalized political parties – result into a rather weak civic landscape in which mobilization exists, but is fragmented, reactive, and structurally constrained. Until recently, most local associations were mainly focused on the promotion of single events/project based on a direct relation with political representatives – providing resources or support, on an almost clientelism-based relation. However, the situation has changed, especially after the fall of the political majorities that had ruled for almost half a century (Latterini et al., 2025). However, overall political mobilization occurs to be as a defensive, uneven practice, shaped by immediate impacts, power asymmetries, and limited confidence in institutional receptiveness.

A first, clearly shared theme is the **overall weakness and fragmentation of collective mobilization**. Several interviewees noted that, despite growing pressures linked to tourism, housing affordability, and energy costs, overt mobilization has remained limited or episodic rather than sustained and collective (A4, 32–35). This absence of visible conflict was often explained by the facts that: conversion of dwellings into short-term rentals often benefitted previous owners, and happened on houses that were often left for being old or damaged by the earthquake; many interventions affected buildings or spaces that were already underused or distant from everyday residential life, thus dampening immediate reactions (A4, 32–35).

A second recurring theme concerns the **selective and uneven nature of mobilization**, which tends to emerge only when tangible and immediate inconveniences are perceived. Resistance was more clearly observed in cases where interventions affected daily practices, such as the reorganization of road space or the reduction of parking availability. In these contexts, interviewees reported strong opposition from residents accustomed to car-centered mobility, illustrating how mobilization is often reactive and focused on the defense of established routines rather than proactive engagement with broader policy goals (A12, 7). This pattern suggests a pragmatic, interest-driven form of civic action rather than ideologically or programmatically oriented mobilization.

Yet, the interviews highlight the **emergence of new localized advocacy and grassroots initiatives**, particularly around issues of environmental preservation (like in the case of the Parco della Piana association) and the menace of organized crime infiltration into the entrepreneurial fabric of the city – attracted by the money-laundering opportunities offered by tourism.

"Let's say that they are those with major economic interests which, in this case, were not the classic entrepreneurial ones, so to speak, but we probably also had entrepreneurial groups with unclear intentions, not to mention those involved in criminal economies, who, with large sums of money at their disposal, were able to assert themselves as primary buyers at a time of major change in the tourism market in the area. A market in which the small, family-run businesses that have always characterized the historic center of Assisi were not so ready to face this type of change… So, with [the association] Libera, to combat all uses of the city that are harmful to residential life, we promote many initiatives."

NGO-representative (A4, 13-63)

One example is the Parco della Piana d'Assisi, which is a grassroots project. It has been accepted by the administration but has not yet really got off the ground and there are still studies to be done. Basically, the project originated from the bottom up with the idea of stopping land consumption in the Piana d'Assisi, i.e., the area between Assisi, Santa Maria degli Angeli, and Bastia, but it goes further, let's say towards Spello, towards Cannara, let's say this whole area here, which can then be expanded because the damaging area also extends towards Perugia in some way and towards Foligno, so if desired, it could be expanded further. The idea was to maintain the agricultural vocation of the plain itself, but to ensure that a multifunctional park is created."

Representative from Park Association (A12, 9)

The issue of housing and tourism-related housing vulnerabilities is seen by interviewees as increasingly salient but still insufficiently translated into political leverage. Neighborhood committees and associations on these topics are described as still absent or gradually forming, often supported by research or advocacy work that provides residents with arguments and legitimacy to articulate claims (A4, 61; A9, 25).

"While in Assisi we usually talk about everything, like chatting at the bar, we then turn away from the topic of residentiality and the effects of tourism on residentiality. For the first time, perhaps thanks to this type of work, we have grassroots support to try to propose policies …This residents' committee is undoubtedly coming into being thanks in part to a discussion that I helped to initiate. The discussion has always been there, but the research behind it has helped to put it in place or rather provided the right tools to address the problem."

NGO-representative (A4, 61)

However, these forms of mobilization were perceived as fragile and highly dependent on individual actors or specific projects, rather than embedded in stable, long-term civic infrastructures, and some respondents emphasized that public debate often remains superficial, with housing impacts of tourism widely acknowledged in informal discussions but rarely addressed through strong political demands (A4, 61).

*"The perception of **asymmetrical power relations** also shapes civic attitudes toward mobilization. Interviewees express skepticism about the ability of grassroots action to influence decisions dominated by economic interests, external investors, or higher-level political agendas. This is particularly evident in accounts of conflicts over regeneration projects that resulted in the loss of social spaces, where mobilization was perceived as too weak or too late to prevent outcomes detrimental to community life (A4, 36–37). "one intervention that caused many problems and had a very serious impact on social life was the redevelopment, following the earthquake, of the former Santa Caterina prison, which was first the headquarters of one of the largest associations in the area and then the Arci club, and which was then transformed into a luxury accommodation facility."*

NGO-representative (A4, 36-37)

The interviews suggest a broader **fatigue in daily life of living in the historical center and normalization of exclusion**, especially among vulnerable groups and young people.

3.5 Socio-ecological impacts/benefits (positive)

Some of the interviewees highlight a set of positive socio-ecological impacts associated with energy retrofitting, collective energy solutions, and nature-based interventions. These informations are grounded in everyday experiences and focus on tangible improvements in living conditions, energy security, and community life.

A first recurring theme concerns the **benefits of energy retrofitting and improved energy performance of dwellings**. Interventions such as thermal insulation (the so called "cappotto termico") and the installation of new systems significantly reduce energy consumption, lower heating costs, and improve indoor comfort across seasons. Several interviewees focus on the older housing stock, particularly in historic centers, where external insulation cannot be applied due to historic and architectural preservation constraints. Retrofitting and higher energy

classes translate into warmer homes, improved wellbeing and reduced reliance on inefficient or supplementary heating methods (A6,46–48; A8,31–32). These improvements are therefore framed not only as economic advantages but also as enhancements to overall quality of life.

> "*One thing that truly surprised me was the thermal insulation: at first, I was against it because of the costs, but then I went ahead following my father-in-law's advice. The result is extraordinary: in summer the house stays cool without air conditioning - on the contrary, in the evening I must close the windows because cold air comes in. We installed it ten years ago, before any incentives, and I can say it was an investment that greatly improved our quality of life, even in winter, by reducing heating costs.*"
>
> *Hotel Owner and Inhabitant (A8, 31)*

A second theme relates to **energy communities as tools for energy security and social equity**. Collective energy arrangements are considered as a promising mechanism to reduce individual energy costs and address energy poverty, particularly when properly supported by regional authorities and public housing institutions. Ensuring affordable access to heating is explicitly framed as an objective that aligns ecological transition with social justice, reinforcing the perceived social value of such initiatives (A6,123–124).

