PROTECTION OF CULTURAL HERITAGE

TOWARDS A NEW NATURE-CULTURE RELATIONSHIP IN HISTORIC CENTRES. EVIDENCE OF PUBLIC SPACES BEYOND TOURISM IN FLORENCE, ITALY

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ABSTRACT: Historic centres are globally facing issues never encountered before such as climate change and mass tourism. Over time, the relationship between nature and culture has become one of conflict, with nature seen as a threat to the conservation of tangible heritage; at the same time, tourism has upset the reality of historic centres, compromising their fruition for both residents and tourists.

In this context of vast changes, the role of historic centres as public space has been overturned. Conceived as comprising a set of elements that form the urban landscape and represent the identity of a community, public spaces have already changed significantly. On the one hand, they must respond to the needs of users, mainly tourists who arrive in larger numbers than originally envisioned. On the other, they are experiencing the effects of climate change, with rising temperatures, heat islands, variation in the distribution and consistency of rainfall, andother site-specific issues.

Historic centres and culture can contribute to sustainable development. Conservation plays an important role in creating projects in synergy with the natural environment. Following an overview of current literature on tourism in historic centres and on experiences with nature-based solutions in conservation, this article examines two positive instances of conservation and regeneration of public space in the UNESCO Historic Centre of Florence, with the aim to address critical issues in this area and enhance its historic urban landscape.

KEYWORDS: hnature-culture relationship; historic centres; tourism; public space; nature-based solutions

Urban vision of historic public space

A historic city is made up of public and private built heritage, with relationships formed through series of rules, not always written, which characterise these connections. The ways in which the intermediate spaces are defined, or the boundaries between the two, define the essence of the relationship. In some cases, there is transparency; in others, there is a caesura or semi-permeable, indiscriminate use. These relationships result in community interactions that can, thanks to architecture and urban design, achieve different degrees of openness. These relations characterise the socio-economic, cultural, and religious aspects of the community that produced given heritage. However, the evolution of the socio-economic context inevitably changes the needs of citizens and the spaces of their daily lives. This also concerns historical centres, whose typology and morphology are rooted in relationships within the historical strata that have given life to specific public, productive and residential spaces (Cilona & Del Bianco 2022; Del Bianco 2020, 2021; Lejano & Del Bianco 2018). Thus, the 1972 World Heritage Convention's definition of cultural heritage, which specifies "monuments," "groups of buildings," and "sites," is limiting in the urban context, which comprises "groups of buildings" and whose essence consists in streets and boulevards, squares and courtyards – its human fabric, with tangible and intangible attributes, and its natural and cultural characteristics that constitute the spirit of the city (Turner 2018). Furthermore, historical contexts themselves are characterized by growing tension between globalisation and local development, with the new often being incompatible with the historical. For example, unsustainable tourism and general environmental degradation present new challenges for the conservation of urban heritage (Van Oers & Roders 2012).

Since 2011, however, with the Recommendation of the Historic Urban Landscape (HUL; UNESCO 2011), the concept of heritage has expanded, creating a comprehensive vision of the past, present and future, linked to the dynamics of social and cultural processes and the evolving aspirations of populations and communities (Rodwell 2010). Therefore, the dichotomous relationship between conservation and development needs to be resolved. The HUL approach challenges the orthodox method in urban conservation (Taylor 2016).

The contemporary historical city

The historic city is also contemporary and thus affected by different dynamics than in the past. Phenomena such as the depopulation of historic centres and the abandonment of traditional activities are the result of policies aimed solely at conserving assets rather than at development. According to the HUL approach, it is necessary to consider the dynamism of the urban organism, regarding it from a multidimensional perspective to foster not only the conservation of urban heritage but also its social and economic development (Del Bianco 2020; Francini 2022; UNESCO 2013). The contemporaneity of the historic city means it must face the profound changes that are part of global dynamics and which are difficult to control at urban scale, including climate change and mass tourism, which require new reflections and strategies for both conservation and development.

The issue of tourism in historic centres has been debated in many disciplinary fields, especially in recent decades, and has lately focused on post-pandemic developments. As an economic

activity, tourism has always been oriented at European historical centres and cultural institutions (Dodds & Butler 2019). This has also been the goal of many developing sites recently registered in the UNESCO World Heritage List.

