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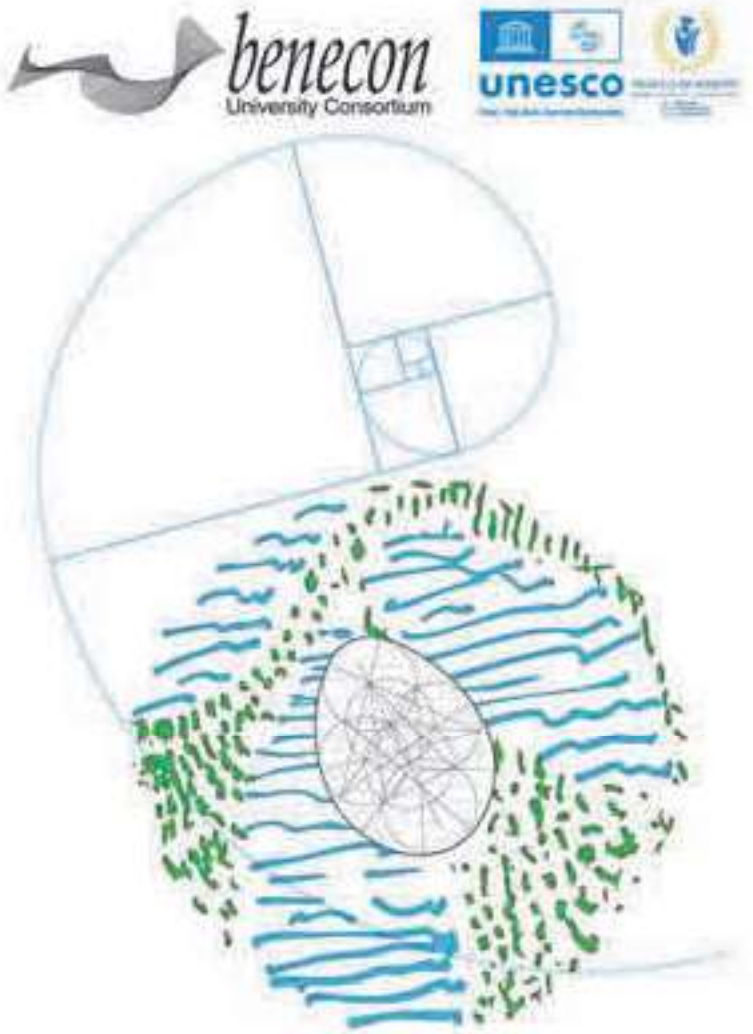
XXIII INTERNATIONAL FORUM

Le Vie dei Mercanti



WORLD HERITAGE and FOOD TO FEED

XXIII INTERNATIONAL FORUM

NAPLES and CAPRI

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WORLD HERITAGE and FOOD TO FEED
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Peer review

Scholars has been invited to submit researches on theoretical and methodological aspects related to the impact of natural ecological disasters and armed conflicts on Cultural Heritage, and show real applications and experiences carried out on these themes. Based on blind peer review, abstracts have been accepted,conditionally accepted, or rejected. Authors of accepted and conditionally accepted papers has been invited to submit full papers. These has been again peer-reviewed and selected for the oral session and publication, or only for the publication in the conference proceedings.

Conference report

300 abstracts and 400 authors from 20 countries:

Albania, Algeria, Austraia, Belgio, China, France, Germany, Greece, Hungary, Iran, Italy, Japan, Mexico, New York, Portugal, Romani, Serbia, Spain, Turkey, United Kingdom.

From the XXII FORUM WORLD HERITAGE and CITIES IN EMERGENCIES to the XXIII FORUM WORLD HERITAGE and FOOD TO FEED

The theme “World Heritage and Food to Feed” explores the connection between world heritage and food, highlighting how culinary traditions and cultural landscapes can contribute to sustainable nutrition and address global challenges such as food security and climate change. Culinary traditions, like the Mediterranean diet and Japanese washoku, are protected by UNESCO for their cultural value and respect for sustainable agricultural practices. Other examples include agricultural landscapes like the rice terraces of the Philippines and historic olive groves, which promote biodiversity and sustainability.

These agricultural landscapes are also linked to architecture, cities, and historic centers, where architectural design integrates food production and sustainability. Traditional agricultural practices, such as crop rotation and the use of local varieties, can ensure food security without harming the environment. Biodiversity is crucial, with agricultural practices that preserve unique ecosystems and reduce environmental impact.