Nature-based solutions also emerge as a key positive dimension. **Urban green spaces are described not merely as environmental assets but as social infrastructures**, especially in dense or car-dominated urban contexts. The presence of accessible green areas near housing is associated with improved livability, reduced cooling needs, and enhanced opportunities for social interaction, particularly for residents living in small dwellings (A12,13; A8,8). Green spaces are thus perceived as supporting both environmental adaptation and everyday social practices.

Similarly, **landscape care and green infrastructure are considered key factors in promoting more sustainable forms of tourism**. Investments in parks, cycling infrastructure, and the maintenance of natural and semi-natural areas are seen as enabling walking and cycling tourism, generating positive territorial impacts also off season and revitalizing otherwise marginal or declining areas. Such forms of tourism – as in the "Vivi Assisi" project funded by the Ministry of Tourism within the Recovery and under the UNESCO framework- are associated with longer stays, lower environmental pressure, and broader local benefits compared to mass tourism models (A4,46; A9,12; A9,24).

3.6 Socio-ecological impacts/harms (negative)

Negative social impacts in Assisi are largely associated with tourism dynamics and structural limitations in the provision of social housing, rather than with green interventions. Respondents consistently report that **gentrification and displacement in the historical center** are driven by high tourism demand and short-term rental proliferation. Properties increasingly serve as vacation homes or tourist accommodations, raising housing prices and reducing accessibility for long-term residents. Municipal incentives to encourage relocation to the center were deemed ineffective in countering these trends (A2, 20; A3, 111-113). The interviews further highlight **spatial inequality**, as high-income households occupy central areas while middle- and lower-income residents have been displaced, including older residents and immigrant

communities (A4, 40-41; A4, 43-44; A9, 18-19, 28, 31). Notably, in the perception of respondents these effects, as in other historical centres, were already driven by the challenging uncomfortable conditions of the poorer old housing stock (and high costs needed for its upgrade) and the offer of more comfortable cheaper housing in the plain. Somehow these processes affected but not uniquely induced by ecological or retrofitting policies.

The availability of social housing remains structurally low due to chronic underinvestment. Demand far exceeds supply, and few new developments have been realized in recent decades (A2, 23-24, 53; A3, 68-69). Scarcity is exacerbated by tourism-driven price increases, which further limit central urban living for low- and middle-income residents (A4, 43-44, 48, 57). Another, less-reported dimension of negative perceptions concerns **opposition to green interventions**. Interviewees reported resistance when urban redesign or retrofitting projects reduce parking lots or create any kind of inconvenience (A12, 7-7). In public housing specifically, some residents deactivated ventilation systems, likely due to noise or perceived operational burdens, highlighting a need for **passive retrofit solutions** that do not require user intervention or incur additional costs (A1, 38). These cases represent the main negative social effects directly linked to green interventions.

In summary, negative socio-ecological impacts are primarily **tourism- and housing-system related**, rather than induced or associated with environmental policies. Green interventions may generate short-term disruption, but broader social concerns stem from the interaction of high market pressures, inadequate public housing, and touristification.

3.7 Tensions and power dynamics between stakeholders/actors

Structural tensions and asymmetric power relations emerge among actors involved in housing, urban regeneration, and sustainability policies. These tensions feature both the operational level - between residents, public managers, and private actors - and the institutional level, across governance scales and administrative competences.

A first recurring theme concerns **contradictions and disputes between actors**, particularly at the level of implementation. Technically sound retrofit or energy-efficiency interventions are contested or undermined in practice by residents or co-owners. As mentioned above, in public housing contexts, residents have been reported to deactivate or physically block ventilation systems perceived as noisy or intrusive, revealing a misalignment between design assumptions and everyday use (A1,38). This points to broader tensions between expert-driven solutions and user practices, reinforcing the perception that some interventions should be “passive” and not dependent on residents’ capacity or willingness to manage them (A1,38).

Similar conflicts emerge in mixed-ownership condominiums, where decision-making rules grant veto power to both public and private owners, as the private owners - who generally gained ownership of the previously socially rented flat with a lot of economic effort and exposure - resist to further investments in the property. This controversies results in stalemates that prevent retrofitting despite public actors holding the majority of property shares (A1,51).

Institutional fragmentation and responsibility spread across governance levels is identified as a major concern. Energy and housing policies are designed at European and national levels, filtered through regions and municipalities, but ultimately implemented by public housing managers who lack adequate resources and decision-making power. This governance chain produces a structural responsibility gap: while strategic objectives are set "from above," operational and financial risks are borne by the last link, often by ATER (the public housing company) or similar public bodies (A6,11–12). The inefficiency or ineffectiveness of policies is therefore never neutral, as it translates into concrete economic and managerial burdens for implementing entities, discouraging experimentation and making "green" policies appear as isolated, non-replicable cases (A6,11–12).

> *"This highlights a structural problem: policies originate at the European level, pass through Regions and Municipalities, but no actor assumes full responsibility for them. In the end, everything falls on the last link in the chain, often the public housing provider itself. The inefficiency or ineffectiveness of a policy is never neutral: it always impacts those who are tasked with implementing it. This is an issue that should be addressed seriously, because too often "green" policies remain isolated, non-replicable cases that ultimately fade away on their own. For the technical offices of public bodies, they become experiences to be avoided, for fear of generating further economic problems".*
>
> *Urban Planning Expert (A6, 11-12)*

A related tension concerns **financing mechanisms and access to subsidies**. Interviewees highlight how funding schemes for green housing operate on a "first-come, first-served" basis, favouring actors with greater administrative capacity and liquidity (A1,54). The Superbonus 110% is repeatedly cited as emblematic: its procedural complexity, reliance on tax credit mechanisms, and continuous regulatory changes made it largely inaccessible to social housing providers (A1,61; A6,34–35). As a result, social housing benefited little, if at all, from a measure that instead disproportionately favored private homeowners able to anticipate costs and navigate complex financial arrangements (A5,62).