Tourism is an economic and social resource that facilitates enhancing local culture and offers an opportunity for people to meet, which could, with support from local administrations, promote intercultural dialogue and peaceful coexistence, as well as heritage conservation (Del Bianco 2015, 2020; Del Bianco 2017; ICOMOS 2022; UNESCO 2001). However, tourism is also harmful because of its destructive effects: gentrification, reduced access to housing for residents, conversion of commercial establishments into services for tourists, overexploitation of resources, and growing levels of pollution and waste. The term *overtourism*, despite having been coined only recently, describes a phenomenon that has been known for a long time. As early as in the mid-nineteenth century, John Ruskin highlighted such risks for Venice, referring to excessive numbers of tourists at certain destinations having a negative impact on local communities (Dodds & Butler 2019). Since the 1990s, the awareness of issues related to large numbers of tourists has increased (Gössling et al. 2020), and with the rise of short-term rental platforms (especially Airbnb, founded in 2011) the phenomenon has grown exponentially in historic cities, spreading even beyond the central areas and invading residential cities (Celata & Romano 2020; D'Eramo 2020). The penetration of tourism into the residential city has thus become the real problem of overtourism (Dodds & Butler 2019), often leading to "tourismphobia" and public protests.

Following the end of the pandemic, the tourism sector has shown great resilience (Celata 2020), being among the first to consistently recover. In 2018, the United Nations World Tourism Organization (2023) recorded 1.6 billion international travellers; in 2023, it noted a return to 80-90% of pre-pandemic numbers and forecast an annual growth of 3.3% by 2030. Nevertheless, tourism, in its current form, is a highly polluting sector, where CO_2 emissions grew by 60% from 2005 to 2016, with transport causing 5% of emissions in 2016; it is also expected that this will increase by 25% or more by 2030 if decarbonisation does not accelerate (after: One Planet 2021). Environmental concern is an umbrella for all areas of heritage investigation: from usage to communication and conservation. In this context, the relationship between nature and culture has long been a conflicted one. However, this can be improved, both by enhancing traditional knowledge (Laureano 2011) and by using conservation and design solutions that are in synergy with the natural environment, such as nature-based solutions (NBSs; Coombes & Viles 2021). In many cases, historic centres are dotted with greenery confined to closed and controlled areas, while pavements prevail in most public spaces, turning them into heat islands and contributing to pollution, waste production and massive use of natural resources.

Given the urgency of climate change (IPCC 2023), it is necessary to invest in the recovery of the traditional relationship between nature and culture in order to meet sustainable development objectives, with projects aimed at reducing heat islands, developing urban forestry, and using NBSs, both out of respect for heritage and towards its protection. This approach could give heritage a new meaning as well as improve both the quality of life of residents and the experience of tourists since the pandemic has placed both groups in greater need of psycho-physical benefits offered by greenery and made them more sensitive to environmental issues.

Challenges and opportunities of applying NBSs in conservation

The relationship between culture and nature is controversial: in the world of cultural heritage, the dominant narrative identifies nature as a threat to heritage, just as humans are a threat to natural diversity (Coombes & Viles 2021). NBSs are natural systems that work to solve contemporary environmental issues and can contribute to the creation of healthy urban environments, mitigating the effects of intense urbanisation and improving issues such as water management, climate change, health and well-being (Boros & Mahmood 2021). At the urban level, benefits that can be drawn from the application of NBSs are related to improved health, carbon absorption, enhanced biodiversity, greater acoustic comfort, sustainable management of water and air quality, reduced urban heat islands, urban agriculture, economic vitality through employment and investment, and enhanced social cohesion (Xing et al. 2017).

The use of NBSs requires flexibility and the modification of existing approaches to heritage areas (especially historic centres with substantial built mass), as well as guidance in assessing vulnerabilities and possibilities for application (Coombes & Viles 2021). Cultural and natural heritage, as part of the UN's Sustainable Development (Goal 11, Target 10), is a vital component of sustainable and resilient communities, promoting shared values and connecting people with their surroundings, the past and nature. Until the Industrial Revolution, humanity regarded itself to be in harmony with the natural environment, learning from the relationship with nature. NBSs can thus be seen as a new way of referring to concepts and practices that, in the past, were often the basis of urban and rural living. To implement an NBS, it is therefore necessary to recover and enhance the traditional knowledge that links people to the environment. Furthermore, conscious and respectful implementation of NBSs in public spaces, without engaging in greenwashing or green gentrification, facilitates the development of historic centres by increasing their resilience. As Coombes and Viles (2021) point out, the exchange is two-way: built heritage benefits from the mitigation of material deterioration, improved visitor experience and greater resilience through investment, in return offering new locations to implement NBSs, providing inspiration for a closer relationship between nature and society, and enriching the NBS with cultural value.