Architecture plays an important role in reflecting food and cultural values. Designing homes that promote conviviality, sustainability, and a connection to nature, such as traditional Mediterranean houses, Japanese homes, or rural dwellings in developing countries, fosters a connection between food, community, and the environment. Sustainability in architecture can also be seen in contemporary projects that combine tradition and innovation, like modular bamboo homes in Vietnam or urban agriculture projects in Cuba.

Historic Italian buildings, like masserie in Southern Italy, trulli in the Valle d’Itria, courtyard houses in the Po Valley, and the Sassi di Matera, reflect the bond between architecture, food, and landscape. These historical buildings were designed to meet agricultural and food production needs, such as food preservation and production. Italian architectural solutions are examples of sustainability that integrate traditional food practices with the surrounding environment.

Global challenges require an integrated approach to food sustainability. Scientific communities and governments must cooperate to promote agricultural practices that preserve biodiversity and encourage food self-sufficiency. Architecture, therefore, becomes a powerful tool to reflect values related to food and sustainability, creating spaces that celebrate cultural diversity and promote innovative solutions for a more sustainable and connected future.

Finally, architecture and food are closely linked to cultural heritage, and innovative and resilient solutions can inspire global design that respects the environment and promotes equitable access to food. Scholars are called upon to contribute with research and proposals to develop sustainable practices that integrate food with daily life and architectural context, reflecting local traditions and global needs.

Dal XXII FORUM WORLD HERITAGE and CITIES IN EMERGENCIES
Al XXIII FORUM WORLD HERITAGE and FOOD TO FEED

Il tema “World Heritage and Food to Feed” esplora il legame tra il patrimonio mondiale e il cibo, evidenziando come le tradizioni alimentari e i paesaggi culturali possano contribuire a un’alimentazione sostenibile e a rispondere alle sfide globali come la sicurezza alimentare e il cambiamento climatico. Le tradizioni culinarie, come la dieta mediterranea e il washoku giapponese, sono protette dall’UNESCO per il loro valore culturale e per il rispetto delle pratiche agricole sostenibili. Altri esempi includono i paesaggi agricoli delle terrazze di riso delle Filippine e gli uliveti storici, che promuovono la biodiversità e la sostenibilità.

Questi paesaggi agricoli sono anche legati all’architettura, alle città e ai centri storici, dove la progettazione architettonica integra la produzione alimentare e la sostenibilità. Le pratiche agricole tradizionali, come la rotazione delle colture e l’uso di varietà locali, possono garantire la sicurezza alimentare senza danneggiare l’ambiente. La biodiversità è cruciale, con pratiche agricole che preservano ecosistemi unici e riducono l’impatto ambientale.

L’architettura gioca un ruolo importante nella riflessione sui valori alimentari e culturali. La progettazione di case che promuovono la convivialità, la sostenibilità e il legame con la natura, come le case tradizionali mediterranee, le case giapponesi o le abitazioni nelle zone rurali dei paesi in via di sviluppo, favorisce una connessione tra cibo, comunità e ambiente. La sostenibilità in architettura si può vedere anche in progetti contemporanei che combinano tradizione e innovazione, come le case modulari in bambù in Vietnam o i progetti di agricoltura urbana a Cuba.

Le costruzioni storiche italiane, come le masserie nel Sud Italia, i trulli della Valle d’Itria, le case a corte della Pianura Padana e i Sassi di Matera, riflettono il legame tra architettura, cibo e paesaggio. Questi edifici storici erano progettati per soddisfare le necessità agricole e alimentari, come la conservazione e la produzione del cibo. Le soluzioni architettoniche italiane sono esempi di sostenibilità che integrano pratiche alimentari tradizionali con l’ambiente circostante.

Le sfide globali richiedono un approccio integrato per la sostenibilità alimentare. Le comunità scientifiche e i governi devono cooperare per promuovere pratiche agricole che preservano la biodiversità e favoriscono l’autosufficienza alimentare. L’architettura, quindi, diventa un potente strumento per rispecchiare i valori legati al cibo e alla sostenibilità, creando spazi che celebrano la diversità culturale e promuovono soluzioni innovative per un futuro più sostenibile e connesso.
Infine, l’architettura e l’alimentazione sono strettamente legate al patrimonio culturale, e le soluzioni innovative e resilienti possono ispirare una progettazione globale che rispetti l’ambiente e promuova l’accesso equo al cibo. Gli studiosi sono chiamati a contribuire con ricerche e proposte per sviluppare pratiche sostenibili che integrano il cibo con la vita quotidiana e il contesto architettonico, riflettendo le tradizioni locali e le necessità globali.