Another core theme revolves around **conflicting policy goals**, particularly between environmental sustainability and housing affordability. Interviewees describe how energy-efficiency requirements, maintenance costs, and increased condominium expenses can paradoxically exacerbate financial vulnerability among low-income residents (A3,25; A6,9–10) while especially in historic centers, heritage protection authorities are perceived as obstructing the economic benefits of energy retrofitting by restricting solar panels or insulation measures to preserve architectural features and (A9,22).

Finally, several interviews underline the lack of integration between **urban regeneration and retrofitting policies**. While housing renovation is often accompanied by expectations to extensive upgrade public space, funding streams and institutional responsibilities remain fragmented, forcing actors to navigate parallel and poorly coordinated policy tracks (A3,39; A3,101). The result is that sometimes buildings are renovated but public space is not upgraded. Overall, civic perceptions depict a governance system marked by fragmented authority, uneven power relations, and persistent tensions between policy ambitions and socio-economic realities.

3.8 Innovative governance mechanisms

Across the interviews, innovative governance mechanisms are not framed primarily as the creation of new institutions, but rather as **recombinations of existing actors, regulatory tools, and financial instruments** to respond to structural constraints in housing, energy, and territorial management. Interviewees consistently referred to mechanisms operating at an intermediate scale - between individual buildings and comprehensive planning frameworks - as the most promising ones.

A first core mechanism relates to **"zero land take" objective through public acquisition and reuse of existing buildings**. In the last years, the public housing sector in Umbria has followed a strict policy framework of reduction of soil consumption and renovation of the existing heritage, mainly based on funding coming from upper levels of government. Practices of reusing historic or publicly owned buildings for different forms of affordable or public housing were identified as a distinctive feature of the Umbrian context (A5 e, 41–45; A6, 61; A6, 73). The expansion of the public housing stock by ATER Umbria has almost entirely happened by purchasing existing dwellings or buildings (A3, 51; A3, 57–58). This approach was supported by regional planning instruments that promote reuse within historic centers through regulatory exemptions, incentives, and targeted flexibility, while maintaining strict limits on urban expansion (A3, 52; A3, 86–87).

"Over the last ten years, the Umbria Region has implemented plans financed mainly with state or EU funds. This funding has almost always followed two guidelines: zero land consumption and restoration of existing heritage … "We have implemented the expansion [of the ERP public rental housing stock], but always in compliance with the rule of the last ten years: zero land consumption. In practice, this has been done mainly through the purchase of ready-made buildings. For example, Maria Elena mentioned the student residence earlier: in that case, these were apartments that had already been built, were vacant, and were privately owned. The purchase and renovation of these properties allows us to increase the ERP stock, but always without consuming new land".

Civil servant in regional administration (A3, 7-12)

"In Assisi, I was always struck by the case of the former hospital in Via San Francesco, which was converted into public housing. It was a unique case: a hospital that became public housing, right in the historic center. In Lombardy, for example, in Milan, I have never seen anything like it…"It is very interesting because the example of the hospital in Assisi predates complex urban programs by a long way. It was a specific intervention, a course of action that showed how a disused building could be effectively reused. This case demonstrates that significant examples of regeneration existed even before complex urban programs."

Urban Planning Expert (A6, 61-73)

However, this has not happened for the private building sector, which still relies heavily on greenfield development.

“Over the years, however, many agricultural areas have been converted into residential areas without sufficient public compensation. Today, however, there is more attention: when a variation is approved, significant compensation is required (offices, spaces for associations, public housing).”

Public manager in urban planning (A2, 46)

Regarding the **energy retrofitting of the public housing stock**, the policies “Conto Termico” (Thermal Account), Law 80/2014, and some funding linked to the National Recovery and Resilience Plan and the government-funded “Sicuro Verde Sociale” (Safe, Green Social) national program - are mentioned by the public housing company as best practices, while there are also high expectations for the implementation of the Social Climate Plan that has to be implemented in order to access the EU Social Climate Funding in the period 2026–2032.

"There is one specific measure, the M7, in particular investment 17 and therefore the ‘new PNRR’ [the National Recovery and Resilience Plan, authors’ note], formerly known as Repower EU. In this, approximately three and a half billion euros are earmarked for institutions, formerly autonomous institutions, to overcome the difficulties associated with energy poverty”

Representative of regional public housing institution (A1, 6)

“I would say that Law 80/2014, although now outdated, was fundamental because it guaranteed ATER constant annual funding. This is very important, given that ordinary and extraordinary maintenance are strongly affected by turnover in rentals. Having regular funds allows us to quickly put updated housing back on the market, for example by replacing boilers and systems.”

Civil servant in regional administration (A3, 24)

The perspective of various institutional actors witnesses that more regular funding would be a fundamental key to assure efficient and continuous renovation of the public housing stock, in other words to make it fastly ready and energy efficient for beneficiaries.

“Today, a similar role is also performed by the “Sicuro Verde Sociale” program, which has a total budget of approximately €36 million allocated to routine and extraordinary maintenance and renovations, always in line with the principles of zero land consumption and energy efficiency. The program is progressing very quickly: according to the latest monitoring, approximately 50% of the work has already been completed. In the last two years, around 200 homes have been put back on the market, and the total estimate is almost 800 units."

Civil servant in regional administration (A3, 28).

A second theme concerns **institutional learning from past integrated programs**, particularly the legacy of Piani Urbani Complessi, PUC (Integrated neighbourhood regeneration programs). In many cases, these programs have been formative experiences that improved administrative coordination, reporting capacity, and community engagement

skills across municipalities (A6, 57–60; A6, 95). Building on this legacy, some respondents suggested reclaiming a transformative role for ATER as a public urban regeneration agency capable of integrating housing provision and management, physical renovation, and social objectives (A6, 71; A6, 83–84).

A third theme concerns **community-scale governance for the energy transition**. Several respondents emphasized that building-by-building incentives are poorly suited to contexts such as public housing or historic centers, whereas meso-scale platforms could pool producers and consumers, manage complex administrative procedures, and capture public incentives more effectively (A1, 6; A2, 8). In Assisi, the Renewable Energy Community "Cantico" was described as a virtuous associative structure capable of attracting public tenders and private investment, with objectives extending beyond short-term bill reductions toward longer-term public policy outcomes (A2, 8; A4, 16).