Changing historical centres: the case of Florence

Florence is representative of the phenomena described above: in the pre-pandemic period it experienced an exponential increase in tourism and short-term rentals, its historic centre becoming depopulated and seeing a generalised *touristification* of services. At the same time, the city was threatened by environmental issues such as the danger of flooding by the Arno River. The historic centre of Florence – covering 532 hectares enclosed within fourteenth-century walls – has been a World Heritage Site since 1982, based on five Criteria (I, II, III, IV, VI):

1. It is an urban whole resulting from continuous creation lasting six centuries.

2. It has exerted a dominant influence on the development of architecture and the arts throughout Europe.

3. It offers exceptional testimony of a medieval and Renaissance merchant city.

4. It exercised strong political and economic power in Europe, many of its buildings bearing witness to this.

5. It remains associated with events of universal scope, such as the Renaissance.

The integrity and authenticity of the urban landscape, including traditional craftsmanship, are further characteristics that add to the exceptional value of the historic centre in Florence. These criteria are linked to the physical and human components of Florentine public space, which comprises an intricate urban fabric of narrow streets, small open spaces, large buildings, and churches with monumental squares (Zoppi 2019). In short, public space in Florence is a choral work that remains in the process of "continuous creation," as reported in Criterion I, and represents a given period's community (Zoppi 2019). This population, however, has been dwindling in: 2019, there were 66,447 historic centre residents but their number fell to 64,427 in 2021. The same trend can be identified in all districts of the city; in fact, the total population decreased from 376,450 in 2019 to 365,315 in 2021 (Municipality of Florence 2023a).

In addition to depopulation and the flooding of the Arno River, the critical issues that the site is addressing in its management plan are mass tourism, mobility, air pollution, and heritage conservation (Francini 2022). In 2019 – the peak year for tourism – Florence recorded more than four million arrivals (Municipality of Florence 2023a), with tourism representing 11% of the local economy (Liberatore et al. 2022). After the pandemic, the sector has consistently revived city-wide. Attempts have been made to regulate tourist flows by developing tools for monitoring tourism and drafting policies aimed at decentralisation (Liberatore et al. 2022). Overwhelmed by tourists, in March 2023 the administration approved a Structural and Operational Plan that prohibits the opening of new hotel businesses in the historic centre and regulates short-term rentals (Municipality of Florence 2023b). Indeed, the historic centre is currently dominated by short-term rentals, which represent the intended use of 77% of all real estate assets (Celata & Romano 2020), to which can be added other accommodation facilities (hotels, hostels, period residences, etc.). This has a dual implication: in addition to the reduction of housing stock for long-term rentals, the accommodation capacity of the Municipality of Florence is growing exponentially, increasing from 51,414 beds in 2018 to 71,310 in 2022. Furthermore, the depopulation is not limited to housing dynamics but extends to the daily use of the historic centre. In fact, in addition to moving out of their homes in the center in order to secure short-term rental income, residents use streets less often and less willingly: a 2016 survey reported that they avoid 72 different streets due to congestion caused by tourists (Centre for Tourism Studies 2016). In this context, integrated conservation must both respond to the needs of users and try to encourage the use of public space by residents.

Tourists feel a "moral obligation" to admire the main attractions of the places they visit (MacCannell, 2005); visitors to Florence must therefore see the key monuments, including the Duomo, Accademia Gallery, Palazzo Vecchio, Uffizi, and Ponte Vecchio. Thus, they concentrate on the route that includes Piazza San Marco, Accademia Gallery, Piazza del Duomo, Piazza della Signoria, Ponte Vecchio, and Piazza Pitti (Francini 2022). An average stay in Florence is currently fewer than three nights, which leads visitors to pass through these areas extremely quickly, making it difficult to decentralise the flows of people or to persuade them to visit areas outside the historic centre. Nonetheless, the tourist base in the city has expanded (Celata & Romano 2020), with many

people staying in the suburbs, benefitting from the improvement of public mobility (trams) and shared mobility (bicycles, electric bikes, scooters, electric cars), as well as easier navigation tools (Google Maps, etc.), which have all made the city more accessible to foreigners.