World Heritage and Food to Feed
Architecture|Landscape|Urban Planning|Territorial Governance|Design|Sustainability|Environment|
Agriculture|Health|Economy|Archeology|Cultural Heritage|Training|e-Learning|Gender Equality
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Resilient cityscapes. Best practices of biodiversity and sustainability

Teresa Cilona
Department of Architecture, University of Palermo, Italy
teresa.cilona@unipa.it

Abstract
The effects of climate change are putting all forms of life on Earth at risk. Global greenhouse gas emissions, widespread environmental degradation and planning policies disregarded by various *governances* - at various levels - have significantly affected the fragility of natural and anthropic ecosystems. Floods, inundations, landslides together with the contrasting phenomena of heat waves and droughts are the emergency events that territories and cities are increasingly facing, in every part of the globe. An immediate reversal of the trend is needed that focuses on urban biodiversity and ecosystem services, as already outlined in 2015 with the 2030 Agenda - goal 11 of the United Nations Environment Programme "*Make cities and human settlements inclusive, safe, resilient and sustainable*". In this study we will look at some of the world's cities that are already tackling climate challenges through good urban ecological practices. A focus is dedicated to Sicily which, despite experiencing a delicate moment of environmental, social and economic emergency, presents virtuous realities that, thanks to the use of innovative and sustainable methodologies, record improvements in the quality of life of the territories and populations.

Keywords: climate change, cityscapes, urban biodiversity

1. Introduction
In recent decades, climate change has become one of the main global threats, with evident impacts on various aspects of human life, from the environment to health, from food security to natural resource management. In all response, urban planning has aimed at creating resilient urban landscapes that harmoniously integrate natural and anthropic elements - green spaces, waterways, ecological infrastructures and protected areas - in order to support biodiversity, improve air, water and soil quality [1]. These urban landscapes are designed to be flexible, capable of evolving, and address future environmental changes and population growth. This article analyses some cities, both national and international, that have become exemplary models of sustainability and biodiversity thanks to an innovative use of natural resources, efficient water and waste management, social inclusiveness, active participation of citizens - the true protagonists of the ecological and social transformations of their neighborhoods - and far-sighted *governance* [2].

2. National and international urban sustainability models
Internationally, some concrete examples of resilient and sustainable urban landscapes come to us from metropolises whose planning policies today represent a guide for other urban centers that are facing the same problems. We refer to large cities overseas and not, such as Singapore, Vancouver and Copenhagen, which have become leaders in tackling climate change by demonstrating that an ecological urban future is possible through collaboration between institutions, innovative technology and civic engagement. Even at a national level, several Italian cities are adopting new approaches to integrate nature into the urban fabric, creating landscapes that respond to climate change by promoting biodiversity, among all we remember Milan, Bologna, Naples. And it is precisely these virtuous urban realities that we will briefly describe together with the Sicilian case.

2.1 International Models

2.1.1 - Singapore with an ever-growing population and limited land, has faced a series of challenges including scarcity of natural resources, rising sea levels and water management. The Southeast Asian city is an example of how the urban fabric and nature can integrate harmoniously and resiliently, having invested heavily in ecological solutions, such as the promotion of the "*City in a Garden*" project, with large green spaces, vertical gardens and green roofs, which improve urban aesthetics and reduce the thermal insulation of buildings, together with a large network of parks and gardens - such as the "Gardens by the Bay" or the "*Park Connector Network*" program. In this regard, it should be remembered that, since 2000, the city has had an advanced water management system, "*Newater*", which treats and recycles water, together with solutions for flood protection, such as the raising of coastal infrastructure and the construction of cutting-edge drainage systems.

2.1.1 - Vancouver has adopted an Action Plan that includes reducing its greenhouse gas emissions by 50% by 2030, with the ultimate goal of becoming carbon neutral by 2050. To achieve these goals, the Canadian city has focused on the use of solar energy, the promotion of electric vehicles and the adoption of the "*Greenest City 2020 Action Plan*" (GCAP), with interventions that aimed at energy efficiency in the construction of new buildings, waste management, and the creation of urban green spaces. The very positive results obtained have allowed the city be part of to the ranking of the "*10 greenest cities*" in the world in 2024, having invested over the years in cycle paths, infrastructure for sustainable mobility, thus reducing dependence on private transport. Furthermore, it is promoting the use of green technologies in the management of natural resources, such as rainwater collection for irrigation and passive cooling of buildings.