> *"We have also launched an energy community in Assisi called Cantico. It was established as an association (not a public body), promoted together with local entrepreneurs and associations. The goal is not so much to reduce bills as to create a tool for public policies and partnerships with private individuals, capable of managing investments in energy efficiency and responding to calls for tenders."*
>
> *Public manager in urban planning (A2, 8)*

Several interviewees stressed the need for regional oversight and the direct involvement of ATER as a guarantor, to ensure – by public guidance - that such mechanisms translate into real reductions in energy expenditure targeting low-income tenants (A6, 123–124). Similar logics underpin the philosophy of municipal energy helpdesks and Energy Service Company-based agreements for public lighting and buildings, which act as institutional intermediaries between technical expertise and everyday users (A11, 10; A2, 6–7).

Finally, s**oft governance instruments to manage tourism pressure**, such as ethical tourism charters and multi-stakeholder pacts aimed at developing a more ecological and socially sound form of tourism (against the monoculture of mass pilgrimages and event related tourism), are considered relevant to mitigate speculative dynamics and rebalance relationships between residents, operators, and institutions, particularly in UNESCO-designated contexts (A5 e, 67; A9, 25).

3.9 Tourism and market pressures

Since centuries, Assisi is a targeted destination for tourists, especially pilgrims. Moreover, the more recent and intensive conversion of many dwellings into short-term rentals in the historical center has contributed to its residential desertification: a wide range of residential services and commercial activities such as grocery stores, hardware stores and clothing shops have declined or relocated to the expanding residential and accessible areas in the plain (A2, 20; A4, 23). Property values in the historical center have increased, generating challenges for many tenants, such as elderly people and members of immigrant communities – with specific

mentions to the Albanian community of Assisi – who were in some cases forced to move to peripheral areas due to rising costs (A4, 43; A9, 18).

> *"In the historic center, as in many Italian cities, a process of desertification is taking place: an increasing number of properties are being converted into holiday homes and tourist-related activities. As a result, residential services have declined and relocated to more accessible areas. The growth of tourist accommodation has driven up prices, making the historic center less accessible to residents. A municipal call issued a few years ago, which provided incentives for those relocating their residence to the historic center, had no significant effects compared to prevailing market dynamics."*
>
> *Public manager in urban planning (A2, 20)*

The local administration has greatly invested in policies aimed at supporting and promoting touristic activities, yet many question the sustainability of such strategies. No regulatory measures currently exist to limit overtourism or the expansion of B&Bs (A5, 81; A7, 20-21), 11). Tourism is reported to cause high management costs on the city, including waste collection and processing, public transport, and security, which need to be scaled for tourist flows rather than the resident population (A5, 86). Additionally, although many property owners have opened B&Bs, the profitability is often limited due to intense competition and high operational demands (A7, 63; A8,19; A8, 23-24).

Touristification has also affected investments in retrofitting the historical housing stock. Because owners do not inhabit their properties, they have limited incentives to implement energy efficiency improvements, and the focus on tourist rental income has reduced long-term residential investment (A7, 20-21; A4, 23; A7, 19). Overall, tourism is reported as having distorted the housing market, leading to speculative behavior and aggressive pricing from owners of B&B activities (A9, 18).

A second form of tourism-driven gentrification which is reported is linked to international buyers, with specific mentions to US-American pensioners who, due to tax-break incentives, are encouraged to spend six months abroad and choose Umbria as a retirement destination. Given their higher purchasing power with respect to residents, their acquisitions, concentrated in historic centers and rural properties, are perceived to have contributed to rising property values and increased competition for housing (A5, 114-116; A9, 19).

Public incentives such as the Superbonus 110% have amplified speculative behavior in the housing market. While intended to stimulate energy retrofitting, the availability of public funding has inflated property prices, particularly in areas already affected by touristification (A1, 56; A4, 48; A5, 67-72).

In summary, a tension between the economic benefits of tourism and its social and spatial impacts in the historical center of Assisi emerges recurrently as a core issue. Tourism is a driver for high housing costs, reduced access to services, and speculative pressures, raising concerns about long-term sustainability in the historical center (A5, 81; A6, 44; A9, 18).

3.10 Gaps in Perceptions Between Civic Groups and Public Agencies

Tourism represents one of the clearest perception gaps and most contested issues in Assisi. Public agencies describe tourism - - especially "green" or experiential tourism - - as a **strategic development lever**, while civic actors increasingly perceive it as a **driver of displacement and exclusion**. Interviewees involved in bottom-up tourism projects highlight conflicts with municipal authorities when ethical or anti-gentrification objectives clash with branding or visibility strategies (A9, 25). Civic actors frame tourism as socially selective, redistributing benefits upward while externalizing costs onto residents (A4, 63; A9, 28). Institutions, by contrast, tend to treat tourism growth as structurally positive and socially neutral. This comes together with a gap in the perceived priorities of public action between, mainly, economic development (mainly via touristic development) and foundational infrastructures - housing, services, mobility, sociability. A tension surfaces repeatedly in critiques of fragmented interventions that improve buildings but ignore services, mobility, or other issues linked to social reproduction (A7, 23–27; A4, 46). Interestingly, we see converging perspectives of activists and hotel owners and developers on short term rental proliferation: b&bs and short-term rentals growth are seen as a problem, yet framing the causes and possible solutions differently (with hotel owners claiming for loosening up rules for hotels expansion).

> *"Homeowners have clearly benefited because they have found themselves with capital that has been greatly revalued over the years due to Assisi's new image and tourist potential and the emergence of this new type of tourist leisure consumption, i.e., staying in the homes of residents, which then became bed and breakfasts or tourist rentals. This has seen tremendous growth over the last twenty years, and those who owned homes in locations that were susceptible to this phenomenon have enjoyed enormous advantages. Those who were disadvantaged were those who did not own a home, so they had to look for one and pay for it, and they found themselves having to pay more and more in order to compete with a type of user who might otherwise have been a tourist."*
>
> *NGO-representative (A4, 63)*

A further gap concerns energy transition and housing policies. Public agencies emphasize **technical and environmental performance**, while civic perspectives stress **affordability and usability**. Centralized heating systems, bonus-driven retrofits, and energy efficiency measures were often described by residents as generating costs they cannot sustain, leading to underuse or system shutdowns (A6, 14–16; A6, 23). Public bodies, however, interpret these interventions as baseline improvements: this divergence indicates different benchmarks of "success". Regarding the distributional effects of energy retrofitting policies, the point of view of local stakeholders is similar between the two groups: the Superbonus 110% had rather regressive outcomes and primarily benefitted wealthy homeowners. This might be due to the fact that even institutional interviewees are active at local level, while the main measures (above all, the Superbonus 110%) have been centralized at the national level.