In the case of Florence, the penetration of the tourism-focused area into residential areas has exacerbated issues related to overtourism. Visitors who arrive as groups, families, couples or alone, have the right to find public space suited to their needs. The activities in which they engage in public spaces are different from the daily life of residents: they queue to access museums and institutions, observe and take photographs of themselves in front of monuments, walk, listen to tour guides, read brochures, eat and drink, sit down to rest, buy souvenirs or fast-consumption items, drag trolleys, and carry backpacks. The urban landscape has changed; in fact, both its users and uses have changed (Zoppi 2019), which necessitates a sensible project of public space and its conservation. While the issue of the impact of tourism on Florentine heritage, society and economy has been widely debated, there is little literature on the impact of tourism on the city's environment. At the environmental level, Florentine urban heritage is experiencing several critical issues, including damage from air pollution, which is widely recognised as one of the major threats to cultural heritage (Nava et al. 2009), and risks associated with possible flooding by the River Arno (Arrighi et al. 2018, 2022; Francini 2022). The last flood occurred in 1966 and had a strong impact on the historic centre, damaging books, manuscripts, paintings, sculptures, structures, homes as well as commerce and craftsmanship despite a surge of international support. However, although it was widely cited by the World Heritage Committee as a risk to its heritage, flooding has not been consistently addressed with effective and extensive measures, probably due to the lack of adequate quantification of the risk to assets (Arrighi et al. 2018).

Recently, however, research has been carried out that aims to quantify and map those heritage buildings and works of art that could be involved in various flooding scenarios in order to identify strategies of protection (Arrighi et al. 2018). A 2016 study analysed the impact of urban forestation on the removal of air pollution in the Florentine area, underlining how the historic centre, densely built up with few green areas (or greener suburbs), suffers from very high levels of pollution due to car traffic and heating (Bottalico et al. 2016). Further, the municipality is working with the University of Florence to map hot spots and draft a Green Plan (Municipality of Florence 2023b).

Two interventions emphasising the nature-culture relationship in Florentine public space

Where the city of residents and the city of tourists overlap, it is worthwhile to work towards sustainable enhancement of public space. Two particularly successful cases of recovery and conservation of public space in Florence are those of Piazzetta dei Tre Re, a smaller square adjacent to Piazza della Repubblica, and Piazza Santa Maria del Carmine, a historic square in the Oltrarno, which used to be a place for commerce, located outside the twelfth-century city walls (fig. 1). The first is part of the circuit of *minor squares* – a system of spaces in the historic centre of Florence along the edges of areas with greater tourist and commercial value (Zaffi 2019), characterised by less anthropopressure and latent privatisation of use (Armanni 2019). These smaller squares can be considered "peripheral" from the environmental, socio-economic and cultural perspective (Armanni 2019). Some of the smaller squares still manage to preserve residues of activities intended indiscriminately for both inhabitants and visitors (Zaffi 2019).
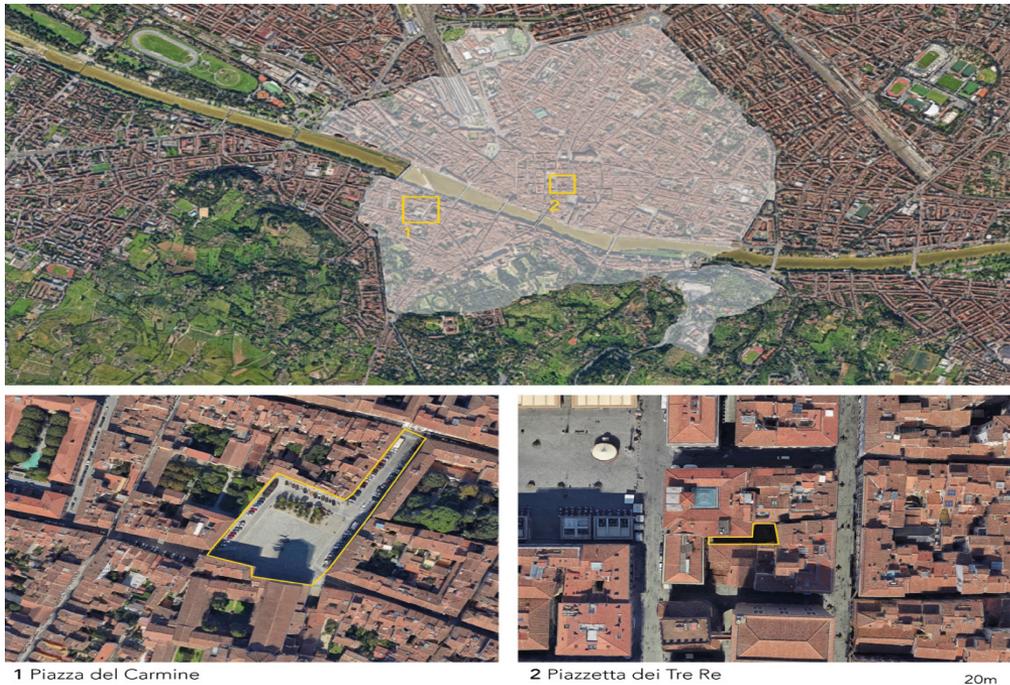
Fig. 1. Location of the two selected best practices. Elaboration by the author after Google Maps, 2023