2.1.2 - Copenhagen is recognized as one of the most advanced cities in the field of sustainability. The climate plan aims to make the Danish city *carbon neutral* by the end of this year 2025 thanks to the policies applied in transport, energy management, urban planning and the adoption of the "*Green City Vision*", a Plan that includes the creation of a network of parks, gardens and green spaces that improve the quality of the urban environment and support biodiversity. One of the most significant examples is the renaturalization project of the *Sankt Jørgens* river, where the river *habitat* has been improved and ecological corridors for fauna have been created. Very important are investments in wind and solar energy systems, the construction of low-energy buildings, the planting of tall trees, the creation of multifunctional green areas, the expansion of cycle paths (over 400 km) and the adoption of innovative practices in rainwater management such as the "*Cloudburst Management Plan*" project which involves the construction of public spaces that act as natural drainage systems, reducing the risk of flooding caused by heavy rains (fig. 1).

2.2 National models

2.2.1 - Milan, with the *Bosco Verticale* of 2014 and the *ForestaMi* project of 2019 (planting 3 million trees by 2030, a green infrastructure that promotes biodiversity, improves air quality by reducing the concentration of fine dust and lowering summer temperatures through natural cooling), is one of the main Italian cities that has undertaken an important path towards the creation of greener and more resilient urban landscapes (fig. 2). At the same time, it has started the redevelopment plan of abandoned areas, as in the case of the *Parco Lambro* and the *Parco Agricolo Sud*, with new trees and the creation of public spaces accessible to citizens. Interventions that have improved the city's capacity to absorb rainfall, increasing biodiversity and reducing the risk of extreme weather phenomena such as heat waves.

2.2.2 - Bologna is investing in urban resilience through greenery, sustainable mobility and water management. The initiative to create a *Green Belt* and *Ecological Corridors* (fig. 3) - to protect the natural areas surrounding the city, improve air quality, thermal comfort and promote biodiversity - integrates very well with other interventions on sustainable mobility thanks to the expansion of the network of cycle paths, the promotion of the use of electric public transport and the creation of limited traffic zones. Actions that contribute to reducing air pollution, improve the quality of life of citizens and make the city more resilient to the impacts of climate change. Furthermore, the city is actively involved in the adoption of sustainable drainage systems (SuDS) in new urban infrastructures which, together with the planting of vegetation capable of absorbing rainwater, contribute to mitigating the effects of floods.

2.2.3 - “Napoli Resiliente” is a virtuous urban model applied in the city of Naples to address climate risks through the creation of new parks and gardens, the recovery of natural areas, the adoption of new systems for the recovery and reuse of rainwater. Tangible examples are the *Parco Virgiliano* (fig.4), which overlooks the Gulf of Naples - which represents a balance between the conservation of biodiversity and urban accessibility - and the "*Verde Metropolitano*" project, which promotes the creation of green spaces along the main traffic arteries, using native trees and plants to improve air quality and

reduce noise pollution, thus promoting the well-being of citizens and local biodiversity, creating a suitable *habitat* for a variety of species of insects, birds and small fauna. Interventions that make the city of Naples more sustainable.

3. A Sicilian model of biodiversity - The *Radice Pura* botanical park in Giarre

Sicily, with its extraordinary variety of landscapes, ecosystems and biodiversity, represents one of the richest and most complex regions from an environmental point of view. Its strategic position in the Mediterranean, the variety of microclimates and the presence of unique *habitats* make this Island a natural heritage of inestimable value. However, like many other regions of the world, it is called upon to face the challenges arising from climate change and land consumption. In response to these challenges, it is the promoter of the first law on agroecology - *regional law no. 21 of 29 July 2021, which regulates agro-ecological companies and establishes the basic criteria to facilitate the transition towards the evolution of agricultural models and ecological and social connections* - and has developed, in the last decade, several good sustainability practices that aim to protect local ecosystems, promote the resilience of natural environments and promote development models that integrate urban centers with environmental conservation and socio-economic needs [3 - 4]. Among the most sustainability practices we can mention the project for the redevelopment of the Favorita urban park in Palermo, the urban agriculture projects in the city of Messina and the creation of community gardens and urban vegetable gardens, as well as the ecological corridors project in the Catania *hinterland.* An extraordinary example is, in fact, the "*Radice Pura*" Botanical Park in Giarre, in the province of Catania (Figg. 5, 6, 7).