> *"But look, if we're talking about [Superbonus] 110, in our city it has exclusively benefited all those wealthy owners, all those owners who could afford it anyway, who started and embarked on this path without fear that if the government took a step back, they would find themselves in financial difficulty. And so yes, yes, the upper middle class. Exactly, but higher than average.*

We were asked to give an overview, and it's the same everywhere... I mean, if we ask ourselves which population groups have benefited? The upper-middle class.

Representative of tenants' union (A10, 11)

Regarding public housing, most stakeholders agree that demand largely exceeds the very limited and stagnating supply. However, municipalities display a strong fear of possible ghettoization and tend to promote "intermediate" forms of housing between public housing and market housing (e.g. the *canone concordato,* an agreed rent scheme), instead of new public housing.

Regarding **urban transformation**, there seems to be some underlying conflict and perception gap between Institutional actors and civic groups on environmental protection related topics, including urban transformations that entail soil consumption and landscape alteration or degradation. This has happened more recently due to construction of medium retail structures via an accelerated planning permission due to the 1998 Bersani national reform – a national reform that liberalized many aspects of commercial activities – and its implications in terms of liberalization of retail activities. In Assisi, despite high landscape protection standards, high real estate values trigger new construction activity linked to urban sprawl in the lower parts of the city, entailing land consumption, as stressed by environmentalist civic groups (A4, A11, A12).

Additionally, a gap emerges around the evaluation of outcomes of regeneration projects. Public agencies largely assess projects through **physical, financial, or functional indicators** (reuse of vacant buildings, efficiency gains, attractiveness). Civic groups instead foreground **loss of social infrastructure and everyday spaces**. The conversion of the former Santa Caterina prison - previously hosting major associations and the ARCI social club - into luxury hospitality was cited by civic actors as a profound social rupture (A4, 36–37). From an institutional viewpoint, the intervention aligned with reuse and valorization objectives; from a civic perspective, it represented **the erosion of collective life and informal welfare functions.**

Another gap concerns how **participation** itself is understood and how vulnerability is perceived and represented. Public agencies tend to frame participation as **procedural compliance** - consultation at predefined stages - whereas civic actors understand participation as a **shared process of framing and co-decision**. Civic interviewees involved in consultancy to support policy and project design expressed frustration when key strategic choices were later altered without discussion, despite initial engagement claims. From their perspective, participation was instrumentalized as a legitimizing device, rather than treated as an ongoing governance relationship. Public institutions, by contrast, implicitly treated consultation as concluded once formal steps had been completed, revealing a mismatch between expectations and institutional practice.

Public agencies often assume that existing consultation mechanisms capture social needs, while civic interviewees emphasize the underrepresentation of the most vulnerable groups. Some respondents noted that elderly people, low-income tenants, and marginalized residents often avoid mobilization due to stigma, dignity concerns, or resignation (A9, 45; A10, 14). Their absence from protests or committees could be misread institutionally as consent or low conflict, masking latent exclusion.

4 Section 4 – Critical Analysis: Assisi

4.1 Overview

The 1997 earthquake profoundly reshaped Assisi's social geography. While many residents benefited from reconstruction funds yet a significant share of them never returned to their homes in the historic center. Reconstructed dwellings were converted into second homes or tourist accommodations, accelerating a process of touristification. This dynamic lies at the core of perceived social harm. Rising property values, the proliferation of short-term rentals, and the decline of everyday services have rendered the historic center increasingly inaccessible to long-term residents. Interviewees explicitly separate these effects from green policies. Displacement and desertification are attributed to tourism and market dynamics rather than to ecological interventions.

In face of **chronic insufficiency of public housing stock**, Umbria partially compensated by acquiring and reusing existing buildings under a strict **zero-land-take** rule for public housing actors. Integrated urban programs implemented in the late 1990s combined physical regeneration with social objectives and often included the reuse of buildings for public or social housing in central areas. Beyond affordability gains, such interventions produced collateral benefits by revitalizing neighborhoods and restoring social functions. The conversion of disused buildings, such as the former hospital in Assisi, into public housing exemplifies this integrated approach, which sharply contrasts with more recent, fragmented policy instruments. Nonetheless, demand still far exceeds supply, and **institutional discontinuity** - loss of experienced staff, burdensome reporting, shifting priorities - weakens implementation.

Political **mobilization around housing remains weak and fragmented**, reflecting both national patterns of low participation and local dynamics of benefit distribution. Because many property owners gained from tourism and retrofitting incentives, collective contestation has so far been limited, despite recent rise oft he topic in the debate. Housing inequality is acknowledged but insufficiently politicized. By contrast, environmental issues generate more visible mobilization, though primarily from conservationist perspectives rather than through lenses of housing justice or inequality. As a result, the relationship between ecological transition policies and housing inequalities does not strongly emerge from the case study. Green policies are rarely perceived as either the cause of injustice or a tool for redressing it. Traffic and mobility, together with natural heritage preservation and land take, stand out as the most salient environmental concerns. High car dependency characterizes daily life in Assisi and the wider Umbrian region, where commuting patterns and dispersed settlements generate significant emissions. Many stress that ecological sustainability debates should extend beyond building retrofits to address mobility systems, which account for a substantial share of household carbon footprints. Opposition to green interventions is most visible when they disrupt car-based routines, such as reductions in parking or road space, highlighting the

political sensitivity of mobility. **Questioning whether green transition initiatives caused or exacerbated housing inequalities, t**he interviewees suggest that green transition measures have interacted with *pre-existing* drivers of inequality - touristification, scarce public housing supply, and path-dependent planning legacies - sometimes amplifying them rather than countering them.

The clearest example is the **retrofit policy via Superbonus 110%**: across respondents, access skewed toward middle and high income owners able to anticipate costs, navigate complex procedures, and absorb regulatory uncertainty; meanwhile, social tenants and low income groups largely remained excluded (A10, 11; A5 e, 62; A11, 3). In the public housing sector, institutional hurdles (procurement, governance complexity) and the design of the instrument itself meant that *very little* of the measure reached public housing stock, especially outside large cities (A1, 58; A1, 56; A1, 61). This produced an uneven distribution of public expenditure and benefits, with limited relief for those facing energy poverty (A4, 22; A6, 26). Affordability concerns also emerge around new **heating systems** : centralized systems conceived as efficient solutions have proven difficult to sustain for low income tenants who cannot cover operating and condominium costs, resulting in underuse or service interruptions - an outcome experienced as policy failure by residents even where infrastructure exists (A6, 14–16; A6, 23–24). Barriers to adopting innovative technologies such as heat pumps are not purely financial. A lack of training, technical knowledge, and public awareness among both residents and professionals limits uptake. Interviewees repeatedly call for better accompaniment mechanisms, such as local energy helpdesks, to guide households through retrofitting processes and ensure effective outcomes. In short, retrofit and energy measures perceived as *technically* successful may translate *socially* into additional financial strain.