Piazzetta dei Tre Re is a closed and hidden space (Lauria & Vessella 2021) located between Piazza della Repubblica and Via de' Calzaiuoli. It can be accessed through three gates: the first in via Calimala, the second in via de' Calzaiuoli, and the third in Piazza della Repubblica. The space was in a state of decay, and the conservation project treated it as a small garden made available to the city, bringing a programme of traditional street food, art installations and musical performances in spring and summer. The recovery of the square included cleaning all surfaces, previously covered with graffiti and used as a public toilet, and has seen the installation of a specially designed kiosk, a service warehouse, seats, a platform for performances, a green wall on scaffolding, and a number of trees in pots.

Signage at the three access lanes was equally important for informing residents and travellers about this regenerated area. In addition to the written indications, trees, planters and suspended lanterns were placed, marking detachment from the minerality of the historic centre. The intervention has recovered heritage and regenerated the environment with plants, small furnishings and activities. The square can be closed thanks to the gates installed at the entrances, both for security reasons and to privatise its use (Lauria & Vessella 2021). In this project, natural elements play an important role because, being almost absent from the historic centre's public space, they represent innovation and regeneration, allowing one to relate to the public space in a new way and increasing the use of the space, consequently improving its conservation.

The second case is that of Piazza Santa Maria del Carmine, which is larger in size and more peripheral to the main tourist axes. The square has an area of 7,343 square meters (Vitali 2017) and is located in Oltrarno (the south bank of the Arno River), specifically in San Frediano, which

is a popular area in the Santo Spirito neighbourhood. Being located immediately outside the twelfth-century walls, its first function was that of a place for exchanges and meetings among travellers who arrived in Florence from all over the world (Bargellini 2017) as well as a place where duties could be collected, and checks conducted to allow goods to enter the city. The church facing the square is Santa Maria del Carmine. It was the Carmelites who petitioned in 1317 to end the state of degradation of the surrounding area, which was then used as a waste dump. In response, the Signoria transformed the space in front of the church into a square to the delight of passers-by, elevating decorum and increasing utility (Fanelli 1997, 42).

In recent decades, however, the square has been used almost entirely as a car park. Thus, decay had once again taken hold of this public space, which is central to the life of the neighbourhood. It had become a place that was difficult to cross and use, and there was severe damage to the stone slab flooring caused by wear and tear, particularly under the weight of cars. Recent interventions have restored the square as communal space and were followed with proposals drafted in participatory process that involved the residents of the neighbourhood (Di Cintio 2017). Surveys and analyses were performed that considered both emergencies and prospective views, highlighting both critical structural issues (pavement deterioration, road fronts, materials and urban design elements inconsistent with the context) and relational aspects (posters and outside platforms [*dehor*] placed along the main visual axes; Capitanio 2017).

During participation talks, the inhabitants of the neighbourhood strongly emphasised the need to bring greenery into the square, to repopulate it, to make it usable and pleasant, to create shade, to lower the summer temperatures, to increase possibilities for meeting and conviviality, and to carefully evaluate any programmes of events that, especially in summer, might create problems with noise for residents (Di Cintio 2017, 112). The neighbourhood lacks greenery, which makes any space with natural elements highly appreciated by the local community. Thus, the intervention focused on adding a shaded area with trees and on recovering the pavement, which involved restoration of stone slabs and the insertion of architectural cement in parts of the square suitable for vehicles. The conservation project drew on traditional knowledge dating back to Roman times, with the laying of the pavement upon layered stones of different sizes, which made the pavement permeable. By avoiding overbuilding prior to laying the stone slabs, this technology has two advantages: it prevents accumulation of stagnant water, thus avoiding deterioration by frost, and it does not require canalisation for drainage. The mantle of the square therefore maintains its original attributes and additionally preserves traditional knowledge based on a conscious relationship between nature and culture.