It is one of the most fascinating and significant realities of the Sicilian naturalistic heritage, in connection with the city center, an open-air garden museum where biodiversity and culture merge to give life to an environment that promotes the conservation of plant species through a project to recover abandoned land, the collection of seeds from mother plants and the formation of a school of botany.

The Park, inaugurated in 2017, at the same time as the "*Radicepura Garden Festival*", a biennial dedicated to the Mediterranean landscape that features the participation of international experts, it extends over an area of approximately 10 hectares, at the foot of Etna, around a noble palace built at the end of the 19th century – characterised by large reception rooms covered with fine painted vaults, hand-carved white stone fronts and stables with lava stone colonnades – and a "Palmento", an industrial archaeology building where wine was produced. The Park features tourist accommodation facilities, a very modern *Greenhouse the Conferences* - made of glass and steel for conference activities - and 15 gardens enriched by artistic and landscape installations (1) containing a vast collection of plant species from different parts of the world, the result of careful selection and cultivation work which has allowed the reproduction of natural environments typical of different Countries.

One of the main peculiarities is its ability to host exotic and tropical plants alongside native Sicilian species, Mediterranean plants, centuries-old trees, as well as endemic species from southern Italy. No less important is the presence of the fauna that inhabits the area, characterized by numerous birds, pollinating insects and small mammals. The synergy between flora and fauna helps maintain the ecological balance, and the park promotes environmental sustainability practices that favor the well-being of the organisms that populate it. The name "*Radice Pura*" derives from the presence of a symbolic plant: the pure root, a metaphor that alludes to the purity and authenticity of the plant species that populate the park. In the past, the area was used for agricultural cultivation and was transformed into a botanical park, starting from the 2000s, thanks to the 'environmental vision' of the owners of the land, the Faro family, and a group of experts in the field of botany and landscape design.

The aim was to create a space that would represent a green lung for the area, a center for environmental education and scientific research, becoming a true ecological corridor for the city as well as a point of reference for scholars, botany enthusiasts and anyone who wishes to enjoy direct contact with nature through educational activities and guided tours that stimulate visitors' curiosity about plants, biological cycles and the environmental challenges of our time. Finally, for example, the methods of managing water resources, the use of renewable energy and the promotion of sustainable waste management are some of the initiatives that contribute to making the park, *Radice Pura*, a virtuous model of sustainability. Furthermore, several collaborations have been undertaken with public and private entities to promote research and conservation of plants at risk of extinction. In short, the *Radice Pura* park is a magical place where art, architecture, culture, creativity, ecology, biodiversity, environmental sustainability tell the story of a place and connect it with the city. A virtuous example to be replicated in other realities.

Conclusions

The future of our cities depends on the ability to adopt innovative ecological practices to improve the quality of life and limit the loss of biodiversity caused by the effects of climate change, the conversion of natural lands into urbanized areas and the construction of infrastructures. In this study, we have briefly described some cities that have managed to integrate environmental conservation well with the socio-economic development of the same inhabited centers. The *best practices* adopted, the correct

management of natural resources, the conservation of protected areas, the promotion of renewable energy [5], sustainable mobility, collaboration between institutions - public and private - and the active participation of citizens they are the only actions that must be undertaken as soon as possible.

Notes

(1) The installations and gardens, created by landscape architects from all over the world, such as François Abélanet, Paolo Pejrone, Michel Péna, Antonio Perazzi and Andy Sturgeon, are in dialogue with works by contemporary artists such as Emilio Isgrò, Alfio Bonanno and Adrian Paci.

(2) The photos included in the text are sourced from the web.

Fig. 1 - Copenaghen. Panoramic view and examples of how the city and nature integrate harmoniously and resiliently (2).

Fig. 2 - Milan. Panoramic view, detail of the interventions (2).

Fig. 3 - Bologna. Panoramic view, detail of the *Ecological Corridors* (2).

Fig. 4 - Napoli. Panoramic view and examples of how the city and nature integrate harmoniously and resiliently (2).

Fig. 5 - Giarre, *Radice Pura* - Botanic Park, panoramic view (2).

Fig. 6 - Giarre, *Radice Pura* Botanic Park, details of the outdoor spaces (photo by T. Cilona).

Fig 7 - Giarre, *Radice Pura* Botanic Park, panoramic view with Etna in the background (2).

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