By contrast, **NBS** are not perceived as direct housing inequality drivers. Interviewees portray Umbria's small cities as already embedded in green landscapes; if anything, this *abundance* has encouraged a long term underinvestment in urban green management within towns (A5 e, 138–140). Yet green amenities also *raise place attractiveness*, providing another channel through which tourism and short term rentals revalorize the historic center and push residents out - an indirect, market-mediated effect more than an immediate impact of NBS policy (A2, 20; A4, 63).

Densification appears only selectively salient with regard to housing inequalities. Respondents link its *potential* equity gains less to new supply than to reduced mobility costs: in a context of high car dependency, household energy budgets are dominated by fuels; therefore, compactness and proximity - if paired with walkability and nonmotorized mobility - could mitigate "energy poverty" via transport expenditure rather than via building performance alone (A11, 7). Densification is highly practiced in continuity with retrofit, allowed by a policy meant to make retrofitting more financially viable. However, densification in the historical center is constrained by heritage protections and limited demand in a depopulating region; where attempted, residents often mobilize defensively around parking loss and street space changes (A12, 7).

Regarding distributional effects, interviewees describe mainly three issues: (i) retrofit incentives captured by better off owners (A10, 11; A5 e, 62); (ii) ERP tenants struggling with energy/condominium costs (A6, 14–16; A6, 23–26); and (iii) tourist market dynamics that

convert housing into B&Bs and raise prices, hollowing out the center (A2, 20; A7, 23–30; A8, 36).

Looking ahead, further **pressures are expected** from large scale photovoltaic siting debates on rural land and from continued short term rental growth unless governance shifts (A9, 42–43; A4, 63). Conversely, **collective energy mechanisms (CERs)** and municipal energy helpdesks are viewed as *promising, equity-oriented correctives* if anchored by regional stewardship and ATER's role, with the explicit social objective to cut heating bills for low income tenants (A2, 8; A11, 10; A6, 123–124).

4.2 Key critical points defining housing justice/inequalities in the case in conversation with local/national context and histories

The Assisi case emerges as a context in which ecological transition policies, housing inequalities, and urban regeneration intersect only partially. Social vulnerability primarily results from tourism pressure, long-term underinvestment in public housing, and mobility dependence. The impacts of green interventions are mostly perceived as technically beneficial (with some exceptions) but socially selective or weakly redistributive. Unlike metropolitan contexts, Assisi's socio-ecological challenges are not so much framed around access to green amenities (largely present in the surrounding natural landscape) or large-scale redevelopment, but around the tension between heritage preservation, (touristification related) challenges in access to housing, and everyday residential life and access to services. Negative social impacts of ecological transition policies reported by civic actors are overwhelmingly attributed to market dynamics linked to tourism and to the structural fragility of the public housing system, with green policies playing, at most, an indirect or amplifying role.

Urban regeneration in Assisi follows trajectories that differ fundamentally from those observed in large cities and metropolitan contexts. Scale, demographic trends, and institutional legacies shape a model in which regeneration is fragmented, incremental, and deeply conditioned by historical events, most notably the 1997 earthquake and the efforts to recover historical centers. Not only the 1957 Astengo plan, but also the first architectural association for the protection of historical centers in Italy characterize the urban XXth century planning culture in Umbria. As a legacy, rather than large, coordinated redevelopment projects led by private capital, regeneration in Assisi has largely taken the form of dispersed interventions on single buildings. While halting land take is an official public goal at most levels of government, densification only happens in soft- and small scale typologies, more framed in terms of increasing volume as leverage for building renovation – for long time incentivized by effective public-led reconstruction policies after the 1997 and 2016 earthquakes. The post-earthquake reconstruction acted as a powerful catalyst for regeneration, producing widespread improvements in building quality and technical capacity. This legacy triggered a process of diffused regeneration that benefited broad segments of the population, particularly homeowners able to access reconstruction funds. However, this process did not translate into a structural relaunch of urban functions or social composition. Large scale regeneration and densification is both unattractive due to low plusvalue and not incentivized enough, with greenfield construction still constituting the main strategy for private developers (with some exceptions). The Umbrian context features de-population and lacks the real estate value

differentials that make large-scale private redevelopment attractive in cities. Consequently, private-led housing-driven regeneration has remained marginal, with few exceptions while urban transformation instead proceeds through piecemeal interventions, constrained by the small size of urban centers and by heritage protection rules. This model has ambiguous social outcomes. On the one hand, it avoided the disruptive effects often associated with large redevelopment schemes. On the other, it failed to counter long-term trends of depopulation and functional hollowing-out of historic centers, which were exacerbated by post-earthquake displacement and later by tourism-driven reuse. The Umbrian case shows a peculiar role of ATER (the public housinc company) as a key actor in urban regeneration processes that we do not see in other Italian cities: ATER is often “used” by regional and local governments to acquire and redevelop decayed building into social housing (or more rarely public housing due to social mix concerns). Some public-led regeneration initiatives are considered very interesting in terms of socio-ecological approach, such as the conversion of a former hospital into 28 public housing units in the city center of Assisi or the rehabilitation of unfinished residential complexes in Perugia, but remain quantitatively limited.