The citizens' request to include green space was answered by adding an area at the north end of the square, where benches were installed and twenty-three maple trees were planted. This section is the only shaded part and offers view of free space, now used for exhibitions and performances, and of the church, enhancing both public and private spaces. The area is commonly used by the local population, who have returned to living there and have begun to take possession of it. In result, it becomes, at certain hours of the day, a playground for children, a resting and contemplative place, and a site of recreation for adults. All of these groups benefit from trees and the shaded area, helping to reduce the heat-island effect.

It is appropriate to underline certain critical points in these two interventions. In the case of Piazzetta dei Tre Re, the main problem lay in the fact that the new space is not really public. Sometimes closed and sometimes open, it is not equipped with appropriate furnishings when the catering businesses are closed, making the space unusable. In the case of Piazza del Carmine, on the other hand, the question mainly concerns greenery: the planted trees are not thriving as expected, and one specimen has already died and been removed. Further, there are too few trees to consistently reduce the temperature in the square on summer days, and a permeable architectural concrete solution for the pavement was used where they were planted instead of de-paving. Despite these issues, both spaces benefit the residents and allow them to meet tourists in less congested and more relaxed situations, favouring intercultural dialogue. Both interventions have also improved the environmental and perceptual quality of space and helped to reduce the central heat island, thus contributing to the improvement of the historic centre as a whole.

Conclusions

To address the problem of climate change, humanity must implement every possible solution that limits environmental degradation and improves energy efficiency. Protection and conservation of every site requires protection from both physical decay and destruction of heritage by factors like war or climate change, which are presently of particular concern. At the same time, the dynamics of global markets has created the phenomenon of modern tourism: a resilient, capillary, continuously growing economy that is largely connected to cultural heritage. Tourism is also an activity that is highly polluting in current form. Many historic centres are now experiencing the highly contradictory situation when overcrowding with masses of tourists is accompanied by the disappearance of residents. In fact, the main users of public space in these cities are no longer locals but tourists. This has changed the meaning of public space from a representative place where citizens meet and connect, to a place that hosts new functions related to communication, utilisation and fruition of heritage rather than everyday life. Contributions from conservation projects, at this moment greatly uncertain, must include architectural and urban solutions that seek to conserve the natural environment, answer questions about the current users of these spaces as well as embrace these changes.

The two discussed Florentine projects – Piazzetta dei Tre Re and Piazza Santa Maria del Carmine – are positive interventions that have succeeded in combining the needs of tourists, residents and conservation. They emphasise the nature-culture relationship and protect the urban heritage while also reactivating the local community and the network of traditional knowledge and craftsmanship (Francini 2022), in contrast to prevailing depopulation.

To maintain the outstanding universal values of HUL – in the case of Florence an *urban whole resulting from continuous creation* – it is necessary to push towards the conservation of these characteristics, placing urban heritage in the broadest context, and to avoid sectoral decisions that could lead to conflicts in the planning process and deepen the polarisation between conservation and development. Culture, then, must become an activator of sustainable development, which requires integrated thinking aimed at balancing the management of natural resources in and around cities (Rodwell & Turner 2018).

Finally, the world of conservation, like those of architectural and urban design, must initiate a dialogue with urban geographers, economists, ecologists and planners to protect the needs of heritage during major urban transformations, thus ensuring that the principles of conservation are also considered and valued (Coombes & Viles 2021) in the use of NBSs. The HUL Recommendation is of special relevance for the contributions that conservation can make to UN's Sustainable Development Goal 11, Target 4: to "protect and safeguard the world's natural and cultural heritage" and to "make cities and human settlements inclusive, safe, resilient, and sustainable." In fact, in a globalised and changing context, the Recommendation is a tool that reassures urban heritage, with its tangible and intangible components as well as traditional knowledge, to be the key in improving the liveability of an area, ensuring sustainable development, and fostering social cohesion (UNESCO 2011).

Acknowledgements

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