Renovation of the existing housing stock is widespread in Assisi and Umbria, involving public actors, private owners, and mixed-ownership arrangements. Earthquake recovery and planning instruments, such as density bonuses, have facilitated extensive physical renewal. However, energy retrofitting has not been systematically integrated into these processes. In many cases, renovations focused on structural safety or functional upgrading without addressing insulation, system efficiency, or long-term energy performance. This gap reflects both regulatory constraints in historic centers and uneven technical capacities among professionals. As a result, the environmental impact of many renovations remains uncertain, and efficiency gains are often more nominal than real. Despite this, energy retrofitting (together with housing renovation in general) emerged as the most important policy in terms of funding and quantity. While energy retrofitting initiatives are often evaluated positively in terms of comfort and energy saving, they rarely emerge as catalysts of either social justice or social conflict, outside of any planning and mobility logic. Instead, most actors agree that the Superbonus 110 had a rather unjust and regressive distributive impact, mostly benefitting wealthy homeowners and excluding tenants and public housing companies, as suggested by increasing literature on fiscal welfare (Jessoula, Pavolini, 2022) and social impact of ecological transition policies (Peverini et al., 2023; Carrosio, Cogliati Dezza, 2025) in Italy. The Superbonus 110% represents the most significant recent retrofitting policy, yet it is widely perceived as socially regressive. Access to the measure was structurally skewed toward middle- and high-income homeowners with sufficient liquidity, administrative capacity, and professional networks. Low-income households and public housing providers, despite being among those most affected by energy poverty, were largely excluded. Public housing agencies were effectively left out of both the policy design and its practical implementation. Procedural complexity, procurement constraints, and uncertainty linked to regulatory changes made participation unfeasible. As a result, the policy largely bypassed the housing stock most in need of energy upgrading. Moreover, the measure produced distortive market effects, including inflated construction prices and the spread of informal or irregular labor practices.

Nature-based solutions, as conceptualized in contemporary urban policy debates, play a limited role in Assisi. This is not unanimously perceived as a deficit, as the city is embedded within a highly valued landscape and is directly adjacent to extensive green areas, notably the

Monte Subasio natural park, and access to green space is not a pressing issue, as much as halting land take. In this context, green is framed less as an infrastructural intervention to be implemented within the city and more as an inherited asset to be preserved. The main ecological concerns relate to landscape protection, land consumption in the plain, and conflicts over large-scale photovoltaic installations on agricultural land and wind turbines in mountain areas, rather than to the creation of new urban green spaces. The main private-led greening initiative indeed involves the (touristic) valorization of an existing forest close tot he main cathedral. This framing reinforces the idea that ecological transition in Assisi is primarily about safeguarding an existing environmental capital rather than redistributing access to it.

4.3 Short reflections

Primary stressors of housing inequalities are **tourist and short term rentals related pressure** and **structural public and social housing scarcity**; green measures interact indirectly through place valorization and regressive distribution of benefits. The **historic center of Assisi** - protected, compact, and globally valued - has undergone **resident replacement** since the post1997 cycle, with properties converted to tourist use. The **plain** concentrates newer housing and car-based life, with heat island concerns and opportunities for **networked green and cycling corridors**. **Energy poverty** is salient, but in Umbria it is as much **mobility driven** (fuels) as building driven, and there are no significant measures targeting just sustainable mobility.

Despite these tensions, interviews identify **mechanisms with distributive promises**. The regeneration programs' (PUC) **season** built administrative and engagement capacity that is now largely lost but could be reactivated. **ATER as a public urban regeneration agency** - through acquisitions, reuse, and rental strategies in historic centers - offers ways to stabilize social mix without new sprawl. Renewable Energy Communities, **energy helpdesks**, and **Energy Service Contracts** can act as *intermediaries* translating complex transitions into lower bills and manageable practices for households and municipalities. **Ethical tourism charters** and territorial projects are attempts to rebalance the resident–visitor–operator triangle, but remain very limited in scale, impact, and uptake by public institutions. Their success hinges on **stable funding, regional stewardship, and social targeting** - conditions repeatedly missing when institutional leadership changes. We can argue that for Assisi, a just green transition is *less* about multiplying projects and *more* about **scaling up the few mechanisms that already align ecological goals with social protection** - public housing acquisition without land take, regulated social mix in the center including new rental opportunities, RECs and other energy efficiency measures including ATER, slow mobility and shade networks in the plain part of the city.

4.4 Limitations and perspectives for further research

Interviewees reflected a balanced composition between public institutions, third sectors and civic groups, inhabitants and local entrepreneurs. The results presented in this paper include various limitations, including limited number of interviews and gender imbalance. Notably, no real estate developer, landlord association, and short-term rental unit owner were interviewed, perhaps reflecting a bias towards tenants. Concerning gender, while the Policy Lab was rather

balanced, only 3 out 15 interviewees are female (20%), reflecting an unequal position of women in key positions in the region (including in civic groups).

5 Appendix 1 – Glossary

5.1 Abbreviations

ATER	Regional Public housing company
CERs	Collective energy mechanisms
ERP	Edilizia Residenziale Pubblica – public housing, allocated on the basis of income and needs criteria, owned and managed by public bodies (public housing agencies and municipalities.
GESCAL	Gestione Case Lavoratori. A public fund created in 1963 to finance the construction and allocation of public housing for workers.
NRRP / PNRR	National Recovery and Resilience Plan
PAESC	Sustainable Energy and Climate Action Plan (Piano d'Azione per l'Energia Sostenibile ed il Clima)
PUC	Complex public-led urban regeneration programs
REC	Renewable Energy Communities

5.2 Terms and Concepts

Superbonus 110%	EU funded national energy retrofitting program National instrument (partly funded through the NRRP) incentiv ising retrofitting in the residential sector.
Astengo plan	1957 urban plan for the city of Assisi, a pioneering case of heritage protection and conservative urban planning

6 Appendix 2 – Key interview data and transcripts

#	Position of Interviewee	Sector/Organization	Date of interview	Modality
A1	Representative of Regional Public Housing Institution	Regional Public Housing Institution	11/4/2025	In person
A2	Public manager in Urban Planning	Municipality of Assisi	06/9/2025	In person
A3	Collective interview with three civil servants of the Direction of Urban Planning, the Service Housing policy of the Umbria Region	Umbria Region	23/09/2025	In person
A4	NGO-representative	Representative of anti-mafia association (Libera)	17/06/2025	Online
A5	Representative from municipalities network	Association of municipalities working on sustainability topics	06/09/2025	In person
A6	Urban Planning Expert	Architect and urbanist	07/09/2025	In person
A7	Hotel Owner and inhabitant	Hotel Owner	06/09/2025	In person
A8	Hotel Owner and inhabitant	Hotel Owner	06/09/2025	In person
A9	Urban Planning Expert	Local NGO	12/06/2025	In person
A10	Representative of tenants' union	Tenants' union	04/04/2025	In person
A11	Representative of environmentalist association	National environmentalist association	04/04/2025	In person
A12	Representative from Park Association	Local civic group and initiative (Parco della Piana di Assisi)	04/04/2025	In person

Date	**4 April 2025**
Location (indicate, if hybrid)	In person event, Assisi, DigiPass, Piazza Giuseppe Garibaldi, Santa Maria degli Angeli

Number and types of participants	16 people participated in the event, of which 6 persons from research and academia, 6 from public and cooperative housing associations, 1 person from the municipality, 1 from a tenant union, 1 from an environmental NGO, and 1 practitioner (architect). The policy lab was dedicated to one case study location only (Assisi).

7 Appendix 4 – Bibliography

Mecucci M.G. (a cura di, 2016), *Ricostruire difendendo l'identità. Intervista ad Aldo Bonomi. Passaggi. L'Umbria nel futuro 2*, Morlacchi Editore, Perugia.

Nigro N., Fazzio F. (ed., 2007), *Il territorio rinnovato. Uno sguardo urbanistico sulla ricostruzione postsismica in Umbria 1997 – 2007*, Quattroemme, Perugia.

Berni F. (2024), „La Piana nel mosaico territoriale assisano", in Berni F. (a cura di), *Parco della Piana di Assisi. Un progetto di ecologia integrale*, AssisiMia, Assisi. Link: https://www.assisimia.it/wp-content/uploads/2024/10/Parco-della-Piana.pdf

Lanfaloni M. (2024), „Mobilità per ricucire il territorio", in Berni F. (a cura di), *Parco della Piana di Assisi. Un progetto di ecologia integrale*, AssisiMia, Assisi. Link: https://www.assisimia.it/wp-content/uploads/2024/10/Parco-della-Piana.pdf

Mariucci A. (2024), „La Piana e le sue regole", in Berni F. (a cura di), *Parco della Piana di Assisi. Un progetto di ecologia integrale*, AssisiMia, Assisi. Link: https://www.assisimia.it/wp-content/uploads/2024/10/Parco-della-Piana.pdf

Peverini M. (2024), „Il consumo di suolo: una questione regionale", in Berni F. (a cura di), *Parco della Piana di Assisi. Un progetto di ecologia integrale*, AssisiMia, Assisi. Link: https://www.assisimia.it/wp-content/uploads/2024/10/Parco-della-Piana.pdf

Comune di Assisi. (2022). *Piano d'Azione per l'Energia Sostenibile e il Clima (PAESC)*. Assisi, Italy. Retrieved from https://www.comune.assisi.pg.it/wp-content/uploads/2022/08/31_8_2022_Paesc.pdf

Latterini A., Peverini M., Berni F. (2025), "Governo del territorio e movimenti ambientalisti nel "cuore verde" d'Italia. Un'analisi delle relazioni tra pianificazione urbanistica e infrastrutturale e pratiche di difesa attiva del territorio in Umbria", in *Sociologia Urbana e Rurale*, volume 136, 81-94. 10.3280/SUR2025-136007

Mariucci A. (2023), "Assisi, il centro storico e la pervasività della monocultura turistica. Temi, problemi e conflitti di una trasformazione urbana non governata", Master Thesis, Università degli Studi di Perugia

Moretti & Stamponi (2023): The Renewable Energy Communities in Italy and the Role of Public Administrations: The Experience of the Municipality of Assisi between Challenges and Opportunities: https://www.mdpi.com/2071-1050/15/15/11869

Moretti et al. (2023) La prima Comunità Energetica rinnovabile di Assisi: analisi tecnico-economica e legale: https://research.unipg.it/handle/11391/1560556

Gubbiotti G. (2013), *Le Strategie Del Piano Regolatore Generale Di Assisi Di Giovanni Astengo*, Master Thesis, Università degli Studi di Perugia

Indovina F. (1991), *La ragione del piano, Giovanni Astengo e l'urbanistica italiana*, Bologna: Franco Angeli.

Carrosio G., Cogliati Dezza V. (2025), Clima ingiusto. Il welfare per un patto eco-sociale, Roma: Donzelli.

Figari F., Hollan K., Matsaganis M., Zólyomi E. (2019), "Fiscal vs. Social Welfare: Support for Affordable Housing in Seven EU Countries", *Politiche Sociali*, 6 (1): 67-92.

Jessoula M., Pavolini E. (2022), *La mano invisibile dello stato sociale. Il welfare fiscale in Italia*, Bologna: il Mulino.

Moscarelli R., Peverini M. (2024), "Cambiare prospettiva sulla crisi abitativa: oltre i confini urbani del fabbisogno", *Territorio*, 105.

Peverini M. (2023), "How Affordable is Social Housing? The Concept of Affordability as a Constitutive Feature of Public Rental Housing: a Comparison between Vienna and Milan", in Güntner S., Lehner J., Hauser J. and Reinprecht C. (eds.) "The Social Dimension of Social Housing", Spector books.

Latterini A., Peverini M., Berni F. (2025), "Governo del territorio e movimenti ambientalisti nel "cuore verde" d'Italia. Un'analisi delle relazioni tra pianificazione urbanistica e infrastrutturale e pratiche di difesa attiva del territorio in Umbria", in *Sociologia Urbana e Rurale*, volume 136, 81-94. 10.3280/SUR2025-136007

Peverini M., Cavicchia R., Friesenecker M., De Jesus K., Munson L., Susani A. (2023), Greener housing, but affordable? A study of synergies and conflicts between environmental policy instruments and access to housing, research report, Sciences Po, Urban School – Chair of Cities, Housing and Real Estate. Link: https://www.researchgate.net/publication/373482680_Greener_housing_but_affordable_A_study_of_synergies_and_conflicts_between_environmental_policy_instruments_and_access_to_housing

Ricci C. (2024), "Pianificazione urbanistica e Siti Patrimonio Mondiale : i PRG di Assisi, Urbino e Volterra come "antenati" dei piani di gestione UNESCO", in *Archivio di studi urbani e regionali*, 140, 2, pp. 80-101. DOI: 10.3280/ASUR2024-140004

Moretti, E., & Stamponi, E. (2023), „The Renewable Energy Communities in Italy and the Role of Public Administrations: The Experience of the Municipality of Assisi between Challenges and Opportunities", *Sustainability*, *15*(15), 11869. https://doi.org/10.3390/su151511869

Marincioni F., Casareale C., Toseroni F. (2017), „Quarant'anni di terremoti nell'Italia centrale: influenze globali e problematiche locali alla base delle azione di (s) radicamento territoriale", *(S)radicamenti,* 15, pp. 243-248